# MANAGERIAL ACCOUNTING


FOURTH EDITION

# Managerial Accounting

Fourth Edition


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# BRIEF CONTENTS

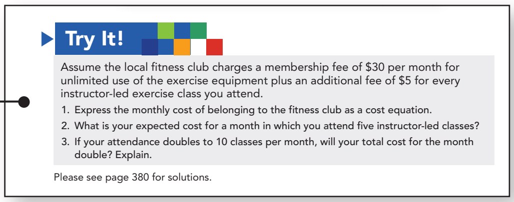
# CONTENTS

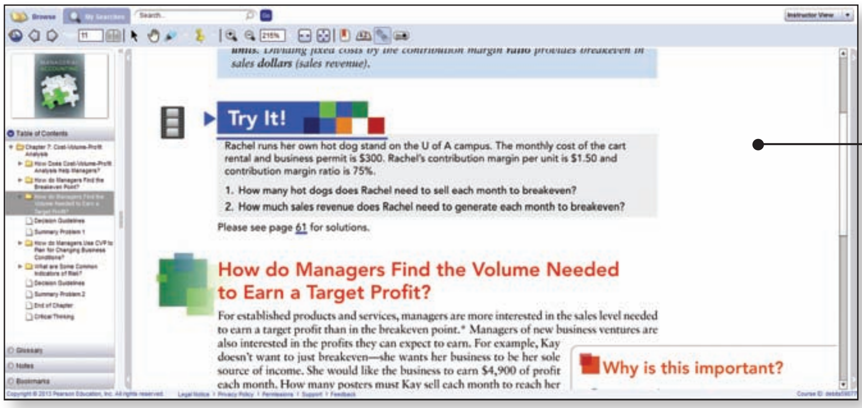
# Visual Walk-Through

NEW!

## Try It! Interactive Questions

Found throughout the chapter, Try It! interactive questions give students the opportunity to apply the concept they just learned. Linking in the eText will allow students to practice in MyAccountingLab® without interrupting their interaction with the eText. Students' performance on the questions creates a precise adaptive study plan for additional practice.




NEW!

## Video Solutions

Found in the eText and MyAccountingLab, the video solutions feature the author walking through the Try It! problems on a white board. Designed to give students detailed help when they need it.

## Excel Exhibits

NEW!

To give students a glimpse into the real world presentation of managerial accounting topics, all financial statements and schedules are presented in Excel. In the eText, a video link on selected exhibits will teach students how to create the same schedule using Excel.

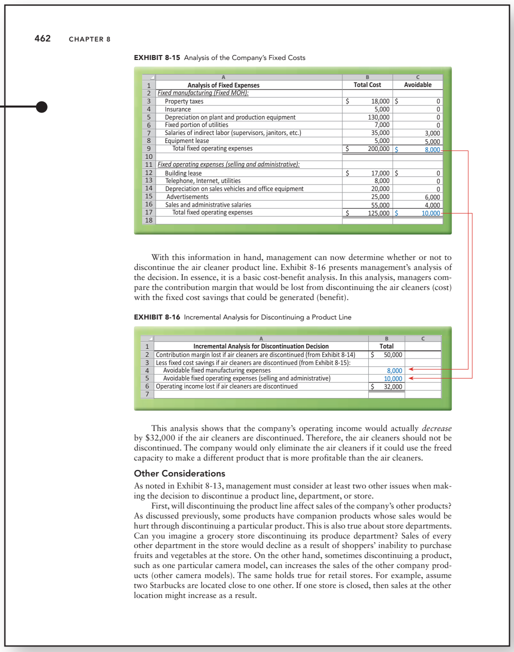

462 CHAPTER 8

**EXHIBIT 8-15** Analysis of the Company's Fixed Costs

| | A | B | C |
|---|---|---|---|
| 1 | Analysis of Fixed Expenses | Total Cost | Avoidable |
| 2 | Fixed manufacturing (Fixed MOH): | | |
| 3 | Property taxes | $ 18,000 | $ 0 |
| 4 | Insurance | 5,000 | 0 |
| 5 | Depreciation on plant and production equipment | 130,000 | 0 |
| 6 | Fixed portion of utilities | 7,000 | 0 |
| 7 | Salaries of indirect labor (supervisors, janitors, etc.) | 35,000 | 3,000 |
| 8 | Equipment lease | 5,000 | 5,000 |
| 9 | Total fixed operating expenses | $ 200,000 | $ 8,000 |
| 10 | | | |
| 11 | Fixed operating expenses (selling and administrative): | | |
| 12 | Building lease | $ 17,000 | $ 0 |
| 13 | Telephone, Internet, utilities | 8,000 | 0 |
| 14 | Depreciation on sales vehicles and office equipment | 20,000 | 0 |
| 15 | Advertisements | 25,000 | 6,000 |
| 16 | Sales and administrative salaries | 55,000 | 4,000 |
| 17 | Total fixed operating expenses | $ 125,000 | $ 10,000 |
| 18 | | | |

With this information in hand, management can now determine whether or not to discontinue the air cleaner product line. Exhibit 8-16 presents management's analysis of the decision. In essence, it is a basic cost-benefit analysis. In this analysis, managers compare the contribution margin that would be lost from discontinuing the air cleaners (cost) with the fixed cost savings that could be generated (benefit).

**EXHIBIT 8-16** Incremental Analysis for Discontinuing a Product Line

| | A | B | C |
|---|---|---|---|
| 1 | Incremental Analysis for Discontinuation Decision | Total | |
| 2 | Contribution margin lost if air cleaners are discontinued (from Exhibit 8-14) | $ 50,000 | |
| 3 | Less fixed cost savings if air cleaners are discontinued (from Exhibit 8-15): | | |
| 4 | Avoidable fixed manufacturing expenses | 8,000 | |
| 5 | Avoidable fixed operating expenses (selling and administrative) | 10,000 | |
| 6 | Operating income lost if air cleaners are discontinued | $ 32,000 | |
| 7 | | | |

This analysis shows that the company's operating income would actually *decrease* by $32,000 if the air cleaners are discontinued. Therefore, the air cleaners should not be discontinued. The company would only eliminate the air cleaners if it could use the freed capacity to make a different product that is more profitable than the air cleaners.

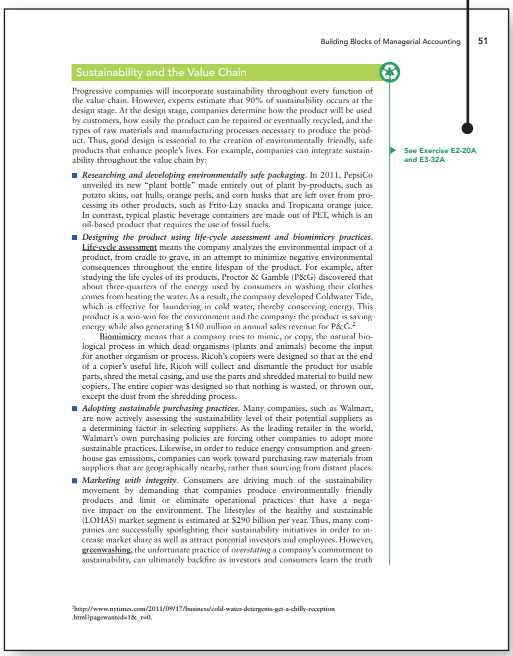
### Other Considerations

As noted in Exhibit 8-13, management must consider at least two other issues when making the decision to discontinue a product line, department, or store.

First, will discontinuing the product line affect sales of the company's other products? As discussed previously, some products have companion products whose sales would be hurt through discontinuing a particular product. This is also true about store departments. Can you imagine a grocery store discontinuing its produce department? Sales of every other department in the store would decline as a result of shoppers' inability to purchase fruits and vegetables at the store. On the other hand, sometimes discontinuing a product, such as one particular camera model, can increases the sales of the other company products (other camera models). The same holds true for retail stores. For example, assume two Starbucks are located close to one other. If one store is closed, then sales at the other location might increase as a result.

## Sustainability

Within every chapter is a section on how sustainability relates to the main chapter topic.



