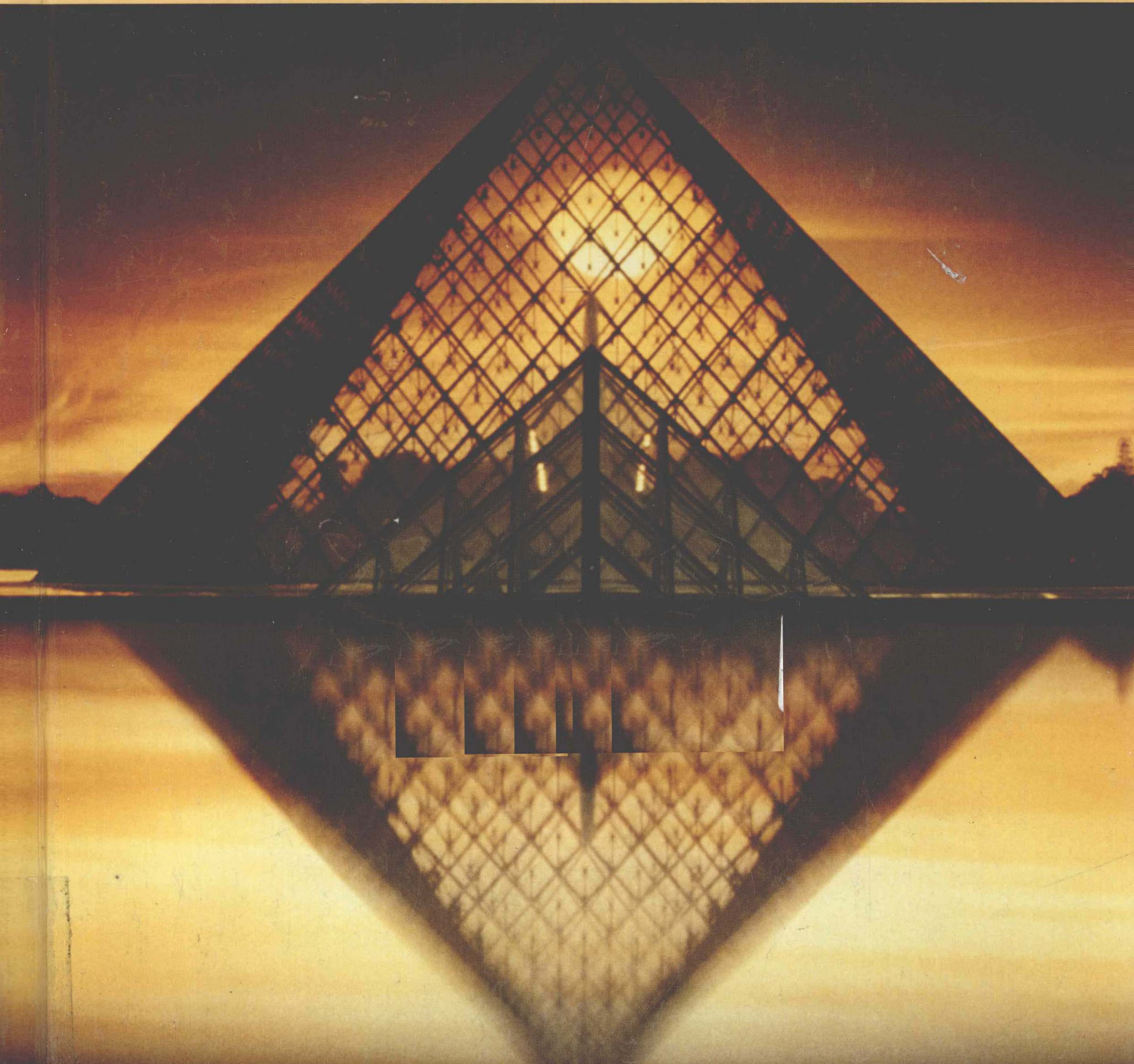


Second Edition

Cost Management

Strategies for Business Decisions



Hilton ▲ Maher ▲ Selto

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Strategies for Business Decisions

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COST MANAGEMENT: STRATEGIES FOR BUSINESS DECISIONS

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To my wife, **Meg**, and to our sons, **Tim** and **Brad**.

Ronald W. Hilton

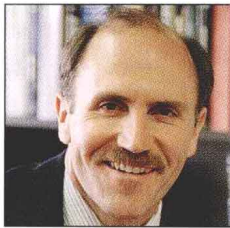
To my family: my wife **Miriam**, my daughters **Krista** and **Andrea**, and my father **Bill**, who have taught me just about everything worth knowing.

Michael W. Maher

To my parents, **Frank** and **Dorothy Selto**, who taught me the value of love, hard work, and integrity. To my wife, **Linda**, and sons, **Michael** and **Mark**, who inspire and support me. To my first accounting teachers, **Bill Bruns** and **Gary Sundem**, who surprised me by demonstrating that accounting can be fun, useful, and intellectually challenging and that an academic career can be immensely rewarding. Finally, to my students, who every semester teach me something significant.

Frank H. Selto

About the Authors



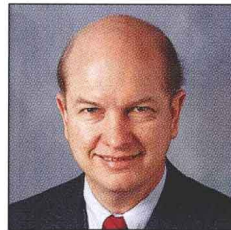
Ronald W. Hilton A Professor of Accounting at Cornell University, Professor Hilton teaches in the areas of managerial accounting and cost-management systems. With bachelor's and master's degrees in accounting from The Pennsylvania State University, he received his Ph.D. from The Ohio State University.

