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**PREFACE**

The keys to the success of a course in cost accounting are the assignment and discussion of provocative problem material. The gathering of high-quality assignment material has been a crucial phase of this book’s preparation—not a painful afterthought.

Please review the preface in the text in conjunction with examining the suggestions in this *Instructor’s Resource Manual*. Please also read all the front matter of this manual.

Anna Jensen and Barbara Durham assisted us greatly with contributing, critiquing, and checking of the problems and their solutions. We thank them for their many wonderful contributions.

We appreciate the technical support for data analysis provided by DeYett Law. Her ability to cheerfully respond to our challenges made our tasks much more manageable.

We are thankful to Ellen Geary and Martha Lachance at Pearson for providing continual support in preparing this Solutions Manual.

SRIKANT M. DATAR

MADHAV V. RAJAN

**In memory of Charles T. Horngren 1926–2011**

Chuck Horngren revolutionized cost and management accounting. He loved new

ideas and introduced many new concepts. He had the unique gift of explaining these

concepts in simple and creative ways. He epitomized excellence and never tired

of details, whether it was finding exactly the right word

or working and reworking assignment materials.

He combined his great intellect with genuine humility and warmth and a human

touch that inspired others to do their best. He taught us many lessons about

life through his amazing discipline, his ability to make everyone

feel welcome, and his love of family.

It was a great privilege, pleasure, and honor to have known

Chuck Horngren. Few individuals will have the enormous influence that

Chuck had on the accounting profession. Fewer still will be able to do it with the

class and style that was his hallmark. He was unique, special, and amazing

in many, many ways and, at once, a role model, teacher, mentor, and friend.

He will be deeply missed.

Srikant M. Datar

Harvard University

Madhav V. Rajan

Stanford University

**SUPPLEMENTS AVAILABLE FOR THE 16TH EDITION**

A complete package of supplements is available to assist students and instructors in using Horngren, *Cost Accounting*, 16th edition.

**MyAccountingLab**

MyAccountingLab is an online homework and assessment tool designed to help students practice cost accounting problems and concepts and to give their instructors feedback on student performance. It lets cost accounting professors assign a homework deliverable that is automatically graded but that also serves as a tutorial experience for students.

Based on Pearson’s MathXL platform, which has graded millions of assignments, MyAccountingLab provides a strong, reliable platform with a rock solid performance history. To learn more, visit **www.myaccountinglab.com**.

**For Instructors**

**Instructor Resource Center (IRC)**

These password-protected resources are accessible from **www.pearsonhighered.com** for *Cost Accounting*, 16th ed. Resources include the following:

* Solutions Manual
* Test Bank in Word and in TestGen, including algorithmic questions
* Instructor’s Manual
* PowerPoint Presentations
* Image Library

**Instructor’s Manual**

By Sandra J. Cereola

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The chapter-by-chapter manual offers helpful classroom suggestions and teaching tips.

**Test Bank**

By Michael Griffin

© 2018 | 0-13-4475941 | Online

This collection of tests for each chapter offers an array of questions ranging from easy to difficult. An electronic version of these questions is also available. The *Test Bank* supports Association to Advance Collegiate Schools of Business (AACSB) International Accreditation.

**Solutions Manual**

© 2018 | 0-13-447576-3 | Online

This manual contains the fully worked-out and accuracy-checked solutions for every question, exercise, and problem in the text.

**PowerPoint Presentations**

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These chapter-by-chapter presentations provide you with a slide show ready for classroom use. Use the slides as they are or edit them to meet your classroom needs.

**For Students**

In addition to this textbook and MyAccountingLab, a companion Web site is available for

students at www.pearsonhighered.com/horngren.

**ALTERNATIVE SUGGESTED CHAPTER SEQUENCES**

The Preface to *Cost Accounting* noted that our aim in organizing the material was to present a modular, flexible organization that permits a course to be custom tailored. This section presents six possible sequences for a first course in cost accounting. For each of these six sequences, we also present the sequence of a second course that would result in coverage of many or all of the topics in *Cost Accounting*. Outlines I–V all include Chapters 1 to 9 in varying orders of sequence. Outline VI has a strong (almost exclusive) focus on the decision making role of cost accounting.

We analyzed the sequences of chapters assigned by many users of the 15th edition. Although many instructors tended to follow the sequence in the text, other instructors tailored sequences to fit their particular desires. These tailored sequences varied considerably. By far the most popular departure was to assign the chapter on process costing (Chapter 17) immediately after the coverage of job costing (Chapter 4) and activity-based costing (Chapter 5). The next most popular departure was to assign Chapter 10 after Chapter 2 or 3. All the accompanying alternative assignment schedules have an optional provision to facilitate tailoring a course. Obviously, instructors should alter any suggested sequence to suit their preferences.

OUTLINE I: This basic course provides a balance of topics between the major purposes of cost accounting:

 1. Calculating the cost of products, services, and other cost objects

 2. Obtaining information for planning and control and performance evaluation

 3. Analyzing relevant information for making decisions

Finishing the first course with Chapters 11 and 13 means that topics with less procedural emphasis are highlighted in the last weeks of the course; these two chapters also introduce topics covered in more detail in a second course. Some instructors may assign Chapter 10 without using the Appendix on “Regression Analysis,” preferring to delay use of the Appendix until the second course (especially if many students have not been exposed to regression analysis at the time of the basic course).

OUTLINE II: This basic course covers the same chapters as Outline I but assigns Chapter 10 (Determining How Costs Behaves) immediately after Chapter 3 (Cost Volume-Profit Analysis). It also assigns Chapter 12 on Strategy, Balanced Scorecard, and Strategic Profitability Analysis. This first part of the second course emphasizes cost management and performance evaluation before covering the six chapters (14–20) on cost allocation and other aspects of costing systems.

OUTLINE III: After covering Chapters 1 to 9 and 11 in the basic course, this sequence finishes with a chapter on strategic issues (Chapter 12) and two chapters on cost allocation topics (Chapters 14 and 15). Some instructors view it as important that students who take only one cost accounting course become aware of how pervasive cost allocation issues are in practice.

OUTLINE IV: This basic course is similar to Outline II with one key exception: Chapter 17 (Process Costing) is covered immediately after Chapter 5. Many instructors prefer to cover job costing and process costing in sequence so that their differences are highlighted.

OUTLINE V: This basic course emphasizes technical cost accounting topics more than the other five outlines. Chapters 17 and 18 extend Chapters 4 and 5; covering 4, 5, 17, and 18 as a single section of the course provides students with a solid understanding of product costing alternatives.

