NINTH EDITION

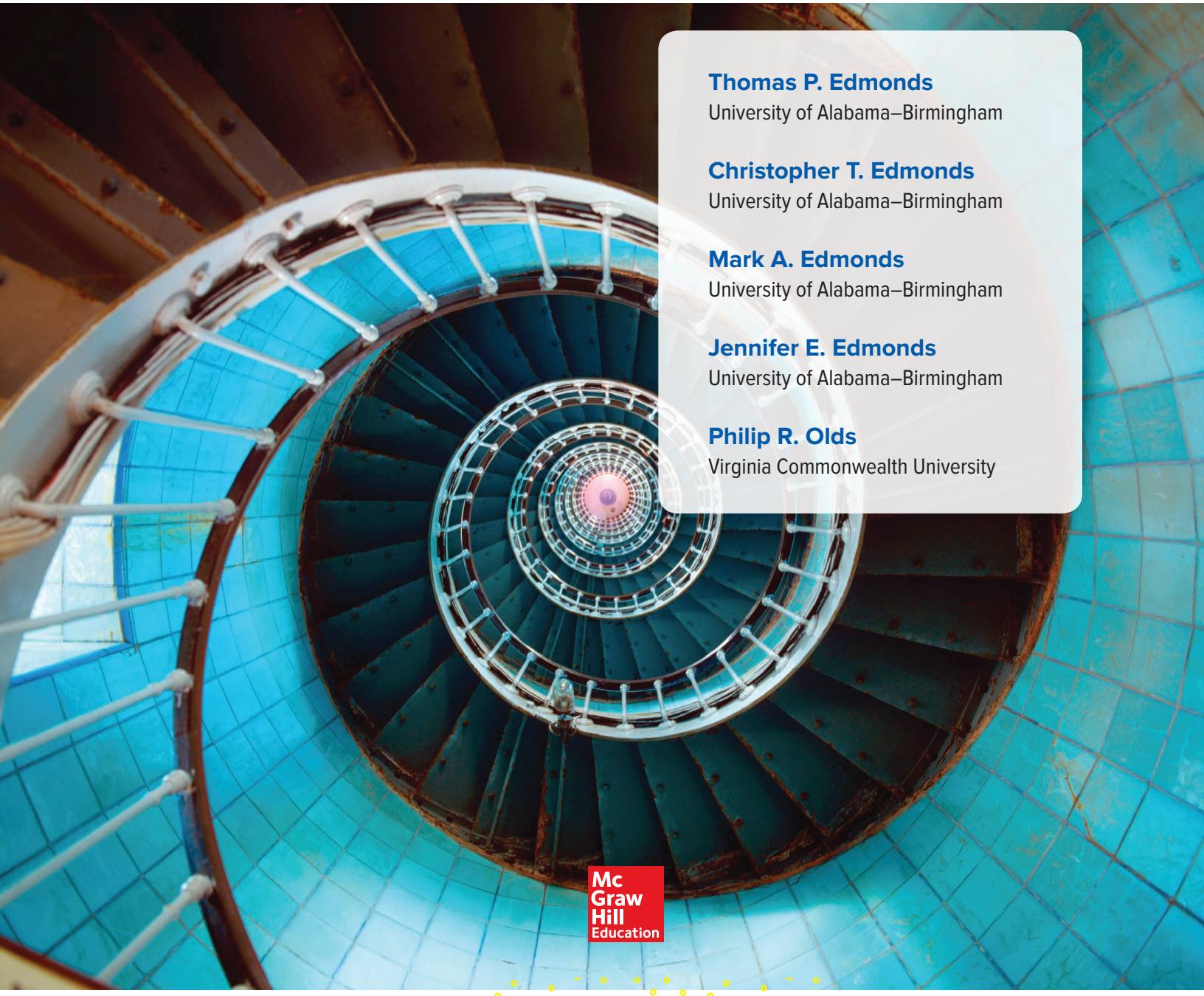
Fundamental Managerial Accounting Concepts

Edmonds • *Olds*

Mc Graw Hill Education

ninth edition

Fundamental Managerial Accounting Concepts



Thomas P. Edmonds
University of Alabama–Birmingham

Christopher T. Edmonds
University of Alabama–Birmingham

Mark A. Edmonds
University of Alabama–Birmingham

Jennifer E. Edmonds
University of Alabama–Birmingham

Philip R. Olds
Virginia Commonwealth University

Mc Graw Hill Education

FUNDAMENTAL MANAGERIAL ACCOUNTING CONCEPTS, NINTH EDITION

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This book is dedicated to our students, whose questions have so frequently caused us to reevaluate our method of presentation that they have, in fact, become major contributors to the development of this text.

NOTE FROM THE AUTHORS

UNIQUE USER PERSPECTIVE

This text focuses on the development of decision-making skills. The decision-making emphasis is evident from a review of the table of contents. You will notice that topics related to decision making are placed first while procedural topics like manufacturing cost flow, job order, and process costing are placed at the end of our text. In addition, we have made an effort to reduce coverage of recording procedures. Indeed, you will notice that the text does not require the use of debits and credits. Accordingly, the text is a natural fit for schools that have decided to take a user-oriented approach for their introductory financial accounting course.

The text places an unusually heavy emphasis on service companies. For example, the budgeting chapter uses a merchandising business while most traditional texts use a manufacturing company. Using a service company is not only more relevant but also simplifies the learning environment, thereby making it easier for students to focus on budgeting concepts rather than procedural details. For a more detailed description of the unique features of this text, see the "How Does Edmonds Help Students See the Big Picture?" section on page x.

INNOVATIVE INSTRUCTIONAL METHODOLOGY

This text is accompanied by the most comprehensive set of ***instructional videos*** on the market today. These instructional videos explain the content associated with every learning objective introduced throughout the text. ***The videos have been developed by a member of the author team.*** They have the touch and feel of a live lecture as opposed to a canned PowerPoint presentation. The benefits are enormous. Videos allow students to pause for contemplation and note-taking. They permit students to repeat difficult concepts or fast forward through content they have mastered. In other words, videos enable self-paced learning. No longer is the lecture too fast for some and too slow for others. Now the lecture satisfies the needs of each individual student.

Many accounting educators have taught in professional exam prep courses that make extensive use of video lectures. Now you can bring that prep course learning approach into your everyday classroom. Here are some examples of how you can use instructional videos to improve the classroom environment.

Traditional Courses

You do not have to change the way you teach your class to reap many of the benefits available from video instruction. Students who have to miss class or who have trouble comprehending certain concepts can benefit from watching video lectures. Also, many students who attend class will be able to build confidence by watching videos that reinforce the concepts presented in class. Since the videos are tied directly to the learning objectives, you can develop a specific plan for students who are struggling with specific topics. Alternatively, you may offer video instruction to enable advanced students to cover additional topics.

Distance Learning Courses

One of the fastest growing markets in higher education today is Internet-based courses. Many students struggle with these courses. Generally, they would prefer to learn from a lecture but due to timing or location are unable to attend class.

Prerecorded video lectures solve this problem by allowing students to access lectures on demand. Until now the only way to provide video coverage was for the instructor to make personal recordings. Anyone who has tried this knows it is a time-consuming activity. We offer a standardized turn-key course that is composed of prerecorded instructional videos, student directed self-assessment quizzes, and instructor-generated evaluative exams. The instructor simply selects the learning objectives to be covered. There is no simpler way to develop a distance learning course.

Flip Courses

Instructional videos enable instructors to flip the traditional teaching model. Specifically, instead of providing a lecture in class and then assigning homework, ***flip courses*** deliver the lecture at home and use the classroom as a place for students to work problems and ask questions. The teacher's function moves from lecturer to coach and tutor. Without a requirement to deliver a lecture, the instructor is free to tutor students in small groups or individually. Instruction becomes more focused and individualized. Indeed, when coupled with Connect technology, instructors can obtain real-time feedback that allows them to identify and approach specific students who are having difficulty without disturbing those students who are able to digest the material independently.

Hybrid Courses

Many instructors are developing hybrid classes where some classes involve face-to-face time with the instructor and other class time is devoted to group work, individualized instruction, case study, or other activities. This means there is less time for traditional lectures. Instructional videos are ideal for filling the lecture gap. Instructors can cover the key concepts in their lectures and leave the detailed presentation to the video lectures.

Mass Section Courses

Many schools deliver live lectures to mass section classes. Students then break into small groups that are led by teaching assistants or adjunct faculty. While this approach is cost-effective, it frequently results in dissatisfaction. Students often find it difficult to see and hear in large lecture halls. Also, the lecture must be set at an average pace that, by its nature, is too fast for many students and too slow for others. Prerecorded video lectures resolve these issues. They enable students to study the lecture before class. They can then bring questions about the lecture to the breakout sessions. Since videos eliminate the need for mass lectures, there is more time for students to meet in small groups where they are able to receive more individualized attention.

Competency-Based Learning Courses

Video instruction enables the implementation of a competency-based grading system. Since learning is self-paced, grades can be assigned on the basis of how far students go into the content as opposed to an averaging approach. For example, content could be divided into modules. Grades could be assigned based on the number of modules completed successfully. Weaker students could repeat lower-level modules while stronger students move on to more advanced topics. When you are no longer forced to move students through your class in a lock-step fashion, the potential for improving the learning environment is virtually limitless.

There are many different competency-based models that can be applied to introductory accounting. At this point, our objective is to introduce the general possibilities for improving learning. If you are interested in developing a specific competency-based approach for your classroom, you can speak directly with a member of the author team who has used videos in a variety of settings (contact information is provided below). Standardized lesson plans that can be adapted for use in your individual classroom are available upon request. These are only a few opportunities made possible by video lectures. If you would like to discuss these or other possible applications please contact Chris Edmonds at **cedmonds@gmail.com.**

INSTRUCTORS' RESOURCE KIT (IRK)

As many students choose to adopt the electronic version of textbooks, instructors are beginning to face a situation where students do not have textbooks available in the classroom. Accordingly, working a particular exercise or problem in class is frustrated by the fact that students do not have access to the exercise and problems being worked. To resolve this issue we now offer an ***Instructors' Resource Kit (IRK)***.

The IRK includes a general set of instructions for how to conduct flipped, online, and hybrid classes. It has a chapter-by-chapter Microsoft Word document that contains an ***instructor version*** of all B set exercises and problems. The corresponding solution is shown directly below each exercise and problem. The matching of exercises and problems with solutions makes it easy for instructors to toggle between the items and the solution when making classroom presentations. An example of Exercise 2-7B instructor version appears as follows.

Exercise 2-7B Fixed versus variable cost behavior (LO 2-1)

Shawn Corder needs extra money quickly to help cover some unexpected school expenses. Mr. Corder has learned fortune-telling skills through his long friendship with Fred Molloy, who tells fortunes during the day at the city market. Mr. Molloy has agreed to let Mr. Corder use his booth to tell fortunes during the evening for a rent of $90 per night.

Required

a. What is the total and per customer booth rental cost if the number of customers is 5, 10, 15, 20, or 25? Round your figures to 2 decimal points.

Number of Customers (a)	5	10	15	20	25
Total rental cost (b)	$90	$90	$90	$90	$90
Cost per customer (b) ÷ (a)	$18.00	$9.00	$6.00	$4.50	$3.60

b. Is the cost of renting the fortune-telling booth fixed or variable relative to the number of customers?

Since the cost of renting the booth is $90 regardless of the number of customers, it is a fixed cost.

The IRK also includes a separate chapter-by-chapter Word document that contains a ***student version*** of the B set of exercises and problems. These documents show each exercise and problem with a corresponding working paper directly below it. For example, Exercise 2-7B student version appears as follows.

Exercise 2-7B Fixed versus variable cost behavior (LO 2-1)

Shawn Corder needs extra money quickly to help cover some unexpected school expenses. Mr. Corder has learned fortune-telling skills through his long friendship with Fred Molloy, who tells fortunes during the day at the city market. Mr. Molloy has agreed to let Mr. Corder use his booth to tell fortunes during the evening for a rent of $90 per night.

Required

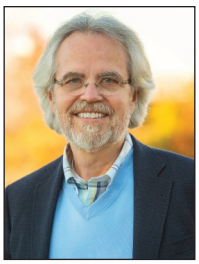
a. What is the total and per customer booth rental cost if the number of customers is 5, 10, 15, 20, or 25? Round your figures to 2 decimal points.

Number of Customers	5	10	15	20	25
Total rental cost					
Cost per customer					

b. Is the cost of renting the fortune-telling booth fixed or variable relative to the number of customers?

Since the IRK is composed in Microsoft Word, instructors can easily "cut and paste" the materials to customize content for their particular classes. Materials can be delivered to students through electronic files or printouts. Also, the Word format enables the development of customized electronic overhead slides with pop-up solutions, thereby eliminating the need for chalkboard presentations. Not only will you avoid the annoying chalk dust, but your students will appreciate a presentation that perfectly matches their working paper forms. The IRK contains a video that shows you how to implement this very attractive feature.

ABOUT THE AUTHORS



Courtesy of Thomas Edmonds.

Thomas P. Edmonds

Thomas P. Edmonds, Ph.D., is Professor Emeritus in the Department of Accounting at the University of Alabama at Birmingham (UAB). He has been actively involved in teaching accounting principles throughout his academic career. Dr. Edmonds has coordinated the accounting principles courses at the University of Houston and UAB. He has taught introductory accounting in mass sections and in distance learning programs. He has received five prestigious teaching awards, including the Alabama Society of CPAs' Outstanding Educator Award, the UAB President's Excellence in Teaching Award, and the distinguished Ellen Gregg Ingalls Award for excellence in classroom teaching. He has written numerous articles that have appeared in many publications, including *Issues in Accounting,* the *Journal of Accounting Education, Advances in Accounting Education, Accounting Education: A Journal of Theory, Practice and Research,* the *Accounting Review, Advances in Accounting,* the *Journal of Accountancy, Management Accounting,* the *Journal of Commercial Bank Lending,* the *Banker's Magazine,* and the *Journal of Accounting, Auditing, and Finance*. Dr. Edmonds has served as a member of the editorial board for *Advances in Accounting: Teaching and Curriculum Innovations* and *Issues in Accounting Education.* He has published five textbooks, five practice problems (including two computerized problems), and a variety of supplemental materials, including study guides, work papers, and solutions manuals. Dr. Edmonds's writing is influenced by a wide range of business experience. He is a successful entrepreneur. He has worked as a management accountant for Refrigerated Transport, a trucking company. Dr. Edmonds also worked in the not-for-profit sector as a commercial lending officer for the Federal Home Loan Bank. In addition, he has acted as a consultant to major corporations, including First City Bank of Houston (now Citi Bank), AmSouth Bank in Birmingham (now Regions Bank), Texaco, and Cortland Chemicals. Dr. Edmonds began his academic training at Young Harris Community College in Young Harris, Georgia. He received a B.B.A. degree with a major in finance from Georgia State University in Atlanta, Georgia. He obtained an M.B.A. degree with a concentration in finance from St. Mary's University in San Antonio, Texas. His Ph.D. degree with a major in accounting was awarded by Georgia State University. Dr. Edmonds's work experience and academic training have enabled him to bring a unique user perspective to this textbook.