A Cornell faculty member since 1977, Professor Hilton also has taught accounting at Ohio State and the University of Florida, where he held the position of Walter J. Matherly Professor of Accounting. Prior to pursuing his doctoral studies, Hilton worked for Peat, Marwick, Mitchell and Company and served as an officer in the United States Air Force.

Professor Hilton is a member of the Institute of Management Accountants and has been active in the American Accounting Association. He has served as associate editor of *The Accounting Review* and as a member of its editorial board. Hilton also has served on the editorial board of *Journal of Management Accounting Research*. He has been a member of the resident faculties of both the Doctoral Consortium and the New Faculty Consortium sponsored by the American Accounting Association.

With wide-ranging research interests, Professor Hilton has published articles in many

journals, including the *Journal of Accounting Research*, *The Accounting Review*, *Management Science*, *Decision Sciences*, *The Journal of Economic Behavior and Organization*, *Contemporary Accounting Research*, and the *Journal of Mathematical Psychology*. Author of *Managerial Accounting*, he also has published a monograph in the *AAA Studies in Accounting Research* series. He is a co-author of *Budgeting: Profit Planning and Control* and of *Cost Accounting: Concepts and Managerial Applications*. Hilton's current research interests focus on contemporary cost-management systems and international issues in managerial accounting. In recent years, he has toured manufacturing facilities and consulted with practicing managerial accountants in North America, Europe, Asia, and Australia.



Michael W. Maher A Professor of Management at the University of California–Davis, Professor Maher previously taught at the University of Michigan, the University of Chicago, and the University of Washington. He also worked on the audit staff at Arthur Andersen & Co. and was a self-employed financial consultant for small businesses. He received his BBA from Gonzaga University (which named him Distinguished

Alumnus in 1989) and his MBA and Ph.D. from the University of Washington, and he earned the CPA from the state of Washington.

Professor Maher was president of the Management Accounting Section of the American Accounting Association and has served on the editorial boards of *The Accounting Review*, *Accounting Horizons*, *Journal of Management Accounting Research*, and *Management Accounting*. Co-author of two leading textbooks, *Principles of Accounting* and *Managerial Accounting*, Maher has co-authored several additional books and monographs, including *Internal Controls in U.S. Corporations* and *Management Incentive Compensation Plans*, and published articles in many journals, including *Management Accounting*, *The Journal of Accountancy*, *The Accounting Review*, *Journal of Accounting Research*, *Financial Executive*, and *The Wall Street Journal*.

For his research on internal controls, Professor Maher was awarded the American Accounting Association's Competitive Manuscript Award and the AICPA Notable Contribution to Literature Award. He also has received the award for the Outstanding Tax Manuscript, and from the students at the University of California's Graduate School of Management, he has received the Annual Outstanding Teacher Award three times and a special award for outstanding service twice. Maher's current research includes studies of the efficacy of online education, health care costs, and corporate corruption.



Frank H. Selto Professor Selto has been on the faculty at the University of Colorado at Boulder since 1985, where he has taught accounting at the undergraduate and graduate levels and served as Division Chair of Accounting and Information Systems. Recently appointed a Research Fellow of the University of Melbourne, Selto has taught at the University

of Denver, the University of Colorado at Denver, and the University of Washington. He holds MBA and Ph.D. degrees in accounting from the University of Washington and BS and MS degrees in mechanical engineering from Gonzaga University and the University of Utah, respectively. Prior to earning his MBA and Ph.D. degrees, he worked as a mechanical engineer and served as an officer in the US Army Corps of Engineers.

Active in the American Accounting Association and its Management Accounting Section, Professor Selto was the editor of the Education Research section of

The Accounting Review and has served on the editorial boards of *The Accounting Review*, *Journal of Management Accounting Research*, *Management Accounting Research*, and *Accounting Horizons*. A researcher of management accounting and management control, Selto has published articles in the *Journal of Accounting Research*, *Accounting, Organizations & Society*, *Journal of Cost Management* and *Journal of Management Accounting Research*, one of which was recognized as a Notable Contribution to the Management Accounting Literature.

Introduction

We are pleased and excited to offer the second edition of the ground-breaking text, *Cost Management: Strategies for Business Decisions*. The new edition keeps the best features of the first and improves the rest. If you are new to this text, the Preface describes its mission and vision, which the changing world has reinforced. It also describes the text's key features, which we have refined, and each chapter's aims and strengths, which we have improved as well. Those who are returning to *Cost Management* will notice a somewhat different chapter order and several entirely new chapters—all the result of listening to you, who are both our customers and colleagues.

As we write this Preface, the world economy is recovering from the dot-com and high-technology bubble that burst. It seems as if an entire generation of entrepreneurs and investors believed or hoped that stock prices were keyed to revenues or promises of revenues. Millions of dot-com employees and investors were greatly disappointed to learn, after all, that companies must earn revenues and manage the other half of the income equation—costs, of course. Where we once saw free spending on corporate perquisites, we now observe managers carefully examining activities and expenditures to see if they truly add value in excess of their cost. This is what *Cost Management* is all about—adding more value at lower cost. We are convinced that there has never been a better time to sound our message: *Costs do not just happen; they are the result of management decisions*. Neither we nor our students can continue to passively measure costs; we must actively manage costs to deliver more value. We do our students and their (future) employers a disservice if we do not stress and deliver this message in tangible, memorable ways.

Vision and Mission

**Steve Jackson—
University of Southern
Maine**

I believe that we need to emphasize the use of accounting information and its use in decision making and start to move away from the accounting coverage from the preparer perspective. This book is moving in that direction.

