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# COOST

## MANAGEMENT

MEASURING, MONITORING, **AND** MOTIVATING PERFORMANCE

THIRD CANADIAN EDITION

WILEY



## FOCUS ON ETHICAL DECISION MAKING

The textbook introduces an *ethical framework* in Chapter 1 and then asks students to use the framework when addressing a real-world ethical dilemma in each chapter.

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# **COST** **MANAGEMENT**

THIRD CANADIAN EDITION

**MEASURING, MONITORING,  
AND MOTIVATING PERFORMANCE**

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## DEDICATION

I dedicate this book to my parents, Shei-Te and YuYuon,  
my husband, Dr. Louis Florence, and to our miracle baby,  
Delphine Egene, for their unconditional support and encouragement.

Liang-Hsuan Chen

Dedicated to Steve, Jaclyn, and Lindsey in recognition  
of their patience and understanding, and to those  
students who enjoy the challenge of learning.

Gail Lynn Cook

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# ABOUT THE AUTHORS

## Third Canadian Edition

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**Susan K. Wolcott, Ph.D., CPA, CMA,** is Thought Leader for CA School of Business, in which she generates ideas for and helps to bring about innovations in the competency-based training of CA students in western Canada. She is also an educational consultant with WolcottLynch Associates, working with faculty and programs around the world to support critical thinking development, competency assessment, and curriculum innovation. Her publications include a chapter on critical thinking assessment in *Assessment of Student Learning in Business Schools: Best Practices Each Step of the Way* published by AACSB International and Association for Institutional Research, assessment materials for the AICPA *Educational Competency Assessment* website, *Steps for Better Thinking: A College Faculty Handbook*, and various articles in journals such as *Issues in Accounting Education*, *Journal of Accounting Education*, *Assessment Update*, and *IDEA Center Papers*. Susan chaired the AICPA Core Competency Framework Curriculum Evaluation Task Force, consulted with the Canadian profession's Board of Evaluators on critical thinking assessment in the Uniform Evaluation for CA candidates, and served as associate editor of *Issues in Accounting Education*. She has served on and chaired numerous committees and has held several leadership positions as a member of AAA, IMA, Washington Society of CPAs, and Colorado Society of CPAs. Susan is a part-time professor at IE Business School in Madrid (where she a multi-time recipient of the Prize of Excellence for teaching in the International Executive MBA program) and Aalto University in Finland. She previously taught at University of Denver (where she received the MBA Core Diamond Award for teaching), University of Washington, and the J. L. Kellogg Graduate School of Management at Northwestern University. She worked in public accounting for ten years, including three years with Coopers & Lybrand (Portland, Oregon). She holds Ph.D. and MS degrees in Accounting and Information Systems from Northwestern University and a BBA in Accounting from University of Portland. ■

## Bridging the Gap

*Cost Management: Measuring, Monitoring, and Motivating Performance*, Third Canadian Edition, was written to help students learn to appropriately apply cost accounting methods in a variety of organizational settings. To achieve this goal, students must also develop professional competencies, such as strategic/critical thinking, risk analysis, decision making, ethical reasoning, and communication. Most textbooks focus on content knowledge and then expect students to “magically” demonstrate professional competencies. As an author team, we bring to this textbook extensive knowledge about cost accounting as well as about the best approaches for teaching and learning professional competencies. This textbook bridges the gap between typical student performance and what we would like students to be able to do by:

- ▶ Maintaining a central focus on business decision making
- ▶ Explicitly addressing risk and biases
- ▶ Adopting a writing style that is accessible and interesting to students
- ▶ Concentrating on all types of organizations
- ▶ Focusing on ethical reasoning
- ▶ Simultaneously challenging and guiding students to learn

## Third Canadian Edition

- ▶ *Risk of Biased Decisions* boxes: Each chapter introduces a type of bias that interferes with high-quality decision making and applies the bias to chapter material. These boxes help students understand why and how accountants and managers sometimes use information inappropriately.
- ▶ Strategic Risk Management: *Strategic Risk Management* boxes placed after selected realistic examples give students the opportunity to explore issues beyond those presented in the example. Students are guided through the process of considering biases, business risks, or other strategic matter.
- ▶ Extensive end-of-chapter problems: Each chapter includes an extensive collection of exercises and problems, as well as two to three Mini-Cases. Like problems, Mini-Cases pose open-ended questions, and the requirements support better performance by guiding students through the steps needed. However, Mini-Cases give students an opportunity to address more complex applications of cost accounting techniques involving deeper analysis. One or two *Cumulative Problems* or *Integrating Across the Curriculum* Mini-Cases in each chapter ask students to integrate cost accounting material with the content of other accounting and business core courses, such as auditing, marketing, or finance.
- ▶ A new chapter on advanced production variances and revenue/market variances continues the discussion of variances by extending the production variances and introducing externally focused market variances. The mix and yield variances provide information for management decisions about the trade-offs between substitutable inputs. Revenue and profit variances focus on the effect of changes in selling price and shifts in sales mix. Profit variances also provide information about a business’s position in the external market.

- ▶ A new chapter on economic order quantity concepts help managers manage inventory costs. Businesses need to strategically manage inventory to provide flexibility, to minimize inventory costs, and to avoid unnecessary costs associated with inventory. This chapter introduces students to the trade-offs between these divergent costs, the costs associated with the possibility of unexpected events, and special ordering opportunities offered by suppliers.
- ▶ The GPK and RCA costing systems are discussed and compared to ABC. GPK (*Grenzplankostenrechnung*, a German costing system), and RCA (resource consumption accounting) costing systems aim to improve the mapping between resource use and cost flows. Cost information under alternative costing methods is also discussed.