Christopher T. Edmonds

Christopher T. Edmonds, PhD, is an Associate Professor in the Department of Accounting and Finance at the UAB Collat School of Business. He is the course coordinator for the face-to-face and online principles of accounting courses. Dr. Edmonds specializes in teaching and developing engaging face-to-face and online introductory accounting courses. He is a frequent speaker at conferences and universities on best teaching practices and has delivered over 20 professional teaching workshops. His passion for helping students learn inspired him to create hundreds of short videos teaching the fundamental concepts of accounting. This work led to the publication of the first interactive video textbook for introductory accounting. Dr. Edmonds has received seven prestigious teaching awards, including the UAB President's Outstanding Teaching Award, UAB Faculty Student Success Award, UAB Transformative Online Course Award, UAB Loudell Ellis Robinson Classroom Teaching Award, UAB Disability Support Recognition Award, and the Virginia Tech Favorite Faculty Award. He has published four textbooks and has written numerous articles that have appeared in publications, including *The Accounting Review, Journal of Accounting and Public Policy, Issues in Accounting Education, Advances in Accounting Education, Advances in Accounting,* and *Review of Quantitative Finance and Accounting*. He currently serves on several editorial boards. Dr. Edmonds started his career as a web application developer creating software solutions to put newspapers online. He began his academic training at Colorado State University. He obtained an M.B.A. from UAB. His Ph.D. with a major in accounting was awarded by Virginia Polytechnic Institute and State University. Check out his blog at **www.accountingstepbystep.com.**

Mark A. Edmonds

Courtesy of Mark Edmonds.

Mark A. Edmonds, Ph.D., CPA, is an Assistant Professor in the Department of Accounting and Finance at the University of Alabama at Birmingham. He has taught principles and advanced accounting classes in face-to-face, flipped, and online formats. Dr. Edmonds began his career providing assurance services for the internationally recognized accounting firm Ernst & Young. At the conclusion of his professional service, he obtained his Ph.D. from Southern Illinois University–Carbondale. He serves as the education adviser on the board of the Institute of Internal Auditors, Birmingham Chapter. Dr. Edmonds's research focuses on alternative learning strategies and auditor decision making.

Jennifer E. Edmonds

Courtesy of Jennifer Edmonds.

Jennifer Echols Edmonds, Ph.D., is an Associate Professor at the University of Alabama at Birmingham (UAB) Collat School of Business. Her primary teaching areas are financial and managerial accounting. She has experience teaching in the undergraduate, MAC, and MBA programs and currently serves as the course coordinator for the managerial accounting sequence at UAB. She has received the UAB Loudell Ellis Robinson Classroom Teaching Award, as well as teaching grants from Deloitte, UAB, and Virginia Tech. She created teaching resources for incorporating International Financial Reporting Standards into intermediate accounting. The teaching resources were published online at the American Accounting Association. Dr. Edmonds is also active in the research community. She has published articles in prominent journals such as *Journal of Accounting and Public Policy, Advances in Accounting, Research in Accounting Regulation,* and *The CPA Journal*. Dr. Edmonds received a bachelor's degree in accounting from Birmingham-Southern College and completed her master's and Ph.D. degrees in accounting at Virginia Polytechnic Institute and State University.

Philip R. Olds

Courtesy of Philip Olds.

Professor Olds is Associate Professor of Accounting at Virginia Commonwealth University (VCU). He serves as the coordinator of the introduction to accounting courses at VCU. Professor Olds received his A.S. degree from Brunswick Junior College in Brunswick, Georgia (now Costal Georgia College). He received a B.B.A. in accounting from Georgia Southern College (now Georgia Southern University) and his M.P.A. and Ph.D. degrees are from Georgia State University. After graduating from Georgia Southern, he worked as an auditor with the U.S. Department of Labor in Atlanta, Georgia. A former CPA in Virginia, Professor Olds has published articles in various professional journals and presented papers at national and regional conferences. He also served as the faculty adviser to the VCU chapter of Beta Alpha Psi for five years. In 1989, he was recognized with an Outstanding Faculty Vice-President Award by the national Beta Alpha Psi organization. Professor Olds has received both the Distinguished Teaching Award and the Distinguished Service Award from the VCU School of Business. Most recently, he received the university's award for maintaining High Ethical and Academic Standards While Advocating for Student-Athletes and Their Quest Towards a Degree.

HOW DOES EDMONDS HELP

"This text is the 'gold standard' for managerial accounting courses both in undergraduate business programs and MBA programs. I appreciate that it's scalable in that I can teach a variety of groups of students from the same text by altering the exercises, problems, cases, Connect exercises, and supplemental materials I provide the students."

ROBERT CORNELL, UNIVERSITY OF NEVADA, LAS VEGAS

"I believe this text is a bit easier and more interesting to read than many other Managerial texts. Plus, it has a heavy focus on real business decision making."

SCOTT PAXTON, VALENCIA COLLEGE

PRINCIPAL FEATURES

Our goal in writing this text is to teach students managerial accounting concepts that will improve their ability to make sound business decisions. The text differs from traditional managerial accounting books in the following ways.

Decision-Making Skills Emphasized

Notice that the table of contents places decision making first. Procedural topics like manufacturing cost flow, job order, and process costing are placed at the end of our text, while traditional books discuss these topics early. We put decision making front and center because we believe it is important. Beyond placement, we introduce topics within a decision-making context. For example, in Chapter 2 we introduce "cost behavior" within the context of operating leverage. We focus on how cost behavior affects decisions such as "Am I sure enough that volume will be high that I want to employ a fixed cost structure, or do I want to reduce operating leverage risk by building a variable cost structure?" Further, notice that Chapter 3 is written around a realistic business scenario where a management team is using CVP data to evaluate

STUDENTS SEE THE BIG PICTURE?

decision alternatives. Indeed, all chapters are written in a narrative style with content focused on decision-making scenarios. This makes the text easy to read and interesting as well as informative.

Service Companies Emphasized

For example, our budgeting chapter uses a merchandising business while most traditional texts use a manufacturing company. Using a service company is not only more relevant but also simplifies the learning environment, thereby making it easier for students to focus on budgeting concepts rather than procedural details. This is only one example of our efforts to place greater emphasis on service companies.

Isolating Concepts

How do you promote student understanding of concepts? We believe new concepts should be isolated and introduced individually in decision-making contexts. For example, we do not include a chapter covering cost terminology (usually Chapter 2 in traditional approaches). We believe introducing a plethora of detached cost terms in a single chapter is ineffective, as students have no conceptual framework for the new vocabulary.

Interrelationships between Concepts

Although introducing concepts in isolation enhances student comprehension of them, students must ultimately understand how business concepts interrelate. The text is designed to build knowledge progressively, leading students to integrate the concepts they have learned independently. For example, see how the concept of relevance is compared on page 255 of Chapter 6 to the concept of cost behavior (which is explained in Chapter 2) and how the definitions of direct costs are contrasted on page 154 of Chapter 4 with the earlier introduced concepts of cost behavior. Also, Chapters 1 through 12 include a comprehensive problem designed to integrate concepts across chapters. The problem builds in each successive chapter with the same company experiencing new conditions that require the application of concepts across chapters.

Context-Sensitive Nature of Terminology

Students can be confused when they discover the exact same cost can be classified as fixed, variable, direct, indirect, relevant, or not relevant. For example, the cost of a store manager's salary is fixed regardless of the number of customers that shop in the store. The cost of store manager salaries, however, is variable relative to the number of stores a company operates. The salary costs are directly traceable to particular stores but not to particular sales made in a store. The salary cost is relevant when deciding whether to eliminate a given store but not relevant when deciding whether to eliminate a department within a store. Students must learn to identify the circumstances that determine the classification of costs. The chapter material,

"This book is excellent for the non-accounting major because it is user-oriented. This book actually interests non-accounting majors. I have seen many students actually get excited about what they are learning because they can relate the information to the real world."

JACQUELINE BURKE, HOFSTRA UNIVERSITY

"I think Edmonds' approach to introducing concepts, and his flow of topics, is the best of any accounting textbook I have used. His approach allows me to emphasize a piece of the puzzle at a time [while] building to the whole picture."

GARY REYNOLDS, OZARK TECHNICAL COMMUNITY COLLEGE

"One of the reasons I chose the Edmonds textbooks is because I have always enjoyed the 'horizontal statements model' used by Edmonds in his financial accounting textbooks. In my opinion, it gives the students a much better picture of how each business transaction affects the financial statements."

JEROLD K. BRAUN, DAYTONA STATE COLLEGE

exercises, and problems in this text are designed to encourage students to analyze the decision-making context rather than to memorize definitions. ATC 4-1 in Chapter 4 illustrates how the text teaches students to interpret different decision-making environments.

ANALYZE, THINK, COMMUNICATE

ATC 4-1 Business Applications Case ***Allocating fixed costs at HealthSouth Corporation***

HealthSouth Corporation claims to be "the nation's leading owner and operator of inpatient rehabilitation hospitals and a leader in home-based care (home health and hospice), offering services in 36 states and Puerto Rico." As of December 31, 2017, the company derived 96.7 percent of its hospital revenues from inpatient services. During 2017 it treated and discharged 171,922 patients, and the average length of a patient's stay was 12.7 days. If one patient occupying one bed for one day represents a "patient-day," then HealthSouth produced 2,183,409 patient-days of output during 2017 (171,922 × 12.7 = 2,183,409). During this period, HealthSouth incurred depreciation and amortization costs of $183,800,000. For the purpose of this problem, assume that all of this is depreciation that is related to the property, plant, and equipment of inpatient hospitals.

Required

a. Indicate whether the depreciation cost is a:
(1) Product (i.e., patient) cost or a general, selling, and administrative cost.
(2) Fixed or variable cost relative to the volume of production.
(3) Direct or indirect cost if the cost object is the cost of patient services provided in 2017.

b. Assume that HealthSouth incurred depreciation of $15,320,000 during each month of the 2017 fiscal year, but that it produced 196,000 patient-days of service during February and 166,000 patient-days of service during March. Based on monthly costs and service levels, what was the average amount of depreciation cost per patient-day of service provided during each of these two months, assuming each patient-day of service was charged the same amount of depreciation?

"Given the current economic environment, [Edmonds'] extensive coverage of corporate governance is critical to accounting."

PATRICK STEGMAN, COLLEGE OF LAKE COUNTY

Corporate Governance

Accountants have always recognized the importance of ethical conduct. However, the enactment of Sarbanes–Oxley (SOX) has signaled the need for educators to expand the subject of ethics to a broader concept of corporate governance. We focus our expanded coverage on four specific areas, including:

- Quality of Earnings—We explain how financial statements can be manipulated.
- The *Statement of Ethical Professional Practice* for Management Accountants—Our coverage focuses on the policies and practices promulgated by the Institute of Management Accountants.
- The Fraud Triangle—We discuss the three common features of criminal and ethical misconduct, including opportunity, pressure, and rationalization.
- Specified Features of Sarbanes–Oxley (SOX)—We cover four key provisions of SOX that are applicable to managerial accountants.

Corporate governance is introduced in Chapter 1. This chapter includes four exercises, two problems, and one case that relate to the subject. Thereafter, a corporate governance case is included in every chapter, thereby enabling continuing coverage of this critically important topic.

Excel Spreadsheets

Spreadsheet applications are essential to contemporary accounting practice. Students must recognize the power of spreadsheet software and know how accounting data are presented in spreadsheets. We discuss Microsoft Excel spreadsheet applications where appropriate throughout the text. In most instances, the text illustrates actual spreadsheets. End-of-chapter materials include problems students can complete using spreadsheet software. A sample of the logo used to identify problems suitable for Excel spreadsheet solutions is shown here.

Problem 1-24A *Service versus manufacturing companies*

LO 1-4

Wang Company began operations on January 1, Year 1, by issuing common stock for $70,000 cash. During Year 1, Wang received $88,000 cash from revenue and incurred costs that required $65,000 of cash payments.

Required

Prepare a GAAP-based income statement and balance sheet for Wang Company for Year 1, under each of the following independent scenarios.

a. Wang is a promoter of rock concerts. The $65,000 was paid to provide a rock concert that produced the revenue.

b. Wang is in the car rental business. The $65,000 was paid to purchase automobiles. The automobiles were purchased on January 1, Year 1, and have five-year useful lives, with no expected salvage value. Wang uses straight-line depreciation. The revenue was generated by leasing the automobiles.

c. Wang is a manufacturing company. The $65,000 was paid to purchase the following items:

(1) Paid $10,000 cash to purchase materials that were used to make products during the year.

(2) Paid $20,000 cash for wages of factory workers who made products during the year.

(3) Paid $5,000 cash for salaries of sales and administrative employees.

(4) Paid $30,000 cash to purchase manufacturing equipment. The equipment was used solely to make products. It had a three-year life and a $6,000 salvage value. The company uses straight-line depreciation.

CHECK FIGURES

a. Net income: $23,000

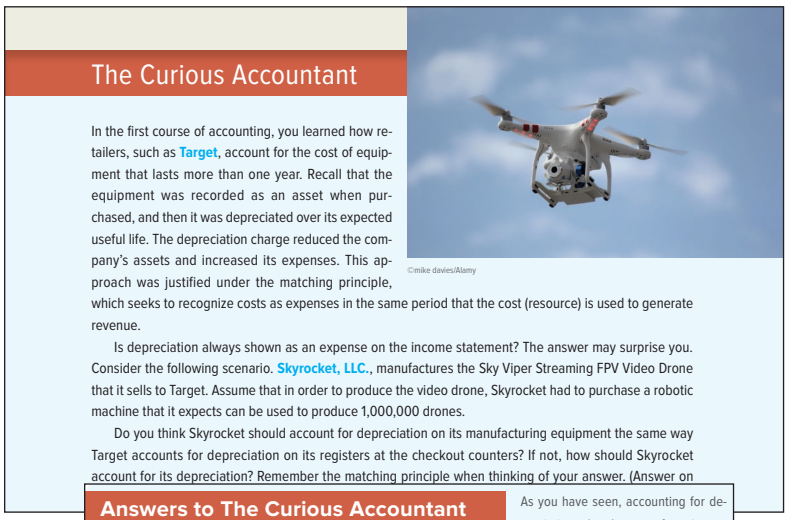
b. Total assets: $145,000

c. Net income: $54,500

"[The text is] easy to read and it is innovative for including Excel spreadsheets and the accounting template."

WEDE ELLIOTT-BROWNELL, SOUTHERN UNIVERSITY/A&M COLLEGE

HOW DOES EDMONDS



The Curious Accountant

©mike davies/Alamy

In the first course of accounting, you learned how retailers, such as **Target**, account for the cost of equipment that lasts more than one year. Recall that the equipment was recorded as an asset when purchased, and then it was depreciated over its expected useful life. The depreciation charge reduced the company's assets and increased its expenses. This approach was justified under the matching principle, which seeks to recognize costs as expenses in the same period that the cost (resource) is used to generate revenue.

Is depreciation always shown as an expense on the income statement? The answer may surprise you. Consider the following scenario. **Skyrocket, LLC.**, manufactures the Sky Viper Streaming FPV Video Drone that it sells to Target. Assume that in order to produce the video drone, Skyrocket had to purchase a robotic machine that it expects can be used to produce 1,000,000 drones.

Do you think Skyrocket should account for depreciation on its manufacturing equipment the same way Target accounts for depreciation on its registers at the checkout counters? If not, how should Skyrocket account for its depreciation? Remember the matching principle when thinking of your answer. (Answer on

Answers to The Curious Accountant

As you have seen, accounting for depreciation related to manufacturing assets is different from accounting for depreciation for nonmanufacturing assets. Depreciation on the checkout equipment at **Target** is recorded as depreciation expense. Depreciation on manufacturing equipment at **Skyrocket** is considered a product cost. It is included first as part of the cost of inventory and eventually as part of the expense, cost of goods sold. Recording depreciation on manufacturing equipment as an inventory cost is simply another example of the matching principle, because the cost does not become an expense until revenue from the product sale is recognized.

