MANAGERIAL ACCOUNTING

FOURTH CANADIAN EDITION

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Brief Contents

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Preface

Updates to the New Edition

The fourth Canadian edition of *Managerial Accounting* brings several important changes that will benefit both students and instructors:

- Updated Professional Competencies to match the current CPA Competency Map.
- Refreshed chapter opening vignettes attract student attention and lay the groundwork for the chapter using recognizable, real-world companies.
- Chapter 10 coverage of variances has been reworked to make it more accessible to an introductory audience.
- Refreshed end-of-chapter Exercises and Problems.
- Revised Sustainability feature boxes in each chapter show how sustainability relates to the chapter content.

Technology Makes It Simple: Excel This feature box provides students with step-by-step instructions to better leverage Excel when practising accounting for select applications. NEW boxes have been added to Chapters 4, 9 and 12, and the existing boxes in Chapter 3 have been updated.

Control Concepts NEW feature boxes in each chapter that provide students with insight on management control activities and how they apply to accounting concepts. Related questions are included in the end-of-chapter assessment.

Serial Case This ALL-NEW serial case on Casino Halifax has been added to the end-of-chapter material. Its purpose is to maintain focus on technical skills while enriching students' integration of accounting knowledge across a number of different areas and using this knowledge to improve decision making.

Data Analytics Projects NEW to MyLab Accounting, Data Analytics Projects offer students hands-on practice in mining, analyzing, and reporting on data. Each project contains a list of requirements, a dataset from a real company, a tutorial video, and instructions for using software such as Excel, Power BI, or Tableau. Using these tools, students learn how to extract and examine key information about a company related to its products, operations, and consumer buying habits. With this experience and knowledge, students are able to make smarter business decisions and are better prepared for the workforce.

Key Features of *Managerial Accounting*

We have maintained the features that have set our text apart as the standard for managerial accounting courses.

- **Integration of CPA Competencies.** *Managerial Accounting* focuses on covering the competencies outlined in the 2019 CPA Competency Map and each chapter opens with a list of Professional Competencies considered in that chapter. These features will allow students and faculty interested in CPA designation to become familiar with the Competency Map and the material covered in the book.
- **Learning Objectives** are the most important concepts in each chapter. Expressed in everyday language, these LOs are mapped throughout the chapter, end-of-chapter assessment, and MyLab Accounting, allowing students to accurately track their understanding of each learning objective.
- Each **chapter-opening vignette** shows why the topics in the chapter are important to companies and businesspeople.
- **Try It!** interactive questions are found throughout the chapter and give students the opportunity to apply the concept they just learned. Video Solutions, found in MyLab Accounting, feature the author walking through select Try It! problems on a white board. Designed to give students detailed help when they need it.
- **Excel Exhibits** give students a glimpse into the real-world presentation of managerial accounting topics by presenting all financial statements and schedules in Excel. In the MyLab, selected exhibits have a video that will teach students how to create the same schedule using Excel.

- **Sustainability** boxes are integrated into the body of each chapter, providing students with insight on how sustainability applies to accounting concepts. Related questions are included in the end-of-chapter assessment.
- **Stop & Think,** a question-and-answer section, encourages students to think critically about the application of key concepts.
- **Why Is This Important?** sections highlight the connection of accounting to the business environment so students can better understand the business significance of managerial accounting.
- **Decision Guidelines** summarize key terms, concepts, and formulas in the context of specific business decisions so that students can see how accounting is used to make good business decisions.
- **Summary Problems** allow students to practise the skills outlined in the decision guidelines.

Key Features at the End of Each Chapter

- **Accounting Vocabulary** lists all the bolded terms in the chapter, with definitions and page references. There is also a complete glossary at the end of the book.
- **Quick Check** section is a series of questions designed to test student recall of key concepts. Answers are provided in the text.
- **Group A** and **Group B Exercises** and **Problems** in the textbook allow instructors to work through the exercises in one of these groups in class and assign the other group as individual work, giving students more practice on these key concepts.
- **Case Assignments** appear in the Capstone Application Problems in Chapters 3 through 12. They are designed to test the students' understanding of the concepts in realistic, complex scenarios.
- **Demo Doc Problems and Solutions** appear in Chapters 4, 5, 6, and 9. These provide walk-through problems for demonstration and comprehension of the concepts.