**Explicitly Addressing Risk and Biases.** Many students fail to recognize that cost accounting information is subject to risks and biases. This failure causes them to place undue reliance on computational results and inhibits their ability to evaluate the assumptions, limitations, behavioural implications, and qualitative factors that influence business decisions. These types of weaknesses inhibit student development of professional competencies. To overcome these weaknesses, *Cost Management*, Third Canadian edition, explicitly addresses uncertainties and biases in the content and homework problems in every chapter.

**Adopting a Writing Style that Is Accessible and Interesting to Students.** *Cost Management*, Third Canadian edition, is written in a style that students can easily understand, and it incorporates interesting scenarios designed to pique student interest. The goal is to help students learn the basic cost accounting knowledge on their own before they come to class so that through class discussions, they can further develop their accounting expertise and focus on more complex issues, such as qualitative factors that influence information and decisions, and the effects of uncertainty and bias.

**Concentrating on All Types of Organizations.** Manufacturing is now a small part of North American business, while service and not-for-profit organizations are increasingly important. Students need to apply cost accounting techniques in a variety of settings. Accordingly, we focus throughout this textbook on a wide range of business organizations, including large and small, public and private, Canadian and international, manufacturing, retail, service, and not-for-profit. Businesses featured in this text include **CN, McAfee, Bombardier, Tim Hortons, Canada Goose, Fruit D'Or, and Sun Life Assurance**. Hypothetical organizations include Melodious Notes, Creaciones Concretas, Roadrunner Publishers, Boats Afloat Yacht Company, and Mont-Tremblant Bikes. Students learn to apply cost accounting in different settings, and they also learn about the types of decisions and factors that are important to different types of organizations.

**Focusing on Ethical Decision Making.** The accounting profession is currently facing negative media attention and increased governmental regulation, largely because a number of accountants and managers have behaved unethically. To develop better ethical reasoning skills, students need greater exposure to realistic ethical issues. *Cost Management*, Third Canadian edition, avoids scenarios that have simplistic “correct” solutions. Instead, the ethical dilemmas contain ambiguities, conflicts of interest, and value judgements. The textbook presents a framework for ethical decision making in Chapter 1. Students will use this framework when addressing ethical dilemmas in each chapter. With continual practice, students are likely to develop their own process for ethical decision making to use in other classes and over their careers.

**Simultaneously Challenging and Guiding Students to Learn.** Educational research indicates that students need repeated practice with *appropriately designed* learning activities to develop professional competencies such as strategic/critical thinking. Students must be challenged to develop new skills, but at the same time they need guidance so that they do not falter and become discouraged.

# Organization of Cost Accounting Content

*Cost Management*, Third Canadian edition, includes traditional as well as the most current practices in cost accounting. The focus is on methods that will be useful to students in their professional careers. First, we introduce students to relevant costs and their use in decision-making, including cost functions and cost behaviour. Then, when students understand cost behaviour, they are better able to understand the uses and limitations of cost allocations. Because performance measurement and evaluation rely on a thorough understanding of both decision-making and allocation information, the last section of the book considers a variety of performance measurement and evaluation techniques and issues. Following is a detailed description of each of these three sections. We view some topics, such as quality and international practices, as pervasive. Therefore, we include these topics throughout the textbook rather than as stand-alone chapters.

Initial chapters focus on identifying and using relevant information for management decisions. Chapter 1 provides an overview of the strategic management process. A model for developing higher-quality decisions (*Steps for Better Thinking*) is introduced in Appendix 1B. Chapters 2, 3, and 4 address ways to categorize costs, analyze cost behaviour, and use costs to make decisions. This approach motivates interest in course material by immediately involving students in realistic business problems. Focusing on decisions also allows students to relate cost accounting material to their own personal lives, increasing their perceptions of course relevance.

The next chapters explore the assignment of costs to products and other activities of an organization. Chapter 5 begins with the relatively simple assignment of costs to customized products and services. Chapter 6 introduces the more complex cost assignment methods used in process costing. Chapter 7 explores the development and use of activity-based costing and activity-based management. Chapters 8 and 9 present the more specialized practices for assigning costs for support departments, joint products, and by-products. These chapters help students move beyond a purely mechanical application toward a deeper understanding of the reasons behind and limitations of cost assignment techniques. We also introduce basic concepts related to standard costs and overapplied and underapplied overhead, beginning with Chapter 5. This approach more closely ties chapter content to contemporary business practice.

The latter chapters use budgets and benchmarks to plan and monitor financial and nonfinancial performance. These chapters also examine the use of incentives and compensation, combined with benchmarks, to motivate performance. Chapters 10, 11, and 12 focus on the development and use of budgets and benchmarks. Chapter 13 addresses long-term, strategic investment decisions. Chapters 14 and 15 introduce contemporary issues related to pricing and cost management. Chapter 16 provides an introduction to inventory management costs. Chapter 17 examines various ways to measure and report costs for internal and external income statements. Chapter 18 provides an overview of traditional financial performance measures and introduces the challenges that accountants and managers face when motivating performance in organizations. In Chapter 19, the balanced scorecard is presented as a method for using both financial and nonfinancial information to help achieve an organization's strategic goals. Although students are asked to consider the behavioural influences of accounting practices throughout the textbook, these chapters focus more specifically on the motivational uses of accounting information. Students are asked to recognize both intended and unintended behavioural consequences of performance metrics. Chapter 20 discusses current frameworks for considering sustainability and sustainability accounting.