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### Sustainability and the Value Chain

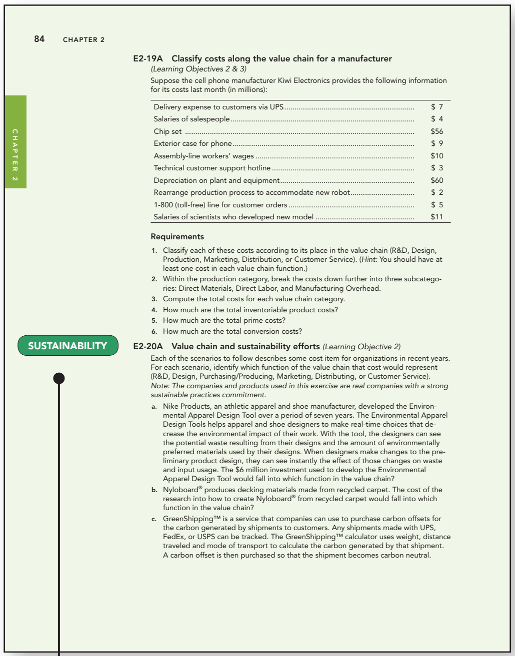
Progressive companies will incorporate sustainability throughout every function of the value chain. However, experts estimate that 90% of sustainability occurs at the design stage. At the design stage, companies determine how the product will be used by customers, how easily the product can be repaired or eventually recycled, and the types of raw materials and manufacturing processes necessary to produce the product. Thus, good design is essential to the creation of environmentally friendly, safe products that enhance people's lives. For example, companies can integrate sustainability throughout the value chain by:

See Exercise E2-20A and E3-32A

- ***Researching and developing environmentally safe packaging.*** In 2011, PepsiCo unveiled its new "plant bottle" made entirely out of plant by-products, such as potato skins, oat hulls, orange peels, and corn husks that are left over from processing its other products, such as Frito-Lay snacks and Tropicana orange juice. In contrast, typical plastic beverage containers are made out of PET, which is an oil-based product that requires the use of fossil fuels.
- ***Designing the product using life-cycle assessment and biomimicry practices.*** Life-cycle assessment means the company analyzes the environmental impact of a product, from cradle to grave, in an attempt to minimize negative environmental consequences throughout the entire lifespan of the product. For example, after studying the life cycles of its products, Proctor & Gamble (P&G) discovered that about three-quarters of the energy used by consumers in washing their clothes comes from heating the water. As a result, the company developed Coldwater Tide, which is effective for laundering in cold water, thereby conserving energy. This product is a win-win for the environment and the company: the product is saving energy while also generating $150 million in annual sales revenue for P&G.[2]

  Biomimicry means that a company tries to mimic, or copy, the natural biological process in which dead organisms (plants and animals) become the input for another organism or process. Ricoh's copiers were designed so that at the end of a copier's useful life, Ricoh will collect and dismantle the product for usable parts, shred the metal casing, and use the parts and shredded material to build new copiers. The entire copier was designed so that nothing is wasted, or thrown out, except the dust from the shredding process.
- ***Adopting sustainable purchasing practices.*** Many companies, such as Walmart, are now actively assessing the sustainability level of their potential suppliers as a determining factor in selecting suppliers. As the leading retailer in the world, Walmart's own purchasing policies are forcing other companies to adopt more sustainable practices. Likewise, in order to reduce energy consumption and greenhouse gas emissions, companies can work toward purchasing raw materials from suppliers that are geographically nearby, rather than sourcing from distant places.
- ***Marketing with integrity.*** Consumers are driving much of the sustainability movement by demanding that companies produce environmentally friendly products and limit or eliminate operational practices that have a negative impact on the environment. The lifestyles of the healthy and sustainable (LOHAS) market segment is estimated at $290 billion per year. Thus, many companies are successfully spotlighting their sustainability initiatives in order to increase market share as well as attract potential investors and employees. However, greenwashing, the unfortunate practice of *overstating* a company's commitment to sustainability, can ultimately backfire as investors and consumers learn the truth

[2]http://www.nytimes.com/2011/09/17/business/cold-water-detergents-get-a-chilly-reception.html?pagewanted=1&_r=0.



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CHAPTER 2

**E2-19A Classify costs along the value chain for a manufacturer** *(Learning Objectives 2 & 3)*

Suppose the cell phone manufacturer Kiwi Electronics provides the following information for its costs last month (in millions):

| | |
|---|---|
| Delivery expense to customers via UPS | $ 7 |
| Salaries of salespeople | $ 4 |
| Chip set | $56 |
| Exterior case for phone | $ 9 |
| Assembly-line workers' wages | $10 |
| Technical customer support hotline | $ 3 |
| Depreciation on plant and equipment | $60 |
| Rearrange production process to accommodate new robot | $ 2 |
| 1-800 (toll-free) line for customer orders | $ 5 |
| Salaries of scientists who developed new model | $11 |

**Requirements**

1. Classify each of these costs according to its place in the value chain (R&D, Design, Production, Marketing, Distribution, or Customer Service). (*Hint:* You should have at least one cost in each value chain function.)
2. Within the production category, break the costs down further into three subcategories: Direct Materials, Direct Labor, and Manufacturing Overhead.
3. Compute the total costs for each value chain category.
4. How much are the total inventoriable product costs?
5. How much are the total prime costs?
6. How much are the total conversion costs?

SUSTAINABILITY

**E2-20A Value chain and sustainability efforts** *(Learning Objective 2)*

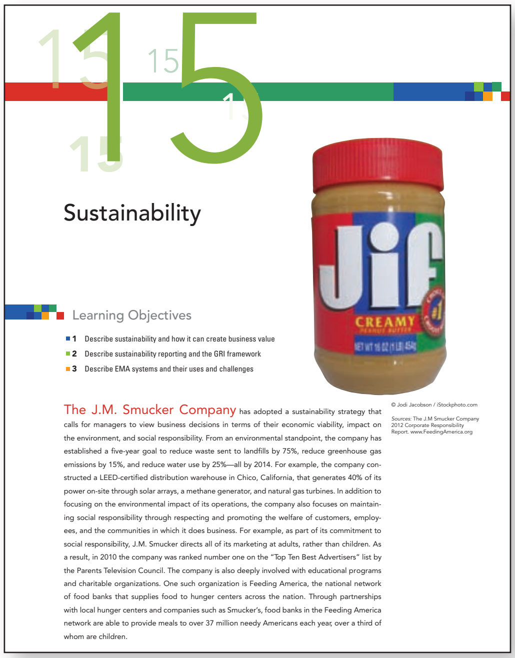
Each of the scenarios to follow describes some cost item for organizations in recent years. For each scenario, identify which function of the value chain that cost would represent (R&D, Design, Purchasing/Producing, Marketing, Distributing, or Customer Service). *Note: The companies and products used in this exercise are real companies with a strong sustainable practices commitment.*

a. Nike Products, an athletic apparel and shoe manufacturer, developed the Environmental Apparel Design Tool over a period of seven years. The Environmental Apparel Design Tools helps apparel and shoe designers to make real-time choices that decrease the environmental impact of their work. With the tool, the designers can see the potential waste resulting from their designs and the amount of environmentally preferred materials used by their designs. When designers make changes to the preliminary product design, they can see instantly the effect of those changes on waste and input usage. The $6 million investment used to develop the Environmental Apparel Design Tool would fall into which function in the value chain?

b. Nyloboard® produces decking materials made from recycled carpet. The cost of the research into how to create Nyloboard® from recycled carpet would fall into which function in the value chain?

c. GreenShipping™ is a service that companies can use to purchase carbon offsets for the carbon generated by shipments to customers. Any shipments made with UPS, FedEx, or USPS can be tracked. The GreenShipping™ calculator uses weight, distance traveled and mode of transport to calculate the carbon generated by that shipment. A carbon offset is then purchased so that the shipment becomes carbon neutral.

Also included is a quick reference on which end-of-chapter problems correspond to this concept.



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Sustainability

Learning Objectives

1 Describe sustainability and how it can create business value
2 Describe sustainability reporting and the GRI framework
3 Describe EMA systems and their uses and challenges

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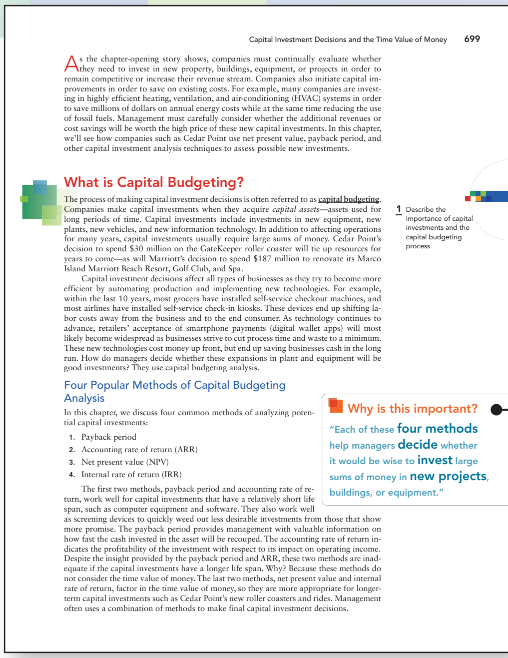
*Sources:* The J.M Smucker Company 2012 Corporate Responsibility Report. www.FeedingAmerica.org

The J.M. Smucker Company has adopted a sustainability strategy that calls for managers to view business decisions in terms of their economic viability, impact on the environment, and social responsibility. From an environmental standpoint, the company has established a five-year goal to reduce waste sent to landfills by 75%, reduce greenhouse gas emissions by 15%, and reduce water use by 25%—all by 2014. For example, the company constructed a LEED-certified distribution warehouse in Chico, California, that generates 40% of its power on-site through solar arrays, a methane generator, and natural gas turbines. In addition to focusing on the environmental impact of its operations, the company also focuses on maintaining social responsibility through respecting and promoting the welfare of customers, employees, and the communities in which it does business. For example, as part of its commitment to social responsibility, J.M. Smucker directs all of its marketing at adults, rather than children. As a result, in 2010 the company was ranked number one on the "Top Ten Best Advertisers" list by the Parents Television Council. The company is also deeply involved with educational programs and charitable organizations. One such organization is Feeding America, the national network of food banks that supplies food to hunger centers across the nation. Through partnerships with local hunger centers and companies such as Smucker's, food banks in the Feeding America network are able to provide meals to over 37 million needy Americans each year, over a third of whom are children.