FOCUS ON INTERNATIONAL ISSUES

FINANCIAL ACCOUNTING VERSUS MANAGERIAL ACCOUNTING—AN INTERNATIONAL PERSPECTIVE

©Adam Roundtree/Bloomberg/Getty Images

This chapter has already explained some of the conceptual differences between financial and managerial accounting, but these differences have implications for international businesses as well. With respect to financial accounting, publicly traded companies in most countries must follow the generally accepted accounting principles (GAAP) for their country, but these rules can vary from country to country. Generally, companies that are audited under the auditing standards of the United States follow the standards established by the Financial Accounting Standards Board (FASB). Most companies located outside the United States follow the standards established by the International Accounting Standards Board (IASB). For example, the United States is one of very few countries whose GAAP allow the use of the LIFO inventory cost flow assumption.

Conversely, most of the managerial accounting concepts introduced in this course can be used by businesses in any country. For example, *activity-based costing (ABC)* is a topic addressed in Chapter 5 and is used by many companies in the United States. Additionally, while accrual-based earnings can differ depending on whether a company uses U.S. GAAP or IFRS, cash flow will not. As you will learn in this course, managerial accounting decisions often focus on cash flow versus accrual-based income. Therefore, managerial accounting concepts are more universal than financial accounting rules.

CHECK YOURSELF 1.5

A strike at a **General Motors** brake plant caused an almost immediate shutdown of many of the company's assembly plants. What could have caused such a rapid and widespread shutdown?

Answer A rapid and widespread shutdown could have occurred because General Motors uses a just-in-time inventory system. With a JIT inventory system, there is no stockpile of inventory to draw on when strikes or other forces disrupt inventory deliveries. This illustrates a potential negative effect of using a just-in-time inventory system.

Real-World Examples

This text provides a variety of thought-provoking, real-world examples of managerial accounting as an essential part of the management process.

The Curious Accountant

Each chapter opens with a short vignette that sets the stage and helps pique student interest. These vignettes pose a question about a real-world accounting issue related to the topic of the chapter. The answer to the question appears in a separate sidebar a few pages further into the chapter.

Focus on International Issues

These boxed inserts expose students to international issues in accounting.

Check Yourself

These short question/answer features occur at the end of each main topic and ask students to stop and think about the material just covered. The answer is then given to provide immediate feedback before students go on to a new topic.

"I especially like the Check Yourself and A Look Back/A Look Forward features because they help students to review and refresh topics as they progress through the chapter."

ANNA L. LUSHER, SLIPPERY ROCK UNIVERSITY

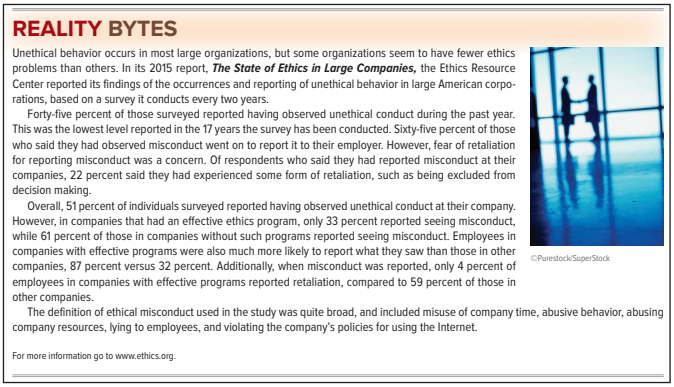
"The Curious Accountant, the real-world examples, and the Check Yourself boxes are unique features."

RONALD REED, UNIVERSITY OF NORTHERN COLORADO

MOTIVATE STUDENTS?

Reality Bytes

Real-world applications related to specific chapter topics are introduced through this feature. *Reality Bytes* may offer survey results, graphics, quotations from business leaders, and other supplemental topics that enhance opportunities for students to connect the text material to actual accounting practice.



REALITY BYTES

Unethical behavior occurs in most large organizations, but some organizations seem to have fewer ethics problems than others. In its 2015 report, ***The State of Ethics in Large Companies,*** the Ethics Resource Center reported its findings of the occurrences and reporting of unethical behavior in large American corporations, based on a survey it conducts every two years.

Forty-five percent of those surveyed reported having observed unethical conduct during the past year. This was the lowest level reported in the 17 years the survey has been conducted. Sixty-five percent of those who said they had observed misconduct went on to report it to their employer. However, fear of retaliation for reporting misconduct was a concern. Of respondents who said they had reported misconduct at their companies, 22 percent said they had experienced some form of retaliation, such as being excluded from decision making.

Overall, 51 percent of individuals surveyed reported having observed unethical conduct at their company. However, in companies that had an effective ethics program, only 33 percent reported seeing misconduct, while 61 percent of those in companies without such programs reported seeing misconduct. Employees in companies with effective programs were also much more likely to report what they saw than those in other companies, 87 percent versus 32 percent. Additionally, when misconduct was reported, only 4 percent of employees in companies with effective programs reported retaliation, compared to 59 percent of those in other companies.

The definition of ethical misconduct used in the study was quite broad, and included misuse of company time, abusive behavior, abusing company resources, lying to employees, and violating the company's policies for using the Internet.

For more information go to www.ethics.org.

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Chapter Focus Company

Each chapter introduces important managerial accounting topics within the context of a realistic company. Students see the impact of managerial accounting decisions on the company as they work through the chapter. When the Focus Company is presented in the chapter, its logo is shown so the students see its application to the text topics.

"By following one company through several situations as the chapter progresses, more of a 'real world' decision-making process is obtained."

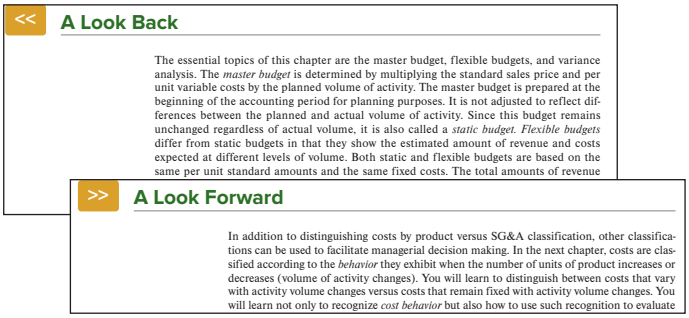
ALEECIA HIBBETS, UNIVERSITY OF LOUISIANA AT MONROE

"I like the different approaches to have real-world examples and the problems within the chapter that show how to do things."

CHRISTINA WILLIAMS, NORTHEASTERN UNIVERSITY

A Look Back/A Look Forward

Students need a roadmap to make sense of where the chapter topics fit into the "whole" picture. *A Look Back* reviews the chapter material and *A Look Forward* introduces students to what is to come.



<< A Look Back

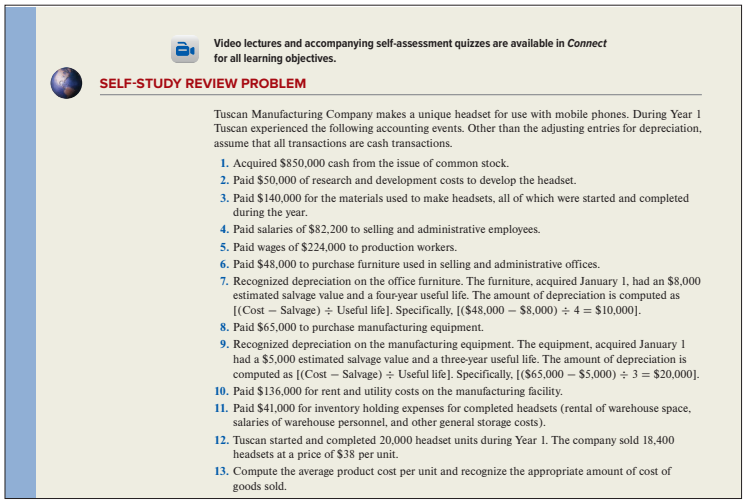
The essential topics of this chapter are the master budget, flexible budgets, and variance analysis. The *master budget* is determined by multiplying the standard sales price and per unit variable costs by the planned volume of activity. The master budget is prepared at the beginning of the accounting period for planning purposes. It is not adjusted to reflect differences between the planned and actual volume of activity. Since this budget remains unchanged regardless of actual volume, it is also called a *static budget. Flexible budgets* differ from static budgets in that they show the estimated amount of revenue and costs expected at different levels of volume. Both static and flexible budgets are based on the same per unit standard amounts and the same fixed costs. The total amounts of revenue

>> A Look Forward

In addition to distinguishing costs by product versus SG&A classification, other classifications can be used to facilitate managerial decision making. In the next chapter, costs are classified according to the *behavior* they exhibit when the number of units of product increases or decreases (volume of activity changes). You will learn to distinguish between costs that vary with activity volume changes versus costs that remain fixed with activity volume changes. You will learn not only to recognize *cost behavior* but also how to use such recognition to evaluate

HOW ARE CHAPTER CONCEPTS

Regardless of the instructional approach, there is no shortcut to learning accounting. Students must practice to master basic accounting concepts. The text includes an ample supply of practice materials, exercises, and problems.

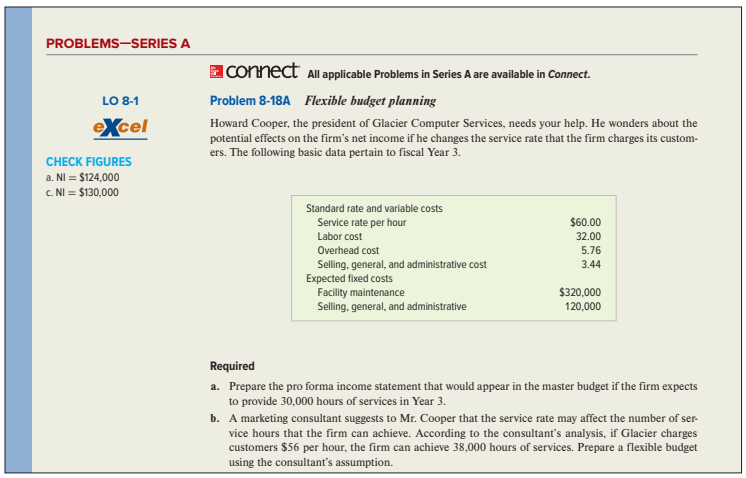


Video lectures and accompanying self-assessment quizzes are available in *Connect* for all learning objectives.

SELF-STUDY REVIEW PROBLEM

Tuscan Manufacturing Company makes a unique headset for use with mobile phones. During Year 1 Tuscan experienced the following accounting events. Other than the adjusting entries for depreciation, assume that all transactions are cash transactions.

1. Acquired $850,000 cash from the issue of common stock.
2. Paid $50,000 of research and development costs to develop the headset.
3. Paid $140,000 for the materials used to make headsets, all of which were started and completed during the year.
4. Paid salaries of $82,200 to selling and administrative employees.
5. Paid wages of $224,000 to production workers.
6. Paid $48,000 to purchase furniture used in selling and administrative offices.
7. Recognized depreciation on the office furniture. The furniture, acquired January 1, had an $8,000 estimated salvage value and a four-year useful life. The amount of depreciation is computed as [(Cost − Salvage) ÷ Useful life]. Specifically, [($48,000 − $8,000) ÷ 4 = $10,000].
8. Paid $65,000 to purchase manufacturing equipment.
9. Recognized depreciation on the manufacturing equipment. The equipment, acquired January 1 had a $5,000 estimated salvage value and a three-year useful life. The amount of depreciation is computed as [(Cost − Salvage) ÷ Useful life]. Specifically, [($65,000 − $5,000) ÷ 3 = $20,000].
10. Paid $136,000 for rent and utility costs on the manufacturing facility.
11. Paid $41,000 for inventory holding expenses for completed headsets (rental of warehouse space, salaries of warehouse personnel, and other general storage costs).
12. Tuscan started and completed 20,000 headset units during Year 1. The company sold 18,400 headsets at a price of $38 per unit.
13. Compute the average product cost per unit and recognize the appropriate amount of cost of goods sold.



PROBLEMS—SERIES A

connect All applicable Problems in Series A are available in *Connect*.

LO 8-1

eXcel

CHECK FIGURES
a. NI = $124,000
c. NI = $130,000

Problem 8-18A *Flexible budget planning*

Howard Cooper, the president of Glacier Computer Services, needs your help. He wonders about the potential effects on the firm's net income if he changes the service rate that the firm charges its customers. The following basic data pertain to fiscal Year 3.

Standard rate and variable costs	
Service rate per hour	$60.00
Labor cost	32.00
Overhead cost	5.76
Selling, general, and administrative cost	3.44
Expected fixed costs	
Facility maintenance	$320,000
Selling, general, and administrative	120,000

Required

a. Prepare the pro forma income statement that would appear in the master budget if the firm expects to provide 30,000 hours of services in Year 3.
b. A marketing consultant suggests to Mr. Cooper that the service rate may affect the number of service hours that the firm can achieve. According to the consultant's analysis, if Glacier charges customers $56 per hour, the firm can achieve 38,000 hours of services. Prepare a flexible budget using the consultant's assumption.

Self-Study Review Problem

These representative example problems include a detailed, worked-out solution and provide another level of support for students before they work problems on their own. These review problems are included as animated audio presentations available in the *Connect Library*.

"End-of-chapter exercise and problem materials are varied and first rate."

DARLENE COARTS, UNIVERSITY OF NORTHERN IOWA

Exercise Series A & B and Problem Series A & B

There are two sets of problems and exercises, Series A and B. Instructors can assign one set for homework and use the other set for in-class work.

Check Figures

The figures provide a quick reference for students to check their progress in solving the problem. These are included for all problems in Series A.

Excel

Many exercises and problems can be solved using the Excel spreadsheet templates located in the *Connect Library*. A logo appears in the margins next to these exercises and problems for easy identification.

REINFORCED?

Analyze, Think, Communicate (ATC)

Each chapter includes an innovative section called Analyze, Think, Communicate (ATC). This section contains:

- **Writing Assignments**
- **Group Exercises**
- **Ethics Cases**
- **Internet Assignments**
- **Real Company Examples**

"The students also seem to like the ATC group assignments. These work very well as an in-class activity."

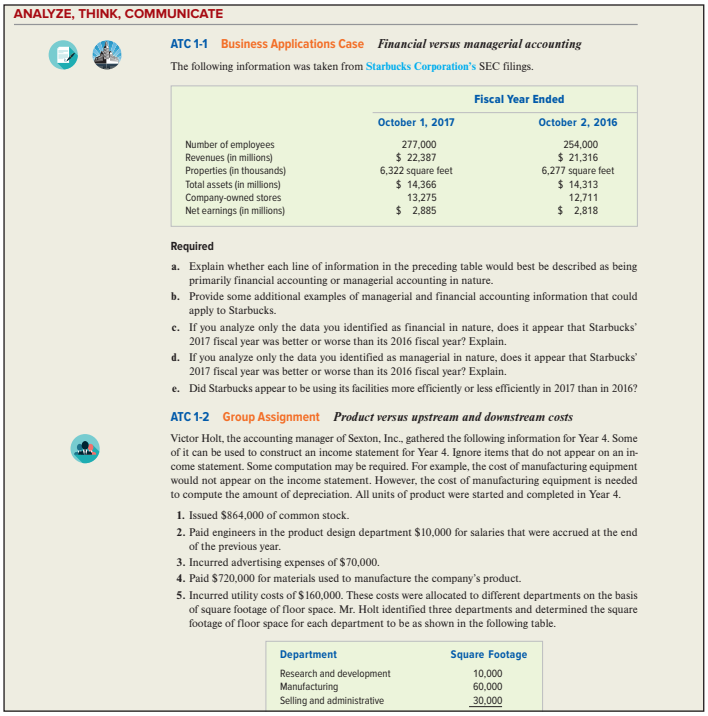
CASSIE BRADLEY, DALTON STATE COLLEGE

Mastering Excel and Using Excel

The Excel applications are used to make students comfortable with this analytical tool and to show its use in accounting.