## Sequencing

We have written the chapters so that they can be taught in any sequence, although we recommend that the first two chapters be taught sequentially at the beginning of the course. Margin notes refer students to more detailed information about a topic that is addressed in other chapters.

## Chapter Focus

### Chapter 1: The Role of Accounting Information in Ethical Management Decision Making

Chapter 1 provides an overview of organizational decision making and introduces students to the use of cost accounting information in decision making. Techniques for identifying and using relevant information are reviewed. *Steps for Better Thinking*, a model for developing higher quality decisions, is introduced in Appendix 1B. Finally, this model is applied to ethical decision making. We do not introduce basic accounting terms in this chapter but instead give students a general overview of the importance of cost accounting information.

### Chapter 2: Cost Concepts, Behaviour, and Estimation

In this chapter, we first introduce accounting terms that relate to cost behaviour and explain the cost function. At this point, we also discuss limitations of the information produced by cost functions and problems with uncertainties and bias in developing cost functions. This focus allows students to consider the quality of information as they learn cost accounting methods. We present and illustrate techniques that are used to describe cost behaviour (engineered estimates, analysis at the account level, two-point method, and regression analysis). Scatterplots are introduced as a way to provide additional information about cost behaviour. Linear and nonlinear (e.g., learning curves) cost functions are presented.

### Chapter 3: Cost-Volume-Profit Analysis

Single and multiple product examples are used in this chapter to explore the development and use of CVP information, before and after taxes. Examples of spreadsheets with input sections and cell referencing are introduced so that students can easily perform sensitivity analysis. Because of the early focus on bias and uncertainties, students better understand the need for sensitivity analysis. Qualitative factors are explored, as are problems with uncertainty and bias. The margin of safety and operating leverage are introduced and then used to analyze risk of operations. Examples show the use of CVP information for both decision-making and monitoring purposes.

### Chapter 4: Relevant Information for Decision Making

Operating decisions such as those involving special orders, make-or-buy decisions, keep-or-drop decisions, product emphasis, and maximization of constrained resources are covered in Chapter 4. This chapter is placed early in the text to allow students additional practice in developing decision-making skills by using cost function information. We find that students better understand the relevancy of their cost accounting course when they immediately use skills that are taught early in the course. In addition, relatively simple decision-making scenarios allow greater discussion of qualitative factors that potentially override quantitative results. Linear programming software is used to solve for optimal sales mixes when resources are constrained. As in all the other chapters, the effects of uncertainty and bias on decision-making are also explored.

### Chapter 5: Job Costing

Chapter 5 introduces job costing and accounting for spoilage under job costing. The first part of the chapter introduces job-costing basics in a manufacturing setting; this method is then extended to the service sector. Product costs and cost flows are discussed first, followed by a comparison of actual and normal job costing methods, and then calculations for over- and underapplied overhead are explained. An example in this chapter highlights potential problems that arise if allocated costs are part of the information used to choose between two different jobs when there are capacity constraints. We also include a discussion of the costs of spoilage, rework, and scrap in job costing, describing opportunity costs that arise from poor quality. Behavioural implications of the accounting methods used to record spoilage are explored.

## Chapter 6: Process Costing

Chapter 6 presents process costing methods, including the FIFO, weighted averages, and standard cost methods. We develop a single format that is used to calculate equivalent units for both the FIFO and weighted averages methods. This format helps students understand the difference between the two methods. In this chapter's examples, an accountant makes a decision about the best process costing method for her organization, comparing and contrasting information from the FIFO and weighted averages methods. In addition, accounting methods for the spoilage, rework, and scrap that arise in mass production are illustrated.

## Chapter 7: Activity-Based Costing and Management

A team of employees implements an ABC system in this chapter, and information from the ABC system is compared to that from a traditional job costing system. ABM is described using a specific example for customer-related costs. In another ABM example, an accountant develops quality cost information aimed at reducing costs while improving quality. The benefits, costs, and limitations of ABC systems are discussed, as are recent academic research results. Two new costing methods, GPK (*Grenzplankostenrechnung*, a German costing system) and RCA (resource consumption accounting), aiming to improve the mapping between resource use and cost flows, are introduced and compared to the ABC system.

## Chapter 8: Measuring and Assigning Support Department Costs

The direct, step-down, and reciprocal methods are described and illustrated in this chapter. Excel Solver is used to develop costs for the reciprocal method. Allocations are illustrated using a hypothetical music store. Information from single- versus dual-rate allocation methods is compared. The quality of support cost allocation information is discussed, with emphasis on its limitations, including behaviour implications.

## Chapter 9: Joint Product and By-product Costing

Physical volume, sales at the split-off point, net realizable value, and constant gross margin NRV methods are compared and contrasted in this chapter. Appropriate use of relevant cost information for decisions about further processing is discussed. Main products and by-products are defined, and methods for accounting for by-products are compared and contrasted.

## Chapter 10: Static and Flexible Budgets

After illustrating the development of a static budget, adjustments are made to develop a flexible budget that reflects activity levels, price changes, and elimination of costs over which managers have no control. This treatment of static and flexible budgeting reflects the actual sequence of events used by most businesses. Students better understand that forecasts are made, developed into a budget, and then adjusted to develop a benchmark as actual operations unfold. This chapter introduces participative, zero-based, rolling, ABC, and kaizen budgets. Behavioural aspects of budgeting are explored, as are the effects of uncertainties and bias in budget information.

## Chapter 11: Standard Costs and Variance Analysis

The development and use of direct and overhead cost standards and variances are presented in this chapter. Behavioural effects arising from the use of this information are explored through an example in which a purchasing department buys less expensive materials that require more labour time and effort. In Appendix 11A, profit-related variances (revenue and contribution margin-related variances) are described and calculated.