## Sustainability Chapter

This chapter provides a deeper dive into how sustainability can generate business value. It also includes sections on sustainability reporting and environmental management accounting systems.





As the chapter-opening story shows, companies must continually evaluate whether they need to invest in new property, buildings, equipment, or projects in order to remain competitive or increase their revenue stream. Companies also initiate capital improvements in order to save on existing costs. For example, many companies are investing in highly efficient heating, ventilation, and air-conditioning (HVAC) systems in order to save millions of dollars on annual energy costs while at the same time reducing the use of fossil fuels. Management must carefully consider whether the additional revenues or cost savings will be worth the high price of these new capital investments. In this chapter, we'll see how companies such as Cedar Point use net present value, payback period, and other capital investment analysis techniques to assess possible new investments.

## What is Capital Budgeting?

1 Describe the importance of capital investments and the capital budgeting process

The process of making capital investment decisions is often referred to as **capital budgeting**. Companies make capital investments when they acquire *capital assets*—assets used for long periods of time. Capital investments include investments in new equipment, new plants, new vehicles, and new information technology. In addition to affecting operations for many years, capital investments usually require large sums of money. Cedar Point's decision to spend $30 million on the GateKeeper roller coaster will tie up resources for years to come—as will Marriott's decision to spend $187 million to renovate its Marco Island Marriott Beach Resort, Golf Club, and Spa.

Capital investment decisions affect all types of businesses as they try to become more efficient by automating production and implementing new technologies. For example, within the last 10 years, most grocers have installed self-service checkout machines, and most airlines have installed self-service check-in kiosks. These devices end up shifting labor costs away from the business and to the end consumer. As technology continues to advance, retailers' acceptance of smartphone payments (digital wallet apps) will most likely become widespread as businesses strive to cut process time and waste to a minimum. These new technologies cost money up front, but end up saving businesses cash in the long run. How do managers decide whether these expansions in plant and equipment will be good investments? They use capital budgeting analysis.

### Four Popular Methods of Capital Budgeting Analysis

In this chapter, we discuss four common methods of analyzing potential capital investments:

1. Payback period
2. Accounting rate of return (ARR)
3. Net present value (NPV)
4. Internal rate of return (IRR)

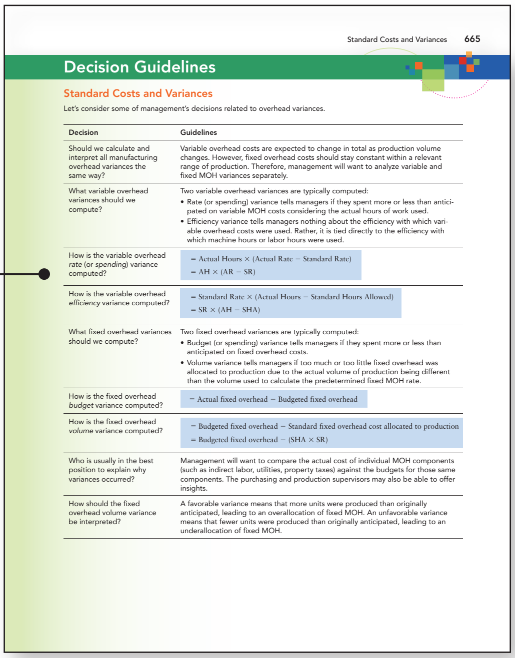
The first two methods, payback period and accounting rate of return, work well for capital investments that have a relatively short life span, such as computer equipment and software. They also work well as screening devices to quickly weed out less desirable investments from those that show more promise. The payback period provides management with valuable information on how fast the cash invested in the asset will be recouped. The accounting rate of return indicates the profitability of the investment with respect to its impact on operating income. Despite the insight provided by the payback period and ARR, these two methods are inadequate if the capital investments have a longer life span. Why? Because these methods do not consider the time value of money. The last two methods, net present value and internal rate of return, factor in the time value of money, so they are more appropriate for longer-term capital investments such as Cedar Point's new roller coasters and rides. Management often uses a combination of methods to make final capital investment decisions.

**Why is this important?**

"Each of these **four methods** help managers **decide** whether it would be wise to **invest** large sums of money in **new projects**, buildings, or equipment."

## Why is this important?

Found throughout the chapter, this feature connects accounting with the business environment so that students can better understand the business significance of managerial accounting.





## Decision Guidelines

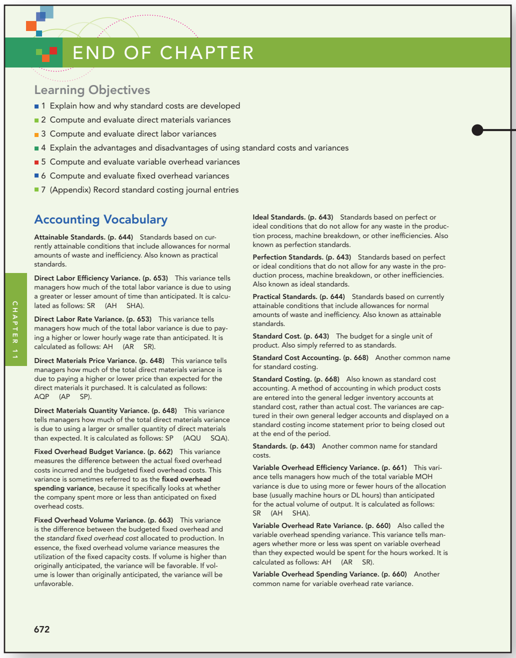
### Standard Costs and Variances

Let's consider some of management's decisions related to overhead variances.

| Decision | Guidelines |
|---|---|
| Should we calculate and interpret all manufacturing overhead variances the same way? | Variable overhead costs are expected to change in total as production volume changes. However, fixed overhead costs should stay constant within a relevant range of production. Therefore, management will want to analyze variable and fixed MOH variances separately. |
| What variable overhead variances should we compute? | Two variable overhead variances are typically computed: • Rate (or spending) variance tells managers if they spent more or less than anticipated on variable MOH costs considering the actual hours of work used. • Efficiency variance tells managers nothing about the efficiency with which variable overhead costs were used. Rather, it is tied directly to the efficiency with which machine hours or labor hours were used. |
| How is the variable overhead *rate* (or *spending*) variance computed? | = Actual Hours × (Actual Rate − Standard Rate)<br>= AH × (AR − SR) |
| How is the variable overhead *efficiency* variance computed? | = Standard Rate × (Actual Hours − Standard Hours Allowed)<br>= SR × (AH − SHA) |
| What fixed overhead variances should we compute? | Two fixed overhead variances are typically computed: • Budget (or spending) variance tells managers if they spent more or less than anticipated on fixed overhead costs. • Volume variance tells managers if too much or too little fixed overhead was allocated to production due to the actual volume of production being different than the volume used to calculate the predetermined fixed MOH rate. |
| How is the fixed overhead *budget* variance computed? | = Actual fixed overhead − Budgeted fixed overhead |
| How is the fixed overhead *volume* variance computed? | = Budgeted fixed overhead − Standard fixed overhead cost allocated to production<br>= Budgeted fixed overhead − (SHA × SR) |
| Who is usually in the best position to explain why variances occurred? | Management will want to compare the actual cost of individual MOH components (such as indirect labor, utilities, property taxes) against the budgets for those same components. The purchasing and production supervisors may also be able to offer insights. |
| How should the fixed overhead volume variance be interpreted? | A favorable variance means that more units were produced than originally anticipated, leading to an overallocation of fixed MOH. An unfavorable variance means that fewer units were produced than originally anticipated, leading to an underallocation of fixed MOH. |

## Decision Guidelines

Found at the midpoint and end of each chapter, this feature uses a business decision context to summarize key terms, concepts, and formulas from the chapter in question and answer format.



## END OF CHAPTER

### Learning Objectives

1 Explain how and why standard costs are developed
2 Compute and evaluate direct materials variances
3 Compute and evaluate direct labor variances
4 Explain the advantages and disadvantages of using standard costs and variances
5 Compute and evaluate variable overhead variances
6 Compute and evaluate fixed overhead variances
7 (Appendix) Record standard costing journal entries

### Accounting Vocabulary

**Attainable Standards. (p. 644)** Standards based on currently attainable conditions that include allowances for normal amounts of waste and inefficiency. Also known as practical standards.

**Direct Labor Efficiency Variance. (p. 653)** This variance tells managers how much of the total labor variance is due to using a greater or lesser amount of time than anticipated. It is calculated as follows: SR (AH SHA).

**Direct Labor Rate Variance. (p. 653)** This variance tells managers how much of the total labor variance is due to paying a higher or lower hourly wage rate than anticipated. It is calculated as follows: AH (AR SR).