"The innovative end-of-chapter materials are especially on target as an aid to improving student critical thinking and writing skills. The Excel spreadsheet applications are also excellent real-world activities."

DAN R. WARD, UNIVERSITY OF LOUISIANA, LAFAYETTE



ANALYZE, THINK, COMMUNICATE

ATC 1-1 Business Applications Case ***Financial versus managerial accounting***

The following information was taken from Starbucks Corporation's SEC filings.

	Fiscal Year Ended	
	October 1, 2017	October 2, 2016
Number of employees	277,000	254,000
Revenues (in millions)	$ 22,387	$ 21,316
Properties (in thousands)	6,322 square feet	6,277 square feet
Total assets (in millions)	$ 14,366	$ 14,313
Company-owned stores	13,275	12,711
Net earnings (in millions)	$ 2,885	$ 2,818

Required

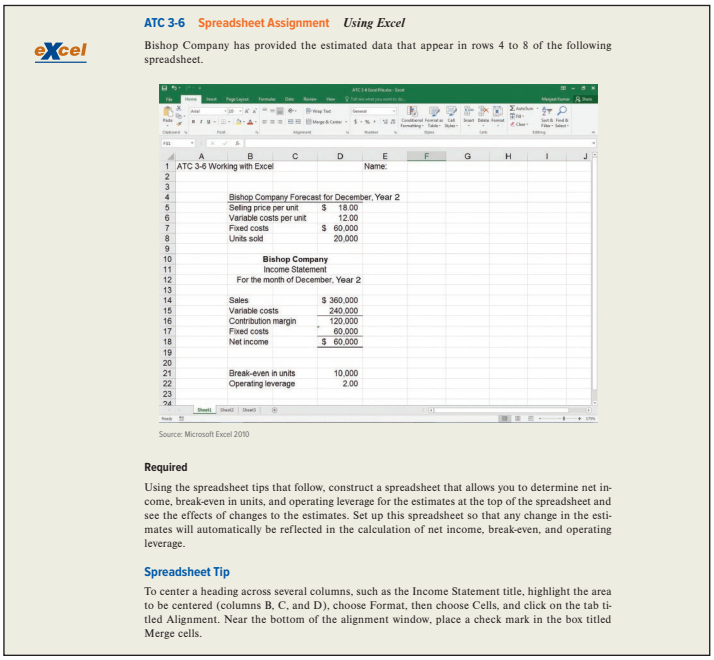
a. Explain whether each line of information in the preceding table would best be described as being primarily financial accounting or managerial accounting in nature.
b. Provide some additional examples of managerial and financial accounting information that could apply to Starbucks.
c. If you analyze only the data you identified as financial in nature, does it appear that Starbucks' 2017 fiscal year was better or worse than its 2016 fiscal year? Explain.
d. If you analyze only the data you identified as managerial in nature, does it appear that Starbucks' 2017 fiscal year was better or worse than its 2016 fiscal year? Explain.
e. Did Starbucks appear to be using its facilities more efficiently or less efficiently in 2017 than in 2016?

ATC 1-2 Group Assignment ***Product versus upstream and downstream costs***

Victor Holt, the accounting manager of Sexton, Inc., gathered the following information for Year 4. Some of it can be used to construct an income statement for Year 4. Ignore items that do not appear on an income statement. Some computation may be required. For example, the cost of manufacturing equipment would not appear on the income statement. However, the cost of manufacturing equipment is needed to compute the amount of depreciation. All units of product were started and completed in Year 4.

1. Issued $864,000 of common stock.
2. Paid engineers in the product design department $10,000 for salaries that were accrued at the end of the previous year.
3. Incurred advertising expenses of $70,000.
4. Paid $720,000 for materials used to manufacture the company's product.
5. Incurred utility costs of $160,000. These costs were allocated to different departments on the basis of square footage of floor space. Mr. Holt identified three departments and determined the square footage of floor space for each department to be as shown in the following table.

Department	Square Footage
Research and development	10,000
Manufacturing	60,000
Selling and administrative	30,000



ATC 3-6 Spreadsheet Assignment ***Using Excel***

Bishop Company has provided the estimated data that appear in rows 4 to 8 of the following spreadsheet.

	A	B	C	D	E
1	ATC 3-6 Working with Excel				Name:
2					
3					
4		Bishop Company Forecast for December, Year 2			
5		Selling price per unit		$	18.00
6		Variable costs per unit			12.00
7		Fixed costs		$	60,000
8		Units sold			20,000
9					
10		**Bishop Company**			
11		Income Statement			
12		For the month of December, Year 2			
13					
14		Sales		$	360,000
15		Variable costs			240,000
16		Contribution margin			120,000
17		Fixed costs			60,000
18		Net income		$	60,000
19					
20					
21		Break-even in units			10,000
22		Operating leverage			2.00
23					
24					

Source: Microsoft Excel 2010

Required

Using the spreadsheet tips that follow, construct a spreadsheet that allows you to determine net income, break-even in units, and operating leverage for the estimates at the top of the spreadsheet and see the effects of changes to the estimates. Set up this spreadsheet so that any change in the estimates will automatically be reflected in the calculation of net income, break-even, and operating leverage.

Spreadsheet Tip

To center a heading across several columns, such as the Income Statement title, highlight the area to be centered (columns B, C, and D), choose Format, then choose Cells, and click on the tab titled Alignment. Near the bottom of the alignment window, place a check mark in the box titled Merge cells.

WHAT WE DID TO MAKE IT BETTER!

WHAT'S NEW IN THIS EDITION?

We thank our reviewers and focus group participants for their suggestions for the ninth edition. Many of these suggestions motivated the changes described as follows.

Chapter 1 Management Accounting and Corporate Governance

- Revised learning objective seven.
- Updated *Curious Accountant* feature.
- Revised horizontal financial statement model format to include statement titles for greater clarity.
- Added algorithmic questions to self-assessment quizzes associated with video lectures for all learning objectives.
- Updated exercises, problems, and ATC cases.

Chapter 2 Cost Behavior, Operating Leverage, and Profitability Analysis

- Reorganized chapter content to improve readability.
- New *Curious Accountant* feature.
- Updated two *Reality Bytes* features.
- New *Focus on International Issues* feature.
- Added algorithmic questions to self-assessment quizzes associated with video lectures for all learning objectives.
- Updated exercises, problems, and ATC cases.

Chapter 3 Analysis of Cost, Volume, and Pricing to Increase Profitability

- New *Curious Accountant* feature.
- New *Focus on International Issues* feature.
- Updated *Reality Bytes* feature.
- Added algorithmic questions to self-assessment quizzes associated with video lectures for all learning objectives.
- Updated exercises, problems, and ATC cases.

Chapter 4 Cost Accumulation, Tracing, and Allocation

- Updated *Reality Bytes* feature.
- Added algorithmic questions to self-assessment quizzes associated with video lectures for all learning objectives.
- Updated exercises, problems, and ATC cases.

Chapter 5 Cost Management in an Automated Environment: ABC, ABM, and TQM

- Updated *Curious Accountant* feature.
- Updated *Reality Bytes* feature.
- New *Focus on International Issues* feature.
- Added algorithmic questions to self-assessment quizzes associated with video lectures for all learning objectives.
- Updated exercises, problems, and ATC cases.

Chapter 6 Relevant Information for Special Decisions

- Updated *Curious Accountant* feature.
- Updated *Reality Bytes* feature.
- Added New *Reality Bytes* feature.
- Added algorithmic questions to self-assessment quizzes associated with video lectures for all learning objectives.
- Updated exercises, problems, and ATC cases.

Chapter 7 Planning for Profit and Cost Control

- Updated *Focus on International Issues* feature.
- Updated *Reality Bytes* feature.
- Added algorithmic questions to self-assessment quizzes associated with video lectures for all learning objectives.
- Updated exercises, problems, and ATC cases.

Chapter 8 Performance Evaluation

- New *Curious Accountant* feature.
- Updated *Reality Bytes* feature.
- Added algorithmic questions to self-assessment quizzes associated with video lectures for all learning objectives.
- Updated exercises, problems, and ATC cases.

Chapter 9 Responsibility Accounting

- Updated *Curious Accountant* feature.
- Updated *Reality Bytes* feature.
- Revised *Focus on International Issues* feature.
- Added algorithmic questions to self-assessment quizzes associated with video lectures for all learning objectives.
- Updated exercises, problems, and ATC cases.

Chapter 10 Planning for Capital Investments

- Updated *Curious Accountant* feature.
- Added algorithmic questions to self-assessment quizzes associated with video lectures for all learning objectives.
- Updated exercises, problems, and ATC cases.

Chapter 11 Product Costing in Service and Manufacturing Entities

- Updated *Reality Bytes* feature.
- Added algorithmic questions to self-assessment quizzes associated with video lectures for all learning objectives.
- Updated exercises, problems, and ATC cases.

Chapter 12 Job-Order, Process, and Hybrid Costing Systems

- New *Curious Accountant* feature.
- New *Focus on International Issues* feature.
- Added algorithmic questions to self-assessment quizzes associated with video lectures for all learning objectives.
- Updated exercises, problems, and ATC cases.

Chapter 13 Financial Statement Analysis

- New *Curious Accountant* feature.
- New *Reality Bytes* feature.
- Added algorithmic questions to self-assessment quizzes associated with video lectures for all learning objectives.
- Updated exercises, problems, and ATC cases.

Chapter 14 Statement of Cash Flows

- New *Curious Accountant* feature.
- New *Reality Bytes* feature.
- Updated Exhibit 14.4.
- Added algorithmic questions to self-assessment quizzes associated with video lectures for all learning objectives.
- Updated exercises, problems, and ATC cases.

Assurance of Learning Ready

Many educational institutions today are focused on the notion of assurance of learning, an important element of some accreditation standards. *Fundamental Managerial Accounting Concepts,* 9e, is designed specifically to support your assurance of learning initiatives with a simple, yet powerful, solution. Each test bank question for *Fundamental Managerial Accounting Concepts,* 9e, maps to a specific chapter learning outcome/objective listed in the text. You can use *Connect* to easily query for learning outcomes/objectives that directly relate to the learning objectives for your course. You can then use the *Connect* reporting features to aggregate student results in similar fashion, making the collection and presentation of assurance of learning data simple and easy.

AACSB Statement

McGraw-Hill Education is a proud corporate member of AACSB International. Recognizing the importance and value of AACSB accreditation, we have sought to recognize the curricula guidelines detailed in AACSB standards for business accreditation by connecting selected questions in Edmonds 9e with the general knowledge and skill guidelines found in the AACSB standards. The statements contained in Edmonds 9e are provided only as a guide for the users of this text. The AACSB leaves content coverage and assessment clearly within the realm and control of individual schools, the mission of the school, and the faculty. The AACSB does also charge schools with the obligation of doing assessment against their own content and learning goals. While Edmonds 9e and its teaching package make no claim of any specific AACSB qualification or evaluation, we have labeled selected questions according to the six general knowledge and skills areas. The labels or tags within Edmonds 9e are as indicated. There are, of course, many more within the test bank, the text, and the teaching package which might be used as a "standard" for your course. However, the labeled questions are suggested for your consideration.

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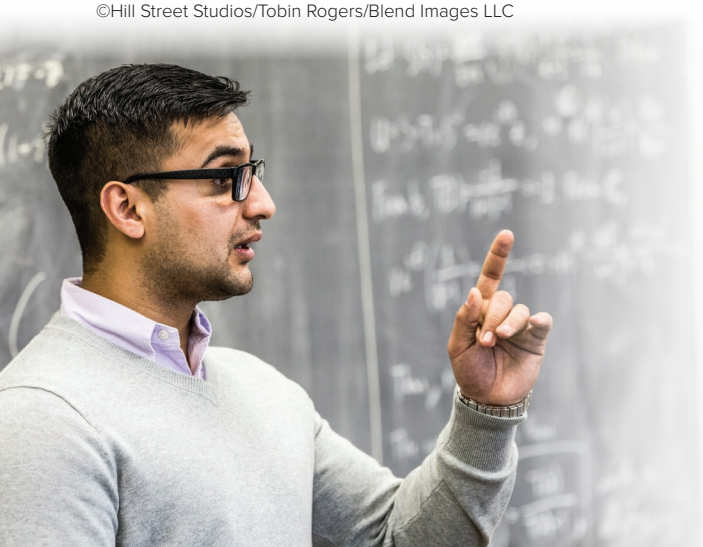

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>
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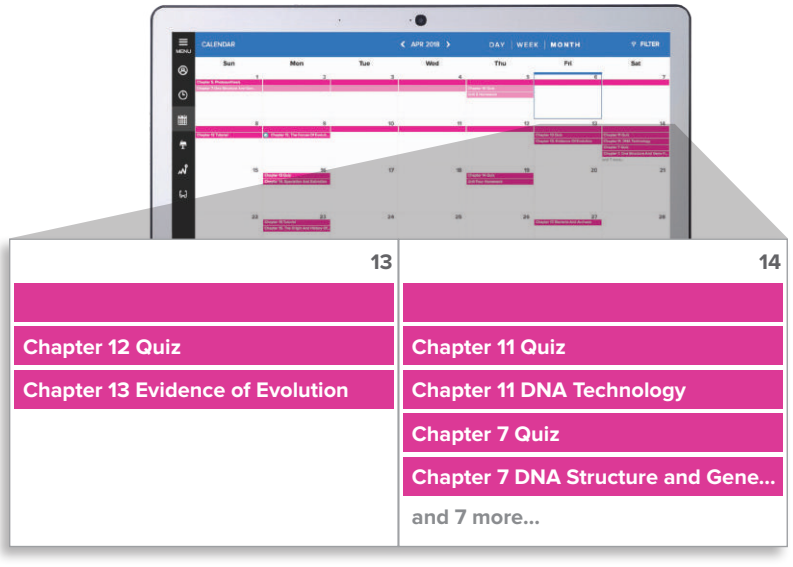

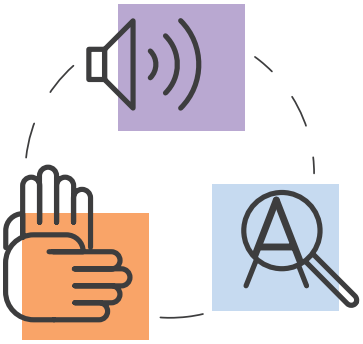

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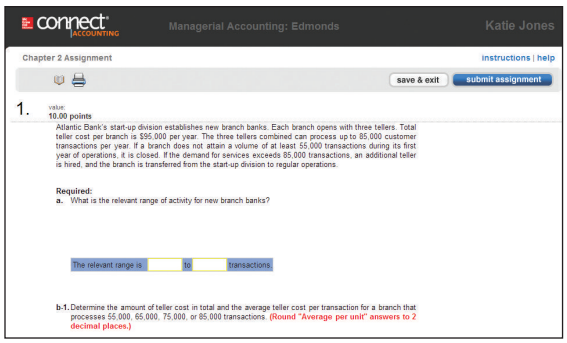
HOW CAN TECHNOLOGY HELP