## Chapter 12: More Variances: Revenue, Contribution Margin and Advanced Production Variances

This chapter continues the discussion of variances by extending the production variances and introducing externally focused market variances. The mix and yield variances provide

information for management decisions about the trade-offs between substitutable inputs. Revenue and profit variances focus on the effect of changes in selling price and shifts in sales mix. Profit variances also provide information about a business's position in the external market.

### **Chapter 13: Strategic Investment Decisions**

Net present value analysis and other capital budgeting techniques are described and then compared and contrasted in this chapter. Examples with increasing complexity develop capital budgeting with income taxes. Inflation effects are considered in Appendix 12A, using both the real rate and nominal rate methods. Risks and bias in capital budget information are emphasized in this chapter. A case developed for this chapter requires that students use their own judgement to apply CCA, assess the life of a project, and determine appropriate discount rates.

### **Chapter 14: Pricing Decisions**

Product pricing techniques (cost and market based; time and materials) are introduced, with emphasis on current pricing practices that are based on demand. An economic model is introduced to calculate a profit-maximizing price using price elasticity concepts. Transfer pricing techniques (cost and market based, negotiated, dual rate) are presented.

### **Chapter 15: Strategic Management of Costs**

In this chapter, students learn to develop and implement target, kaizen, and life cycle costing systems. Value chain and supply chain analysis to support pricing decisions are discussed. Additionally, students are introduced to lean accounting concepts.

### **Chapter 16: Inventory Management**

Economic order quantity concepts help managers manage inventory costs. Businesses need to strategically manage inventory to provide flexibility, to minimize inventory costs, and to avoid unnecessary costs associated with inventory. This chapter introduces students to the trade-offs between these divergent costs, the costs associated with the possibility of unexpected events, and special ordering opportunities offered by suppliers.

### **Chapter 17: Measuring and Assigning Costs for Income Statements**

Absorption, variable, and throughput income statements are compared and contrasted. Factors that affect the choice of fixed overhead allocation rate volume measures (theoretical, practical, normal, and budgeted) are explored. The uses and limitations of information produced by these three income statements are discussed. Several examples and homework problems address the incentives under absorption costing of inventory build-up to improve a period's income.

### **Chapter 18: Performance Evaluation and Compensation**

In this chapter, responsibility centres are introduced to explore the assignment of decision-making authority and responsibility. Performance evaluation measures (ROI, residual income, and EVA) are compared and contrasted. Transfer pricing approaches are illustrated. Incentives that give rise to suboptimal decision making are described for each type of performance measure and transfer price policy.

### **Chapter 19: Strategic Performance Measurement**

This chapter emphasizes the strategic decision making model introduced in Chapter 1, highlighting the role of long-term strategic decision making. The balanced scorecard is then introduced as a method that can be used to combine financial and nonfinancial performance



measures to gauge progress and motivate employees. The strengths and weaknesses of the balanced scorecard are discussed, including uncertainties about the best choice of measures, mistakes in implementation, and the effects of bias on performance measure choices.

## Chapter 20: Sustainability Accounting

This chapter expands the role of accounting in the strategic management process to include consideration of sustainability, also known as the “triple bottom line”: economic, environmental, and social value systems. Motivations and frameworks for reporting sustainability information are presented, and cost accounting techniques are introduced to develop sustainability information. The chapter provides an opportunity to revisit and expand upon topics learned earlier in the textbook, including identification of relevant costs and benefits, cost assignment, process costing, life cycle costing, capital budgeting, and balanced scorecard.

## Chapter Features

*Cost Management*, Third Canadian edition, uses a number of pedagogical features in each chapter to enhance teaching and learning.

## Learning Objectives

At the beginning of each chapter, learning objectives are listed to provide a structure for student learning. These learning objectives also appear in the margins where the material is first presented, organize the chapter summary, and identify homework material and Test Bank problems.

- L01 Describe the process of strategic management and decision making
- L02 Identify the types of control systems that managers use
- L03 Explain the role of accounting information in strategic management
- L04 Explain the information systems and information that are relevant for decision making
- L05 Describe how business risk affects management decision making
- L06 Appreciate how biases affect management decision making
- L07 Determine how managers make higher-quality decisions
- L08 Explain the importance of ethical decision making

### Bombardier: Custom Manufacturing



Clement Sabourin/AFP/Getty Images

**The iconic Canadian** company **L'Auto-Neige** **Bombardier Limitée** began manufacturing tracked vehicles for snow-covered terrain in 1942. (In English, *l'auto-neige* means “snow car.”) These vehicles were early models of what later became snowmobiles. Over time, the company developed expertise in building engines and expanded into other markets, such as personal watercraft, aircraft, subway cars, buses, and jet boats.

The company, now known as **Bombardier Inc.**, continued to expand, often by acquiring existing companies such as **Canadair** (the leading Canadian aircraft manufacturer), **Pullman Railcars** in the United States, and an Irish manufacturer of civil and military aircraft and defence systems.

In 1990, Bombardier acquired **Learjet Corporation**, a U.S. manufacturer of high-performance business jets with interiors designed for personal comfort and convenience. Often referred to as the limousines of the skies, these jets are built at Bombardier's plant in Wichita, Kansas. Models include the Learjet 31A (light jet), Learjet 45 (super-light jet), and Learjet 60 (midsize jet).