OUTLINE VI: This basic course is adopted by instructors who wish to put most emphasis on the decision making and performance evaluation aspects of cost accounting. Finishing the basic course with Chapters 22 and 23 means that behavioral issues are highlighted in the final weeks of the course.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **OUTLINE I** | **OUTLINE II** | **OUTLINE III** |
| BASIC COURSE | **Chapter** | **Number of Sessions** | **Chapter** | **Number of Sessions** | **Chapter** | **Number of Sessions** |
|  |  1 | (1) |  1 | (1) |  1 | (1) |
|  |  2 | (2) |  2 | (2) |  2 | (2) |
|  |  3 | (2) |  3 | (2) |  3 | (2) |
|  |  4 | (3) | 10 | (2) |  4 | (3) |
|  |  5 | (3) |  4 | (3) |  5 | (3) |
|  |  6 | (2) |  5 | (3) |  6 | (2) |
|  |  7 | (2) |  6 | (2) |  7 | (2) |
|  |  8 | (2) |  7 | (2) |  8 | (2) |
|  |  9 | (2) |  8 | (2) |  9 | (2) |
|  | 10 | (2) |  9 | (2) | 11 | (2) |
|  | 11 | (2) | 11 | (2) | 12 | (2) |
|  | 13 | (2) | 12 | (2) | 14 | (2) |
|  |  |  | 13 | (2) | 15 | (2) |
|  | Tests | (3) | Tests | (3) | Tests | (3) |
|  | Optional | (4) | Optional | (2) | Optional | (2) |
|  |  | 32 |  | 32 |  | 32 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SECONDCOURSE | **Chapter** | **Number of Sessions** | **Chapter** | **Number of Sessions** | **Chapter** | **Number of Sessions** |
|  | 12 | (3) | 21 | (3) | 10 | (2) |
|  | 14 | (2) | 22 | (2) | 13 | (2) |
|  | 15 | (2) | 23 | (2) | 21 | (3) |
|  | 16 | (2) | 14 | (3) | 15 | (2) |
|  | 17 | (2) | 15 | (2) | 17 | (3) |
|  | 18 | (2) | 16 | (2) | 18 | (2) |
|  | 19 | (2) | 17 | (3) | 19 | (2) |
|  | 20 | (2) | 18 | (2) | 20 | (3) |
|  | 21 | (2) | 19 | (2) | 22 | (2) |
|  | 22 | (2) | 20 | (2) | 23 | (2) |
|  | 23 | (2) |  |  |  |  |
|  | Tests | (3) | Tests | (3) | Tests | (3) |
|  | Optional | (6) | Optional | (6) | Optional | (6) |
|  |  | 32 |  | 32 |  | 32 |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **OUTLINE IV** | **OUTLINE V** | **OUTLINE VI** |
| BASIC COURSE | **Chapter** | **Number of Sessions** | **Chapter** | **Number of Sessions** | **Chapter** | **Number of Sessions** |
|  |  1 | (1) |  1 | (1) |  1 | (1) |
|  |  2 | (2) |  2 | (2) |  2 | (2) |
|  |  3 | (2) |  3 | (2) |  3 | (2) |
|  | 10 | (2) |  4 | (3) | 10 | (2) |
|  |  4 | (2) |  5 | (3) |  4 | (2) |
|  |  5 | (2) | 17 | (3) |  5 | (2) |
|  | 17 | (2) | 18 | (2) |  6 | (2) |
|  |  6 | (2) |  6 | (3) | 11 | (2) |
|  |  7 | (2) |  7 | (2) | 12 | (2) |
|  |  8 | (2) |  8 | (2) | 13 | (3) |
|  |  9 | (2) |  9 | (2) | 22 | (2) |
|  | 11 | (2) |  |  | 23 | (2) |
|  | 13 | (2) |  |  |  |  |
|  | Tests | (3) | Tests | (3) | Tests | (3) |
|  | Optional | (4) | Optional | (4) | Optional | (5) |
|  |  | 32 |  | 32 |  | 32 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SECONDCOURSE | **Chapter** | **Number of Sessions** | **Chapter** | **Number of Sessions** | **Chapter** | **Number of Sessions** |
|  | 12 | (3) | 10 | (2) |  7 | (2) |
|  | 21 | (3) | 11 | (2) |  8 | (2) |
|  | 22 | (2) | 12 | (2) |  9 | (2) |
|  | 23 | (2) | 13 | (3) | 17 | (3) |
|  | 14 | (3) | 21 | (3) | 18 | (2) |
|  | 15 | (2) | 14 | (2) | 19 | (2) |
|  | 16 | (2) | 15 | (2) | 20 | (2) |
|  | 18 | (2) | 16 | (2) | 21 | (3) |
|  | 19 | (2) | 19 | (2) | 14 | (2) |
|  | 20 | (2) | 20 | (2) | 15 | (2) |
|  |  |  | 22 | (2) | 16 | (2) |
|  |  |  | 23 | (2) |  |  |
|  | Tests | (3) | Tests | (3) | Tests | (3) |
|  | Optional | (6) | Optional | (3) | Optional | (5) |
|  |  | 32 |  | 32 |  | 32 |

**CATEGORIZATION OF ASSIGNMENT MATERIAL**

The assignment material in the 16th edition has been developed to offer instructors a broad range of options in developing a challenging and interesting course. The following exhibits assist instructors in selecting assignment material.

Exhibits P-l and P-2 show assignment material that is based on service or nonprofit and on merchandising (retail, wholesale, or distribution) sectors of the economy. Although many of the assignments in the 16th edition are based in the manufacturing sector, Exhibits P-l and P-2 provide many examples for instructors who wish to either select assignment material from a broad range of sectors or intend to concentrate on sectors outside manufacturing.

1. SERVICE AND NONPROFIT SECTORS: These assignments include settings such as accounting firms, law firms, advertising agencies, bank and finance companies, lodging companies, transportation companies, and government agencies

2. MERCHANDISING SECTORS: These assignments include settings such as distributors, wholesalers, and retailers

There is growing demand from instructors for assignment material in three specific areas—ethics, global or international, and modern cost management. Exhibits P-3 to P-5 show assignment material in the 16th edition on these three topics.

3. ETHICS. The second-to-last problem of many chapters incorporates an ethical issue facing a management accountant or a manager. Examples include pressure for cooking the books, concealing unfavorable information, and conflicts of interest between management incentives and company values. Many of these problems require students to consider the IMA Statement of Ethical Professional Practice on p.17 of the text.

4. GLOBAL AND INTERNATIONAL DIMENSIONS. These assignments include material based outside the United States or problems pertaining to companies with operations in more than one country.

5. MODERN COST MANAGEMENT FRONTIER IDEAS. These assignments include material that an instructor can use to highlight areas such as customer focus, key success factors, balanced scorecard, value-chain analysis, strategic analysis of operating income, JIT, and continuous improvement. Assignment material related to activity-based costing (ABC), activity-based management (ABM), and cost drivers is found in many chapters.

**EXHIBIT P-1**

**ASSIGNMENT MATERIAL FROM SERVICE AND NOT-FOR-PROFIT SECTORS**

|  |  |  |
| --- | --- | --- |
| **Chapter** | **Number** | **Context** |
| 1 | 1-19 | Fast-food restaurants; value chain, cost classification |
|  | 1-20 | Consultation services; key success factors  |
|  | 1-27 | Windshield replacement; professional ethics |
|  | 1-28 | Internet company; planning and control |
|  | 1-36 | Publishing company; ethics; end-of-year actions |
|  |  |  |
| 2 | 2-23 | Marketing research; classification of costs |
|  | 2-26 | Restaurant; fixed and variable costs |
|  | 2-31 | Training services; total costs and unit costs |
|  |  |  |
| 3 | 3-23 | Travel agency; CVP analysis |
|  | 3-24 | Restaurant; CVP analysis |
|  | 3-27 | Restaurant; CVP analysis |
|  | 3-34 | Music Society; CVP analysis |
|  | 3-38 | Tourism; CVP analysis |
|  | 3-39 | Daycare; CVP analysis, target operating income |
|  | 3-40 | Marketing; CVP analysis, margin of safety |
|  | 3-45 | Printing Company; Alternative cost structures and sensitivity analysis |
|  | 3-52 | Museum; gross margin and contribution margin |
|  |  |  |
| 4 | 4-23 | Residential construction; job costing, normal, actual |
|  | 4-26 | Management consulting firm, job costing |
|  | 4-29 | University press; job costing, journal entries |
|  | 4-33 | Canadian accounting firm; actual, normal and variation from normal costing |
|  | 4-34 | Web-design firm; actual, normal, and variation from normal costing |
|  | 4-37 | Law firm; job costing |
|  | 4-38 | Law firm; job costing |
|  | 4-444-46 | Printing; allocation and proration of overheadMarket Research; Job costing |
|  |  |  |
|  |  |  |
| 5 | 5-19 | Testing labs; activity-based costing, cost hierarchy |
|  | 5-20 | Professional services firm; alternative allocation bases |
|  | 5-24 | Architectural firm; department costing based on activities |
|  | 5-25 | Printing company; activity-based costing |
|  | 5-29 | Custom framing; activity-based costing |
|  | 5-30 | Banking; activity-based costing, product costing, cross-subsidization |
|  | 5-31 | Law firm; job costing, single direct- and indirect-cost categories |
|  | 5-32 | Law firm; job costing, multiple direct- and single indirect-cost categories |
|  | 5-33 | Law firm; job costing, multiple direct- and indirect-cost categories |
|  | 5-35 | Lawn care, landscaping; first-stage allocation, ABC |
|  | 5-36 | Radiology center; department, activity-cost rates |
|  | 5-39 | Health care; activity-based costing system |