Cost Management's original, proactive vision is stronger and more clearly presented in the second edition. Its vision is that every resource must be used to provide value or it is wasted. The most valuable contributions from accountants/financial analysts/consultants are analysis, interpretation, communication, and identification of opportunities for improvement. These uses of information are the focus of *Cost Management*.

Our mission (and that of the field of cost management) is to prepare the next generation of financial managers and consultants. These individuals will make decisions that greatly influence the cost structure and performance of organizations. The mission is communicated through presentation and explanation of “best cost-management practices” throughout the text.

Measurement of costs is still important, but accuracy is not as important as relevance and timeliness for key strategic decisions. In fact, most companies have automated their cost-accounting systems, so the actual task of measurement is now less important than the design, interpretation, and identification of opportunities and methods for improving costs and performance.

Development of the Second Edition

The first edition of *Cost Management* began as a concept based on extensive discussions among the authors and editors in 1997. The revision of the second edition began in earnest in the fall of 2000. We are convinced that the market is ready for this cost-management text that is grounded in best practices. Our beliefs are reinforced by the Institute of Management Accountants' 2000 survey of practice, which confirmed its 1997 study that the role of the “management accountant” has evolved dramatically in

the past decade. Indeed, most individuals in this role do not identify themselves or their jobs as “accounting.” Rather, they are internal “financial analysts” or “business consultants.” We know that many progressive teachers of cost and managerial accounting have seen these changes and are ready for a text that supports their efforts to prepare their students for this exciting new set of challenges.

This second edition is the result of nearly three years of teaching experience with the text, feedback from adopters of the first edition, continued observation of the ever-changing world of cost management, and extensive reviews of drafts of new and revised chapters. The primary focus of writing the second edition has been to strengthen the message while improving the readability and accessibility of the innovative presentations of the text. We heard loud and clear that the first edition was greatly appreciated for its innovations but that we should improve the communication and presentation of some topics. Thus, in many ways, writing the second edition was as much work as the first edition because we sought to continue to innovate and improve without losing sight of our vision and mission. Reviewers of the second edition chapters overwhelmingly agree that we have succeeded, and we are pleased to present this revised text to the market.

Key Features

The text accomplishes its goals by incorporating five key elements to reinforce learning and retention throughout all chapters:

- Cost-management focus
- Realistic company settings
- Decision-making emphasis
- Best cost-management practices
- Reliable-research findings

Cost-Management Focus

The primary principle of cost management is that costs do not simply happen; they are the results of management decisions. To prevent mistakes and identify opportunities, cost management focuses on the anticipation of the impacts of alternative decisions. *Cost Management* combines value chain, activity-based costing, value-added analyses, activity-based management, and economic value added to build a logical and easily communicated view of the subject. This proactive cost-management perspective motivates all of the book’s topics. This approach is not as radical as it might seem. More and more companies are adopting cost management in one way or another, and complementary business curricula (e.g., marketing, management, and operations) have embraced the approach.

Realistic Company Settings

The concepts and applications of each chapter are developed in the context of a focus company, which is closely based on the actual practices and experiences of a real company. Although the focus organizations are not real themselves, they are realistic and motivate students by making their cost-management study more tangible and interesting. The use of focus companies provides an environment in which abstract, conceptual discussions become more practical and communicate the decision-making context of cost management. This focus provides grounded, logical descriptions of the origins of cost-management problems and their solutions. The text has a balance of manufacturing, service, government, mature, and start-up focus companies to demonstrate that cost-management concerns are universally applicable.

Leslie Kren—University of Wisconsin (Milwaukee)

I think a lot of excellent work was done on the pedagogy in this text. Great illustrations from practice, thoughtful in-chapter problems. I think it is very well done.

Alexander Sannella—Rutgers University

The students absolutely love the “storyteller” pedagogy used with the sample companies.

**Masako Darrough—
Baruch College (CUNY)**
*The discussion on
nonprofits adds a real
strength to the book.*

The focus-company context also shows that strategic, cross-cultural, international, technological, or communication issues really do complicate concepts that at first seem straightforward. However, cost management contributes reliable principles that guide managers toward successful solutions.

Many companies, of all sizes and industries, have embraced team-based decision making. This is having a profound effect on the role of individuals who previously might have had predominantly functional roles and loyalties. Effective cost-management analysts participate in team decision making and understand how to work with individuals from different cultures and functional backgrounds. The text prominently features team decision making with emphases on interaction and communication.

The use of realistic focus companies provides the context in which cost-management is used to identify opportunities and prevent costly mistakes. These companies reflect real-world practices of large, established companies that have been improving their productivity by downsizing, embracing technology, and outsourcing many functions, including finance and accounting. The relatively fewer accountants in large firms must be more entrepreneurial and strategic in outlook. Furthermore, most job growth in the US economy comes from small companies. More dramatically, an entrepreneurial spirit is sweeping former state-controlled economies both in established and developing countries. Many opportunities for cost management exist around the world in small and start-up companies. The text provides numerous applications in smaller companies to illustrate cost management's impact.