Making Connections with *Managerial Accounting*

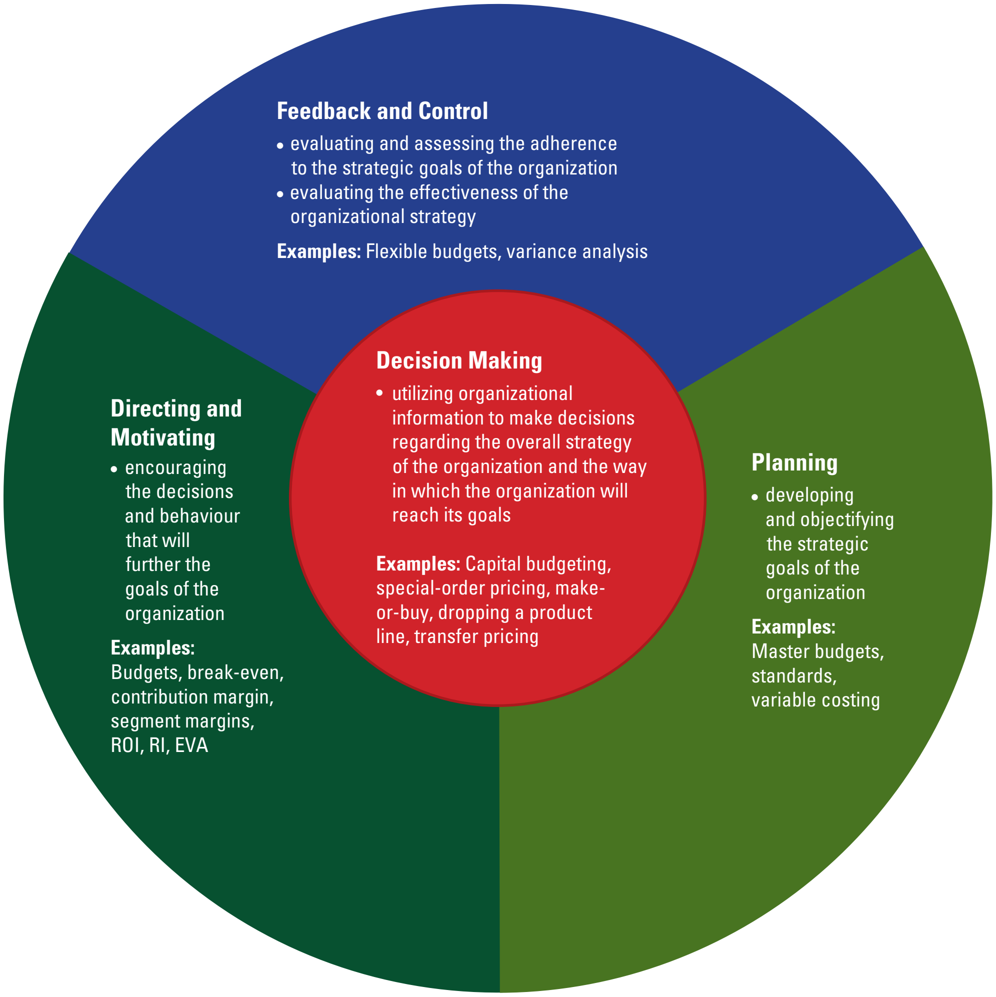
Welcome to *Managerial Accounting!* We hope that you all—students and faculty—enjoy your managerial accounting course, and we hope that this textbook and its integrated MyLab Accounting prove to be valuable tools to assist you!

Students Accounting is the language of business. Whether you intend to be an accountant or not, you owe it to yourself to develop your skills with this language so you can give yourself a winning edge in your career. Managerial accounting is used by managers of any department (such as human resources, IT, and operations), not just accountants. This isn't "just an accounting course"—*Managerial Accounting* is a foundation for future business courses and business dealings in your daily life. We know that managerial accounting can be a very challenging subject to learn, and we know that people have many different learning styles.