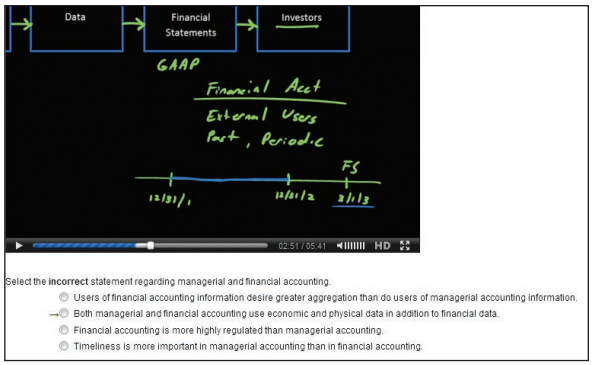


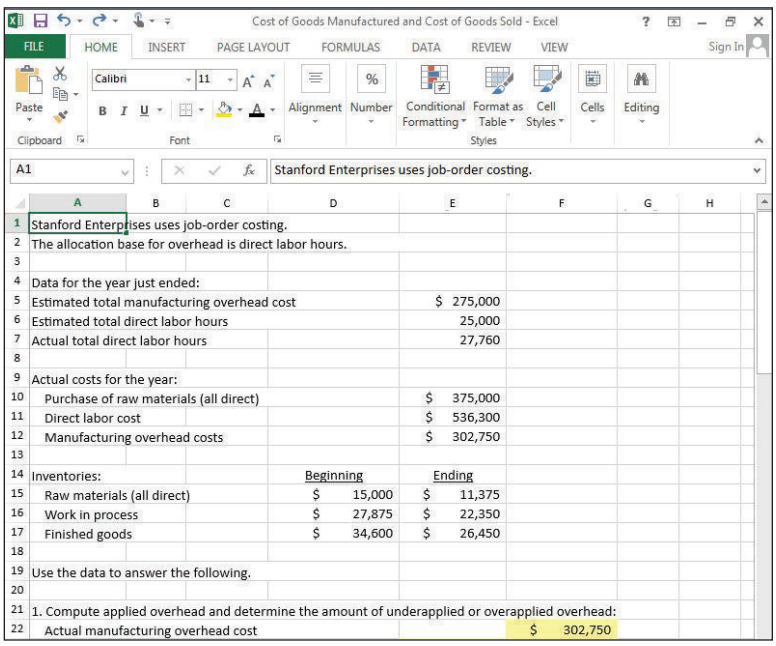
Online Assignments

Connect helps students learn more efficiently by providing feedback and practice material when and where they need it. *Connect* grades homework automatically and students benefit from the immediate feedback that they receive, particularly on any questions they may have missed. Also, select questions have been redesigned to test students' knowledge more fully. They now include tables for students to work through rather than requiring that all calculations be done offline.

Lecture Videos

One or more lecture videos are available for every learning objective introduced throughout the text. The videos have been developed by a member of the author team and have the touch and feel of a live lecture. The videos are accompanied by a set of self-assessment quizzes. Students can watch the videos and then test themselves to determine if they understand the material presented in the video. Students can repeat the process, switching back and forth between the video and self-assessment quizzes, until they are satisfied that they understand the material. Incorporating lecture videos as a resource for students to learn the material is great way to flip your classroom.





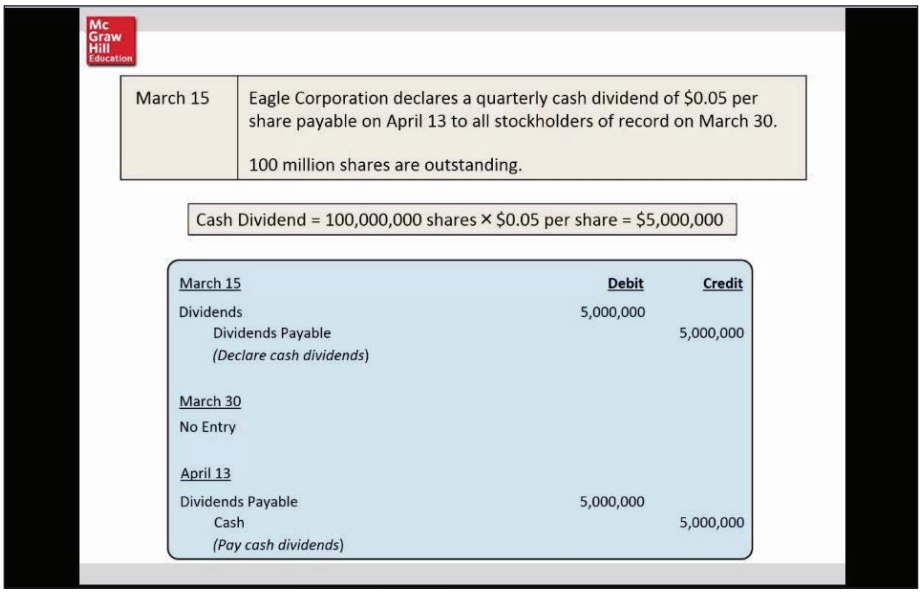
Excel Simulations

Simulated Excel Questions, assignable within *Connect*, allow students to practice their Excel skills—such as basic formulas and formatting—within the content of managerial accounting. These questions feature animated, narrated Help and Show Me tutorials (when enabled), as well as automatic feedback and grading for both students and professors.

IMPROVE STUDENT SUCCESS?

Guided Examples

The Guided Examples in *Connect* provide a narrated, animated, step-by-step walk-through of select exercises similar to those assigned. These short presentations can be turned on or off by instructors and provide reinforcement when students need it most.



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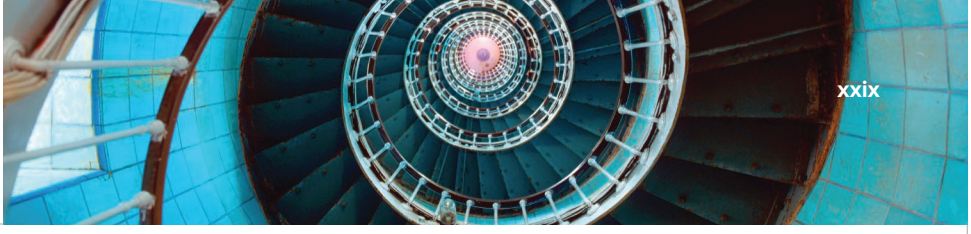

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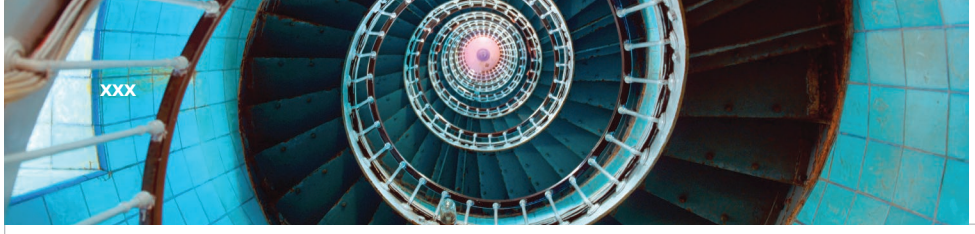

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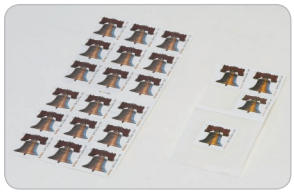

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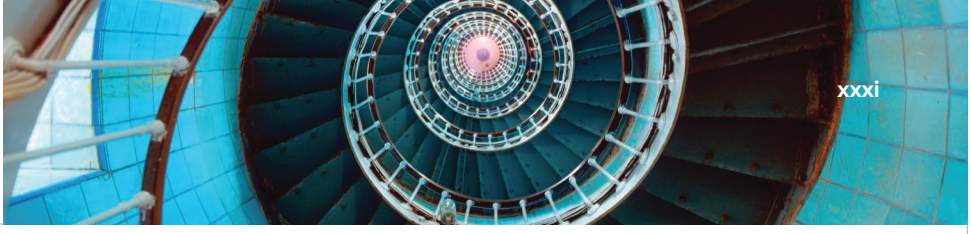

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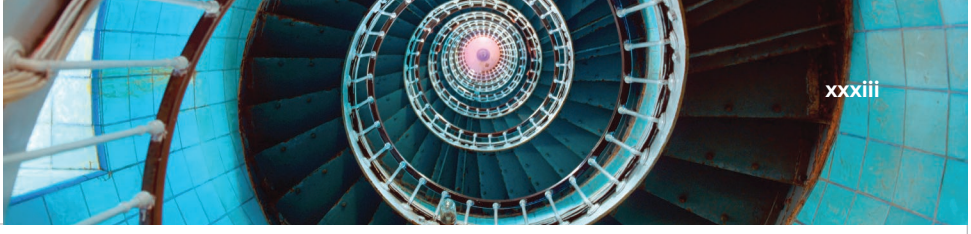

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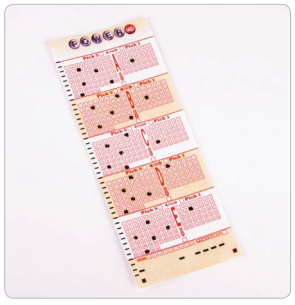

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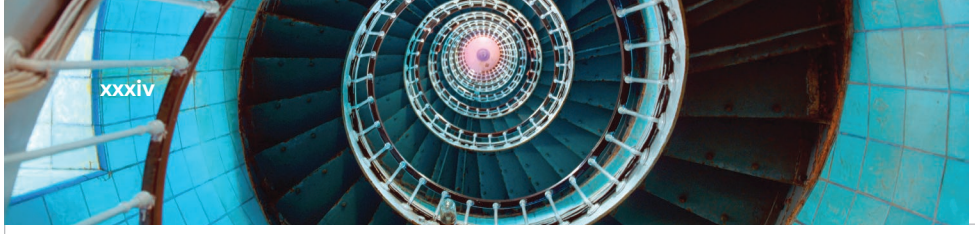

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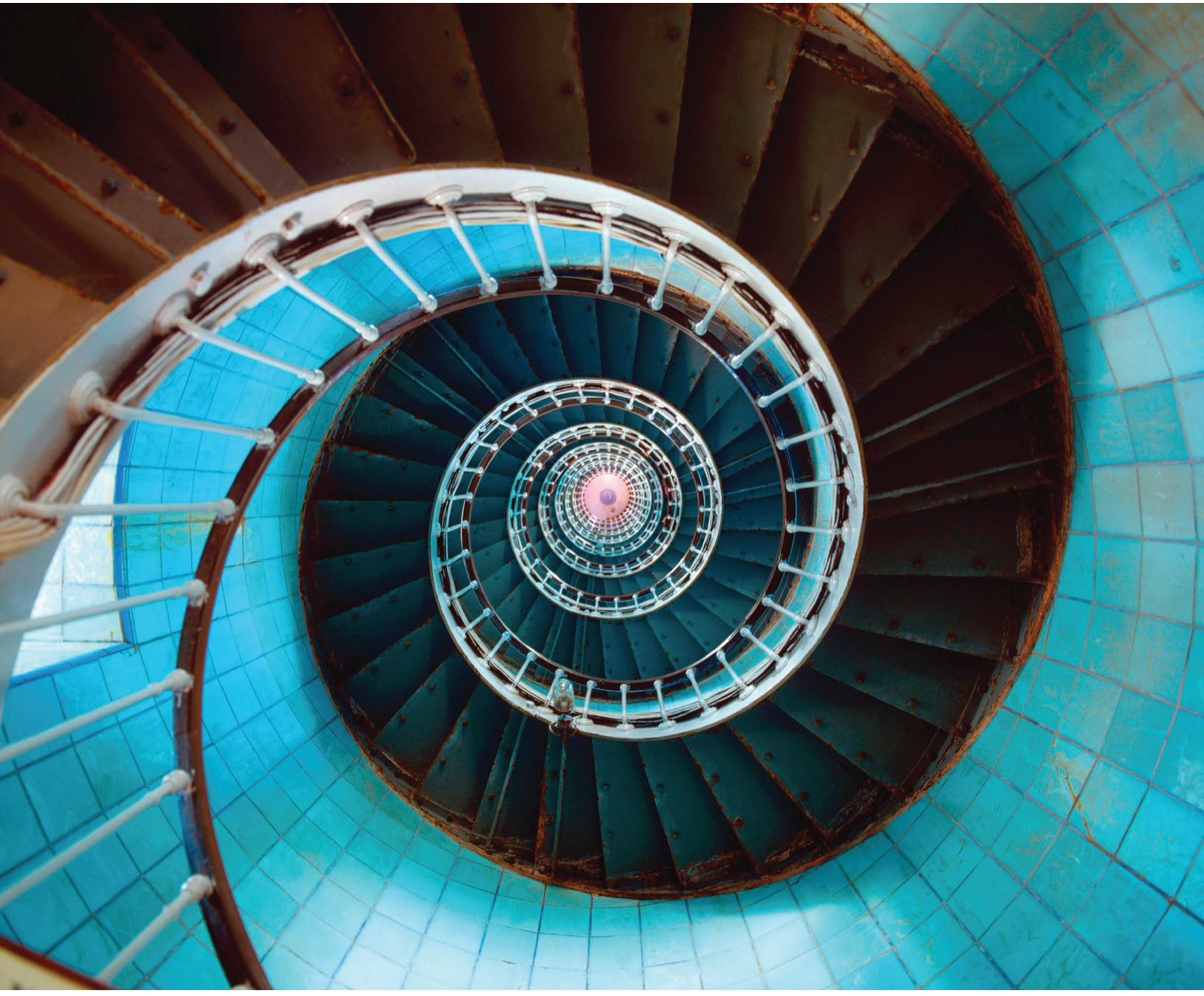
Fundamental Managerial Accounting Concepts



CHAPTER 1

Management Accounting and Corporate Governance

LEARNING OBJECTIVES

After you have mastered the material in this chapter, you will be able to:

LO 1-1 Distinguish between managerial and financial accounting.

LO 1-2 Identify the cost of manufacturing a product.

LO 1-3 Show how manufacturing product costs affect financial statements.

LO 1-4 Compare the treatment of upstream, midstream, and downstream costs in manufacturing, service, and merchandising companies.

LO 1-5 Show how just-in-time inventory can increase profitability.

LO 1-6 Identify the key components of corporate governance.

LO 1-7 Identify the key features of total quality management (TQM) and activity-based management (ABM). (Appendix).

Video lectures and accompanying self-assessment quizzes are available in Connect® for all learning objectives.

CHAPTER OPENING

Andy Grove, former CEO of **Intel Corporation**, is credited with the motto "Only the paranoid survive." Mr. Grove described a wide variety of concerns that made him paranoid. Specifically, he stated:

> I worry about products getting screwed up, and I worry about products getting introduced prematurely. I worry about factories not performing well, and I worry about having too many factories. I worry about hiring the right people, and I worry about morale slacking off. And, of course, I worry about competitors. I worry about other people figuring out how to do what we do better or cheaper, and displacing us with our customers.