CollegePak Company manufactures backpacks sold to college and high school students through college bookstores and other traditional retail outlets. Although the company started by focusing on the college market, which explains the name CollegePak, it has expanded into the high school market and now is considering an entry into the middle school and elementary school markets as well. The company operates a single production facility located in Trenton, New Jersey. CollegePak's market covers all regions of the United States, and the company has recently entered the European market. The family-owned company has been in business for 22 years, and its annual sales are now \$4.5 million. CollegePak has been profitable every year since its founding by Gustavo Perez, who turned over the company's reins to his daughter, Maria, four years ago. Both credit the company's success to four factors: a reliable, durable, functional product; a successful marketing approach that focuses directly on the collegiate market; an outstanding group of employees from the top management team to the machine operators' helpers; and a strong commitment to sound cost-management practices. As Gustavo has said more than once, "You can't be successful in business unless you understand what it costs you to make your product. Then you must manage that cost diligently to consistently deliver value to customers at a price they will pay." CollegePak's current president echoes her father's sentiment, adding that "we have an outstanding cost-management team. It has pulled us out of the fire many a time by finding ways to create value at lower cost."

Decision-Making Emphasis

Each chapter begins with the feature *Cost-Management Challenges*, which illustrate the chapter content the student must master. The *challenges* engage the student and require the integration of content, and are addressed in integrative discussions at the chapter's end.

Each of the book's focus companies faces critical decisions that motivate its use of cost-management principles. These decisions include how to use scarce capacity, whether to add a new complex line of business, and how to design incentives to motivate employees to take risks and find innovative solutions. Each chapter actively involves the student in this problem solving by posing content applications, called *You're the Decision Maker*, at key points in the chapter. These are neither quizzes nor examples of end-of-chapter problems. Rather, they are integral to the chapter because they extend the text by asking the student to apply the knowledge gained in the chapter to realistic conditions. These are excellent opportunities for students to flex their new cost-management muscles in a nonthreatening environment. They also can be used as the basis of interactive classroom discussions.

**Joyce Berg—
University of Iowa**
*Chapters include a good
coverage of tools used in
decision making. Good
students will gain a good
working knowledge of
tools they can use on the
job. I actually get the
feeling that my students
could go into a firm and
immediately add value.*

Cost-Benefit Analysis of Outsourcing

Refer to the information in Exhibit 1–6.

- Explain why some costs and benefits in the analysis are quantified but others are not. How do you think Pursuit.Com measured the quantified costs and benefits?
- Is it possible that the nonquantified costs or benefits of this decision could be more important than those that are quantified? Explain with an example from Exhibit 1–6.
- Explain how the personnel, facilities, and support cost savings listed in Exhibit 1–6 might not result in actual cost savings.
- Team Focus:** Assume that you are the cost-management analyst assigned to the Pursuit.Com team that will make recommendations about outsourcing the company's accounts receivable process. How can you use the analysis to help the team's analysis and decision making? What problems and information needs should you anticipate? How can you gather more information?
- Ethical Considerations:** Has Pursuit.Com identified all costs of the outsourcing alternative? If personnel are laid off or dismissed to realize cost savings, does Pursuit.Com have any obligations to those employees? Could the way that Pursuit.Com treats those employees affect retained or future employees? Explain.

(Solutions begin on page 22.)



**You're the
Decision
Maker 1.5**

**James Russell Hardin—
Pittsburg State
University**

The “You’re the Decision Maker” activities are excellent, allowing the students to practice what has just been covered.

Best Cost-Management Practice

Many cost-management techniques originated in mature manufacturing companies. Thus, it makes sense to discuss these concepts as best practices that can be adapted to other settings. Service, government, and start-up organizations alike have found cost-management techniques to be immensely valuable. Since many developed countries are becoming service economies, extensive focus on cost management in service organizations will be beneficial to students who will find rewarding careers managing or consulting to service companies.

Most cost texts reflect a strong US influence, which is excessive for international audiences and too narrow for the many US students who will work in international companies. Many US-based companies generate more than half of their sales outside the country and work extensively through foreign subsidiaries or partners. The text adds case, survey, and empirical information regarding European, American, and Australasian experiences. *Cost Management in Practice* features demonstrate the applicability of cost management to well-known companies.

**Catherine Usoff—
Bentley College**

I find the approach of the text to be very progressive and highly reflective of what cost accountants (or internal business consultants) will be doing in organizations.

Cost Management in Practice 4.1

Use of Activity-Based Costing

Activity-based costing has maintained a high profile as a cost-management innovation for about two decades. Enough time has passed to assess whether it is a passing fad. Studies of company practices indicate that a large number of manufacturing and service companies, as well as some organizations in the public sector, are using ABC.

Some companies have tried ABC and dropped it. Reasons for this include its implementation cost. In the case of a **Hewlett-Packard** division that one of the authors studied, management obtained a great deal of information from ABC, restructured the company as a result, and no longer had the problems that ABC had uncovered. ABC had served its purpose and was no longer needed.

A recent survey of practices in the United Kingdom indicated that 37.8 percent of the companies that provided usable responses were using ABC or were considering using it. The study reported these results:

ABC Adoption Status	Number of Companies in Study	Percent of Companies in Study
Currently using it	31	17.5%
Currently considering using it	36	20.3
Considered but rejected it	27	15.3
Had not considered using it	83	46.9
Total	177	100.0%

Although ABC has its roots in manufacturing companies, the study found that the financial services companies surveyed were more likely to use ABC than were manufacturing companies. *Source:* J. Innes, F. Mitchell, and D. Sinclair, “Activity-Based Costing in the U.K.’s Largest Companies.” (Full citations to references are in the Bibliography.)

Many management problems are communication problems. Accountants and financial analysts must learn to communicate their information, interpretations, and recommendations effectively. Otherwise, their use of cost-management techniques will not add value to organizations. The text stresses the importance of communication within and at the end of each chapter.

Reliable Research Findings

We know that answering the question, What kind of research do you do in accounting? can be difficult. This book is not an overt defense of academic research, but we believe that an effective way to demonstrate the value of research to both academics and cost managers is to include short descriptions of research studies that address important cost-management issues.