**Direct Materials Price Variance. (p. 648)** This variance tells managers how much of the total direct materials variance is due to paying a higher or lower price than expected for the direct materials it purchased. It is calculated as follows: AQP (AP SP).

**Direct Materials Quantity Variance. (p. 648)** This variance tells managers how much of the total direct materials variance is due to using a larger or smaller quantity of direct materials than expected. It is calculated as follows: SP (AQU SQA).

**Fixed Overhead Budget Variance. (p. 662)** This variance measures the difference between the actual fixed overhead costs incurred and the budgeted fixed overhead costs. This variance is sometimes referred to as the **fixed overhead spending variance**, because it specifically looks at whether the company spent more or less than anticipated on fixed overhead costs.

**Fixed Overhead Volume Variance. (p. 663)** This variance is the difference between the budgeted fixed overhead and the *standard fixed overhead cost* allocated to production. In essence, the fixed overhead volume variance measures the utilization of the fixed capacity costs. If volume is higher than originally anticipated, the variance will be favorable. If volume is lower than originally anticipated, the variance will be unfavorable.

**Ideal Standards. (p. 643)** Standards based on perfect or ideal conditions that do not allow for any waste in the production process, machine breakdown, or other inefficiencies. Also known as perfection standards.

**Perfection Standards. (p. 643)** Standards based on perfect or ideal conditions that do not allow for any waste in the production process, machine breakdown, or other inefficiencies. Also known as ideal standards.

**Practical Standards. (p. 644)** Standards based on currently attainable conditions that include allowances for normal amounts of waste and inefficiency. Also known as attainable standards.

**Standard Cost. (p. 643)** The budget for a single unit of product. Also simply referred to as standards.

**Standard Cost Accounting. (p. 668)** Another common name for standard costing.

**Standard Costing. (p. 668)** Also known as standard cost accounting. A method of accounting in which product costs are entered into the general ledger inventory accounts at standard cost, rather than actual cost. The variances are captured in their own general ledger accounts and displayed on a standard costing income statement prior to being closed out at the end of the period.

**Standards. (p. 643)** Another common name for standard costs.

**Variable Overhead Efficiency Variance. (p. 661)** This variance tells managers how much of the total variable MOH variance is due to using more or fewer hours of the allocation base (usually machine hours or DL hours) than anticipated for the actual volume of output. It is calculated as follows: SR (AH SHA).

**Variable Overhead Rate Variance. (p. 660)** Also called the variable overhead spending variance. This variance tells managers whether more or less was spent on variable overhead than they expected would be spent for the hours worked. It is calculated as follows: AH (AR SR).

**Variable Overhead Spending Variance. (p. 660)** Another common name for variable overhead rate variance.

CHAPTER 11



**NEW!**

## New End-of-Chapter Problems

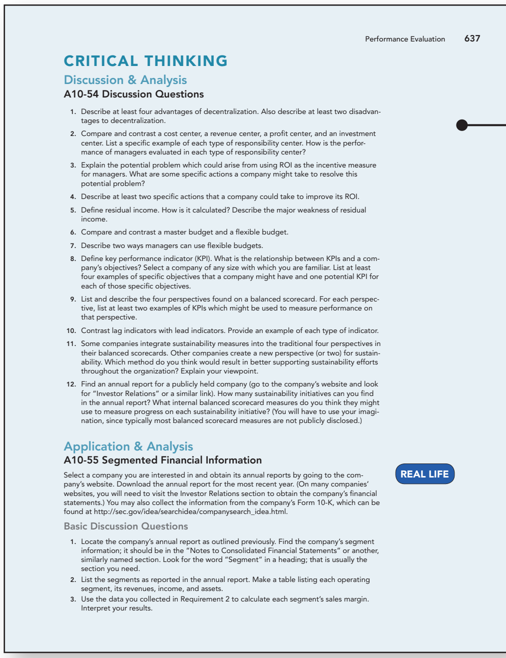
The Quick Check questions are all new in every chapter. The end-of-chapter content for short exercises, exercises, and problems has been refreshed for this edition. End of chapter items are structured to allow students to progress from simple to more rigorous as they move from item to item.

A new ethics exercise based on the IMA Statement of Professional Practice has been added and is highlighted with an icon.

**ETHICS**

Problems specific to sustainability are highlighted with an icon.

**SUSTAINABILITY**



Performance Evaluation 637

CRITICAL THINKING

Discussion & Analysis

A10-54 Discussion Questions

1. Describe at least four advantages of decentralization. Also describe at least two disadvantages to decentralization.
2. Compare and contrast a cost center, a revenue center, a profit center, and an investment center. List a specific example of each type of responsibility center. How is the performance of managers evaluated in each type of responsibility center?
3. Explain the potential problem which could arise from using ROI as the incentive measure for managers. What are some specific actions a company might take to resolve this potential problem?
4. Describe at least two specific actions that a company could take to improve its ROI.
5. Define residual income. How is it calculated? Describe the major weakness of residual income.
6. Compare and contrast a master budget and a flexible budget.
7. Describe two ways managers can use flexible budgets.
8. Define key performance indicator (KPI). What is the relationship between KPIs and a company's objectives? Select a company of any size with which you are familiar. List at least four examples of specific objectives that a company might have and one potential KPI for each of those specific objectives.
9. List and describe the four perspectives found on a balanced scorecard. For each perspective, list at least two examples of KPIs which might be used to measure performance on that perspective.
10. Contrast lag indicators with lead indicators. Provide an example of each type of indicator.
11. Some companies integrate sustainability measures into the traditional four perspectives in their balanced scorecards. Other companies create a new perspective (or two) for sustainability. Which method do you think would result in better supporting sustainability efforts throughout the organization? Explain your viewpoint.
12. Find an annual report for a publicly held company (go to the company's website and look for "Investor Relations" or a similar link). How many sustainability initiatives can you find in the annual report? What internal balanced scorecard measures do you think they might use to measure progress on each sustainability initiative? (You will have to use your imagination, since typically most balanced scorecard measures are not publicly disclosed.)

Application & Analysis

A10-55 Segmented Financial Information

REAL LIFE

Select a company you are interested in and obtain its annual reports by going to the company's website. Download the annual report for the most recent year. (On many companies' websites, you will need to visit the Investor Relations section to obtain the company's financial statements.) You may also collect the information from the company's Form 10-K, which can be found at http://sec.gov/idea/searchidea/companysearch_idea.html.

Basic Discussion Questions

1. Locate the company's annual report as outlined previously. Find the company's segment information; it should be in the "Notes to Consolidated Financial Statements" or another, similarly named section. Look for the word "Segment" in a heading; that is usually the section you need.
2. List the segments as reported in the annual report. Make a table listing each operating segment, its revenues, income, and assets.
3. Use the data you collected in Requirement 2 to calculate each segment's sales margin. Interpret your results.

**NEW!**

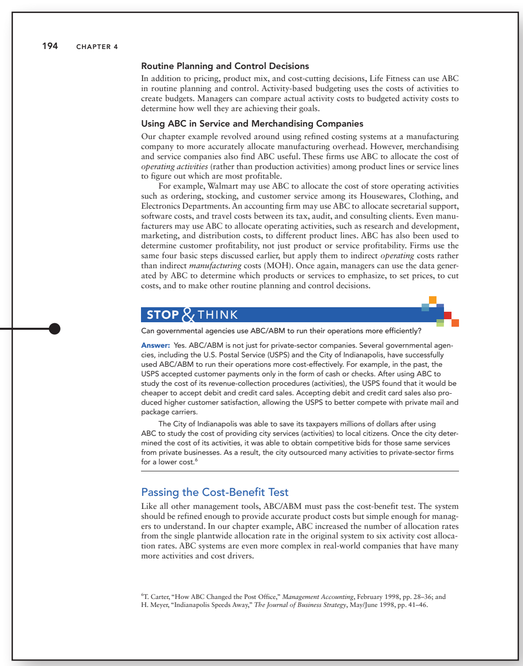
## Critical Thinking End-of-Chapter Problems

Additional problems were developed to provide students with the opportunity for applied critical thinking. These problems include ethical topics, mini cases, and decision-making cases in real companies.

- New Ethics Mini Cases based on the IMA Statement of Professional Practice are highlighted with an icon.
  ETHICS
- New Real Life Mini Case focusing on a real company and the decisions presented in business are highlighted with an icon.
  REAL LIFE

## Stop & Think

Found at various points within each chapter, this feature includes a question-and-answer snapshot asking students to critically examine a concept they just learned.



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Routine Planning and Control Decisions

In addition to pricing, product mix, and cost-cutting decisions, Life Fitness can use ABC in routine planning and control. Activity-based budgeting uses the costs of activities to create budgets. Managers can compare actual activity costs to budgeted activity costs to determine how well they are achieving their goals.

Using ABC in Service and Merchandising Companies

Our chapter example revolved around using refined costing systems at a manufacturing company to more accurately allocate manufacturing overhead. However, merchandising and service companies also find ABC useful. These firms use ABC to allocate the cost of *operating activities* (rather than production activities) among product lines or service lines to figure out which are most profitable.