Do Intel's historically based financial statements contain the information Mr. Grove needs? No. **Financial accounting** is not designed to satisfy all the information needs of business managers. Its scope is limited to the needs of external users such as investors and creditors. The field of accounting designed to meet the needs of internal users is called **managerial accounting.**

The Curious Accountant

©mike davies/Alamy

In the first course of accounting, you learned how retailers, such as **Target**, account for the cost of equipment that lasts more than one year. Recall that the equipment was recorded as an asset when purchased, and then it was depreciated over its expected useful life. The depreciation charge reduced the company's assets and increased its expenses. This approach was justified under the matching principle, which seeks to recognize costs as expenses in the same period that the cost (resource) is used to generate revenue.

Is depreciation always shown as an expense on the income statement? The answer may surprise you. Consider the following scenario. **Skyrocket, LLC.**, manufactures the Sky Viper Streaming FPV Video Drone that it sells to Target. Assume that in order to produce the video drone, Skyrocket had to purchase a robotic machine that it expects can be used to produce 1,000,000 drones.

Do you think Skyrocket should account for depreciation on its manufacturing equipment the same way Target accounts for depreciation on its registers at the checkout counters? If not, how should Skyrocket account for its depreciation? Remember the matching principle when thinking of your answer. (Answer on page 12.)

DIFFERENCES BETWEEN MANAGERIAL AND FINANCIAL ACCOUNTING

LO 1-1

Distinguish between managerial and financial accounting.

While the information needs of internal and external users overlap, the needs of managers generally differ from those of investors or creditors. Some distinguishing characteristics are discussed in the following section.

Users and Types of Information

Financial accounting provides information used primarily by investors, creditors, and others *outside* a business. In contrast, managerial accounting focuses on information used by executives, managers, and employees who work *inside* the business. These two user groups need different types of information.

Internal users need information to *plan, direct,* and *control* business operations. The nature of information needed is related to an employee's job level. Lower-level employees use nonfinancial information such as work schedules, store hours, and customer service policies. Moving up the organizational ladder, financial information becomes increasingly important. Middle managers use a blend of financial and nonfinancial information, while senior executives concentrate on financial data. To a lesser degree, senior executives also use general economic data and nonfinancial operating information. For example, an executive may consider the growth rate of the economy before deciding to expand the company's workforce.

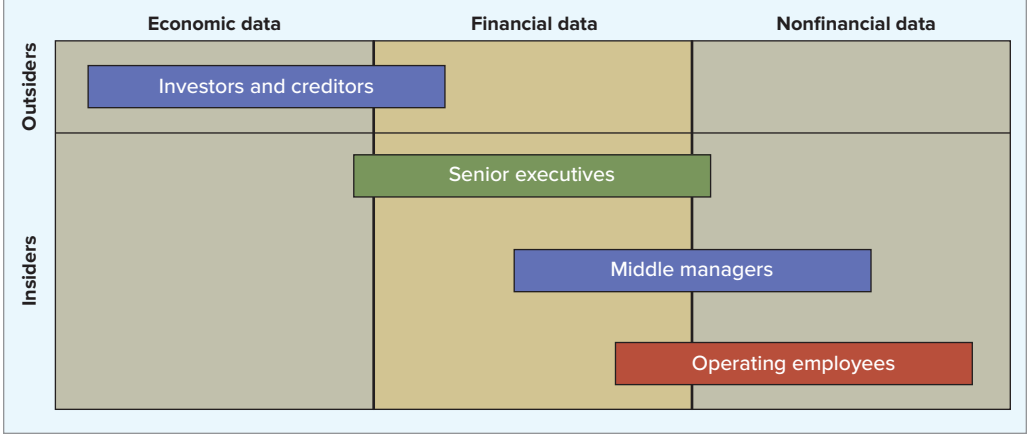
External users (investors and creditors) have greater needs for general economic information than do internal users. For example, an investor debating whether to purchase stock versus bond securities might be more interested in government tax policy than financial statement data. Exhibit 1.1 summarizes the information needs of different user groups.

Level of Aggregation

External users generally desire *global information* that reflects the performance of a company as a whole. For example, an investor is not so much interested in the performance of a particular Sears store as she is in the performance of **Sears Roebuck Company** versus that of **JCPenney Company**. In contrast, internal users focus on detailed information about specific subunits of the company. To meet the needs of the different user groups, financial accounting data are more aggregated than managerial accounting data.

EXHIBIT 1.1

Relationship between Type of User and Type of Information



Regulation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Financial accounting is designed to generate information for the general public. In an effort to protect the public interest, Congress established the **Securities and Exchange Commission (SEC)** and gave it authority to regulate public financial reporting practices. The SEC has delegated much of its authority for developing accounting rules to the private-sector **Financial Accounting Standards Board (FASB),** thereby allowing the accounting profession considerable influence over financial accounting reports. The FASB supports a broad base of pronouncements and practices known as **generally accepted accounting principles (GAAP).** GAAP severely restrict the accounting procedures and practices permitted in published financial statements.

Beyond financial statement data, much of the information generated by management accounting systems is proprietary information not available to the public. Since this information is not distributed to the public, it need not be regulated to protect the public interest. Management accounting is restricted only by the **value-added principle.** Management accountants are free to engage in any information gathering and reporting activity so long as the activity adds value in excess of its cost. For example, management accountants are free to provide forecasted information to internal users. In contrast, financial accounting as prescribed by GAAP does not permit forecasting.

Information Characteristics

While financial accounting is characterized by its objectivity, reliability, consistency, and historical nature, managerial accounting is more concerned with relevance and timeliness. Managerial accounting uses more estimates and fewer facts than financial accounting. Financial accounting reports what happened yesterday; managerial accounting reports what is expected to happen tomorrow.

Time Horizon and Reporting Frequency

Financial accounting information is reported periodically, normally at the end of a year. Management cannot wait until the end of the year to discover problems. Planning, controlling, and directing require immediate attention. Managerial accounting information is delivered on a continuous basis.

Exhibit 1.2 summarizes significant differences between financial and managerial accounting.

PRODUCT COSTING IN MANUFACTURING COMPANIES

LO 1-2

Identify the cost of manufacturing a product.

A major focus for managerial accountants is determining **product cost.**[1] Managers need to know the cost of their products for a variety of reasons. For example, **cost-plus pricing** is a common business practice.[2] **Product costing** is also used to control business operations. It is useful in answering questions such as: Are costs higher or lower than expected? Who is responsible for the variances between expected and actual costs? What actions can be taken to control the variances?

Components of Product Cost

Generally accepted accounting principles (GAAP) recognize three types of cost that are incurred in the process of making products. Specifically, the company must pay for (1) the

[1]This text uses the term *product* in a generic sense to mean both goods and services.

[2]Other pricing strategies will be introduced in subsequent chapters.

EXHIBIT 1.2

Comparative Features of Managerial versus Financial Accounting Information

Features	Managerial Accounting	Financial Accounting
Users	Insiders, including executives, managers, and operators	Outsiders, including investors, creditors, government agencies, analysts, and reporters
Information type	Economic and physical data as well as financial data	Financial data
Level of aggregation	Local information on subunits of the organization	Global information on the company as a whole
Regulation	No regulation, limited only by the value-added principle	Regulation by SEC, FASB, and other determiners of GAAP
Information characteristics	Estimates that promote relevance and enable timeliness	Factual information that is characterized by objectivity, reliability, consistency, and accuracy
Time horizon	Past, present, and future	Past only, historically based
Reporting frequency	Continuous reporting	Delayed, with emphasis on annual reports

materials used to make the products, (2) the *labor* used to transform the materials into products, and (3) the **overhead** (other resources such as utilities and equipment consumed in the process of making the products). If the company stores its products, the costs of the materials, labor, and overhead used in making the products are maintained in an inventory account until the products are sold. For a detailed explanation of how product costs flow through the financial statements, refer to the following example of Tabor Manufacturing Company.

Tabor Manufacturing Company

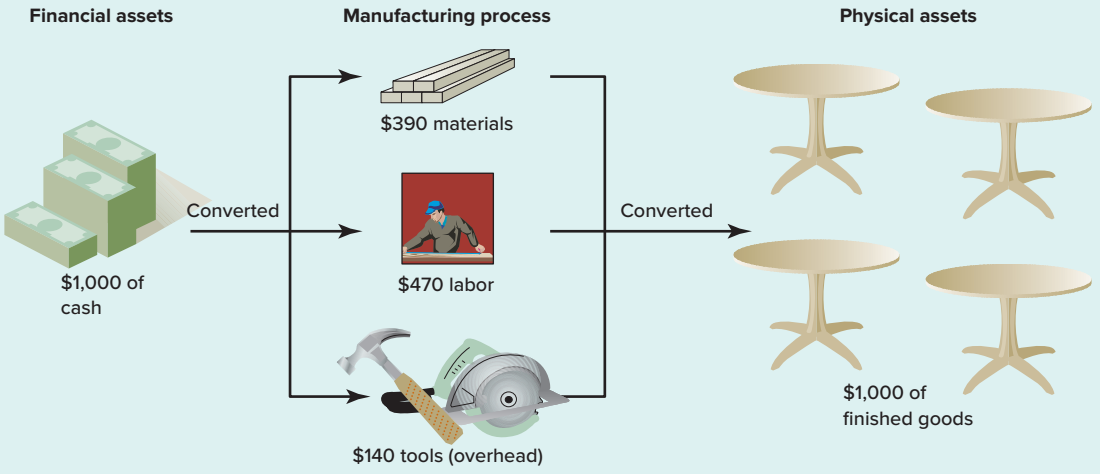
Tabor Manufacturing Company makes wooden tables. The company spent $1,000 cash to build four tables: $390 for materials, $470 for a carpenter's labor, and $140 for tools used in making the tables. How much is Tabor's expense? The answer is zero. The $1,000 cash has been converted into products (four tables). The cash payments for materials, labor, and tools (overhead) were *asset exchange* transactions. One asset (cash) decreased while another asset (tables) increased. Tabor will not recognize any expense until the tables are sold; in the meantime, the cost of the tables is held in an asset account called **Finished Goods Inventory.** Exhibit 1.3 illustrates how cash is transformed into inventory.

Average Cost per Unit

How much did each table made by Tabor cost? The *actual* cost of each of the four tables likely differs. The carpenter probably spent a little more time on some of the tables than others. Material and tool usage probably varied from table to table. Determining the exact cost of each table is virtually impossible. Minute details such as a second of labor time cannot be effectively measured. Even if Tabor could determine the exact cost of each table, the information would be of little use. Minor differences in the cost per table would make no difference in pricing or other decisions management needs to make. Accountants therefore normally calculate cost per unit as an *average*. In the case of Tabor Manufacturing, the **average cost** per table is $250 ($1,000 ÷ 4 units). Unless otherwise stated, assume *cost per unit* means *average cost per unit*.

EXHIBIT 1.3

Transforming the Asset Cash into the Asset Finished Goods Inventory



CHECK YOURSELF 1.1

All boxes of **General Mills'** Total Raisin Bran cereal are priced at exactly the same amount in your local grocery store. Does this mean that the actual cost of making each box of cereal was exactly the same?

Answer No, making each box would not cost exactly the same amount. For example, some boxes contain slightly more or less cereal than other boxes. Accordingly, some boxes cost slightly more or less to make than others do. General Mills uses average cost rather than actual cost to develop its pricing strategy.

Costs Can Be Assets or Expenses

It might seem odd that wages paid to production workers are recorded as inventory instead of being expensed. Remember, however, that expenses are assets used in the process of *earning revenue*. The cash paid to production workers is not used to produce revenue. Instead, the cash is used to produce inventory. Revenue will be earned when the inventory is used (sold). So long as the inventory remains on hand, all product costs (materials, labor, and overhead) remain in an inventory account.

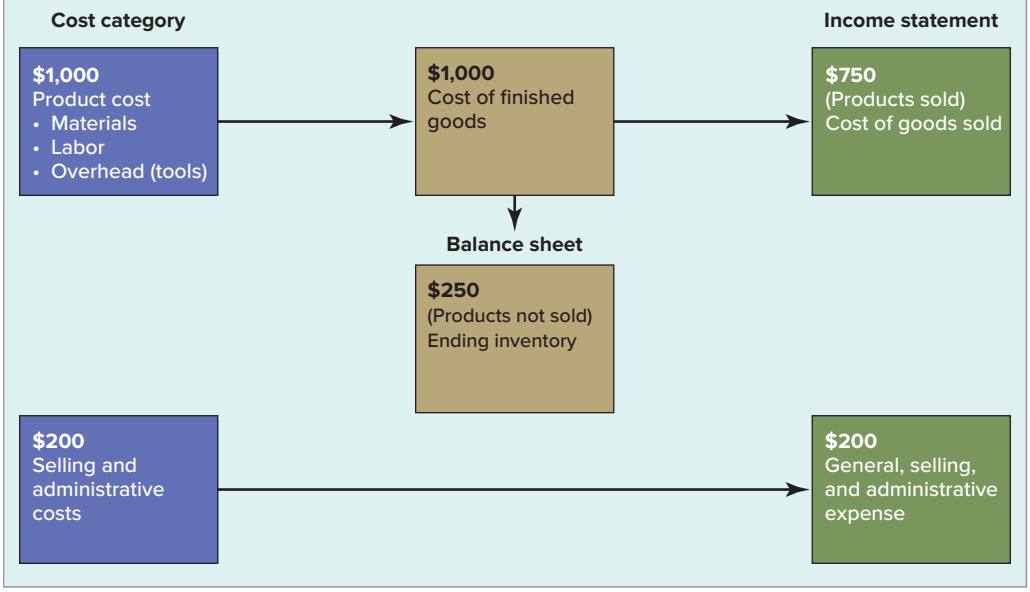
When a table is sold, the average cost of the table is transferred from the Inventory account to the Cost of Goods Sold (expense) account. If some tables remain unsold at the end of the accounting period, part of the *product cost* is reported as an asset (inventory) on the balance sheet while the other part is reported as an expense (cost of goods sold) on the income statement.

Costs that are not classified as product costs are normally expensed in the period in which they are incurred. These costs include *general operating costs, selling and administrative costs, interest costs,* and the *cost of income taxes*.

To illustrate, return to the Tabor Manufacturing example. Recall that Tabor made four tables at an average cost per unit of $250. Assume Tabor pays an employee who sells three of the tables a $200 sales commission. The sales commission is expensed immediately. The total product cost for the three tables (3 tables × $250 each = $750) is expensed on the income statement as cost of goods sold. The portion of the total product cost remaining in inventory

EXHIBIT 1.4

Cost Classification for Tabor Manufacturing Company



is $250 (1 table × $250). Exhibit 1.4 shows the relationship between the costs incurred and the expenses recognized for Tabor Manufacturing Company.

PRODUCT COSTS ON FINANCIAL STATEMENTS

LO 1-3

Show how manufacturing product costs affect financial statements.