Faculty You have told us that your greatest challenges are teaching students effectively given their different business and accounting backgrounds, as well as motivating students to give accounting the study time and attention it deserves. So we set out to make this book not only "solid" in its managerial accounting concepts, but also less intimidating and more student friendly by making information easier to find, making topics easier to understand, and making examples more engaging for students. We have incorporated cases in the end-of-chapter material, as well as an integrative multi-chapter case to provide students with opportunities to apply their newly acquired knowledge in lifelike scenarios.

Making Connections Using the Framework for Managerial Accounting

Managerial accounting concepts form the basis of how information should be created and reported to internal users for completing the tasks of planning, directing/motivating, and feedback/control. These managerial accounting concepts work together to form the framework for decision making. As the diagram shows, the decisions managers make are central to achieving the strategic and operational needs of the company.



About the Authors

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Professor Braun is a Certified Public Accountant and holds membership in the American Accounting Association (AAA), the Institute of Management Accountants, and the American Institute of Certified Public Accountants. She also holds the Chartered Global Management Accountant designation and is a member of the AAA's Management Accounting Section as well as the Teaching, Learning and Curriculum Section. Dr. Braun has regularly held leadership positions with the AAA's Conference on Teaching and Learning in Accounting (CTLA) including co-chairing the 2015 and 2016 conferences. She was awarded the 2016 Bea Sanders/AICPA Teaching Innovation Award for her development of Excel-based active-learning resources for introductory managerial accounting courses. Dr. Braun's research and teaching interests revolve around lean operations, sustainability, corporate responsibility, and accounting education. Dr. Braun's work has been published in *Contemporary Accounting Research*, *Issues in Accounting Education*, and *Journal of Accounting Education*.

Dr. Braun received her Ph.D. from the University of Connecticut and her B.A., summa cum laude, from Luther College, where she was a member of Phi Beta Kappa. Dr. Braun gained public accounting experience while working at Arthur Andersen & Co. and accumulated additional business and management accounting experience as a corporate controller.

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Dr. Tietz authors a blog, Accounting in the Headlines, which has real-world news stories and resources for use in the introductory accounting classroom. Dr. Tietz was awarded the Bea Sanders/AICPA Teaching Innovation Award for her blog in 2014 and the Jim Bulloch/IMA Award for Innovations in Management Accounting Education in 2016. She was also awarded the Best Educational/Case Award for the Teaching, Learning and Curriculum Section (AAA, Ohio Region) in 2016. Dr. Tietz earned her Ph.D. from Kent State University. She received both her M.B.A. and B.S.A. from the University of Akron. She worked in industry for several years, both as a controller for a financial institution and as the operations manager and controller for a recycled plastics manufacturer.

Dr. Tietz and her husband, Russ, have two adult sons. In her spare time, she enjoys walking, reading, and spending time with family and friends. She is also intensely interested in using technology and social media in education.

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1 Introduction to Managerial Accounting

Learning Objectives

1. Identify managers' four 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 CPA Canada, and apply its guidelines for ethical behaviour.
5. Discuss and analyze the implications of regulatory and business trends.
6. Describe a lean production system.
7. Describe and use the costs of quality framework.

Chapter 1, "Introduction to Managerial Accounting," covers material outlined in **Section 5, Part 3: Management Accounting** of the CPA Competency Map (by Competency Area). This chapter offers a general introduction to Management Accounting.

PROFESSIONAL COMPETENCY The presence of the **coverage button** in the margin indicates focus on one or more of the specific competency areas from the competency map. The concepts in the text are building blocks to developing the competencies required in the CPA. While the chapter may address multiple areas of the competency map, the main focus will be:

Competencies:

3.3.1 Evaluates management information requirements*

3.1.2 Evaluates the types of information systems used and the role they play in an organization*

3.1.4 Identifies ethical and privacy issues related to information technology*

CARA Restaurants

created a niche when it was first founded as a concession business in 1883, the Canada Railway News Company.