| **EXHIBIT P-1 (Continued)** |
| --- |
| **Chapter** | **Number** | **Context** |
| 6 | 6-21 | Environmental testing; sales budget |
|  | 6-28 | Gutter-cleaning; budgeted cost of jobs |
|  | 6-33 | Tour company; responsibility accounting, stretch targets |
|  | 6-39 | Restaurant; purchasing agent responsibility accounting |
|  |  |  |
| 7 | 7-337-357-46 | Student loan financing; static and flexible budgetsCleaning service; variance analysisAuto detailing; comprehensive variance analysis |
|  |  |  |
| 8 | 8-298-32 | Food delivery service; overhead variancesFinancial services; overhead variances |
|  | 8-458-46 | Food inspection; non-financial variancesCloud services provider; overhead variances |
|  |  |  |
| 9 | 9-45 | Hospital chain; cost allocation, downward demand spiral |
|  | 9-46 | Hospital chain; cost allocation, responsibility accounting, ethics |
|  |  |  |
| 10 | 10-21 | Delivery; linear cost function |
|  | 10-22 | Car rental contracts; variable-, fixed- and mixed-cost functions |
|  | 10-27 | Travel services; estimating a cost function, high-low method |
|  | 10-28 | Customer service; estimating a cost function, high-low method |
|  | 10-29 | Physician services; linear cost approximation |
|  | 10-31 | Professional services; regression analysis |
|  | 10-36 | Produce club; high-low method, regression analysis |
|  | 10-37 | Sports stadium; high-low method, regression analysis |
|  | 10-38 | Hotel chain; activity-based costing, choosing cost drivers |
|  | 10-39 | Agricultural transportation; interpreting regression analysis |
|  | 10-42 | Nonprofit hospital; regression, choosing among models |
|  | 10-43 | Nonprofit hospital; multiple regression |
|  |  |  |
| 11 | 11-30 | Convenience store; relevant costs, decision on closing stores |
|  | 11-31 | Printing press; choosing customers |
|  | 11-32 | Bakery; relevance of equipment costs |
|  | 11-38 | Limousine service; opportunity costs, relevant costs |
|  | 11-47 | Fishing tours; dropping and adding tours |
|  |  |  |
| 12 | 12-29 | Architectural firm; strategy, balanced scorecard |
|  | 12-30 | Architectural firm; strategic analysis of operating income |
|  | 12-31 | Architectural firm; analysis of growth, price-recovery, and productivity components |
|  | 12-32 | Architectural firm; identifying and managing unused capacity |
|  | 12-41 | Cable and internet services; balanced scorecard, social performance |
|  | 12-42 | Airline; balanced scorecard, environmental and social performance |
| 13 | 13-17 | Tool repair shop; value-added, nonvalue-added costs |
|  | 13-18 | Architects; target operating income, value-added costs |
|  | 13-22 | Hotel management; cost-plus target return on investment pricing |
|  | 13-25 | Hotel; price discrimination |
|  | 13-28 | Amusement park; value-engineering, target costing, ABC |
|  | 13-30 | Repair services; cost-plus, time and materials, ethics |
|  | 13-31 | Temp labor agency; cost-plus and market-based pricing |
|  | 13-32 | Testing labs; cost-plus and market-based pricing |
|  | 13-33 | Recycling; life-cycle costing |
|  | 13-34 | Airline; price discrimination |
|  | 13-35 | Airline; anti-trust laws, pricing |
|  | 13-36 | Interior decoration; preparing a bid, pricing, ethics |
|  |  |  |
| 14 | 14-18 | Hospitals; cost allocation |
|  | 14-20 | Repair service; customer profitability |
|  | 14-23 | Casino; cost allocation to divisions |
|  | 14-25 | Sports team; variance analysis, multiple products |
|  | 14-33 | Interior design; customer-cost hierarchy and profitability analysis |
|  | 14-36 | Insurance Company; cost-hierarchy income statement, allocation of corporate costs |
|  |  |  |
| 15 | 15-17 | Trucking operations; single-rate method, budgeted versus actual costs |
|  | 15-18 | Trucking operations; dual-rate method, budgeted versus actual costs |
|  | 15-19 | Management consulting; direct and step-down support department cost allocation |
|  | 15-20 | Management consulting; reciprocal method support department cost allocation |
|  | 15-23 | Internet and phone services; allocation of common living costs |
|  | 15-24 | Consulting services; allocation of common travel costs |
|  | 15-29 | University; fixed cost allocation |
|  | 15-35 | Hotel; revenue allocation, bundled products |
|  | 15-36 | Service; direct, step-down, reciprocal support department allocation |
|  |  |  |
| 17 | 17-33 | Spa; Operation costing |
|  |  |  |
| 19 | 19-23 | Carwash center; quality improvement, relevant costs and revenues |
|  | 19-25 | University; waiting time |
|  | 19-26 | University; waiting time, relevant costs, student satisfaction |
|  | 19-30 | Pizza delivery; quality improvement, Pareto diagram, cause-and-effect diagram |
|  | 19-36 | Healthcare group; waiting time, patient satisfaction, compensation |
|  |  |  |
|  |  |  |
| 21 | 21-23 | Hospital; capital budgeting methods, no income taxes |
|  | 21-24 | Hospital; capital budgeting methods, income taxes |
|  | 21-2721-2821-31 | Construction company; payback and NPV methods, no income taxesClinic; DCT, accrual accounting rate of return, working capital, evaluation of performanceDermatology; project choice |
|  | 21-2921-38 | Bakery; new equipment purchase, income taxesLaundromat; payback methods, even and uneven cash flors |
|  | 21-4021-42 | Entertainment center; recognizing cash flows for capital investment projectsConstruction and mining sales and services; NPV of information system |
|  |  |  |
| 22 | 22-18 | Hotel chain; benefits and costs of decentralization |
|  | 22-36 | Composting service; full cost and market-based transfer prices |
| 23 | 23-2223-2523-28 | Educational services; comparison of divisions, DuPont methodReinsurance and financial services; ROI, RI, EVAVenture capital; Capital budgeting, RI |
|  | 23-34 | Restaurants; RI, measurement alternatives for performance measures |
|  | 23-36 | Media group; ROI, RI, DuPont method, investment decisions, balanced scorecard |
|  | 23-37 | Media group; division managers' compensation, levers of control |
|  | 23-42 | Health spas; RI, EVA, measurement alternatives, goal congruence |