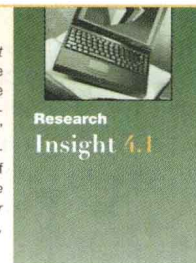
Cost-management research is an evolving field, and researchers are creating and applying new knowledge daily. This text incorporates cost-management research that has been replicated and applied successfully. These findings are used in examples, and particularly important findings are highlighted in *Research Insights*. Because cost management is a new and evolving field, research has not given us all the answers. Indeed, researchers have not identified all of the important questions. The text, therefore, does not accept all research uncritically and identifies important areas for future research in these features. We believe that this approach makes the inclusion of research more credible and can stimulate some students to regard research favorably in their careers and perhaps cause a few to seek careers in academia.

**Catherine Usoff—
Bentley College**

The students should have an understanding of the research that is being done and what it can tell us about current business practices.

What Drives Costs?

Most discussions in the professional literature (e.g., journals such as *Strategic Finance*, *Journal of Cost Management*) focus on how to choose cost drivers for particular businesses. These discussions can be interesting accounts of the challenges that specific companies have faced, but little reliable evidence suggests whether a cost driver used in one company is the same cost driver that should be used in another company. Consequently, cost management analysts might feel the need to "reinvent the wheel" nearly every time they undertake a new activity-based costing project. The few studies of many companies, have found that the volume of outputs, the complexity of operations (e.g., many different types of products), and the nature of customer service activities have a significant effect on costs. For example see A. M. Novin, "Applying Overhead: How to Find the Right Bases and Rates," for a basic approach. See also R. Banker and H. Johnson, "An Empirical Study of Cost Drivers in the U.S. Airline Industry," and G. Foster and M. Gupta, "Manufacturing Overhead Cost Driver Analysis," for more sophisticated approaches.



Strong Pedagogy

**Robert Lin—California
State University,
Hayward**

The text has provided excellent pedagogy in all chapters.

To help students learn the principles of cost management and gain an appreciation for its importance in the contemporary business environment, *Cost Management* includes a wide range of pedagogical features.

- **Flexible sequence of chapters written in modular style.** The authors realize that instructors of cost management prefer to cover topics in a course in a widely different order. We have chosen a topical sequence that makes sense to us, but we also have endeavored to write modular chapters to the extent possible. This makes it possible for instructors who wish to cover the topics in a different sequence to do so.
- **Learning objectives.** Each chapter's learning objectives appear at the beginning of the chapter and are repeated in the margin where they are first addressed. Moreover, the learning objectives covered by each end-of-chapter exercise, problem, or case are indicated in the margin next to the assignment item.
- **Cost-Management Challenges.** This feature at the beginning of each chapter is intended to engage the students in mastering the chapter's content.
- **Focus companies.** These realistic organizations provide a framework in which to present comprehensive illustrations to stimulate students' interest in cost-management topics. All of the topics in each chapter are covered in the context of the same focus company. The illustration begins with a company document, such as a memo, report, or email correspondence, which alludes to the issues to be addressed in the chapter. A company logo appears throughout the chapter to tie exhibits and topical coverage to the focus illustration.
- **Photos.** A photograph at the beginning of each chapter depicts an important aspect of the focus company and adds to the realism of the coverage. In

addition, numerous photos from real-world organizations depict operational concepts and cost-management practices. These photos are intended to engage the students and emphasize key points.

- *Spreadsheet exhibits.* Many of the exhibits are Excel spreadsheets used to make students more comfortable with this widely used analytical tool and emphasize its usefulness in the practice of cost management.
- *Key terms.* Key terms are defined in the text when they are introduced, and the definitions are repeated in the margins for easy reference. A list of each chapter's key terms appears at the end of the chapter along with a page reference to the term's definition. The key terms and their definitions also appear in the Glossary at the end of the text.
- *You're the Decision Maker.* These decision scenarios appear throughout each chapter to actively engage the students in the decisions the focus company faces.
- *Cost-management in practice.* This feature highlights the cost-management practices of real-world organizations.
- *Research insight.* This element in each chapter relates relevant and sound research findings to the chapter's topic.

End-of-Chapter Materials

Each chapter ends with approximately 50 items that reinforce and extend the chapter's learning objectives. These include assignments focusing on ethical issues, international dimensions, group work, Internet use, and communication skills. Logos are used to identify these assignments. Types of assignments include the following:

- **Review questions** relate to the main chapter topics. They require short written or verbal responses that can be synthesized directly from the text. Responding to these questions requires a basic mastery of the chapter's learning objectives.

Review Questions

- | | |
|--|---|
| <p>1.1 Review and define each of the chapter's key terms.</p> <p>1.2 What is the primary objective of cost management?</p> <p>1.3 What is the concept of the value chain, and why is it important for cost management?</p> <p>1.4 What is strategic decision making? Give examples of several strategic decisions.</p> | <p>1.5 What are some cost management techniques that help make better management decisions?</p> <p>1.6 What are cross-functional teams, and why are they important?</p> <p>1.7 How do companies use benchmarking to make important decisions?</p> <p>1.8 How does outsourcing affect an organization's value chain?</p> |
|--|---|

- **Critical analysis questions** extend the chapter's learning to novel, complex, or ambiguous situations. These questions cannot be answered by rote memorization but require analytical reasoning by analogy or logical extension of chapter materials. They can be used to stimulate small group discussions.