Throughout the 1900s the company expanded its operations across the country, providing food and complementary services on railways and later to the airline industry. In 1976, CARA entered the restaurant business and began acquiring chains of restaurant and fast food companies, the most significant acquisition being in 1977 when it acquired Swiss Chalet. The focus was to provide good food at the right price so that restaurant-goers could still afford to go out for dinner in economic downturns, thereby buffering the restaurant from the effects of a changing economy. Since the first restaurant acquisitions, the company has grown to include the well-known brands of Casey's, Pat & Mario's, East Side Mario's, Finn MacCool's, D'Arcy McGee's, Paddy Flaherty's, Bier Markt, and Tir Nan Óg. It employs 26,000 people across Canada with more than 1,000 outlets. CARA has managed its significant growth in recent years through a combination of corporate store growth and franchising.

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A company doesn't grow this quickly, or this well, without having the right information available at the right time. Managerial accounting is a tool to help managers sort through mountains of data, decide what data are necessary, and make the best decisions possible using the data. This text will introduce you to many of the concepts used by those who make managerial accounting decisions.

Managers use accounting information for much more than preparing annual financial statements. Managerial accounting (or management accounting) uses information in short-term decision making and long-term strategy formulation. In this chapter, we will introduce managerial accounting and discuss how managers use it to fulfill their duties. We will also explore how managerial accounting differs from financial accounting. Finally, we will discuss the regulatory and business environment in which today's managers and management accountants operate.

What Is Managerial Accounting?

1 Identify managers' four primary responsibilities.

As you will see throughout the book, managerial accounting is different from financial accounting. Financial accounting focuses on providing shareholders 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.

Managerial accounting focuses on providing internal management with the information it needs to run an organization efficiently and effectively. This information takes many forms, depending on management's needs.

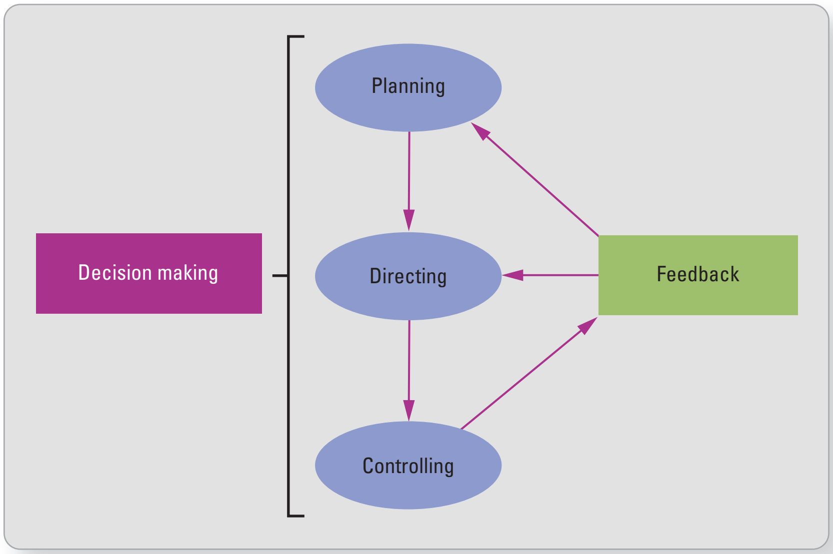
To understand the kind of information managers need, let us first look at their primary responsibilities.

Managers' Four Primary Responsibilities

Managerial accounting helps managers fulfill their primary responsibilities, as shown in Exhibit 1-1: **planning**, **directing**, **controlling**, and **decision making**.