Bombardier operates Learjet completion centres in Wichita and Tucson, Arizona. The completion centres provide customized services such as exterior painting and installation of cabinetry and furniture. Corporate jet customers often order specialized interiors, including unique fabric, carpet, wood, and colour; ergonomic seating; sound, video, and satellite communication systems; distinctive galleys; water systems; custom wiring; bulkhead reinforcements; and soundproofing. Different types of work are performed in different areas of the facility. The facility includes two paint booths, two sand-and-strip areas, four preparation areas, and an interior mockup room. The centre in Wichita completes approximately 120 Learjet 45 aircraft per year.


Deciding what to charge for a custom manufacturing job requires considering many quantitative and qualitative factors. Even when manufacturing to standard specifications takes place over several continents, job costing can be complicated. Bombardier is designing and building a new CSeries of jets that carry 100 to 149 passengers due to be delivered to airlines around the world in 2016. The jets were being assembled at the company's plant in Mirabel, Quebec, but components were being built by thousands of suppliers across the globe, including the wings in Northern Ireland, the fuselage in China, the landing gear in Germany, and the wheels and brakes in Ohio.

SOURCES: “Bombardier Celebrates the Completion of its CS100 Aircraft’s Certification Flight Test Program,” company news release, November 17, 2015; Yan Barcelo, “Fasten Your Seatbelts,” *CPA Magazine*, January 1, 2014; Jens Flottau, “Bombardier Temporarily Reassigns CSeries Fuselage Work,” *Aviation Daily*, July 6, 2012; “Bombardier Gears Up for CSeries Assembly,” *CompositesWorld*, April 4, 2011; “Bombardier CSeries Aircraft Program Continues to Move Forward,” company news release, July 19, 2010; John Sopinski, “Where in the World Are the C Series’ Parts Being Made?,” *The Globe and Mail*, October 1, 2010; Bombardier corporate website, <http://businessaircraft.bombardier.com>.

## Chapter Opener and Analysis

Each chapter-opening vignette motivates students by presenting an interesting, business-related application of chapter material often based on Canadian companies.

example



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### barkley basketballs SPECIAL ORDER

Barkley Basketballs manufactures high-quality basketballs at its plant, which has a production capacity of 50,000 basketballs per month. Current production is 35,000 per month. The manufacturing costs of \$24.00 per basketball are categorized as follows:

	Variable Cost per Unit	Fixed Cost per Unit (at 35,000 per month)	Total Cost per Unit
<b>Manufacturing Costs:</b>			
Direct materials	\$12.00	\$0.00	\$12.00
Direct labour	2.00	0.00	2.00
Manufacturing overhead	0.50	9.50	10.00
<b>Total cost to manufacture</b>	<b>\$14.50</b>	<b>\$9.50</b>	<b>\$24.00</b>
Sales commission	\$ 1.00	\$0.00	\$ 1.00

Jack Chang operates not-for-profit basketball camps for disadvantaged youths on First Nations reserves and throughout inner cities in large urban areas. Jack asks Billie Park, CFO at Barkley Basketballs, to sell him 5,000 basketballs at \$23.00 per ball, or \$115,000 for the entire order.

Billie speaks to the cost accountant and then goes to the production floor to speak to several supervisors to gather information for this decision. She determines that the direct labour cost is variable. Workers are paid an hourly wage and are sent home when there are no balls to manufacture. These workers have no guaranteed salary, but demand is stable, so they always work at least half-time, and often 40 hours per week.

Billie asks about the manufacturing overhead and finds that it consists of variable and fixed costs incurred to run the plant where the basketballs are manufactured. Overhead includes insurance, property taxes, amortization, utilities, and various other plant-related costs. She finds that all of the fixed costs are related to a capacity level of 50,000 and will not change if she uses part of the idle capacity of 15,000 units. The foreman warns her, however, that once production exceeds 40,000 basketballs, bottlenecks occur, and the production process will slow down and cause inventory levels to congest the plant, sometimes requiring the company to pay overtime.

**Quantitative Analysis**

With the 5,000 basketballs produced for Jack, total production for the month would be 40,000 basketballs. Bottlenecks and slowdowns do not occur until production exceeds 40,000. Therefore, the special order is within the relevant range of production; the fixed costs should remain fixed. The relevant revenues and costs per basketball are as follows:

Selling price	\$23.00
Variable costs (materials, labour, and overhead)	\$14.50

In deciding whether to accept this special order, fixed costs are irrelevant because they are unavoidable. They will be incurred whether 35,000 or 40,000 basketballs are produced, with a total fixed cost of \$332,500 (\$9.50 × 35,000). However, the fixed cost per unit will be \$8.31 instead of \$9.50 if Barkley produces 40,000 basketballs. The variable cost of \$1.00 sales commission per ball is also irrelevant because no sales representatives are involved in this particular transaction. Therefore, the contribution margin for each special order basketball would be \$23.00 – \$14.50 = \$8.50. For 5,000 basketballs, the additional total contribution margin would be \$42,500.

## Realistic Examples

After the presentation of a major cost accounting method, a realistic example of an organizational setting with interactions between accountants and managers demonstrates the method and introduces qualitative factors and relevant decision-making issues. The same setting is often used several different times in a chapter to introduce various aspects of each method. These examples enhance student learning by demonstrating cost accounting methods, clarifying the business context, and raising issues addressed by accountants, managers, and others.

example



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**FOCUS ON ETHICAL DECISION MAKING:  
DISCRETIONARY COSTS**

In some industries, marketing expenses can be one of the largest discretionary costs. This is particularly true in the pharmaceutical industry, which tries to recoup its enormous research and development costs in the brief time in which a patent protects a drug from generic competitors. One study found that U.S. drug companies spend almost twice as much on promoting their products as on developing them. American firms in 2004 spent U.S. \$57.4 billion on marketing, including direct-to-consumer advertising (DTCA), which is not allowed in Canada.