Critical Analysis

- | | |
|---|--|
| <p>2.20 Evaluate this statement: Issues of product costing are irrelevant for service organizations since they cannot build up inventories of services, and all costs for providing services are expensed in the period they are used. Service firms effectively use throughput costing.</p> <p>2.21 Evaluate this statement: Issues of product costing are unimportant for virtual organizations that outsource their production operations.</p> <p>2.22 Prepare a diagram that illustrates how the following resources—headquarters, facilities, division managers, information systems personnel—can be considered both direct and indirect in a company that has four operating divisions, each of which provides multiple services.</p> <p>2.23 Respond to this comment from an economist friend: You cost-management analysts use an overabundance of cost terms to</p> | <p>interest on any inventories they maintain. If divisions want to tie up the company's resources in inventory, then they should pay the company at least the interest it could be earning if the treasurer had the same amount of cash.</p> <p>2.27 Explain how making more products than can be sold in a period can increase the organization's operating income. Is this a sustainable tactic to increase operating income? Would this happen in a service company, or is it an issue only in manufacturing companies? Explain.</p> <p>2.28 Respond to this comment: Your analysis of last month's financial performance demonstrates that it really doesn't matter whether we use throughput, variable, or absorption costing. All the costs are accounted for; you've just put them in different places. I can't see what real difference this analysis makes. Isn't this just a bean-counting exercise?</p> |
|---|--|

- **Exercises** are relatively straightforward repetitions or applications of chapter topics and analyses. Students can solve exercises by directly applying the analyses in each chapter or by obtaining additional information from the library or Internet. Completing exercises requires a basic mastery of each chapter's learning objectives.

Exercises

An Internet search of the key phrase "customer profitability" results in thousands of "hits," many of which are Web sites of companies seeking to sell software or consulting services. Choose a sample of five of these Web-sites and write a memo that evaluates the information they present and how well they present it.

Building a customer database can be expensive. Free information is available in the United States from the Census Bureau's Web site (www.census.gov). Visit this site (particularly the Economic Census link), and prepare a short report describing the type of information available that might be useful to start-up businesses.

Data mining and data warehousing techniques are potential tools to use to analyze customer profitability. Many companies have had disappointing results using them, however, despite great expense and effort in building data warehouses information. Search the internet for information about data mining and warehousing, and write a memo that makes recommendations for guiding a data warehouse project to deliver useful customer profitability information.

Fontinalis Company produces, sells, and distributes two products, Brooks and Redds, to two types of customers, urban and rural. Using the following information, prepare a customer profitability statement:

Fontinalis Product Profitability	Total	Brooks	Redds
Contribution margin ratio	46.7%	40.0%	60.0%
Revenues	\$9,000,000	\$6,000,000	\$3,000,000
Customer sales to:			
Sales of:		Urban	Rural
Brooks	100%	70%	30%
Redds	100%	20%	80%
Operating costs traced to customers	\$3,000,000	\$2,200,000	\$800,000

Exercise 6.21
Customer Profitability
LO1

Exercise 6.22
Customer Database
LO1

Exercise 6.23
Customer Data Warehouse
LO1

Exercise 6.24
Customer Profitability
LO2

- **Problems** generally are more challenging than exercises because they either require more sophisticated analyses of specific topics or integrate several related topics. Problems often represent a realistic situation or a professional examination level of difficulty. The ability to solve each chapter's problems means that the student has achieved intermediate-level mastery of the chapter's learning objectives.

Insurance companies spend considerable resources on processing claims (which results in a claim denial or payment to cover a loss). Short, accurate processing is desirable because both customers and the company benefit by resolving claims satisfactorily and by using minimum resources to do so. To improve its insurance claims processing, Global Insurance Company began a pilot project in its Northwest Region claims office to track the time to process each new automobile loss claim during a recent quarter. Processing time begins when a company representative receives a claim and ends when the final settlement is reached. Following are time data related to processing these claims at the company's Northwest Region.

Average 8-Hour Days Spent in						
Days to Complete	Percent	Number	Processing by Adjusters	Waiting for Adjusters	Waiting for Information	Average Cycle Time in Days
0-10	4%	11,520	0.25	3.50	4.10	7.97
11-20	10	28,800	0.34	8.10	10.10	18.65
21-30	30	86,400	0.65	9.40	15.20	25.40
31-40	24	69,120	1.30	9.10	25.60	36.28
41-50	19	54,720	2.40	11.90	31.40	46.14
51-60	8	23,040	2.90	12.30	38.20	54.28
More than 60	5	14,400	3.10	11.50	49.70	66.90
Total	100%	288,000				

Problem 7.72
Cycle Time and Throughput Efficiency
LO3

Required

- Compute the overall average cycle time and throughput efficiency ratio in total and for each stage of processing for automobile loss claims during the quarter. (Note: These data can be easily analyzed with a computer spreadsheet.)
- Comment on the apparent cause(s) of long cycle times and low throughput efficiencies.
- What recommendation would you make to Global Insurance Company to improve its processing of automobile loss claims?

- **Cases** are conceptually the most challenging chapter-ending materials. They usually are set in real or realistic company settings and show the ambiguous decision-making environment of cost-management practice. Cases, which rarely have a single correct solution, are excellent opportunities for advanced individual or small-group learning, class discussions, and presentations.

Cases

Case 5.51

Reengineering the
Accounting Function
(LO 4, 6)



Communication Team



An alternative to using ABM to identify opportunities for process improvement is to use benchmarking information to identify where an organization falls short of competitors and best practices. At 2 percent of sales, Cummins-Engine's overall accounting costs were twice as high as companies with world-class accounting functions, and the company was determined to improve. More detailed benchmarking information revealed that accounts payable costs and payroll costs were four and three times higher, respectively, than best practices. These areas seemed to offer the opportunity for great improvement. Cummins created a cross-functional team to analyze these transaction processes and make recommendations for improvement that would increase the quality of transaction processing and achieve best-practice costs (i.e., cost reductions of 75 percent).