PROFESSIONAL COMPETENCY

EXHIBIT 1-1 Managers' Primary Responsibilities



- Planning involves setting goals and objectives for the company and determining how to achieve them. For example, one of CARA's goals is to always use quality products and ingredients to keep customers coming back. One strategy to achieve this goal would be to establish good relationships with suppliers. The management team could incorporate new technology to improve communication between the restaurants and their suppliers. Managerial accounting translates plans such as these into budgets—the quantitative expression of a plan. Management analyzes the budgets before proceeding to determine if its integration 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. CARA uses product sales data to determine which menu items 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. CARA uses performance reports to compare each restaurant's actual performance against the **budget**, and then it uses that *feedback* to take corrective actions if needed. If actual costs are higher or lower than planned, 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 engages in decision making while it plans, directs, and controls operations. CARA must decide where to open new restaurants, which restaurants to refurnish, what prices to set for meals, what entrées to offer, and so forth. Management must consider the financial impact of each of these decisions. Managerial accounting gathers, summarizes, and reports cost and revenue data relevant to 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. With the building blocks presented and new terminology introduced, it is time to provide the tools for case study analysis. The Case Analysis Appendix is designed to guide you through the process of taking complex, integrated information, determining the critical problems in real-life scenarios, and solving these problems effectively.
2. **Understanding Cost and Profit Patterns.** Chapters 3 and 4 discuss how costs behave and how managers use cost behaviour knowledge to make good decisions and accurate forecasts.
3. **Determining Unit Cost.** It is crucial for organizations like CARA to understand how much it costs to make its product or deliver its service in order to effectively set prices. Managers must have this information so that they can set prices high enough to cover costs and generate an adequate profit. Chapters 5, 6, and 7 discuss how businesses determine their product costs. Once management knows its product costs, it uses that information for decision making, planning, directing, and controlling. Then, Chapter 8 addresses common business decisions around costing and pricing, such as *outsourcing*. For example, should CARA outsource its fruit smoothies—that is, have another company make them? Many restaurants do.
4. **Planning and Control.** Budgets are management's primary tool for expressing its plans. Chapter 9 discusses the components of the *master budget* and the way a large company like CARA uses the budgeting process to implement its business goals and strategies. As part of this process management uses *budget variances*—the differences between actual costs and the budget—to control operations. Chapter 10 shows how management uses variance analysis to determine how and where to adjust operations.

5. **Measurement and Evaluation.** It is important for organizations to have effective approaches to managing past and current performance, and to evaluate future decisions. Chapter 11 discusses tools that management can use to determine whether individual segments of the company are reaching the company's goals. Chapter 12 shows you how managers decide whether to invest in new equipment, new locations, and new projects.

Differences Between Managerial Accounting and Financial Accounting

2 Distinguish financial accounting from managerial accounting.

CARA's financial accounting system is geared toward producing annual and quarterly consolidated financial statements that will be used by potential franchisees and creditors to make investment and lending decisions. The financial statements objectively summarize the transactions that occurred during the previous year. However, managerial accounting information differs from financial accounting information in many respects. Exhibit 1-2 summarizes these differences.

Publicly accountable enterprises[1] must, as of January 1, 2011, use **International Financial Reporting Standards (IFRS)**, while private enterprises have an option. CARA is a privately held company; therefore, management can voluntarily select IFRS guidelines or **Accounting Standards for Private Enterprises (ASPE)**.[2] CARA's financial statements are useful to its potential franchisees and creditors, but they do not provide management with enough information to run the company effectively.

CARA's managerial accounting system is designed to provide its managers with the accounting information they need to plan, direct, control, and make decisions. No ASPE- or IFRS-type standards or audits are required for managerial accounting since this information will only be used internally. CARA's managers tailor the company's managerial accounting system to provide the information they need to help them make better decisions. The company must weigh the benefits of the system (information that helps managers make decisions that increase profits) 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.

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[1]The following definitions have been adopted for the purposes of determining which Part of the *CPA Handbook* applies to a reporting entity:

a. A **publicly accountable enterprise** is an entity, other than a not-for-profit organization or a government or other entity in the public sector, that:
   i. has issued, or is in the process of issuing, debt or equity instruments that are, or will be, outstanding and traded in a public market (a domestic or foreign stock exchange, or an over-the-counter market, including local and regional markets); or
   ii. holds assets in a fiduciary capacity for a broad group of outsiders as one of its primary businesses. Banks, credit unions, insurance companies, securities brokers/dealers, mutual funds, and investment banks typically meet the second criterion above. Other entities may also hold assets in a fiduciary capacity for a broad group of outsiders because they hold and manage financial resources entrusted to them by clients, customers, or members not involved in the management of the entity. However, if they do so for reasons incidental to a primary business (as, for example, may be the case for travel or real estate agents, cooperative enterprises requiring a nominal membership deposit, or sellers that receive payment in advance of delivery of the goods or services, such as utility companies), that does not make them publicly accountable.