Canadian pharmaceutical companies still market their products, sidestepping the ban in other ways. For example, they are allowed to advertise directly to health care providers under strict guidelines from the non-profit Pharmaceutical Advertising Advisory Board, and they can advertise to consumers if they don't mention the benefits of their products. This regulation was behind the recent TV campaigns for erectile dysfunction drugs, **Pfizer Canada's Viagra** and **Eli Lilly's Cialis**, which humorously show or imply couples being intimate and implore viewers to contact their doctor for more information.

Canada's doctors, however, do not see direct-to-consumer advertising as a laughing matter. Their professional association, the Canadian Medical Association (CMA), has a policy opposing such advertising. The CMA says it is concerned that such advertising "is not information but marketing, and sends the message that a prescription drug is a 'consumer good' rather than a health care benefit." In addition, the CMA says DTCA may not provide enough information for consumers to make informed drug choices, "may stimulate demand by exaggerating the risks of a disease and generating unnecessary fear," may strain the relationship between health care providers and patients, and even "drives up the cost of health care."

Canadian broadcasters want the DTCA ban lifted, arguing that Canadians see TV and print ads coming from the United States anyway.

sources: Canadian Press, "Study Details Drug Company Interest in Marketing Over Research," *Marketing* magazine, January 4, 2008; Jeremy Lloyd, "Viagra Ads Face Stiff Competition from Cialis," *Marketing* magazine, May 9, 2008; Canadian Medical Association, "Direct-to-Consumer Advertising (DTCA) Policy," September 2002; Pharmaceutical Advertising Advisory Board, www.paab.ca.

**PRACTISING ETHICAL DECISION MAKING**

In Chapter 1, you learned about a process for making ethical decisions (Exhibit 1.14). You can address the following questions for this ethical dilemma to improve your skills for making ethical decisions. Think about your answers to these questions and discuss them with others.

Ethical Decision-Making Process	Questions to Consider About This Ethical Dilemma
Identify ethical problems as they arise.	Does direct-to-consumer advertising create an ethical problem for pharmaceutical companies? Why or why not?
Objectively consider the well-being of others and society when exploring alternatives.	Describe the different viewpoints about whether pharmaceutical companies should advertise directly to consumers. What assumptions lie behind each viewpoint? Are differences in ethical values evident?
Clarify and apply ethical values when choosing a course of action.	What is the best overall solution to this problem for society? What values did you use to arrive at the solution? What ethical values should drug companies use to address the concerns of their critics?
Work toward ongoing improvement of personal and organizational ethics.	How might drug companies continuously improve their marketing practices to benefit themselves and society?

## Focus on Ethical Decision Making

Each chapter includes an ethical dilemma often related to a Canadian business example. As a follow-up, one or more homework problems address ethical issues. To provide students with guidance in addressing these problems, a framework for ethical decision making is introduced in Chapter 1. This framework calls for students to:

- ▶ Identify ethical problems as they arise.
- ▶ Objectively consider the well-being of others and society when exploring alternatives.
- ▶ Clarify and apply ethical values when choosing a course of action.
- ▶ Work toward ongoing improvement of personal and organizational ethics.

Suggested answers for each dilemma are provided on the instructor and student websites.

## Strategic Risk Management

After selected realistic examples, *Strategic Risk Management* boxes give students the opportunity to explore issues beyond those presented in the example. Students are guided through the process of considering biases, business risks, or other strategic matters.

## Risk of Biased Decisions

Each chapter introduces a type of bias that interferes with high-quality decision making and applies the bias to chapter material. These boxes help students understand why and how accountants and managers sometimes use information inappropriately.

## Margin Notes

Several types of margin notes are used throughout this textbook to briefly present supplemental information and real-world examples. *Business Practice* and *International* notes present interesting examples of cost accounting concepts, methods, and issues for real organizations. *Alternative Terms* acquaint students with terminology they may encounter in the workplace, in other textbooks, or on professional examinations. *Chapter Reference* notes help students locate expanded discussions of topics that are presented elsewhere in the textbook. *Helpful Hints* provide students with suggestions to help apply concepts or techniques.