For example, Walmart may use ABC to allocate the cost of store operating activities such as ordering, stocking, and customer service among its Housewares, Clothing, and Electronics Departments. An accounting firm may use ABC to allocate secretarial support, software costs, and travel costs between its tax, audit, and consulting clients. Even manufacturers may use ABC to allocate operating activities, such as research and development, marketing, and distribution costs, to different product lines. ABC has also been used to determine customer profitability, not just product or service profitability. Firms use the same four basic steps discussed earlier, but apply them to indirect *operating* costs rather than indirect *manufacturing* costs (MOH). Once again, managers can use the data generated by ABC to determine which products or services to emphasize, to set prices, to cut costs, and to make other routine planning and control decisions.

STOP & THINK

Can governmental agencies use ABC/ABM to run their operations more efficiently?

**Answer:** Yes. ABC/ABM is not just for private-sector companies. Several governmental agencies, including the U.S. Postal Service (USPS) and the City of Indianapolis, have successfully used ABC/ABM to run their operations more cost-effectively. For example, in the past, the USPS accepted customer payments only in the form of cash or checks. After using ABC to study the cost of its revenue-collection procedures (activities), the USPS found that it would be cheaper to accept debit and credit card sales. Accepting debit and credit card sales also produced higher customer satisfaction, allowing the USPS to better compete with private mail and package carriers.

The City of Indianapolis was able to save its taxpayers millions of dollars after using ABC to study the cost of providing city services (activities) to local citizens. Once the city determined the cost of its activities, it was able to obtain competitive bids for those same services from private businesses. As a result, the city outsourced many activities to private-sector firms for a lower cost.[6]

Passing the Cost-Benefit Test

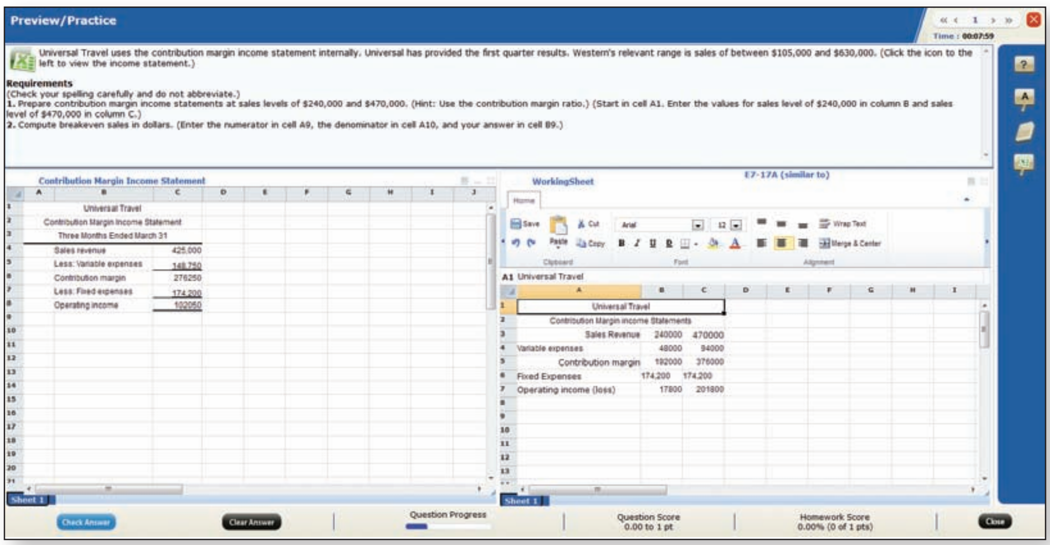
Like all other management tools, ABC/ABM must pass the cost-benefit test. The system should be refined enough to provide accurate product costs but simple enough for managers to understand. In our chapter example, ABC increased the number of allocation rates from the single plantwide allocation rate in the original system to six activity cost allocation rates. ABC systems are even more complex in real-world companies that have many more activities and cost drivers.

[6]T. Carter, "How ABC Changed the Post Office," *Management Accounting*, February 1998, pp. 28–36; and H. Meyer, "Indianapolis Speeds Away," *The Journal of Business Strategy*, May/June 1998, pp. 41–46.

## Excel in MyAccountingLab

NEW!

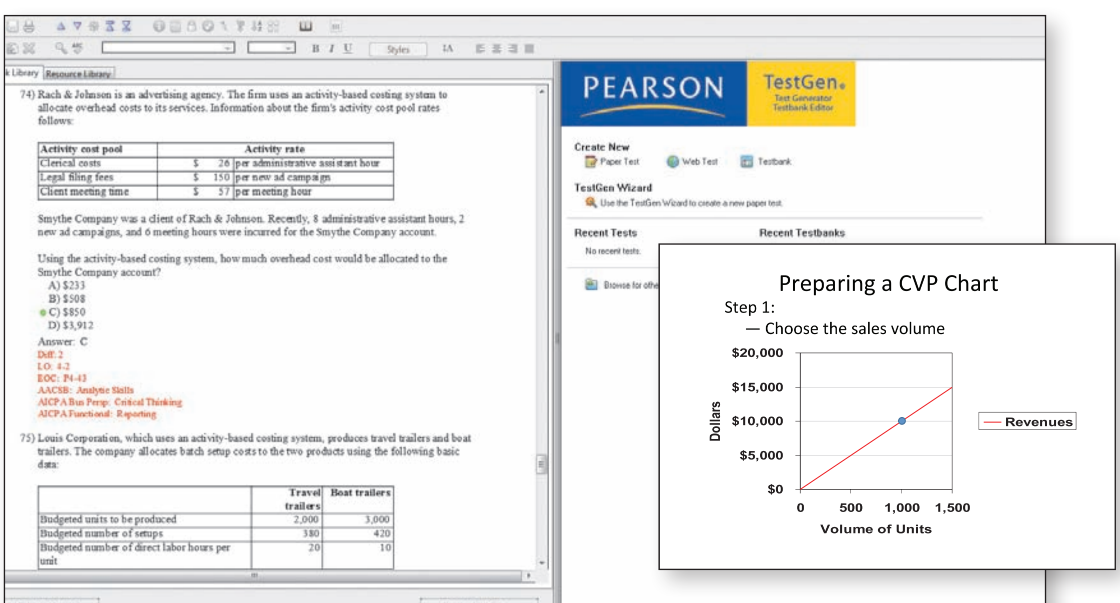
- Now students can get real-world Excel practice in their classes.
- Instructors have the option to assign students end-of-chapter questions that can be completed in an Excel-simulated environment.
- Questions will be auto-graded, reported, and visible in the grade book.
- Excel remediation will be available to students.




## Test Bank and PowerPoints

NEW!

Test bank now includes algorithmic questions and 30% new material. PowerPoints have been updated and refreshed for the new edition. Worked-out problems now contain the entire problem statement.



# CONTENT CHANGES TO THE FOURTH EDITION

*Both students and instructors will benefit from a variety of new content in the fourth edition.*

**New and updated content within the text:**

- New focus on Excel. Chapter exhibits are now illustrated as Excel spreadsheets to get students used to looking at and working with Excel. "Technology Makes it Simple" features teach students how to use Excel applications. Select Excel exhibits are video-demonstrated in the eText.
- New Try It! features in each chapter allow students to self-assess whether they understand the concept just discussed. Author-produced video demonstrations of the solutions are provided in the eText and MyAccountingLab.
- Updated and expanded sections in each chapter show how sustainability relates to the chapter content.
- Refreshed chapter opening stories attract student attention and lay the groundwork for the chapter using recognizable, real-world companies.
- Select modifications and enhancements were made to each chapter to make it easier for students to grasp difficult concepts including:

| | |
|---|---|
| **Chapter 1** | Updated coverage of current topics, such as integrated reporting and the CGMA designation. |
| **Chapter 2** | New exhibits help students differentiate between period costs and inventoriable product costs. |
| **Chapter 3** | New exhibits help students link job cost records to job costing journal entries. |
| **Chapter 7** | New "sales basket" approach to teaching CVP analysis in a multiproduct firm. |
| **Chapter 10** | New company (PepsiCo) used to illustrate responsibility accounting. New learning objective, example, and end-of-chapter problems on transfer pricing. |
| **Chapter 11** | Updated coverage of fixed overhead volume variance. |
| **Chapter 12** | Revised section on Payback and ARR; inclusion of "Technology Makes it Simple" features in the main text illustrates using Excel to calculate NPV and IRR. |
| **Chapter 14** | Updated with the latest financial information from Target, JC Penney, Kohl's and Walmart. |
| **Chapter 15** | All new content including an expanded section on why sustainability makes good business sense and expanded coverage of the GRI sustainability reporting framework. |

**New and updated content within the end-of-chapter material:**

| | |
|---|---|
| **Quick Checks** | All new quick checks in each chapter. These questions are conceptual in nature. |
| **Short Exercises** | All short exercises have been updated. In addition a new Ethics short exercise based on the IMA Statement of Professional Practice is included in every chapter. ETHICS |
| **Exercises** | All exercises have been updated. |
| **Problems** | All problems have been updated. |
| **Ethics Mini Cases** | All new case at the end of each chapter based on the IMA Statement of Professional Practice. ETHICS |
| **Real Life Mini Cases** | All new case at the end of each chapter focusing on a real company situation. REAL LIFE |

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Professor Braun has two daughters who are both in college. In her free time she enjoys biking, gardening, hiking, skiing, and spending time with family and friends.