b. A private enterprise is a profit-oriented entity that is neither a publicly accountable enterprise nor an entity in the public sector.

c. A not-for-profit organization is an entity, normally without transferable ownership interests, organized and operated exclusively for social, educational, professional, religious, health, charitable, or any other not-for-profit purpose. A not-for-profit organization's members, contributors, and other resource providers do not, in such capacity, receive any financial return directly from the organization.

d. A pension plan is any arrangement (contractual or otherwise) by which a program is established to provide retirement income to employees.
   Source: Based on info from IFRS (https://www.ifrs.org/-/media/feature/around-the-world/jurisdiction-profiles/canada-ifrs-profile.pdf)

[2]ASPE guidelines were previously known as Canadian Generally Accepted Accounting Principles (GAAP).

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, shareholders, 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?	The standards to use for financial reporting must be chosen: International Financial Reporting Standards (IFRS) or Accounting Standards for Private Enterprises (ASPE).
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 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. Each province has its own securities commission that requires publicly traded companies to issue annual audited financial statements.
Management carefully considers behavioural implications when designing the managerial accounting system.	Is there any concern over how the reports will affect employee behaviour?	The concern is about adequacy of disclosure; behavioural implications are secondary.

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, CARA's managers determine if their plans make sense by quantitatively expressing them in the form of budgets.

To make good decisions, CARA'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 help 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.

When designing the managerial accounting system, management must carefully consider how the system will affect employees' behaviour. Employees try to perform well on the parts of their jobs that the accounting system measures. If CARA restaurant managers were evaluated only on their ability to control costs, they may use cheaper ingredients or hire less-experienced servers. Although these actions cut costs, they can hurt profits if the quality of the meals or service declines as a result.

What Role Do Management Accountants Play?

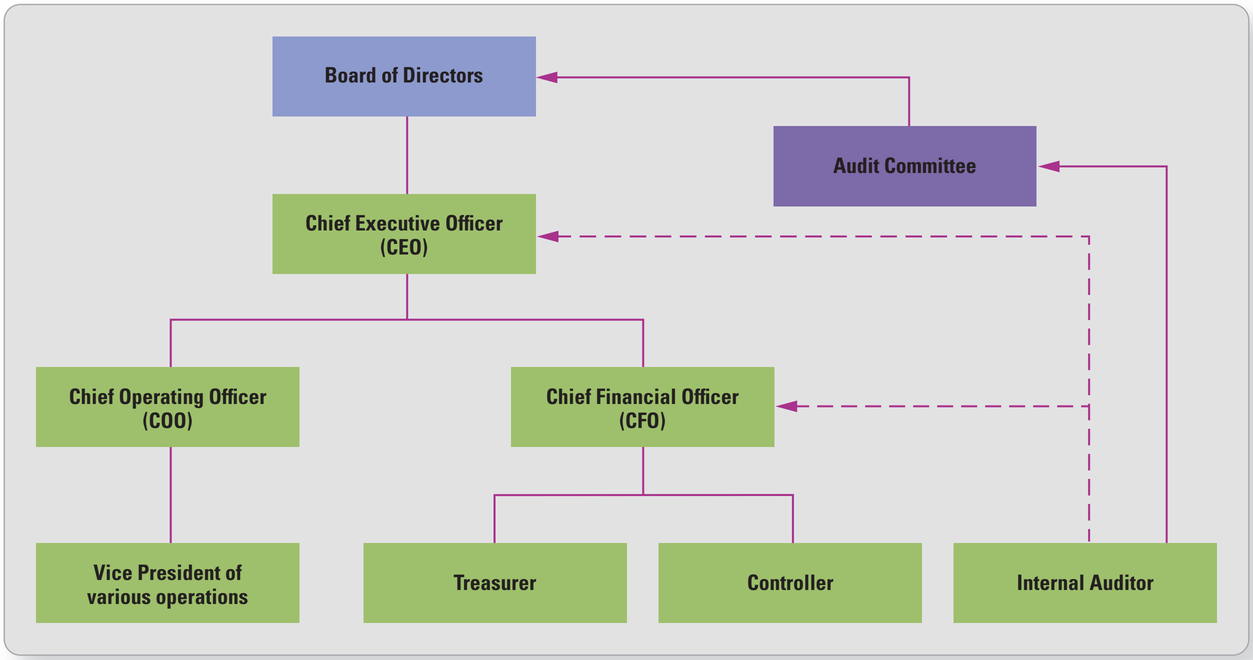
3 Describe organizational structure and the roles and skills required of management accountants within the organization.