**EXHIBIT P-2**

**ASSIGNMENT MATERIAL FROM MERCHANDISING SECTORS**

|  |  |  |
| --- | --- | --- |
| **Chapter** | **Number** | **Context** |
| 2 | 2-24 | Entertainment store; classification of costs |
|  | 2-34 | Department store; cost of goods purchased, cost of goods sold, and income statement |
|  | 2-35 | Retail outlet store; cost of goods purchased, cost of goods sold and income statement |
|  |  |  |
| 3 | 3-24 | Deli sub shop; CVP |
|  | 3-26 | Car dealer; CVP analysis, income taxes |
|  | 3-28 | Jeans wholesaler; CVP and sensitivity analysis |
|  | 3-30 | Rug dealer; space rental terms, operating leverage |
|  | 3-35 | Men’s clothing retailer; contribution margin, decision making |
|  | 3-37 | Retail store; decision making under uncertainty, expected value |
|  | 3-43 | Shoe store; sales commissions, CVP analysis |
|  | 3-44 | Shoe store; sales commissions, CVP analysis |
|  | 3-46 | Sunglasses store; CVP, alternative cost structures |
|  | 3-51 | Luggage carrier retailer; sales mix, CVP analysis |
|  |  |  |
| 5 | 5-27 | Supermarket; ABC, product-line profitability |
|  | 5-28 | Furniture wholesaler; ABC, customer profitability |
|  | 5-37 | Pharmaceuticals distributor; ABC |
|  | 5-43 | Retail store; activity-based costing and management |
|  |  |  |
| 6 | 6-30 | Convenience store chain; activity-based budgeting |
|  | 6-31 | Convenience store chain; activity-based budgeting, kaizen budgeting |
|  | 6-34 | Retail store; cash flow, sensitivity analysis |
| 10 | 10-4610-47 | Fashion store; interpreting regression results, matching time periodsDepartment store chain; cost drivers, ABC, simple regression analysis  |
|  | 10-48 | Department store chain; cost drivers, ABC, multiple regression analysis |
|  |  |  |
| 11 | 11-27 | Food store; Relevant costs, contribution margin, product emphasis |
|  | 11-30 | Convenience stores; relevant costs, closing and opening stores |
|  | 11-49 | Restaurant supply; Dropping a customer, ABC, ethics |
|  |  |  |
| 12 | 12-21 | T-shirts distributor; strategy, balanced scorecard |
|  | 12-22 | T-shirts distributor; strategic analysis of operating income |
|  | 12-23 | T-shirts distributor; analysis of growth, price-recovery,  |
|  |  | and productivity components |
|  | 12-24 | T-shirts distributor; identifying and managing unused capacity |
|  |  |  |
| 13 | 13-19 | Distributor; target prices, target costs, ABC |
|  | 13-21 | Solar-heating systems seller; target costs, process-design changes |
|  |  |  |

| **EXHIBIT P-2 (Continued)** |
| --- |
| **Chapter** | **Number** | **Context** |
| 14 | 14-19 | Environmental products distributor; customer profitability, customer-cost hierarchyxx cccvcvc |
|  | 14-21 | Pharmaceutical distributor; customer profitability |
|  | 14-26 | Wine glass retailer; variance analysis, multiple products |
|  | 14-31 | Paper distributor; customer profitability |
|  |  |  |
| 15 | 15-21 | Online book retailer; direct and step-down support department cost allocation |
|  | 15-22 | Online book retailer; reciprocal method support department cost allocation |
|  | 15-25 | Retailer; revenue allocation |
|  | 15-26 | Auto sales; allocation of common costs |
|  | 15-27 | Department store; single-rate, dual-rate and practical capacity allocation |
|  |  |  |
| 20 | 20-21 | Sporting goods retailer; EOQ |
|  | 20-22 | Sporting goods retailer; EOQ, effect of parameter changes |
|  | 20-23 | Textile retailer; EOQ |
|  | 20-33 | Retailer; sensitivity of EOQ to changes in relevant ordering and carrying costs, cost of prediction error  |
|  |  |  |
| 21 | 21-2521-41 | Soda distributor; Capital budgeting with uneven cash flowsFood retailer; NPV, inflation, income taxes |
|  | 21-42 | Construction supplier; NPV of information system, income taxes |
|  |  |  |
| 22 | 22-16 | Convenience store chain; evaluating management control systems, balanced scorecard |
|  |  |  |
| 23 | 23-2123-27 | Trucking; metrics for driversAutomobile retailer; ROI, RI, EVA |
|  | 23-38 | Multi-channel sales; Executive compensation, balanced scorecard |

**EXHIBIT P-3**

**ASSIGNMENT MATERIAL ON ETHICS**

|  |  |  |
| --- | --- | --- |
| **Chapter** | **Number** | **Context** |
| 1 | 1-26 | Division performance |
|  | 1-27 | Division performance |
|  | 1-34 | Pharmaceutical company, budgeting |
|  | 1-35 | Snack foods division; End-of-year actions |
|  | 1-36 | Consumer magazines; End-of-year actions |
|  | 1-37 | Furniture manufacturing global company, end-of-year actions |
|  |  |  |
| 2 | 2-47 | Cost classification, ethicssz |
|  |  |  |
| 3 | 3-53 | Environmental costs, CVP analysis, ethics |
|  |  |  |
| 4 | 4-45 | Job costing, ethics |
|  |  |  |
| 5 | 5-42 | Electronics; ABC, implementation, ethics |
|  |  |  |
| 6 | 6-46 | Manufacturer; slack, ethics |
|  |  |  |
| 7 | 7-47 | GPS manufacturer; price and efficiency variances, benchmarking, ethics |
|  |  |  |
| 8 | 8-48 | Overhead variances, ethics |
|  |  |  |
| 9 | 9-46 | Hospital chain; cost allocation, responsibility accounting, ethics |
|  |  |  |
| 11 | 11-49 | Dropping a customer, activity-based costing, ethics |
|  |  |  |
| 13 | 13-30 | Repair services; cost-plus, time and materials, ethics |
|  | 13-36 | Interior decoration; preparing a bid, pricing, ethics |
|  |  |  |
| 14 | 14-41 | Writing smaller orders; customer profitability and ethics |
|  |  |  |
| 17 | 17-47 | Rock-crushing plants; benchmarking, ethics |
| 18 | 18-45 | Job costing, classifying spoilage, ethics |
|  |  |  |
| 19 | 19-2019-37 | Car seats; costs of quality ethicsAuto parts manufacturer; ethics and quality |
|  |  |  |
| 20 | 20-41 | Pump manufacturer; JIT production, relevant benefits, relevant costs, ethics |
|  |  |  |
| 22 | 22-33 | Chocolate manufacturer; transfer pricing, goal congruence, ethics |
|  |  |  |
| 23 | 23-41 | Manufacturer; ethics, levers of control |
|  |  |  |

**EXHIBIT P-4**

**ASSIGNMENT MATERIAL WITH GLOBAL OR INTERNATIONAL SETTING**

|  |  |  |
| --- | --- | --- |
| **Chapter** | **Number** | **Context** |
| 1 | 1-37 | Contract bidding, ethical and cultural issues |
|  |  |  |
| 3 | 3-23 | Travel agency, CVP analysis |
|  | 3-31 | International cost structure differences, CVP analysis |
|  |  |  |
| 4 | 4-33 | Canadian accounting firm; actual, normal and variation from normal costing |
|  |  |  |
| 6 | 6-25 | Mexico bicycle manufacturer; revenues, production and purchases budgets |
|  |  |  |
| 7 | 7-45 | Memory card manufacturer in Taiwan; direct-cost and selling price variances |
| 8 | 8-28 | Telecommunications company; manufacturing overhead, standard-costing system |
| 10 | 10-39 | Agricultural transportation in Canada; interpreting regression results |
| 11 | 11-36 | International outsourcing; relevant costs, exchange rates |
|  |  |  |
| 16 | 16-42 | Flash memory chips manufacturer in Taiwan; joint-cost allocation, process further or sell |
|  |  |  |
| 21 | 21-3421-36 | Prototype chip manufacturer; equipment replacement, no income taxesFragrance manufacturer; DCF, sensitivity analysis, no income taxes |
|  |  |  |

**EXHIBIT P-4 (Continued)**

|  |  |  |
| --- | --- | --- |
| **Chapte**r | **Number** | **Context** |
| 22 | 22-20 | Multinational computer company; transfer pricing, alternative transfer-pricing methods, global income tax minimization |
|  | 22-2222-2322-30 | Chainsaw manufacturer; Multinational transfer pricing, global tax minimizationChainsaw manufacturer; Multinational transfer pricing, global tax minimizationHigh-end fertilizers; multinational transfer pricing, global tax minimization |
|  | 22-32 | Component manufacturer; international transfer pricing, taxes, goal congruence |
|  |  |  |
| 23 | 23-29 | Manufacturing, U.S. and Norway; multinational performance measurement, ROI, RI |
|  | 23-35 | Multinational firm, U.S., France, and Australia; differing risk, comparison of profit, ROI, and RI |