To my children, Rachel and Hannah, who are the joy of my life, and to my father, David, who taught me to cherish nature.

*Karen W. Braun*

David Maxwell/DavidMaxwellPhotography.com

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To Russ, Jonathan, and Nicholas, who enrich my life through laughter and love.

*Wendy M. Tietz*

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Kristoffer Tripplaar/SIPA/Newscom

*Source:* Chipotle.com

# 1 Introduction to Managerial Accounting

## Learning Objectives

- **1** Identify managers' three primary responsibilities
- **2** Distinguish financial accounting from managerial accounting
- **3** Describe organizational structure and the roles and skills required of management accountants within the organization
- **4** Describe the role of the Institute of Management Accountants (IMA) and use its ethical standards to make reasonable ethical judgments
- **5** Discuss and analyze the implications of regulatory and business trends

Steve Ells opened the first Chipotle Mexican Grill in 1993 near the University of Denver campus. Although he had never taken a business class, he was fascinated by the simple economic model he saw in place at small burrito shops in San Francisco. By putting his own spin on that simple, cost-effective business model, Steve launched what has now become a tremendously successful company with over 1,400 restaurants in 38 states. Although Steve was first drawn to the business model by its limited costs—few workers, sparse furnishing, food served in foil wrappers—his resulting business was not solely driven by profits. Rather, Steve sought to run his business in a manner that included the ethical treatment of the people, animals, and the planet. Chipotle's motto, "Food with Integrity," has become the driving force for every aspect of the company's operations. Chipotle uses management accounting to help make operating decisions that focus on sustainability, while also keeping the company financially strong.

As the Chipotle story shows, managers use accounting information for much more than preparing annual financial statements. They use managerial accounting information to guide their actions and decisions. For Chipotle, these decisions might include opening new restaurants, adding new items to the menu, or sourcing ingredients from different suppliers. Management accounting information helps management decide whether any or all of these actions will help accomplish the company's ultimate goals. In this chapter, we'll introduce managerial accounting and discuss how managers use it to fulfill their duties. We will also explore how managerial accounting differs from financial accounting, and discuss the role of management accountants within the organization. Finally, we will discuss the regulatory and business environment in which today's managers and management accountants operate.

## What is Managerial Accounting?

As you will see throughout the book, managerial accounting is very different from financial accounting. Financial accounting focuses on providing stockholders and creditors with the information they need to make investment and lending decisions. This information takes the form of financial statements: the balance sheet, income statement, statement of shareholders' equity, and statement of cash flows. On the other hand, managerial accounting focuses on providing internal management with the information it needs to run the company efficiently and effectively. This information takes many forms depending on management's needs.

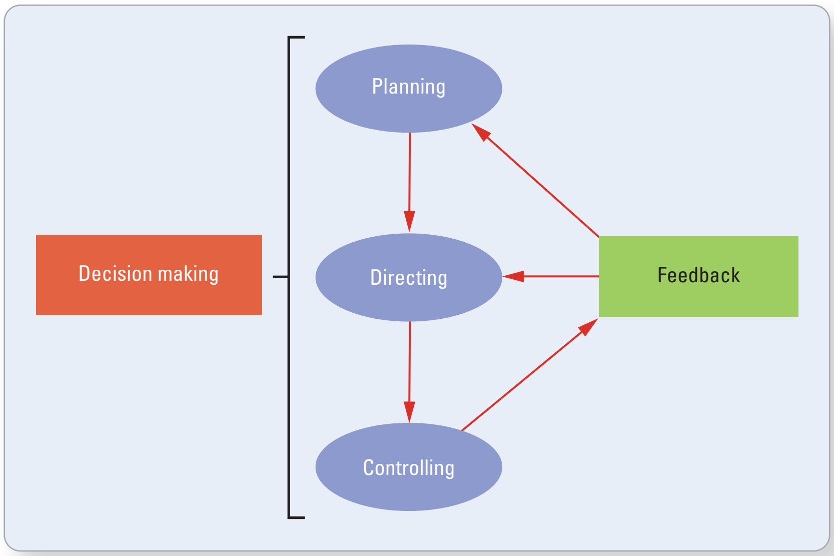
To understand the kind of information managers need, let's first look at their primary responsibilities.

### Managers' Three Primary Responsibilities

1 Identify managers' three primary responsibilities

Managerial accounting helps managers fulfill their three primary responsibilities, as shown in Exhibit 1-1: planning, directing, and controlling. Integrated throughout these responsibilities is **decision making** (identifying alternative courses of action and choosing among them).

**EXHIBIT 1-1** Managers' Three Primary Responsibilities



- **Planning** involves setting goals and objectives for the company and determining how to achieve them. For example, one of Chipotle's goals may be to generate more sales. One strategy to achieve this goal is to open more restaurants. For example, the company opened 183 new restaurants in 2012.[1] Managerial accounting translates these plans into **budgets**—the quantitative expression of a plan. Management analyzes the budgets before proceeding to determine whether its expansion plans make financial sense.
- **Directing** means overseeing the company's day-to-day operations. Management uses product cost reports, product sales information, and other managerial accounting reports to run daily business operations. Chipotle would use product sales data to determine which items on the menu are generating the most sales and then uses that information to adjust menus and marketing strategies.
- **Controlling** means evaluating the results of business operations against the plan and making adjustments to keep the company pressing toward its goals. Chipotle would use performance reports to compare each restaurant's actual performance against the budget and then would use that *feedback* to take corrective actions if needed. If actual costs are higher than planned, or actual sales are lower than planned, then management may revise its plans or adjust operations. Perhaps the newly opened restaurants are not generating as much income as budgeted. As a result, management may decide to increase local advertising to increase sales.

Management is continually making decisions while it plans, directs, and controls operations. Chipotle must decide where to open new restaurants, which restaurants to refurnish, what prices to set for meals, what items to offer on its menu, and so forth. Managerial accounting gathers, summarizes, and reports on the financial impact of each of these decisions.

## A Road Map: How Managerial Accounting Fits In

This book will show you how managerial accounting information helps managers fulfill their responsibilities. The rest of the text is organized around the following themes:

1. **Managerial Accounting Building Blocks** Chapter 1 helps you understand more about the management accounting profession and today's business environment. Chapter 2 teaches you some of the language that is commonly used in managerial accounting. Just as musicians must know the notes to the musical scale, management accountants *and* managers must have a common understanding of these terms in order to communicate effectively with one another.
2. **Determining Unit Cost (Product Costing)** In order to run a business profitably, managers must be able to identify the costs associated with manufacturing its products or delivering its service. For example, Chipotle's managers need to know the cost of producing each item on the menu as well as the cost of operating each restaurant location. Managers must have this information so that they can set prices high enough to cover costs and generate an adequate profit. Chapters 3, 4, and 5 show you how businesses determine these costs. These chapters also show how managers can effectively control costs by understanding the activities that drive costs.
3. **Making Decisions** Before Steve Ells opened the first Chipotle restaurant, he must have thought about the volume of sales needed just to break even—that is, just to cover costs. In order to do so, he had to first identify and estimate the types of costs the restaurant would incur, as well as the profit that would be generated on each meal served. These topics are covered in Chapters 6 and 7. Chapter 6 shows how managers identify different types of cost behavior, while Chapter 7 shows how managers determine the profitability of each unit sold as well as the company's breakeven point. Chapter 8 continues to use cost behavior information to walk through common

[1]http://ir.chipotle.com

business decisions, such as outsourcing and pricing decisions. Finally, Chapter 12 shows how managers decide whether to invest in new equipment, new projects, or new locations, such as when Chipotle decides to open a new restaurant.

4. **Planning** Budgets are management's primary tool for expressing its plans. Chapter 9 discusses all of the components of the master budget and the way companies like Chipotle uses the budgeting process to implement their business goals and strategies.
5. **Controlling and Evaluating** Management uses many different performance evaluation tools to determine whether individual segments of the business are reaching company goals. Chapters 10 and 11 describe these tools in detail. Chapters 13 and 14 describe how the statement of cash flows and financial statement analysis can be used to evaluate the performance of the company as a whole. Finally, Chapter 15 discusses how companies are beginning to address the sustainability of their operations, by measuring, reporting, and minimizing the negative impact of their operations on people and the environment. As you saw in the opening story, one of Chipotle's primary business concerns is to operate in a fashion that has minimal negative consequences for people, animals, and the planet.

## Differences Between Managerial Accounting and Financial Accounting

**2** Distinguish financial accounting from managerial accounting

Managerial accounting information differs from financial accounting information in many respects. Exhibit 1-2 summarizes these differences. Take a few minutes to study the exhibit (on page 5) and then we'll apply it to Chipotle.