Cummins Engine's top management was fully committed to the project. It provided resources to the project team that enabled it to educate Cummins' finance and operating personnel around the world about the project's methods and objectives. Management also committed to no forced layoffs of personnel whose jobs would be affected by resulting process changes.

In the early part of the project (the "baseline" phase), the team recognized that accounts payable, cash disbursement, and procurement processes should be integrated and located at a single site rather than at 50 sites within the United States alone, and that new software and hardware would be required. The team began with a pilot study, however, so that it could understand the complexities of the project before launching a worldwide implementation. The pilot study allowed the team to identify tangible objectives for the new system that included:

- Electronic data interchange (EDI).
- Linkage between procurement, accounts payable, and cash disbursement.
- Use of client-server technology.
- Outsourcing of non-value-added activities such as check printing.
- Improvement of process quality measures involving statistical quality-control techniques.
- Software compatible with Cummins' data architecture at a competitive price and with a user-friendly graphical interface.

Project implementation was phased in over a three-year period, with inflexible target dates for each phase and continuous communication with affected finance and operating personnel. The workforce in accounts payable was reduced by 80 percent, costs reached best-practice levels, and errors were reduced dramatically. (The workforce reduction occurred through attrition, assigning employees to other areas, and early retirement plans.)

Required

Form small groups to prepare a report that answers the following questions:

- What are the differences between the activity-based management approach and the benchmarking approach used by Cummins Engine to identify opportunities for process improvement? What are the relative advantages and disadvantages of the benchmarking approach to identifying opportunities?
- What interests, skills, and knowledge would be required for members of a project team such as the one at Cummins to analyze accounts payable?
- What are specific steps that Cummins Engine took to ensure the success of the accounts payable project?
- Does the Cummins project appear to be perfect, or can you recommend improvement(s) and/or identify area(s) of concern if you were to copy this approach at another organization?

[Adapted from T. Compton, L. Hoshower, and W. Draeger. "Reengineering Transaction Processing Systems at Cummins Engine"]

Chapter-by-Chapter Strengths

The following discussions indicate whether the chapter is new or revised from the first edition, include major changes from the first edition, and present highlights of the chapter.

Part 1: Setting the Stage: The Importance of Analyzing and Managing Costs

Chapter 1: Cost Management and Management of the Value Chain

- Chapter 1 is a revision of the first edition's Prologue and Chapter 1. This new chapter economizes on introductory reading without losing the cost-management message.
- Chapter 1 provides essential material that is the foundation for the remainder of the text. The chapter focuses on managing the value chain and describes

relevant cost-management information and techniques with particular focus on using benchmarking and cost-benefit analysis.

- Chapter 1's focus company is a successful telecommunication company, Pursuit.Com, which is facing strong pressure from domestic and international competitors. Among the decisions the company must make is whether to outsource some or all of its accounting services to improve the competitiveness of its primary services and products.
- Pursuit.Com compares its performance to best practices and considers both quantitative and qualitative costs and benefits to make its decisions.

Chapter 2: Product Costing Systems: Concepts and Design Issues

- A new chapter in this edition, Chapter 2 combines elements from several first edition chapters. The rationale for this change is to introduce cost systems and concepts early as well as to simplify presentations and applications in this and subsequent chapters.
- The focus company, CollegePak, provides the opportunity to discuss cost information to support and evaluate its expansion plans. The emphasis is on the clear presentation and explanation of cost terms and uses, which can be confusing for many students. The straightforward setting eliminates unnecessary complexity that is distracting at this point in the text.
- Chapter 2 addresses the meaning of "cost" and the fact that alternative measures of cost could be appropriate for different decisions. This discussion in other texts typically is quite abstract. The focus company provides a tangible application and illustration of the issues, solutions, and implications of alternative measures of cost.

Chapter 3: Cost Accumulation for Job-Shop and Batch Production Operations

- Chapter 3 is a major revision of the content of the first edition's Chapter 6. The rationale for this major content and placement change is twofold. First, we have found that students more naturally grasp the concept of cost accumulation in a straightforward setting. Second, the earlier placement of the material allows subsequent chapters to add complexity to reinforce learning without requiring students to learn both basic concepts and complex applications.
- Glass Creations, the focus company, creates and markets stained glass windows, doors, and artwork and faces strong competition from much larger, mass producers. Glass Creations needs to measure and manage the costs of its jobs to better understand which products create sustainable advantage and value. Its analysis requires choices about cost system design, as well as identification of the attributes of products that customers prefer and are willing to pay for.
- The chapter discusses the use of a product-costing system called *job-order costing* (or *job costing*) designed for organizations, such as Glass Creations, which produce unique products, services, and custom orders. The job-order costing system helps such companies measure the cost of the resources used in the production process for the purpose of helping management to better manage those resources and their costs.

Stacy Kovar—Kansas
State University

This has an excellent illustration of how to arrive at activity costs and rates. Failure to cover this material is a significant weakness of other texts.

Part 2: Activity-Based Management

Chapter 4: Activity-Based Costing Systems

- Chapter 4, a revision of the first edition's Chapter 5, simplifies the presentation of ABC but retains the first edition's innovations and message.
- Chapter 4 illustrates the activity basis for measuring and analyzing costs; this costing approach is known as "activity-based costing." ABC measures the costs of

resources used to perform activities and builds the costs of products and services by accumulating the activities performed and their costs. This chapter's strength is the clear but detailed exposition of how to design and use ABC systems.