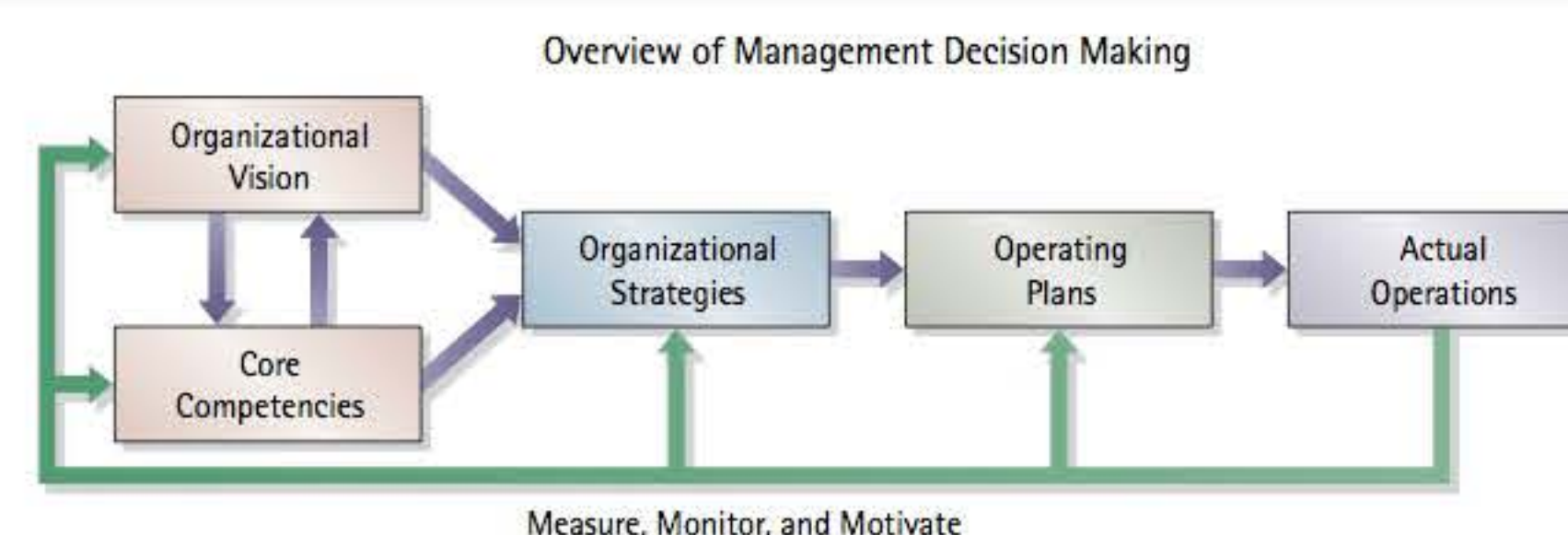
## Review

### Chapter Summary

The chapter summary, organized using the learning objective questions presented at the beginning of the chapter, provides an overview of all key cost accounting methods and concepts. Thus, unlike traditional summaries, *the summary in this text reviews both quantitative and qualitative content of the chapters*. It is a visual tool for students to use as an overview when beginning a chapter and as a review when completing it.

### SUMMARY

**LO1** Describe the process of strategic management and decision making



#### SWOT ANALYSIS

Identify core competencies through study of strengths, weaknesses, opportunities, and threats

**LO2** Identify the types of control systems that managers use

#### MANAGEMENT CONTROL SYSTEMS

Systems and routines to increase the likelihood of organizational success

Belief Systems	Boundary Systems	Diagnostic Control Systems	Interactive Control Systems
Create core values which enhance employees shared values to achieve the organization's goals.	Establish limits on individual behaviour to avoid organizational risks.	Measure, monitor, and motivate employees to achieve the organization's preset goals.	Require managers to communicate interactively and stimulate debates when the organization faces strategic uncertainties.

## Self-Study Problems

Each chapter provides one or two self-study problems that address the most important content introduced in the chapter and are similar to end-of-chapter exercises and problems. Each self-study problem guides students through the calculations and thinking processes, and the solution is presented at the end of the chapter.

# End-of-Chapter Assignment Material

The end-of-chapter material reinforces student learning of cost accounting techniques, and it helps them develop professional competencies such as analytical and decision-making skills.

## Questions

Short-answer questions provide students with practice using the terminology and cost accounting techniques learned in the chapter.

## Multiple-Choice Questions

Five multiple-choice questions are provided in each chapter. Some of these questions are adapted from the professional examinations of the legacy accounting professional bodies, CMA Canada and CGA Canada.

## Exercises

Exercises focus primarily on ensuring that students learn to properly apply cost accounting methods. Exercises are intended to reinforce the basic concepts and techniques for each learning objective.

## Problems

Problems give students additional practice using cost accounting techniques. They also present open-ended questions requiring judgment (e.g., identifying uncertainties, analyzing information, exploring incentives and biases, evaluating alternatives, recommending a course of action). More important, some problems provide students with comprehensive applications of various concepts from the chapter or previous chapters. The requirements support better performance by guiding students through the steps needed to fully address a problem, from less to more complex aspects.

## Mini-Cases

Like Problems, Mini-Cases pose open-ended questions, and the requirements support better performance by guiding students through the steps needed. However, Mini-Cases give students an opportunity to address more complex applications of cost accounting techniques involving deeper analysis. One or two Integrating Across the Curriculum or Cumulative Mini-Cases in each chapter ask students to integrate cost accounting material with the content of other accounting and business core courses, such as auditing, marketing, or finance or to reference material presented in other chapters.

## Exercise and Problem Types, Codes, and Icons

A number of codes and icons are used in the end-of-chapter materials to make it easier for instructors to select homework assignments and to enhance student learning.

**11.43 Cost Variance Analysis** The following information is available for ConcertWearShirts:

LO3, LO4, LO5

	Standard Quantity	Standard Cost	Total Standard Cost
Direct Materials	3 metres	\$12.00/metre	\$36.00
Direct Labour	2 hours	\$10.00/hour	\$20.00
Variable Overhead	2 machine hours	\$3.00/machine hour	\$6.00
Fixed Overhead	2 machine hours	\$1.00/machine hour	\$2.00
			\$64.00

The normal production level is 300 shirts. This production period ConcertWear produced 280 shirts. ConcertWear purchased 900 metres of fabric for \$9,720. The variances for the production period are:

Materials Price Variance	?
Materials Quantity Variance	\$ 336 U
Labour Rate Variance	\$ 532 U
Labour Efficiency Variance	\$ 280 F
VOH Spending Variance	\$ 98 F
VOH Efficiency Variance	\$ 210 F
FOH Budget Variance	\$ 110 F
FOH Volume Variance	\$ 40 U

- REQUIRED**
- How many metres of fabric were used? (Hint: Metres used was not the same as the metres purchased.)
  - What was the materials price variance?
  - What was the actual direct labour rate?
  - What was the actual variable overhead rate?
  - How many machine hours were used?
  - What was the master budget amount for fixed overhead?