**EXHIBIT P-5**

**ASSIGNMENT MATERIAL USING MODERN COST MANAGEMENT FRONTIER IDEAS**

|  |  |  |
| --- | --- | --- |
| **Chapter** | **Number** | **Context** |
| 1 | 1-17 | Computer company; value chain, cost classification |
|  | 1-18 | Pharmaceutical company; value chain, cost classification |
|  | 1-19 | Fast food restaurant; value chain, cost classification |
|  | 1-20 | Key success factors |
|  | 1-21 | Key success factors |
|  | 1-29 | Making strategic decisions |
|  | 1-30 | Making strategic decisions |
|  |  |  |
| 2 | 2-29 | Smartphone company; value chain, cost drivers |
|  |  |  |
| 5 | 5-18 | Cost hierarchy at manufacturer |
|  | 5-19 | Testing labs; ABC, cost hierarchy |
|  | 5-21 | Automotive products; plantwide, department, ABC costing |
|  | 5-22 | Trophies manufacturer; plantwide, department, ABC costing |
|  | 5-23 | Calculator manufacturer; ABC, process costing |
|  | 5-24 | Architectural firms; Department costing based on activities |
|  | 5-25 | Printing company; activity-based costing |
|  | 5-26 | Door manufacturer; activity-based costing |
|  | 5-27 | Supermarket; ABC, product-line profitability |
|  | 5-28 | Furniture wholesaler; ABC, customer profitability |
|  | 5-29 | Custom framing; activity-based costing |
|  | 5-30 | Banking; ABC, product costing, cross-subsidization |
|  | 5-32 | Law firm; job costing, multiple direct- and single indirect-cost categories |
|  | 5-33 | Law firm; job costing, multiple direct- and indirect-cost categories |
|  | 5-34 | Metal products manufacturer; first-stage allocation, ABC |
|  | 5-35 | Lawn care, landscaping; first-stage allocation, ABC |
|  | 5-36 | Radiology center; department, activity-cost rates |
|  | 5-37 | Pharmaceuticals distributor; ABC |
|  | 5-38 | Bag manufacturer; activity-based costing and management |
|  | 5-39 | Health care; ABC system |
|  | 5-40 | Sports manufacturer; unused capacity, activity-based costing and management |
|  | 5-41 | Bow manufacturer; ABC and activity-based management |
|  | 5-42 | Electronics; ABC, implementation, ethics |
|  | 5-43 | Outdoor clothing and equipment merchandiser; activity-based costing and management |
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| **EXHIBIT P-5 (Continued)** |
| **Chapter** | **Number** | **Context** |
| 6 | 6-30 | Convenience store chain; activity-based budgeting |
|  | 6-31 | Convenience store chain; activity-based budgeting, kaizen budgeting |
|  | 6-33 | Tour company; responsibility accounting, stretch targets |
|  | 6-36 | T-shirt manufacturer; kaizen approach |
|  | 6-39 | Purchasing agent; responsibility accounting |
|  | 6-44 | Plastic accessories manufacturer; activity-based budgeting |
|  | 6-47 | Chemical company; kaizen budgeting for carbon emissions |
|  | 6-48 | Footwear manufacturer; activity-based budgeting |
|  |  |  |
| 7 | 7-32 | Insulated cups manufacturer; benchmarking against competitors |
|  | 7-387-42 | Bicycle manufacturer; responsibility issues in supply chainGame manufacturer; variances, custom production, just-in-time manufacturing |
|  | 7-43 | Eyeglass lens manufacturer; use of variances for benchmarking |
|  | 7-47 | GPS manufacturer; variances, benchmarking, ethics |
|  |  |  |
| 8 | 8-318-408-41 | Custom shirt maker; relationship between production-volume and sales-volume variance analysisShoe manufacturer; activity-based costing, batch-level variance analysisSuitcase manufacturer; relationship between overhead and sales-volume variance analysis |
|  | 8-42 | T-shirt maker; activity-based costing, batch-level variance analysis |
|  |  |  |
| 9 | 9-22 | Auto company; throughput costing |
|  | 9-24 | Television set manufacturer; throughput costing |
|  | 9-29 | Capacity management, denominator-level capacity concepts |
|  | 9-30 | Motorcycle manufacturer; alternative denominator-level capacities |
|  | 9-36 | Textbook publisher; metrics to minimize inventory buildups |
|  | 9-39 | Magic kit maker; denominator-level choices, changes in inventory levels, effect on operating income |
|  | 9-41 | Tablet manufacturer; downward demand spiral |
|  | 9-45 | Hospital meal service; cost allocation, downward demand spiral |
|  | 9-469-47 | Hospital meal service; cost allocation, responsibility accounting, ethicsElectric car company; absorption, variable, and throughput costing |
|  |  |  |
| 10 | 10-33 | Radar system manufacture; learning curves |
|  | 10-34 | Radar system manufacture; learning curves |
|  | 10-38 | Hotel chain; ABC, choosing cost drivers |
|  | 10-44 | Manufacturing; cost estimation |
|  | 10-45 | Manufacturing; cost estimation, learning curves |
|  | 10-47 | Department store chain; cost drivers, ABC, simple regression analysis |
|  | 10-48 | Department store chain; cost drivers, ABC, multiple regression analysis |
|  |  |  |
| **Exhibit P-5 (Continued)** |  |  |
| **Chapter** | **Number** | **Context** |
| 11 | 11-24 | Special order, activity-based costing |
|  | 11-25 | Cellular modems; make versus buy, activity-based costing |
|  | 11-29 | Filing cabinets; theory of constraints, throughput margin |
|  | 11-31 | Printers; customer profitability analysis |
|  | 11-41 | Manufacturing; ABC, make versus buy |
|  | 11-44 | Electronic testing equipment manufacturer; theory of constraints, throughput margin |
|  | 11-45 | Furniture manufacturer; theory of constraints, sensitivity analysis |
|  | 11-49 | Customer profitability, activity-based costing, ethics |
|  |  |  |
| 12 | 12-19 | Electric motor manufacturer; balanced scorecard |
|  | 12-20 | Electric motor manufacturer; analysis of growth, price-recovery and productivity components |
|  | 12-21 | Merchandising; strategy, balanced scorecard |
|  | 12-22 | Merchandising; strategic analysis of operating income |
|  | 12-23 | Merchandising; analysis of growth, price-recovery, and productivity components |
|  | 12-24 | Merchandising; identifying and managing unused capacity |
|  | 12-25 | Machine manufacturer; strategy, balanced scorecard |
|  | 12-26 | Machine manufacturer; strategic analysis of operating income |
|  | 12-27 | Machine manufacturer; analysis of growth, price-recovery and productivity components |
|  | 12-28 | Machine manufacturer; identifying and managing unused capacity |
|  | 12-29 | Architecture firm; strategy, balanced scorecard |
|  | 12-30 | Architecture firm; strategic analysis of operating income |
|  | 12-31 | Architecture firm; analysis of growth, price-recovery, and productivity components |
|  | 12-32 | Architecture firm; identifying and managing unused capacity |
|  | 12-33 | DVD manufacturer; strategy, balanced scorecard |
|  | 12-34 | DVD manufacturer; strategic analysis of operating income |
|  | 12-35 | DVD manufacturer; analysis of growth, price-recovery, and productivity components |
|  | 12-36 | DVD manufacturer; identifying and managing unused capacity |
|  | 12-37 | Balanced scorecard |
|  | 12-38 | Petroleum company; balanced scorecard |
|  | 12-39 | Laser printers; balanced scorecard |
|  | 12-40 | Chocolate manufacturer; balanced scorecard, environmental and social performance |
|  | 12-41 | Cable and internet services; balanced scorecard, social performance |
|  | 12-42 | Airline; balanced scorecard, environmental and social performance |
|  | 12-43 | Manufacturing; partial productivity measurement |
|  | 12-44 | Manufacturing; total factor productivity  |
|  |  |  |
|  |  |  |
| **Exhibit P-5 (Continued)** |  |  |
| **Chapter** | **Number** | **Context** |