PATILLO MANUFACTURING COMPANY

We illustrate accounting for product costs in manufacturing companies with Patillo Manufacturing Company, a producer of ceramic pottery. Patillo, started on January 1, Year 1, experienced the following accounting events during its first year of operations.[3] *Assume that all transactions except 6, 8, and 10 are cash transactions.*

1. Acquired $15,000 cash by issuing common stock.
2. Paid $2,000 for materials that were used to make products. All products started were completed during the period.
3. Paid $1,200 for salaries of selling and administrative employees.
4. Paid $3,000 for wages of production workers.
5. Paid $2,800 for furniture used in selling and administrative offices.
6. Recognized depreciation on the office furniture purchased in Event 5. The furniture was acquired on January 1, had a $400 estimated salvage value, and a four-year useful life. The annual depreciation charge is $600 [($2,800 − $400) ÷ 4].
7. Paid $4,500 for manufacturing equipment.
8. Recognized depreciation on the equipment purchased in Event 7. The equipment was acquired on January 1, had a $1,500 estimated salvage value, and a three-year useful life. The annual depreciation charge is $1,000 [($4,500 − $1,500) ÷ 3].
9. Sold inventory to customers for $7,500 cash.
10. The inventory sold in Event 9 cost $4,000 to make.

[3]This illustration assumes that all inventory started during the period was completed during the period. Patillo therefore uses only one inventory account, Finished Goods Inventory. Many manufacturing companies normally have three categories of inventory on hand at the end of an accounting period: Raw Materials Inventory, Work in Process Inventory (inventory of partially completed units), and Finished Goods Inventory. Chapter 11 discusses these inventories in greater detail.

EXHIBIT 1.5

Effect of Product versus Selling and Administrative Costs on Financial Statements

	Balance Sheet										Income Statement				
	Assets							Equity							
Event No.	Cash	+	Inventory	+	Office Furn.*	+	Manuf. Equip.*	=	Com. Stk.	+	Ret. Earn.	Rev.	–	Exp.	=	Net Inc.
1	15,000	+	NA	+	NA	+	NA	=	15,000	+	NA	NA	–	NA	=	NA
2	(2,000)	+	2,000	+	NA	+	NA	=	NA	+	NA	NA	–	NA	=	NA
3	(1,200)	+	NA	+	NA	+	NA	=	NA	+	(1,200)	NA	–	1,200	=	(1,200)
4	(3,000)	+	3,000	+	NA	+	NA	=	NA	+	NA	NA	–	NA	=	NA
5	(2,800)	+	NA	+	2,800	+	NA	=	NA	+	NA	NA	–	NA	=	NA
6	NA	+	NA	+	(600)	+	NA	=	NA	+	(600)	NA	–	600	=	(600)
7	(4,500)	+	NA	+	NA	+	4,500	=	NA	+	NA	NA	–	NA	=	NA
8	NA	+	1,000	+	NA	+	(1,000)	=	NA	+	NA	NA	–	NA	=	NA
9	7,500	+	NA	+	NA	+	NA	=	NA	+	7,500	7,500	–	NA	=	7,500
10	NA	+	(4,000)	+	NA	+	NA	=	NA	+	(4,000)	NA	–	4,000	=	(4,000)
Totals	9,000	+	2,000	+	2,200	+	3,500	=	15,000	+	1,700	7,500	–	5,800	=	1,700

*Negative amounts in these columns represent accumulated depreciation.

The effects of these transactions on the balance sheet and income statement are shown in Exhibit 1.5. Study each row in this exhibit, paying particular attention to how similar costs such as salaries for selling and administrative personnel and wages for production workers have radically different effects on the financial statements. The example illustrates the three elements of product costs—materials (Event 2), labor (Event 4), and overhead (Event 8). These events are discussed in more detail as follows.

Materials Costs (Event 2)

Materials used to make products are usually called **raw materials.** The cost of raw materials is first recorded in an asset account (Inventory). The cost is then transferred from the Inventory account to the Cost of Goods Sold account at the time the goods are sold. Remember that materials cost is only one component of total manufacturing costs. When inventory is sold, the combined cost of materials, labor, and overhead is expensed as *cost of goods sold*. The costs of materials that can be easily and conveniently traced to products are called **direct raw materials** costs.

Labor Costs (Event 4)

The salaries paid to selling and administrative employees (Event 3) and the wages paid to production workers (Event 4) are accounted for differently. Salaries paid to selling and administrative employees are expensed immediately, but the cost of production wages is added to inventory. Production wages are expensed as part of cost of goods sold at the time the inventory is sold. Labor costs that can be easily and conveniently traced to products are called **direct labor** costs. The cost flow of wages for production employees versus salaries for selling and administrative personnel is shown in Exhibit 1.6.

Overhead Costs (Event 8)

Although depreciation cost totaled $1,600 ($600 on office furniture and $1,000 on manufacturing equipment), only the $600 of depreciation on the office furniture is expensed directly on the income statement. The depreciation on the manufacturing equipment is split between the income statement (cost of goods sold) and the balance sheet (inventory). The depreciation cost flow for the manufacturing equipment versus the office furniture is shown in Exhibit 1.7.

EXHIBIT 1.6

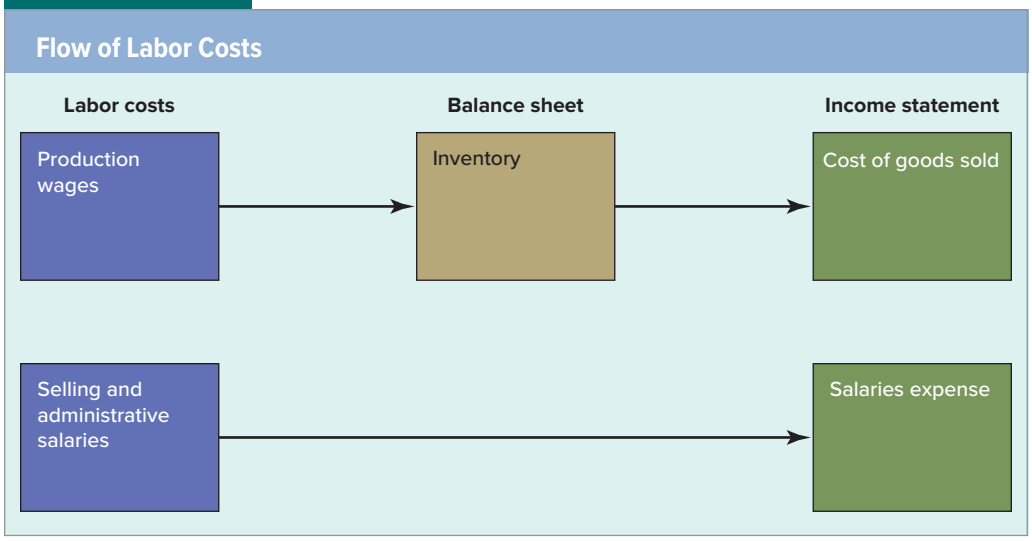
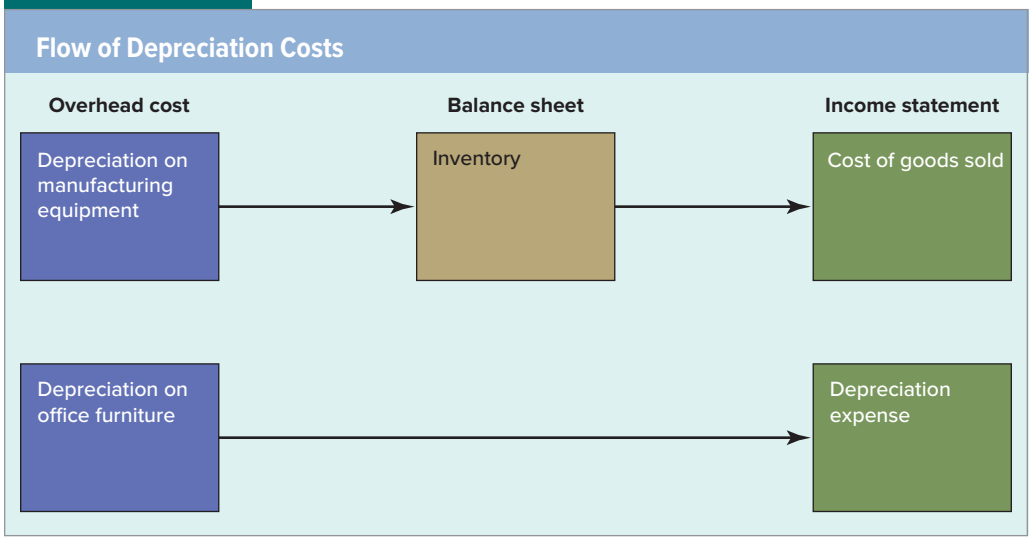


EXHIBIT 1.7



Total Product Cost. A summary of Patillo Manufacturing's total product cost is shown in Exhibit 1.8.

Financial Statements

The GAAP-based income statement and balance sheet for Patillo Manufacturing are displayed in Exhibit 1.9.

Product Costs. The $4,000 cost of goods sold reported on the income statement includes a portion of the materials, labor, and overhead costs incurred by Patillo during the year. Similarly, the $2,000 of finished goods inventory on the balance sheet includes materials, labor, and overhead costs. These product costs will be recognized as an expense in the next accounting period when the goods are sold. Initially classifying a cost as a product cost delays, but does not eliminate, its recognition as an expense. All product costs are ultimately recognized as an expense (cost of goods sold).

Selling, General, and Administrative Costs. Selling, general, and administrative costs (SG&A) are normally expensed *in the period* in which they are incurred. Because of this recognition

EXHIBIT 1.8

Schedule of Inventory Costs

Materials	$ 2,000
Labor	3,000
Manufacturing overhead*	1,000
Total product costs	6,000
Less: Cost of goods sold	(4,000)
Ending inventory balance	$ 2,000

*Depreciation [($4,500 − $1,500) ÷ 3]

EXHIBIT 1.9

PATILLO MANUFACTURING COMPANY
Financial Statements

Income Statement for Year 1

Sales revenue		$ 7,500
Cost of goods sold		(4,000)
Gross margin		3,500
SG&A expenses		
Salaries expense		(1,200)
Depreciation expense—office furniture		(600)
Net income		$ 1,700

Balance Sheet as of December 31, Year 1

Cash		$ 9,000
Finished goods inventory		2,000
Office furniture	$ 2,800	
Accumulated depreciation	(600)	
Book value		2,200
Manufacturing equipment	4,500	
Accumulated depreciation	(1,000)	
Book value		3,500
Total assets		$16,700
Stockholders' equity		
Common stock		$15,000
Retained earnings		1,700
Total stockholders' equity		$16,700

pattern, nonproduct expenses are sometimes called **period costs.** In Patillo's case, the salaries expense for selling and administrative employees and the depreciation on office furniture are period costs reported directly on the income statement.

Overhead Costs: A Closer Look

Costs such as depreciation on manufacturing equipment cannot be easily traced to products. Suppose that Patillo Manufacturing makes both tables and chairs. What part of the depreciation is caused by manufacturing tables versus manufacturing chairs? Similarly, suppose a production supervisor oversees employees who work on both tables and chairs. How much of the supervisor's salary relates to tables and how much to chairs? Likewise, the cost of glue used in the production department would be difficult to trace to tables versus chairs. You could count the drops of glue used on each product, but the information would not be useful enough to merit the time and money spent collecting the data.

Costs that cannot be traced to products and services in a *cost-effective* manner are called **indirect costs.** The indirect costs incurred to make products are called **manufacturing overhead.** Some of the items commonly included in manufacturing overhead are indirect materials, indirect labor, factory utilities, rent of manufacturing facilities, and depreciation on manufacturing assets.

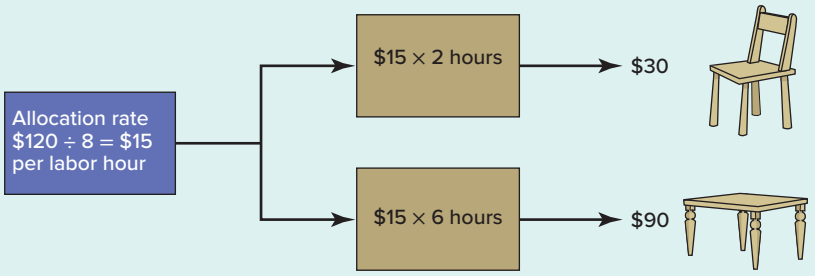
CHECK YOURSELF 1.2

Lawson Manufacturing Company paid production workers wages of $100,000. It incurred materials costs of $120,000 and manufacturing overhead costs of $160,000. Selling and administrative salaries were $80,000. Lawson started and completed 1,000 units of product and sold 800 of these units. The company sets sales prices at $220 above the average per-unit production cost. Based on this information alone, determine the amount of gross margin and net income. What is Lawson's pricing strategy called?

Answer Total product cost is $380,000 ($100,000 labor + $120,000 materials + $160,000 overhead). Cost per unit is $380 ($380,000 ÷ 1,000 units). The sales price per unit is $600 ($380 + $220). Cost of goods sold is $304,000 ($380 × 800 units). Sales revenue is $480,000 ($600 × 800 units). Gross margin is $176,000 ($480,000 revenue − $304,000 cost of goods sold). Net income is $96,000 ($176,000 gross margin − $80,000 selling and administrative salaries). Lawson's pricing strategy is called *cost-plus* pricing.

EXHIBIT 1.10

Cost Allocation



Since indirect costs cannot be effectively traced to products, they are normally assigned to products using **cost allocation,** a process of dividing a total cost into parts and assigning the parts to relevant cost objects. To illustrate, suppose that production workers spend an eight-hour day making a chair and a table. The chair requires two hours to complete and the table requires six hours. Now suppose that $120 of utilities cost is consumed during the day. How much of the $120 should be assigned to each piece of furniture? The utility cost cannot be directly traced to each specific piece of furniture, but the piece of furniture that required more labor also likely consumed more of the utility cost. Using this line of reasoning, it is rational to allocate the utility cost to the two pieces of furniture based on *direct labor hours* at a rate of $15 per hour ($120 ÷ 8 hours). The chair would be assigned $30 ($15 per hour × 2 hours) of the utility cost and the table would be assigned the remaining $90 ($15 × 6 hours) of utility cost. The allocation of the utility cost is shown in Exhibit 1.10.

We discuss the details of cost allocation in a later chapter. For now, recognize that overhead costs are normally allocated to products rather than traced directly to them.

Manufacturing Product Cost Summary

As explained, the cost of a product made by a manufacturing company is normally composed of three categories: direct materials, direct labor, and manufacturing overhead. Relevant information about these three cost components is summarized in Exhibit 1.11.

Answers to The Curious Accountant

As you have seen, accounting for depreciation related to manufacturing assets is different from accounting for depreciation for nonmanufacturing assets. Depreciation on the checkout equipment at **Target** is recorded as depreciation expense. Depreciation on manufacturing equipment at **Skyrocket** is considered a product cost. It is included first as part of the cost of inventory and eventually as part of the expense, cost of goods sold. Recording depreciation on manufacturing equipment as an inventory cost is simply another example of the matching principle, because the cost does not become an expense until revenue from the product sale is recognized.

EXHIBIT 1.11

Components of Manufacturing Product Cost

Component 1—Direct Raw Materials
Sometimes called *raw materials*. In addition to basic resources such as wood or metals, it can include manufactured parts. For example, engines, glass, and car tires can be considered as raw materials for an automotive manufacturer. If the amount of a material in a product is known, it can usually be classified as a direct material. The cost of direct materials can be easily traced to specific products.

Component 2—Direct Labor
The cost of wages paid to factory workers involved in hands-on contact with the products being manufactured. If the amount of time employees worked on a product can be determined, this cost can usually be classified as direct labor. Like direct materials, labor costs must be easily traced to a specific product in order to be classified as a direct cost.