LO1, LO2, LO3, LO4

**LO1, LO2, LO3, LO4, LO5, LO6 Learning Objectives.** Each exercise and problem is keyed to one or more learning objectives.



**Communication.** All Canadian accounting professional organizations emphasize the importance of communication skills. Therefore, several problems in each chapter require students to prepare written memoranda or to describe communication for a given setting.



**Ethics.** The ethics icon indicates problems that focus on ethical dilemmas, many featuring recent business scenarios. Students explore the uncertainties and multiple perspectives before drawing conclusions. These problems are likely to generate lively class discussions because of differences among students' perceptions and values.



**Professional Exams.** This icon indicates that an exercise, a problem, or a multiple-choice question has been adapted from the professional examinations of the legacy accounting professional bodies, CMA Canada and CGA Canada. All these examinations currently include multiple-choice questions. Practice with prior examination problems will help students learn the cost accounting material.



**Spreadsheets.** Spreadsheets are introduced in various chapters, with examples of data input areas so that sensitivity analysis can be performed easily. Students replicate or expand these examples in certain homework problems, which require the use of electronic spreadsheet software. For example, students use spreadsheets to develop financial models, perform regression analysis, calculate optimal sales mixes, and perform reciprocal cost allocations (using Excel Solver for the last two activities).



**Web.** The Web icon indicates that a problem requires students to access information or download datasets posted on the textbook website.

[www.wiley.com/  
go/eldenburgcanada](http://www.wiley.com/go/eldenburgcanada)



**Group.** Certain problems are particularly useful for student group activities. These problems would be difficult for most students working alone, and student learning is enhanced through collaboration with others in the class.

## Resources

The textbook's companion site located at [www.wiley.com/go/eldenburgcanada](http://www.wiley.com/go/eldenburgcanada) provides a wealth of support materials that will help instructors more effectively teach cost management and help students develop their understanding of course concepts and increase their ability to solve problems. Resources include the following listed below. These and additional resources are available in WileyPLUS.

- ▶ **Instructor's Manual** Provides ways to organize course materials, suggestions for teaching each chapter, the authors' teaching philosophy and recommendations, and guidance for using the many electronic and print assessment tools available with the text.
- ▶ **Checklist of Key Figures** Allows students to verify the accuracy of their answers as they work through assignments.
- ▶ **Solutions Manual** Contains detailed solutions to end-of-chapter assignment material, and it guides students through the required computational and thinking



[www.wiley.com/  
go/eldenburgcanada](http://www.wiley.com/go/eldenburgcanada)

processes. The solutions manual also includes information that maps all questions to CPA competencies.

- ▶ **PowerPoint Presentations** Intended as a lecture guideline, the PowerPoint slides present material in a concise bulleted format that enables easy note-taking.
- ▶ **Test Bank** A comprehensive testing package that allows instructors to tailor examinations according to chapter objectives, learning skills, and content. It includes traditional types of questions (e.g., true/false, multiple-choice, matching, computational, and short-answer) as well as open-ended problems that are similar to those in the textbook. All questions are cross-referenced to chapter objectives. The Test Bank is also available in computerized format.
- ▶ **Personal Response System (Clicker) Questions** A bank of 25 true/false and multiple choice questions is available for anyone using personal response systems technology in their classroom.
- ▶ **Solutions to Ethical Decision Making Questions** Analysis and solutions for the Focus on Ethical Decision Making feature in each chapter.

## WileyPLUS

*WileyPLUS* is an innovative, research-based online environment for effective teaching and learning. *WileyPLUS* builds students' confidence because it takes the guesswork out of studying by providing students with a clear roadmap: what to do, how to do it, if they did it right. Students will take more initiative so you'll have greater impact on their achievement in the classroom and beyond.

Among its many features, this online learning interface allows students to study and practise using the digital textbook, quizzes, and algorithmic exercises. The immediate feedback helps students understand where they need to focus their study efforts.

The filtering capability in the assignment area allows instructors to customize assignments by using different filters including criteria related to CPA competencies, level of difficulty, and even learning objectives.

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# COST MANAGEMENT

THIRD CANADIAN EDITION

# The Role of Accounting Information in Ethical Management Decision Making

**in brief** Managers use cost accounting information to make different types of decisions, which include developing long-term strategies and creating short-term operating plans. Managers achieve higher-quality decisions by using higher-quality relevant information and decision-making practices. Accounting information systems often focus on the data needed for financial reporting rather than for management decision making, so managers need to appropriately identify the relevant information for internal decisions. Cost accounting information is also used as part of an organization's control systems, to measure and monitor organizational performance and to motivate employees to take actions consistent with organizational strategies. Some controls ensure that operations proceed according to planned strategies and others help managers determine whether strategies should be altered. Controls also include codes of conduct, values statements, and other mechanisms to ensure ethical behaviour. Although ethical behaviour can be improved through control systems, it ultimately depends on the ability of individuals to recognize ethical dilemmas and consider the well-being of others and society when making decisions. ■

After studying this chapter, you should be able to do the following:

- L01** Describe the process of strategic management and decision making
- L02** Identify the types of control systems that managers use
- L03** Explain the role of accounting information in strategic management
- L04** Explain the information systems and information that are relevant for decision making
- L05** Describe how business risk affects management decision making
- L06** Appreciate how biases affect management decision making
- L07** Determine how managers make higher-quality decisions
- L08** Explain the importance of ethical decision making