| 13 | 13-17 | Tool repair shop; value-added, nonvalue-added costs |
|  | 13-18 | Architecture firm; target operating income, value-added costs |
|  | 13-19 | Distributor; target prices, target costs, ABC |
|  | 13-20 | Medical instruments; target costs, effect of product-design changes on product costs |
|  | 13-21 | Solar heating systems; target costs, effect of process-design changes on service costs |
|  | 13-22 | Hotel management; cost-plus target return on investment pricing |
|  | 13-23 | Table sets manufacturer; cost-plus, target pricing |
|  | 13-24 | Vacuum manufacturer; life-cycle budgeting and costing |
|  | 13-25 | Hotel; price discrimination |
|  | 13-26 | Manufacturer; target pricing |
|  | 13-27 | Cosmetics manufacturer; value engineering, target pricing, target costing  |
|  | 13-28 | Amusement park; value engineering, target costing, ABC |
|  | 13-29 | Candy manufacturer; target return on investment pricing |
|  | 13-31 | Temp labor agency; cost-plus and market-based pricing |
|  | 13-32 | Testing labs; cost-plus, activity-based costing, market-based pricing |
|  | 13-33 | Industrial site cleanup; life-cycle costing |
|  | 13-34 | Airline; price discrimination |
|  | 13-35 | Airline; anti-trust laws, pricing |
|  | 13-37 | Wood sculpture manufacturing; target prices, target costs, locked-in costs, value engineering |
|  |  |  |
| 14 | 14-19 | Environmental products distributor; customer profitability, customer-cost hierarchy |
|  | 14-20 | Repair service; customer profitability |
|  | 14-21 | Pharmaceutical distributor; customer profitability |
|  | 14-30 | Jewelry manufacturer; customer profitability |
|  | 14-31 | Paper distributor; customer profitability |
|  | 14-32 | Manufacturing company; customer profitability analysis |
|  | 14-33 | Interior design; customer-cost hierarchy, customer profitability |
|  | 14-36 | Homeowners insurance; cost-hierarchy income statement, allocation of corporate, division, and channel costs to customers |
|  | 14-37 | Wireless speakers manufacturer; cost-hierarchy income statement, allocation of corporate, division, and channel costs to customers |
|  | 14-41 | Writing smaller orders; customer-cost hierarchy, profitability and ethics |
|  |  |  |
| 16 | 16-42 | Memory chip manufacture; further processing, multiple products/services |
| 17 | 17-46 | Water bottle manufacturer; sustainable materials and processes |
|  |  |  |
| 18 | 18-3918-45 | Solar panel production; silicon processing; inspection at multiple stagesPharmaceutical manufacturer; contract manufacturing |
|  |  |  |
| **Exhibit P-5 (Continued)** |
| **Chapter Number Context** |
|  |
| 19 | 19-18 | Cell phone equipment; costs of quality |
|  | 19-19 | Outdoor chair manufacturer; costs of quality |
|  | 19-20 | Car seats; costs-of-quality, ethics |
|  | 19-21 | Computer bags; nonfinancial measures of quality and time |
|  | 19-22 | Printing presses; quality improvements, relevant costs and relevant revenues |
|  | 19-23 | Car wash; quality improvement, relevant costs and relevant revenues |
|  | 19-24 | Pet toys; waiting time |
|  | 19-25 | University; waiting time |
|  | 19-26 | University; waiting time, relevant costs, student satisfaction |
|  | 19-27 | Cell phones; nonfinancial measures of quality and time |
|  | 19-28 | Manufacturer; nonfinancial measures of quality, manufacturing cycle efficiency |
|  | 19-29 | Cereal manufacturer; statistical quality control |
|  | 19-30 | Pizza delivery; quality improvement, Pareto diagram, cause-and-effect diagram |
|  | 19-31 | Valve manufacturing; quality improvement, relevant costs, and relevant revenues |
|  | 19-32 | Plastic lamps; quality improvement, relevant costs, and relevant revenues |
|  | 19-33 | Plastic products; waiting times, manufacturing cycle times |
|  | 19-34 | Plastic products; waiting times, relevant revenues, and relevant costs |
|  | 19-35 | Wire harnesses; manufacturing cycle times, relevant revenues, and relevant costs |
|  | 19-36 | Healthcare group; waiting time, patient satisfaction, compensation |
|  | 19-37 | Auto parts manufacturer; quality and ethics |
|  | 19-38 | Textile printing; quality improvement; theory of constraints |
|  |  |  |
| 20 | 20-26 | Men’s neckware manufacturer; JIT production, relevant benefits, relevant costs |
|  | 20-27 | Computer assembly; backflush costing and JIT production |
|  | 20-28 | Computer assembly; backflush costing, two trigger points, materials purchase and sale |
|  | 20-29 | Computer assembly; backflush costing, two trigger points, completion of production and sale |
|  | 20-32 | Music players; EOQ, JIT production |
|  | 20-34 | Steel supplier, JIT purchasing, relevant benefits, relevant cost |
|  | 20-35 | Computer manufacturer; supplier evaluation, costs of quality, timely deliveries |
|  | 20-36 | Jeans manufacturer; supplier evaluation, costs of quality, timely deliveries |
|  | 20-37 | Electrical meters; backflush costing and JIT production |
|  | 20-38 | Electrical meters; backflush, two trigger points, materials purchase and sale |
|  | 20-39 | Electrical meters; backflush, two trigger points, completion of production and sale |
|  | 20-40 | Security devices; lean accounting |
|  | 20-41 | Pump manufacturer; JIT production, relevant benefits, relevant costs, ethics. |
| **Exhibit P-5 (Continued)** |
| **Chapter Number Context** |  |  |
| 21 | 21-42 | Construction and mining site supplier; NPV of information system, income taxes |
| 22 | 22-1622-17 | Convenience stores; management control systems, balanced scorecardWindow manufacturing; cost centers, profit centers, decentralization, transfer prices |
|  | 22-1822-26 | Hotel chain; benefits and costs of decentralizationTV set manufacture; insourcing versus outsourcing |
|  |  |  |
| 23 | 23-2323-2723-28 | Sports equipment; ROI and RIAutomotive retailer; ROI, RI, EVAVenture capital; capital budgeting, RI (conservation property) |
|  | 23-29 | Manufacturing, U.S. and Norway; multinational performance measurement, ROI, RI |
|  | 23-30 | Fashion product manufacturer; ROI, RI, EVA, performance evaluation |
|  | 23-31 | Food conglomerate; risk sharing, incentives, benchmarking, multiple tasks |
|  | 23-32 | Doorbell manufacturing; Residual income and EVA, timing issues |
|  | 23-35 | Multinational firm, U.S., France, and Australia; differing risk, comparison of profit, ROI, and RI |
|  | 23-36 | Media group; ROI, RI, DuPont method, investment decisions, balanced scorecard |
|  | 23-37 | Media group; division managers' compensation, levers of control |
|  | 23-38 | Acme Company; business unit manager compensation, balanced scorecard |
|  | 23-41 | Snack cake manufacturer; levers of control, ethics |
|  | 23-42 | Health spas; RI, EVA, measurement alternatives, goal congruence |

**PRESENTATION OF SOLUTIONS**

Instructors have a variety of views regarding the use of classroom time for homework solutions. Most instructors put solutions on a blackboard or an overhead projector. In turn, their students frantically copy the materials in their notes. Our practice is to reproduce the printed homework solutions for distribution either before, during, or after the discussion for a particular solution. The members of the class are glad to pay a modest fee to the school to cover the reproduction costs. In this way, students can spend more of their classroom time in thinking rather than writing. Further, they have a complete set of notes.