Chipotle's *financial accounting* system is geared toward producing annual and quarterly consolidated financial statements that will be used by investors and creditors to make investment and lending decisions. The financial statements, which must be prepared in accordance with Generally Accepted Accounting Principles (GAAP), objectively summarize the transactions that occurred between Chipotle and external parties during the previous period. The Securities and Exchange Commission (SEC) requires that the annual financial statements of publicly traded companies, such as Chipotle, be audited by independent certified public accountants (CPAs). Chipotle's financial statements are useful to its investors and creditors, but they do not provide management with enough information to run the company effectively.

Chipotle's *managerial accounting* system is designed to provide its managers with the accounting information they need to plan, direct, and control operations. There are no GAAP-type standards or audits required for managerial accounting. Chipotle's managerial accounting system is tailored to provide the information managers need to help them make better decisions. Chipotle must weigh the benefits of the system (useful information) against the costs to develop and run the system. The costs and benefits of any particular managerial accounting system differ from one company to another. Different companies create different systems, so Chipotle's managerial accounting system will differ from Toyota's system.

In contrast to financial statements, most managerial accounting reports focus on the *future,* providing *relevant* information that helps managers make profitable business decisions. For example, before putting their plans into action, Chipotle's managers determine if their plans make sense by quantitatively expressing them in the form of budgets. Chipotle's managerial accounting reports may also plan for and reflect *internal* transactions, such as any movement of beverages and dry ingredients from central warehouses to individual restaurant locations.

To make good decisions, Chipotle's managers need information about smaller units of the company, not just the company as a whole. For example, management uses revenue and cost data on individual restaurants, geographical regions, and individual menu items to increase the company's profitability. Regional data helps Chipotle's management decide where to open more restaurants. Sales and profit reports on individual menu items help management choose menu items and decide what items to offer on a seasonal basis. Rather than preparing these reports just once a year, companies prepare and revise managerial accounting reports as often as needed.

**EXHIBIT 1-2** Managerial Accounting Versus Financial Accounting

| MANAGERIAL ACCOUNTING | ISSUE | FINANCIAL ACCOUNTING |
|---|---|---|
| Internal users such as managers. | Who are the primary users of the information? | External users, such as creditors, stockholders, and government regulators. |
| To help managers plan, direct, and control business operations and make business decisions. | What is the purpose of the information? | To help external users make investing and lending decisions. |
| Any internal accounting report deemed worthwhile by management. | What is the primary accounting product? | Financial statements. |
| Management determines what it wants in a report, and how it wants it formatted. Reports are prepared only when management believes the benefit of using the report exceeds the cost of preparing the report. | What must be included in the report, and how must it be formatted? | Generally Accepted Accounting Principles (GAAP) determine the content and format of financial statements. |
| While some information is based on past transactions, managerial accounting focuses on the future. It provides information on both external and internal transactions. | What is the underlying basis of the information? | The information is based on historical transactions with external parties. |
| The data must be relevant. | What information characteristic is emphasized? | The data must be reliable and objective. |
| Segments of the business, such as products, customers, geographical regions, departments, and divisions. | What business "unit" is the report about? | The company as a whole (consolidated financial statements). Limited segment data is provided in the footnotes. |
| It depends on management's needs. Some reports are prepared daily, while others may be prepared only one time. | How often are the reports prepared? | Annually and quarterly. |
| There are no independent audits. However, the company's internal audit function may examine the procedures used in preparing the reports. | Does anyone verify the information? | Independent certified public accountants (CPAs) audit the annual financial statements of publicly traded companies and express an opinion on the fairness of the financial information they contain. |
| No authoritative body requires managerial accounting reports. | Is the information required by an outside group/government agency? | Yes, the Securities and Exchange Commission (SEC) requires publicly traded companies to issue annual audited financial statements. |
| Management carefully considers behavioral implications when designing the managerial accounting system. | Is there any concern over how the reports will affect employee behavior? | The concern is about adequacy of disclosure; behavioral implications are secondary. |

When designing the managerial accounting system, management must carefully consider how the system will affect employees' behavior. Employees try to perform well on the parts of their jobs that the accounting system measures. If Chipotle's restaurant managers were evaluated only on their ability to control costs, they may use cheaper ingredients or hire less experienced help. Although these actions cut costs in the short run, they can hurt profits if the quality of the meals or service declines as a result. Since one of Chipotle's primary goals is to serve food that has been sourced naturally and locally, the performance measurement system needs to include more than just a focus on cost if it is to encourage managers to think beyond cost.

## What Role do Management Accountants Play?

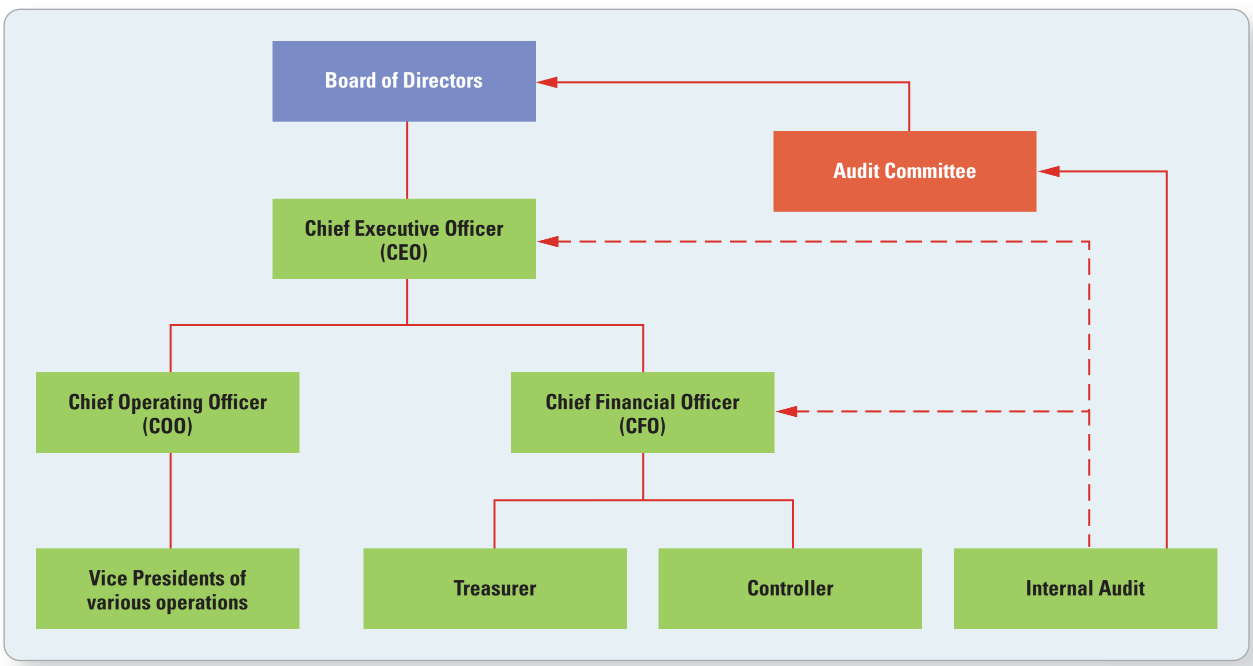
Let's look at how management accountants fit into the company's organizational structure, how their roles are changing, and the skills they need to successfully fill their roles. We'll also look at their professional association, their average salaries, and their ethical standards.

**3** Describe organizational structure and the roles and skills required of management accountants within the organization

### Organizational Structure

Most corporations are too large to be governed directly by their stockholders. Therefore, stockholders elect a **board of directors** to oversee the company. Exhibit 1-3 shows a typical organizational structure with the green boxes representing employees of the firm and the orange and blue boxes representing nonemployees.

**EXHIBIT 1-3** Typical Organizational Structure




The board members meet only periodically, so they hire a **chief executive officer (CEO)** to manage the company on a daily basis. The CEO hires other executives to run various aspects of the organization, including the **chief operating officer (COO)** and the **chief financial officer (CFO)**. The COO is responsible for the company's operations, such as research and development (R&D), production, and distribution. The CFO is responsible for all of the company's financial concerns. The **treasurer** and the **controller** report directly to the CFO. The treasurer is primarily responsible for raising capital (through issuing stocks and bonds) and investing funds. The controller is usually responsible for general financial accounting, managerial accounting, and tax reporting.

The New York Stock Exchange requires that listed companies have an **internal audit function**. The role of the internal audit function is to ensure that the company's internal controls and risk management policies are functioning properly. The Internal Audit

Department reports directly to a subcommittee of the board of directors called the **audit committee**. The audit committee oversees the internal audit function as well as the annual audit of the financial statements by independent CPAs. Both the Internal Audit Department and the independent CPAs report directly to the audit committee for one very important reason: to ensure that management will not intimidate them or bias their work. However, since the audit committee meets only periodically, it is not practical for the audit committee to manage the internal audit function on a day-to-day basis. Therefore, the internal audit function also reports to a senior executive, such as the CFO or CEO, for administrative matters.