Component 3—Manufacturing Overhead
Costs that cannot be easily traced to specific products. Accordingly, these costs are called *indirect costs*. They can include but are not limited to the following:

1. Indirect materials such as glue, nails, paper, and oil. Indeed, note that indirect materials used in the production process may not appear in the finished product. An example is a chemical solvent used to clean products during the production process but not a component material found in the final product.
2. Indirect labor such as the cost of salaries paid to production supervisors, inspectors, and maintenance personnel.
3. Rental cost for manufacturing facilities and equipment.
4. Utility costs.
5. Depreciation.
6. Security.
7. The cost of preparing equipment for the manufacturing process (i.e., setup costs).
8. Maintenance cost for the manufacturing facility and equipment.

UPSTREAM, MIDSTREAM, AND DOWNSTREAM COSTS

Accountants frequently classify cost into three categories including (1) upstream, (2) midstream, and (3) downstream costs. The following section explains the treatment of these costs in manufacturing, service, and merchandising companies.

LO 1-4

Compare the treatment of upstream, midstream, and downstream costs in manufacturing, service, and merchandising companies.

Cost Classification in Manufacturing Companies

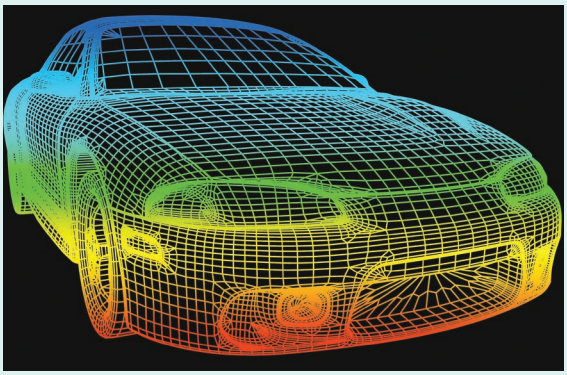
For manufacturing companies, **midstream costs** are composed of the costs incurred in the process of making products including direct materials, direct labor, and manufacturing overhead. **Upstream costs** are costs that are incurred prior to manufacturing process including research and development costs and product design costs. **Downstream costs** are costs incurred after the manufacturing process including marketing, distribution, and customer services. A summary of this cost classification scheme as it relates to an automobile manufacturing company is shown in Exhibit 1.12.

Note that the upstream, midstream, and downstream costs of one company can become the midstream costs of another company. For example, the upstream, midstream, and downstream costs of a steel manufacturing company are passed on as a midstream cost (direct materials) to an auto parts manufacturing company when it purchases steel. Likewise, the upstream, midstream, and downstream costs of the auto parts company are passed on to an automobile manufacturing company as part of its midstream (direct materials) costs when it

EXHIBIT 1.12

Upstream Costs:

- Research and development
- Product design



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Midstream Costs:

- Direct materials
- Direct labor
- Manufacturing overhead

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Downstream Costs:

- Marketing
- Distribution
- Customer service

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purchases auto parts. Also, note that the same type of cost can be classified as an upstream, midstream, or downstream cost. For example, salaries of a researcher may be classified as an upstream cost, while salaries of a production worker are classified as midstream costs, and salaries of a salesperson are classified as a downstream cost.

Generally accepted accounting principles (GAAP) require midstream costs to be reported separately from upstream and downstream costs on public financial statements. More specifically, the midstream costs (direct materials, direct labor, and manufacturing overhead) are classified as product costs and are expensed as cost of goods sold at the time goods are sold. In contrast, upstream and downstream cost are classified as general, selling, and administrative expenses and are expensed in the period they are incurred. In general, cost of goods sold is subtracted from sales revenue to determine the amount of gross margin and then upstream and downstream costs are subtracted from gross margin to determine the amount of net income. The format of a typical GAAP-based income statement is shown in Exhibit 1.13.

EXHIBIT 1.13

Sales revenue
− Cost of goods sold (midstream costs)
= Gross margin
− General, selling, and administrative costs (upstream and downstream costs)
= Net income

Cost Classification in Service and Merchandising Companies

Companies are frequently classified as being service, merchandising, or manufacturing businesses. As the name implies, service organizations provide services, rather than physical products, to consumers. For example, **St. Jude Children's Hospital** provides treatment programs aimed at healing patient diseases. Other common service providers include public accountants, lawyers, restaurants, dry cleaning establishments, and lawn care companies. Merchandising businesses are sometimes called retail or wholesale companies; they sell goods to other companies. **The Home Depot Inc.**; **Costco Wholesale Corporation**, and **Best Buy Co. Inc.**, are merchandising companies. Manufacturing companies make the goods they sell to their customers. **Toyota Motor Corporation**; **Texaco Inc.**, and **American Standard Companies Inc.**, are manufacturing businesses.

Do service and merchandising companies incur materials, labor, and overhead costs? Yes; for example, **Wendy's** has materials costs (meat, potatoes, etc.), labor costs (cooks, packaging staff), and overhead (depreciation on equipment). Can the costs incurred by service and merchandising companies be classified as being upstream, midstream, and downstream? Yes. Continuing the Wendy's example, the company incurs research and development costs to produce its recipes and to find new locations (upstream costs); meat, labor, and overhead costs to make its food products (midstream costs); and sales staff and janitorial salaries and costs incurred to provide space for customers to consume their food (downstream costs).

So how do manufacturing companies differ from service and merchandising businesses? ***The primary difference between manufacturing entities and service companies is that the finished products provided by service companies are consumed immediately.*** For example, advice from a doctor is being consumed as it is being delivered to the patient. In contrast, products made by manufacturing companies can be held in the form of inventory until they are sold to consumers.

While merchandising companies frequently hold inventory, they differ from manufacturing companies in that they do not make the products they sell. Rather, they buy finished goods from suppliers and simply hold those products until they are delivered to customers. Indeed, most labor and overhead costs incurred by merchandising companies result from providing assistance to customers. These costs are normally treated as selling, general, and administrative expenses rather than accumulated in inventory accounts. This is why merchandising companies are often viewed as service companies rather than considered a separate business category.

The important point to remember is that all business managers are expected to control costs, improve quality, and increase productivity. Like managers of manufacturing companies, managers of service and merchandising businesses can benefit from the analysis of the cost of satisfying their customers. For example, Wendy's, a service company, can benefit from knowing how much a hamburger costs in the same manner that **Bayer Corporation**, a manufacturing company, benefits from knowing the cost of a bottle of aspirin.

CHECK YOURSELF 1.3

The cost of making a **Burger King** hamburger includes the cost of materials, labor, and overhead. Does this mean that Burger King is a manufacturing company?

Answer No, Burger King is not a manufacturing company. It is a service company because its products are consumed immediately. In contrast, there may be a considerable delay between the time the product of a manufacturing company is made and the time it is consumed. For example, it could be several months between the time **Ford Motor Company** makes an Explorer and the time the Explorer is ultimately sold to a customer. The primary difference between service and manufacturing companies is that manufacturing companies have inventories of products and service companies do not.

Managerial versus Financial Treatment of Upstream, Midstream, and Downstream Costs in Manufacturing Companies

To avoid having one system for external reporting and a different system for internal reporting, many companies use generally accepted accounting principles (GAAP) for internal as well as external reports. Unfortunately, the effort to maintain consistency between internal and external reporting systems can lead to mistakes in decision making. Specifically, managers may fail to include upstream and downstream costs when establishing sales prices and/or measuring product profitability. If upstream or downstream costs are not included in determining the cost of products, those products will be undercosted. This may lead managers to set prices that are below the total cost of producing and selling products, thereby leading to long-term losses rather than profitability.

CHECK YOURSELF 1.4

To illustrate, Warm Zero, Inc., makes down jackets. The manufacturing costs per unit include $30 direct materials, $35 direct labor, and $15 manufacturing overhead. These costs are based on a production and sales volume of 4,000 units. Advertising costs amounted to $50,000. Research and development cost for the cloth materials used in the jackets amounted to $60,000. Companywide administrative costs amounted to $90,000. Fashion design costs amounted to $40,000. To be competitive Warm Zero's management team used industry standards to establish the sales price at 160 percent of GAAP-defined product cost.

Required

a. Determine the total amount of upstream costs.

b. Determine the total amount of downstream costs.

c. Determine the total amount of midstream costs.

d. Determine the sales price per unit.

e. Prepare a GAAP-based income statement.

f. Provide a plausible explanation as to why the company incurred the loss shown on the income statement prepared to satisfy requirement *e*. (*Hint:* Calculate the full cost of making and selling the jackets.)

Answer

a. Upstream costs = $60,000 research and development + $40,000 fashion design = $100,000

b. Downstream costs = $50,000 advertising + $90,000 administrative costs = $140,000

c. Midstream costs = ($30 direct materials + $35 direct labor + $15 manufacturing overhead) × 4,000 units = $320,000

d. Sales price = GAAP-defined product cost × 160% = [($30 direct materials + $35 direct labor + $15 manufacturing overhead) × 1.6] = $128

e.

Sales revenue ($128 price × 4,000 jackets)	$ 512,000
Cost of goods sold ($80 cost × 4,000)	(320,000)
Gross margin	192,000
General, selling, and administrative costs	
Upstream costs (R&D and design)	(100,000)
Downstream costs (administrative and advertising)	(140,000)
Net loss	(48,000)

f. It appears that management failed to give appropriate consideration to upstream and downstream costs when pricing the product. Only the GAAP-based product cost was used to determine the price. The total cost of making a down jacket is upstream cost + midstream cost + downstream cost. In this case, total cost per unit includes:

Midstream cost = ($30 direct materials + $35 direct labor + $15 manufacturing overhead) = $80

Upstream cost = ($100,000 R&D and design) ÷ 4,000 units = $25

Downstream cost = ($140,000 administrative and advertising) ÷ 4,000 units = $35

Total cost = $80 midstream + $25 upstream + $35 downstream = $140

Note that the selling price of $128 is below the total cost per unit of $140. This explains the loss incurred by the company.

JUST-IN-TIME INVENTORY

LO 1-5

Show how just-in-time inventory can increase profitability.

Companies attempt to minimize the amount of inventory they maintain because of the high cost of holding it. Many **inventory holding costs** are obvious: financing, warehouse space, supervision, theft, damage, and obsolescence. Other costs are hidden: diminished motivation, sloppy work, inattentive attitudes, and increased production time.

Many businesses have been able to simultaneously reduce their inventory holding costs and increase customer satisfaction by making products available **just in time (JIT)** for customer consumption. For example, hamburgers that are cooked to order are fresher and more individualized than those that are prepared in advance and stored until a customer places an order. Many fast-food restaurants have discovered that JIT systems lead not only to greater customer satisfaction but also to lower costs through reduced waste.

Just-in-Time Illustration

To illustrate the benefits of a JIT system, consider Paula Elliot, a student at a large urban university. She helps support herself by selling flowers. Three days each week, Paula drives to a florist, purchases 25 single-stem roses, returns to the school, and sells the flowers to individuals from a location on a local street corner. She pays $2 per rose and sells each one for $3. Some days she does not have enough flowers to meet customer demand. Other days, she must discard one or two unsold flowers; she believes quality is important and refuses to sell flowers that are not fresh. During May, she purchased 300 roses and sold 280. She calculated her driving cost to be $45. Exhibit 1.14 displays Paula's May income statement.

EXHIBIT 1.14

Income Statement for May

Sales revenue (280 units × $3 per unit)	$ 840
Cost of goods sold (280 units × $2 per unit)	(560)
Gross margin	280
Driving expense	(45)
Excess inventory waste (20 units × 2)	(40)
Net income	$ 195

After studying just-in-time inventory systems in her managerial accounting class, Paula decided to apply the concepts to her small business. She *reengineered* her distribution system by

EXHIBIT 1.15

Income Statement for June

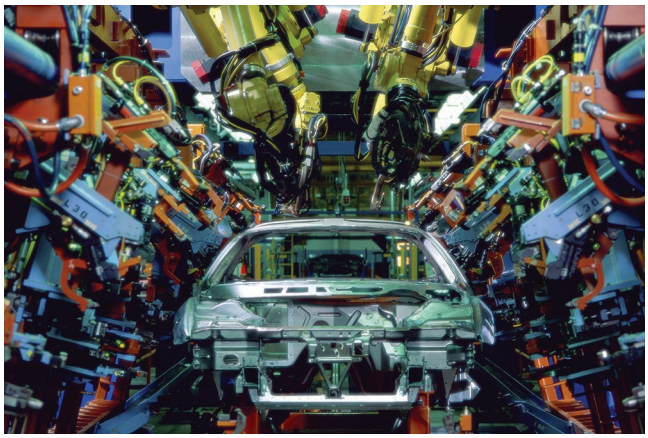
Sales revenue (310 units × $3 per unit)	$ 930
Cost of goods sold (310 units × $2 per unit)	(620)
Gross margin	310
Driving expense	0
Net income	$ 310

purchasing her flowers from a florist within walking distance of her sales location. She had considered purchasing from this florist earlier but had rejected the idea because the florist's regular selling price of $2.25 per rose was too high. After learning about *most-favored customer status,* she developed a strategy to get a price reduction. By guaranteeing that she would buy at least 30 roses per week, she was able to convince the local florist to match her current cost of $2.00 per rose. The local florist agreed that she could make purchases in batches of any size so long as the total amounted to at least 30 per week. Under this arrangement, Paula was able to buy roses *just in time* to meet customer demand. Each day she purchased a small number of flowers. When she ran out, she simply returned to the florist for additional ones.

The JIT system also enabled Paula to eliminate the cost of the *nonvalue-added activity* of driving to her former florist. Customer satisfaction actually improved because no one was ever turned away because of the lack of inventory. In June, Paula was able to buy and sell 310 roses with no waste and no driving expense. The June income statement is shown in Exhibit 1.15.

Paula was ecstatic about her $115 increase in profitability ($310 in June − $195 in May = $115 increase), but she was puzzled about the exact reasons for the change. She had saved $40 (20 flowers × $2 each) by avoiding waste and eliminated $45 of driving expenses. These two factors explained only $85 ($40 waste + $45 driving expense) of the $115 increase. What had caused the remaining $30 ($115 − $85) increase in profitability? Paula asked her accounting professor to help her identify the remaining $30 difference.

The professor explained that May sales had suffered from *lost opportunities*. Recall that under the earlier inventory system, Paula had to turn away some prospective customers because she sold out of flowers before all customers were served. Sales increased from 280 roses in May to 310 roses in June. A likely explanation for the 30 unit difference (310 − 280) is that customers who would have purchased flowers in May were unable to do so because of a lack of availability. May's sales suffered from the lost opportunity to earn a gross margin of $1 per flower on 30 roses, a $30 **opportunity cost.** This opportunity cost is the missing link in explaining the profitability difference between May and June. The total $115 difference consists of (1) $40 savings from waste elimination, (2) $45 savings from eliminating driving expense, and (3) opportunity cost of $30. The subject of opportunity cost has widespread application and is discussed in more depth in subsequent chapters of the text.



CHECK YOURSELF 1.5

A strike at a **General Motors** brake plant caused an almost immediate shutdown of many of the company's assembly plants. What could have caused such a rapid and widespread shutdown?

Answer A rapid and widespread shutdown could have occurred because General Motors uses a just-in-time inventory system. With a JIT inventory system, there is no stockpile of inventory to draw on when strikes or other forces disrupt inventory deliveries. This illustrates a potential negative effect of using a just-in-time inventory system.