Some instructors object to this procedure because it provides students with a “file” that can be passed along to subsequent classes. Students in subsequent classes will then use the “file” to avoid conscientious preparation of homework. We used to worry about such practices, but long ago we decided that there would always be some students who hurt themselves by not doing homework in an appropriate way. Why should the vast majority of students be penalized by withholding the printed solutions? The benefits of using printed solutions clearly outweigh the costs. We no longer fret about the few students who beat the system (and themselves). Moreover, schools using My Accounting Lab can have new problems assigned to students where the problem structure is the same but the numbers are different.

Similarly, we distribute printed solutions to tests and examinations along with a summary of overall class performance. We do not devote class time to discussing these solutions. The students deserve feedback, but they have sufficient motivation to scrutinize the printed solutions and check their errors on an individual basis. In this way, more class time is available for new material.

If students have complaints about grades, we usually ask them to cool off for 24 hours and to then submit a written analysis of how they were unjustly treated. We then take these complaints in batches, regrade the papers, and return the papers. If the student then wants to have a person-to-­person discussion of the matter, he or she is welcome at our office. This procedure may seem too impersonal, but we recommend it to those teachers who have been through some painful debates that have been inefficient and frustrating for both student and teacher.

**MAJOR CHANGES IN TEXT OF THE 16TH EDITION**

**Deeper Consideration of Global Issues**

Businesses today have no choice but to integrate into an increasingly global ecosystem. Virtually all aspects, including supply chains, product markets, and the market for managerial talent, have become more international in their outlook. To illustrate this, we incorporate global considerations into many of the chapters. For example, Chapter 6 talks about the special challenges of budgeting in multinational companies; Chapter 11 discusses the benefits and the challenges that arise when outsourcing products or services outside the United States, while Chapter 23 discusses the challenges of evaluating the performance of divisions located in different countries. The Concepts in Action piece for Chapter 16 explains the importance of joint cost allocation in creating a trade war between poultry farms in the United States and South Africa. Chapter 22 examines the importance of transfer pricing in minimizing the tax burden faced by multinational companies. Several new examples of management accounting applications in companies are drawn from international settings.

**Increased Focus on the Merchandising and Service Sectors**

In keeping with the shifts in the U.S. and world economy, this edition makes greater use of merchandising and service sector examples, with a corresponding de-emphasis of traditional manufacturing settings. For example, Chapter 10 illustrates linear cost functions in the context of payments for cloud computing services. Chapter 20 highlights inventory management in retail organizations and has a revised example based on a seller of sunglasses. Chapter 21 incorporates a running example that looks at capital budgeting in the context of a transportation company. Several concepts in action boxes focus on the merchandising and service sectors, including the impact of ride-sharing services on the cost structure of Twitter (Chapter 2), the use of activity-based costing to reduce the costs of health-care delivery (Chapter 5), the erosion of ESPN's profitability from the rise of cord-cutting (Chapter 9) and the value of Amazon Prime in inducing customer loyalty (Chapter 14).

**Greater Emphasis on Sustainability**

This edition places significant emphasis on sustainability as one of the critical managerial challenges of the coming decades. Many managers are promoting the development and implementation of strategies to achieve long-term financial, social and environmental performance as key imperatives. We highlight this in Chapter 1 and return to the theme in several subsequent chapters. Chapter 12 discusses the benefits to companies from measuring social and environmental performance and how such measures can be incorporated in a balanced scorecard. Chapter 23 provides several examples of companies that mandate disclosures and evaluate managers on environmental and social metrics. A variety of chapters, including chapters 4, 10, and 15, contain vignettes that stress themes of energy independence, using cost analysis to reduce environmental footprints, and constructing “green” homes in a cost-effective manner.

**Focus on Innovation**

We discuss the role of accounting concepts and systems in fostering and supporting innovation and entrepreneurial activities in firms. In particular, we discuss the challenges posed by recognizing R&D costs as period expenses even though the benefits of innovation accrue in later periods. In Chapter 6, we describe ow companies budget for innovation expenses and develop measures to monitor the success of the innovation efforts delinked from operational performance in the current period. Chapter 11 presents the importance of nonfinancial measures when making decisions about innovation. Chapter 13 stresses that innovation starts with understanding customer needs while Chapter 19 discusses process innovations for improving quality.

**New Cutting-Edge Topics**

The pace of change in organizations continues to be rapid. The 16th edition of *Cost*

*Accounting* reflects changes occurring in the role of cost accounting in organizations.

* We have introduced sustainability strategies and the methods companies use to implement sustainability with business goals.
* We have added ideas based on academic research regarding the weights to be placed on performance measures in a balanced scorecard. We have also added a new section on methods to evaluate strategy maps such as the strength of links, differentiators, focal points, and trigger points.
* We have provided details on the transfer pricing strategies used by multinational technology firms such as Apple and Google to minimize income taxes.
* We discuss current trends in the regulation of executive compensation.
* We describe the evolution of Enterprise Resource Planning systems and newer simplified costing systems that practice lean accounting.
* We have added new material around recent trends in big data and data analytics in predicting costs and when making demand forecasts.

**Opening Vignettes**

Each chapter opens with a vignette on a real company situation. The vignettes engage the reader in a business situation, or dilemma, illustrating why and how the concepts in the chapter are relevant in business. For example, For example, Chapter 2 describes how surf wear company Quiksilver was driven into bankruptcy by the relatively high proportion of fixed costs in its operations. Chapter 5 explains the use of activity-based costing by General Motors to evaluate its suppliers. Chapter 9 highlights the use of lean manufacturing by Boeing to work through its backlog of orders and reduce its inventory costs. Chapter 14 shows how Delta made changes to its frequent flyer program to reward its most profitable customers, who drive a disproportionate share of Delta’s revenues. Chapter 18 shows the impact on Honda of the rework costs associated with recalling millions of cars with defective airbags. Chapter 23 describes the misalignment between performance measurement and pay at Viacom, whose CEO has since been forced to step down.

**Concepts in Action Boxes**

Found in every chapter, these boxes cover real-world cost accounting issues across a variety of industries including defense contracting, entertainment, health care, manufacturing, and retailing. New examples include

● Cost–Volume–Profit Analysis Makes Subway’s $5 Foot-Long Sandwiches a Success but Innovation Challenges Loom (Chapter 3)

● Can Chipotle Wrap Up Its Materials-Cost Variance Increases? (Chapter 7)

● H&M Uses Target Pricing to Bring Fast Fashion to Stores Worldwide (Chapter 13)

● Amazon Prime and Customer Profitability (Chapter 14)

● Hybrid Costing for Under Armour 3D Printed Shoes (Chapter 17)

● Netflix Works to Overcome Internet Bottlenecks (Chapter 19)

**Streamlined Presentation**

We continue to try to simplify and streamline our presentation of various topics to make it as easy as possible for a student to learn the concepts, tools, and frameworks introduced in different chapters. We received positive feedback for the reorganization of Chapters 12 through 16 in the fifteenth edition and have maintained that order in the sixteenth edition. Chapter 12 covers the balanced scorecard and the strategic analysis of operating income. Chapter 13 is the first of four chapters on cost allocation. We introduce the purposes of cost allocation in Chapter 13 and discuss cost allocation for long-run product costing and pricing. Continuing the same example, Chapter 14 discusses cost allocation for customer costing. Chapter 15 builds on the Chapter 4 example to discuss cost-allocation for support departments. Chapter 16 discusses joint cost allocation.