When you look at the organizational chart pictured in Exhibit 1-3, where do you think management accountants work? It depends on the company. Management accountants used to work in accounting departments and reported directly to the controller. Now, over half of management accountants are located throughout the company and work on cross-functional teams. **Cross-functional teams** consist of employees representing various functions of the company, such as R&D, design, production, marketing, distribution, and customer service. Cross-functional teams are effective because each member can address business decisions from a different viewpoint. These teams often report to various vice presidents of operations. Management accountants often take the leadership role in the teams. Here is what two managers had to say in a study about management accountants:[2]

> *Finance (the management accountant) has a unique ability and responsibility to see across all the functions and try and make sense of them. They have the neat ability to be a member of all of the different groups (functions) and yet not be a member of any of them at the same time. (U.S. West)*
>
> *Basically the role of the financial person on the team is analyzing the financial impact of the business decision and providing advice. Does this make sense financially or not? (Abbott Laboratories)*

## The Changing Roles of Management Accountants

Technology has changed the roles of management accountants. Management accountants no longer perform routine mechanical accounting tasks. Computer programs perform those tasks. Yet, management accountants are in more demand than ever before. Company managers used to view management accountants as "scorekeepers" or "bean counters" because they spent most of their time recording historical transactions. Now, they view management accountants as internal consultants or business advisors.

Does this mean that management accountants are no longer involved with the traditional task of recording transactions? No. Management accountants must still ensure that the company's financial records adequately capture economic events. They help design the information systems that capture and record transactions and make sure that the information system generates accurate data. They use professional judgment to record nonroutine transactions and make adjustments to the financial records as needed. Management accountants still need to know what transactions to record and how to record them, but they let technology do most of the routine work.

Freed from the routine mechanical work, management accountants spend more of their time planning, analyzing, and interpreting accounting data and providing decision support. Because their role is changing, management accountants rarely bear the job title "management accountant" anymore; managers often refer to them as business management support, financial advisors,

### Why is this important?

"Management **accountants** act as internal business advisors. They provide the **financial** information and in-depth **analysis** that managers need to make good business **decisions.**"

[2]*Counting More, Counting Less: The 1999 Practice Analysis of Management Accounting*, Institute of Management Accountants, Montvale, NJ, 1999.

business partners, or analysts. Here is what two management accountants have said about their jobs:[3]

> *We are looked upon as more business advisors than just accountants, which has a lot to do with the additional analysis and forward-looking goals that we are setting. We spend more of our time analyzing and understanding our margins, our prices, and the markets in which we do business. People have a sense of purpose; they have a real sense of "I'm adding value to the company." (Caterpillar, Inc.)*
>
> *Accounting is changing. You're no longer sitting behind a desk just working on a computer, just crunching the numbers. You're actually getting to be a part of the day-to-day functions of the business. (Abbott Laboratories)*

## The Skills Required of Management Accountants

Because computers now do the routine "number crunching," do management accountants need to know as much as they did 20 years ago? The fact is, management accountants now need to know *more*! They have to understand what information management needs and how to generate that information accurately. Therefore, management accountants must be able to communicate with the computer/information technology (IT) system programmers to create an effective information system. Once the information system generates the data, management accountants interpret and analyze the raw data and turn it into *useful* information management can use.[4]

> *Twenty years ago we would say, "Here are the costs and you guys need to figure out what you want to do with them." Now we are expected to say, "Here are the costs and this is why the costs are what they are, and this is how they compare to other things, and here are some suggestions where we could possibly improve." (Caterpillar, Inc.)*

Today's management accountants need the following skills:

- Solid knowledge of both financial and managerial accounting
- Analytical skills
- Knowledge of how a business functions
- Ability to work on a team
- Oral *and* written communication skills

In order to perform financial analysis in the most efficient manner possible, businesses also expect management accountants to have

- Strong Microsoft Excel skills

Because Excel is so frequently used in business, you will see many of the exhibits in this book featured in Excel. Next to selected exhibits you will be able to click on the icon and watch a short video to see how the analysis is performed in Excel. Your instructor may also assign Excel-based homework problems. Regardless of your future career path, becoming as proficient as you can with Excel during this course will help you become more marketable and more valuable to your future employer.

The skills shown in Exhibit 1-4 are critical to these management accountants:[5]

> *We're making more presentations that are seen across the division. So you have to summarize the numbers . . . you have to have people in sales understand what those numbers mean. If you can't communicate information to the individuals, then the information is never out there; it's lost. So, your communication skills are very important. (Abbott Laboratories)*

[3]*Counting More, Counting Less: The 1999 Practice Analysis of Management Accounting*, Institute of Management Accountants, Montvale, NJ, 1999.

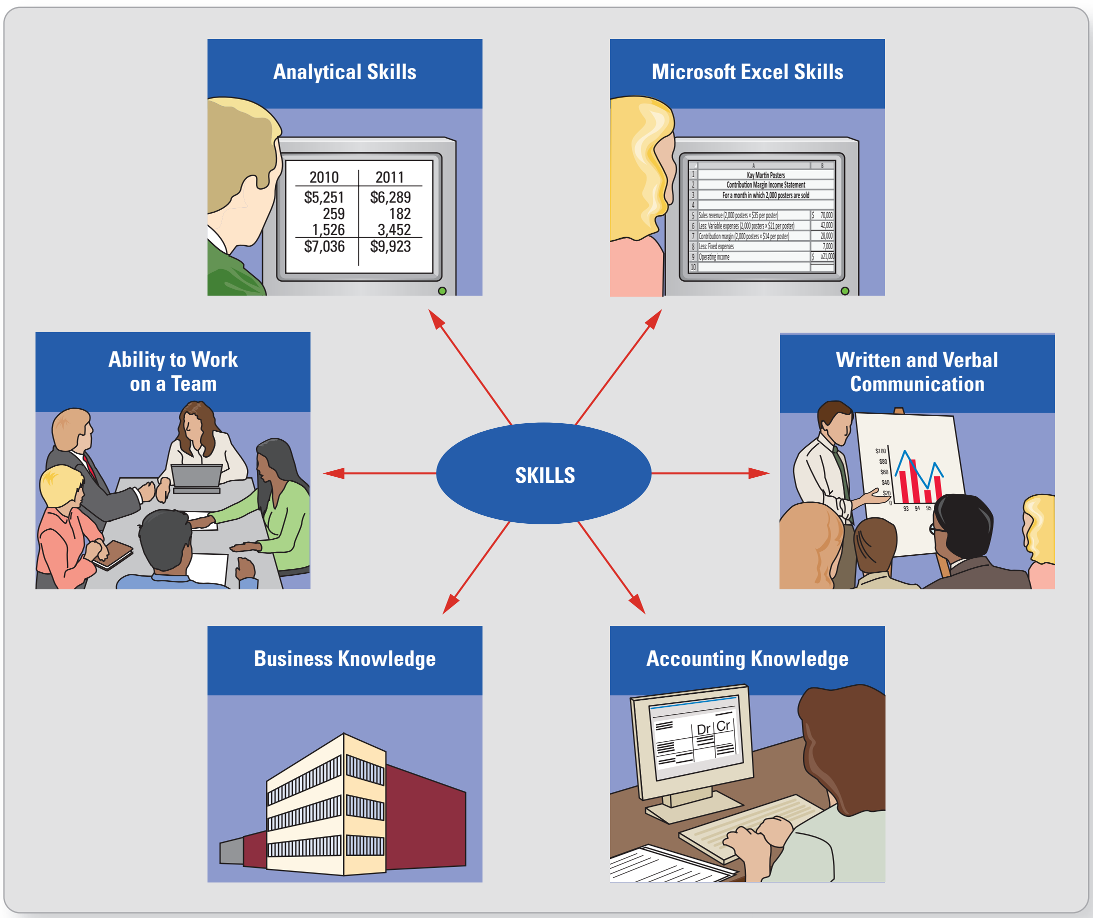
[4]Ibid.

[5]Ibid.

*Usually when a nonfinancial person comes to you with financial questions, they don't really ask the right things so that you can give them the correct answer. If they ask you for cost, well, you have to work with them and say, "Well, do you want total plant cost, a variable cost, or an accountable cost?" Then, "What is the reason for those costs?" Whatever they're using this cost for determines what type of cost you will provide them with. (Caterpillar, Inc.)*

Chapter 2 explains these cost terms. The point here is that management accountants need to have a solid understanding of managerial accounting, including how different types of costs are relevant to different situations. Additionally, they must be able to communicate that information to employees from different business functions.

**EXHIBIT 1-4** The Skills Required of Management Accountants




## Professional Associations

The <u>Institute of Management Accountants (IMA)</u> is the professional association for management accountants in the United States. The mission of the IMA is to provide a forum for research, practice development, education, knowledge sharing, and advocacy of the highest ethical and best practices in management accounting and finance. The IMA also educates society about the role management accountants play in organizations. According to the IMA, about 85% of accountants work in organizations, performing the roles discussed earlier. The IMA publishes a monthly journal called *Strategic Finance* that addresses current topics of interest to management accountants and helps them keep abreast of recent techniques and trends.

**4** Describe the role of the Institute of Management Accountants (IMA) and use its ethical standards to make reasonable ethical judgments

The IMA also issues the <u>Certified Management Accountant (CMA)</u> certification. To become a CMA you must pass a rigorous examination and maintain continuing professional education. The CMA exam focuses on managerial accounting topics similar to