- The focus company, Precision Molding, Inc., uses five levels of activities to describe its processes and measure its costs. The company faces the major decision of whether to begin a new line of business that could be very profitable but is more complex than its current business. ABC allows the company to accurately estimate the costs of this new business.

Chapter 5: Activity-Based Management

- Chapter 5 is a revision of the first edition's Chapter 10. The second edition moves the presentation of ABM to immediately follow that of ABC to reinforce the importance of using ABC information for more than product costing. Chapter 5 discusses how to use ABC information to make process improvements, meet target cost objectives, and create more value at lower cost.
- The chapter continues with Precision Molding, Inc., as it considers a new product line, which requires process improvements before profitability can be expected.
- By identifying value-added and non-value-added activities (as well as activity costs from Chapter 4), the discussion focuses on how the company can use ABM to find opportunities to improve its processes sufficiently to generate a profit.
- The chapter's unique strength is its ability to build on a thorough explanation of ABC as the basis for a straightforward but powerful application of ABM.

Chapter 6: Managing Customer Profitability

- Chapter 6, a new chapter for the second edition, reflects the increasing importance of managing customer profitability and relations. This approach, which often is activity based, is nearly universal in some industries (e.g., banking), and its application is increasing in nearly every economic and government sector. The placement of the chapter reflects the natural use of ABC and ABM information to manage customer profitability.
- HealthWave, the chapter's focus company, must dramatically improve its profitability or risk being liquidated by its parent company. HealthWave analyzes its major customers to identify those that are profitable and not profitable and seeks ways to improve the profitability of less profitable ones.
- The chapter leads students step-by-step through an entire customer-profitability analysis and uses the information to find opportunities for improvement.

Chapter 7: Managing Quality and Time to Create Value

- Chapter 7 is a revision of the first edition's Chapter 11 and adds coverage of productivity and capacity measures.
- Through its focus company, the chapter discusses how analysts increasingly measure and interpret nonfinancial indicators of internal performance that complement financial, cost-based measures. The most important of these operational areas of performance are quality, productivity, capacity, and time.
- The focus company, Transformation Customer Services, Inc., competes primarily on the quality of its services and rapid response to customers' service needs. Thus, these areas of performance are particularly important.
- Chapter 7 thoroughly investigates and applies quality, productivity, capacity, and time measures to situations with which our students must gain familiarity.

Catherine Usoff— Bentley College

The process orientation is wonderful and it highlights where cost accountants will be adding value to organizations.

Il-Woon Kim— University of Akron

Most other books do not emphasize the importance of customer profitability analysis enough.

Gerry Rosson— Lynchburg College

The material is very easy to read. The discussion of managing quality and JIT was effective.

Part 3: Process Costing and Cost Allocation

Chapter 8: Process-Costing Systems

- Chapter 8 is a revision of the first edition's Chapter 7. It simplifies the discussion and presentation of process-costing analysis.
- The focus company is Spirit Beverages, a sports drink company, an organization that produces similar items in a continuous process. Its use of process costing to measure its costs of production and the efficiency of its processes is easy to understand.

Chapter 9: Joint-Process Costing

- A revision of the first edition's Chapter 8, Chapter 9 streamlines the presentation of joint-cost analysis.
- The focus company represents companies that produce multiple products from common inputs and that must decide which products to sell after joint products appear (split-off) or after further processing. After they determine the appropriate products, they can allocate production costs using one of several acceptable methods.
- National Wood Products, the joint-product focus company, processes timber into multiple products and must decide, based on competitive commodity market prices, which products to sell as is or after further processing. The chapter discusses how companies whose several divisions transfer products to each other and should consider the companywide profitability of their decisions.

Chapter 10: Managing and Allocating Support-Service Costs

- Chapter 10 is a revision of the first edition's Chapter 9, which simplifies the presentation and discussion of cost-allocation methods.
- The allocation of the costs of support services by organizations to production departments for many legitimate reasons is a chapter focus. Although all cost allocations are arbitrary, they can be useful for promoting organizational goals if done carefully. Thus, the chapter emphasizes that "arbitrary should not mean capricious."
- The City of Rock Creek allocates support services to improve decision making by departments that provide services directly to citizens to regulate the use of support services and recover the costs of services necessary to support the other departments.
- Although service cost allocations might be important in all types of organizations, the chapter demonstrates that they are particularly important in government and service organizations that typically have not used services available in the market.

Part 4: Planning and Decision Making

Chapter 11: Cost Estimation

- A revision of the first edition's Chapter 12, Chapter 11 improves its presentations and discussions.
- Prior chapters assumed knowledge of cost drivers, and this chapter demonstrates how to identify those drivers and estimate cost relationships using multiple regressions, account analysis, and the engineering method.
- CC Catering, a company developed by entrepreneurial students, uses various cost-estimation methods to estimate five cost drivers tied to the cost hierarchy. The chapter uses their analyses to illustrate how to use this information for cost management, decision making, and planning. The results have a major impact not only on the business but also on the two entrepreneurs' career plans.

Lawrence Klein— Bentley College

Using a not-for-profit entity, a city administrative structure with associated service departments, is an excellent example for this topic; the material is thoroughly discussed and logically developed.

Paul Hutchinson— University of North Texas

Another major strength was the use of a service firm for illustrating chapter content. Service firms usually do not get emphasized in accounting texts.