Other examples of more streamlined presentations can be found in the following:

* Chapter 2 on the discussion of fundamental cost concepts and the managerial framework for decision making
* Chapter 6, which has a revised Appendix that ties together the chapter example and the cash budget
* Chapter 7, which has a new appendix that extends the Webb Company example to a setting with workers of various skill levels and associated compensation levels in order to illustrate mix and yield variances
* Chapter 10, where the writing around the Elegant Rugs example makes clearer to students both the stages in the five-step process and the questions the company hopes to answer by following these steps.

**HIGHLIGHTS OF NEW CHAPTER-BY-CHAPTER CHANGES**

**Chapter 1**

Chapter 1 has been rewritten to include greater discussion of sustainability and innovation and why these issues have become increasingly critical for managers. It also includes more material on the importance of ethics, values, and behaviors, as well as the role of the Sarbanes-Oxley act in improving the quality of financial reporting.

**Chapter 2**

Chapter 2 has been updated and revised to make it easier for students to understand core cost concepts and to provide a framework for how cost accounting and cost management help managers make decisions. We have added more material on environmental costs to explain how and why these costs may be missed in costing systems even though they are a part of product costs. We discuss the challenges of accounting for R&D costs and the implications for innovation.

**Chapter 3**

Chapter 3 now includes greater managerial content, using examples from real companies to illustrate the value of cost-volume-profit analysis in managerial decision making. We have rewritten the section on CVP analysis in Service and Not-for-Profit companies using the context of a management consulting firm.

**Chapter 4**

Chapter 4 has been revised to discuss the creation of cost pools, the level of fixed costs in a seasonal business, and the need to adjust normal costs to actual costs using end-of-accounting-year adjustments. The chapter also now discusses criteria for allocating costs and relates them to real examples to highlight why managers need allocated cost information to make decisions.

**Chapter 5**

Chapter 5 adds more discussion of product undercosting and overcosting and refining a costing system. The chapter example has been changed to add new material on Time-Driven Activity-Based Costing (TDABC) compared to Driver-Rate Activity-Based Costing (DRBABC). We integrate the discussion of behavioral considerations in implementing activity-based costing with the technical material in the chapter.

**Chapter 6**

Chapter 6 presents material on the mismatch between costs incurred for breakthrough innovations in the annual budget and the revenues earned in that year. The chapter describes ways to delink innovation from current year operational performance by developing measures to monitor the success of innovation efforts. The chapter discusses how stretch targets motivate greater carbon reductions. We also elaborate on tradeoffs managers must make when choosing different organization structures.

**Chapters 7 and 8**

In Chapter 7, the appendix on mix and yield variances, which used a one-off example, has now been recast using the same running example that winds its way through both Chapters 7 and 8. Chapter 8 provides a revised comprehensive summary of the variances in both Chapters 7 and 8 via an innovative exhibit.

**Chapter 9**

Chapter 9 retains the simplified two-period integrated example of capacity choice. There is greater emphasis now on linking the impact of the choice of capacity concept to recent changes in financial reporting and tax requirements.

**Chapter 10**

Chapter 10 provides an expanded description of big data and the reasons behind the explosion in data availability and analytics today. It also incorporates several examples of how companies are gathering and using large quantities of data to make better decisions.

**Chapter 11**

Chapter 11 has been revised to emphasize nonfinancial factors in decisions, particularly in environmental and innovation decisions. The chapter explicitly considers how relevant cost analysis is distinct from the absorption costing method of preparing financial statements under Generally Accepted Accounting Principles (GAAP). The focus is on identifying and understanding why relevant costs and relevant revenues are important when making decisions.

**Chapter 12**

Chapter 12 introduces a completely new section around evaluating strategy maps by identifying strong and weak links, differentiators, focal points and trigger points. There is a new exhibit to present these concepts. The chapter also ties the Chipset strategy decision to the general discussion of strategy.

**Chapter 13**

Chapter 13 makes significant revisions to the sections on target pricing and target costing, cost-plus pricing, and life-cycle budgeting. The chapter presents new material on carbon tax, cap-and-trade auctions, and the Sustainability Accounting Standards Board (SASB). New examples have been added when discussing predatory pricing, dumping, and collusive pricing.

**Chapter 14**

Chapter 14 was completely rewritten in 15E. The current revision makes a number of changes to improve the clarity of the writing and to motivate different concepts. The section on Cost-hierarchy-based operating income has been rewritten and the section on fully allocated customer profitability has been streamlined.

**Chapter 15**

Chapter 15 was also heavily revised in 15E. The current revision makes several significant changes to clarify concepts and improve clarity. The sections on single-rate and dual-rate methods, budgeted versus actual costs, the choice of allocation bases, and cost allocation and contract disputes have all been substantially rewritten. The Concepts in Action box uses updated federal cases on cost allocation disputes.

**Chapter 16**

Chapter 16 provides a discussion of the rationale for joint-cost allocation and the merits and demerits of various joint-cost allocation methods. It includes a new opening vignette and a new real-world example to highlight the controversies that can result from using inappropriate methods of joint-cost allocation.

**Chapters 17 and 18**

Chapters 17 and 18 provide a managerial lens on the estimation of equivalent units and the choice between the FIFO and weighted-average costing methods, both in the chapter content and in the new vignettes and real-world examples. The exhibits have been reformatted to make clear how various components are added to get the total costs. Chapter 18 emphasizes, with illustrative examples, the theme of striving for zero waste, and a sustainable environment.

**Chapter 19**

Chapter 19 focuses on quality and time. The sections on control charts, weighing the costs and benefits of improving quality, and evaluating a company’s quality performance have been rewritten. This revision also makes major changes to and reorganizes the section on bottlenecks and time drivers

**Chapter 20**

Chapter 20 emphasizes the importance of choosing the correct products to sell, deeply understanding customers and pricing smartly as ways to manage inventory. It discusses the role of big data and better demand forecasts in reducing demand uncertainty and safety stocks and in implementing Materials Requirements Planning (MRP) systems. The section on the Cost of a prediction error has been revised to link to Exhibit 20-1. The section on lean accounting has been rewritten and simplified.

**Chapter 21**

Chapter 21 focuses on the role of capital budgeting in supporting the choice of sustainable long-term projects. The new opening vignette looks at the financing of residential solar panels, the integrated example deals with the purchase of a new hybrid-engine bus, and various examples through the chapter and in the new Concepts in Action illustrate how companies incorporate sustainability in their capital budgeting decisions.

**Chapter 22**

Chapter 22 has been revised to reflect the most recent developments in the controversial use of transfer prices for tax minimization by multinational corporations, with several real-world examples. The revision also highlights the changing regulatory environment across the world, and provides updated information on the use of tools such as Advance Pricing Agreements.

**Chapter 23**

Chapter 23 describes the use of environmental, social, and ethical objectives by companies as part of top management’s pay structures, with new examples of companies that embed sustainability targets into compensation systems. It discusses the latest SEC regulations on disclosure of executive compensation and the impact of Dodd-Frank “say on pay” rules.

**CHANGES IN ASSIGNMENT MATERIAL FOR THE 15TH EDITION**

More than 70% of the exercises and problems in the 16th edition are new or revised. The remaining exercises and problems are taken from the 15th edition. The following exhibits indicate the source of each of the exercises and problems in the 16th edition. These exhibits can be read as follows:

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|  | Chapter 5 |
|  | 16E  |  | 15E |
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|  | ∙ |  | ∙ |
| Category (a) | 5-xx |  | New |
| Category (b) | 5-yy |  | 5-ww Rev |
| Category (c) | 5-zz |  | 5-zz |

Category (a) shows that problem 5-xx in the 16th edition is new to this edition.

Category (b) shows that problem 5-yy in the 16th edition is a revision of problem 5-ww in the 15th edition; the ‘Rev’ in ‘5-ww Rev’ indicates that the content and numbers from the 15th edition have been revised.

Category (c) shows that problem 5-zz in the 16th edition is problem 5-zz in the 15th edition. The absence of a ‘Rev” after ‘5-zz’ means that no change in the content or numbers has been made in continuing use of this problem in the 16th edition.

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