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

Organizational Structure

Most corporations are too large to be governed directly by their shareholders. Therefore, shareholders 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 purple and blue boxes representing nonemployees.

EXHIBIT 1-3 Typical Organizational Structure



Normally, an organization's board only meets periodically, so it hires 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 Toronto Stock Exchange (TSE/TSX) requires that the members of a board of directors for a listed company have sufficient experience in the industry and in governing public companies. It also requires that at least two board members are independent of the firm. However, for those organizations looking to go public in the United States, the New York Stock Exchange (NYSE) requires that listed companies have not only an external auditor but also 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 the **audit committee**, a subcommittee of the board of directors. The audit committee oversees the internal audit function as well as the annual audit of the financial statements by independent auditors. Both the internal audit department and the independent auditors 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 have competencies in finance and accounting, strategic thinking, decision making, and communication that make them valuable in managerial positions throughout the company. These same competencies also make managerial accountants valuable 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. Lillie Cruikshank, the vice president of the Business Technology Centre at Sobeys Inc., describes her career as a management accountant as providing her with

> the business management skills that help me connect the dots between strategy and action. We're in a highly competitive environment. We have to control costs while providing our customers with the best food offering.[3]

CONTROL CONCEPTS

As you go through each topic in this book, ask yourself the following questions:

1. What is the business issue, event, or problem, and how can accounting help to solve it? Management accounting always begins with some relevant business issue that management is facing or some economic event that occurred in the past or might occur in the future. Management accounting is used to shed light on the issue and direct management's path.
2. What are the "grey areas"? In other words, what differences in methods, assumptions, estimates, measurement choices, and judgment calls might impact the information that is used for decision making? Because of the grey areas and judgment involved, accounting numbers are rarely as precise as they may seem.
3. What are the implications for the business if the accounting information used in the decision is "wrong"? Because of the grey areas, it's difficult to say that accounting information is ever "wrong." However, judgment in these grey areas could lead to financial estimates that are on the high side or on the low side. What are the consequences of numbers that are too high or too low? Would estimates that are "off" in one direction be worse than the other direction?

[3]Excerpt from Certified Management Accountant (CMA). www.creativeaccountants.org

The Skills Required 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. Management accountants must be able to communicate with the computer/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 them into *useful* information management can use.

> 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.)[4]

Today's management accountants need the following skills:[5]

- Solid knowledge of both financial and managerial accounting
- Problem-solving and decision-making skills
- Knowledge of how a business functions
- Ability to lead and to work on a team
- Professionalism and ethical standards
- Oral *and* written communication skills

The skills shown in Exhibit 1-4 are crucial to these management accountants:

> 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)

> 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.)[6]

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.

The Profession of Accounting in Canada

4 Describe the role of CPA Canada, and apply its guidelines for ethical behaviour.

Professional accountants in Canada are represented by the Chartered Professional Accountants of Canada (CPA Canada) in addition to provincial accounting associations (e.g., CPA Ontario). Prior to a multiyear unification process, which began in 2013, there were three professional accounting designations in Canada. The three legacy accounting bodies in Canada were:

- The Society of Management Accountants of Canada, which governed **Certified Management Accountants (CMAs)**;
- **The** Canadian Institute of Chartered Accountants, which regulated **Chartered Accountants (CAs)**; and

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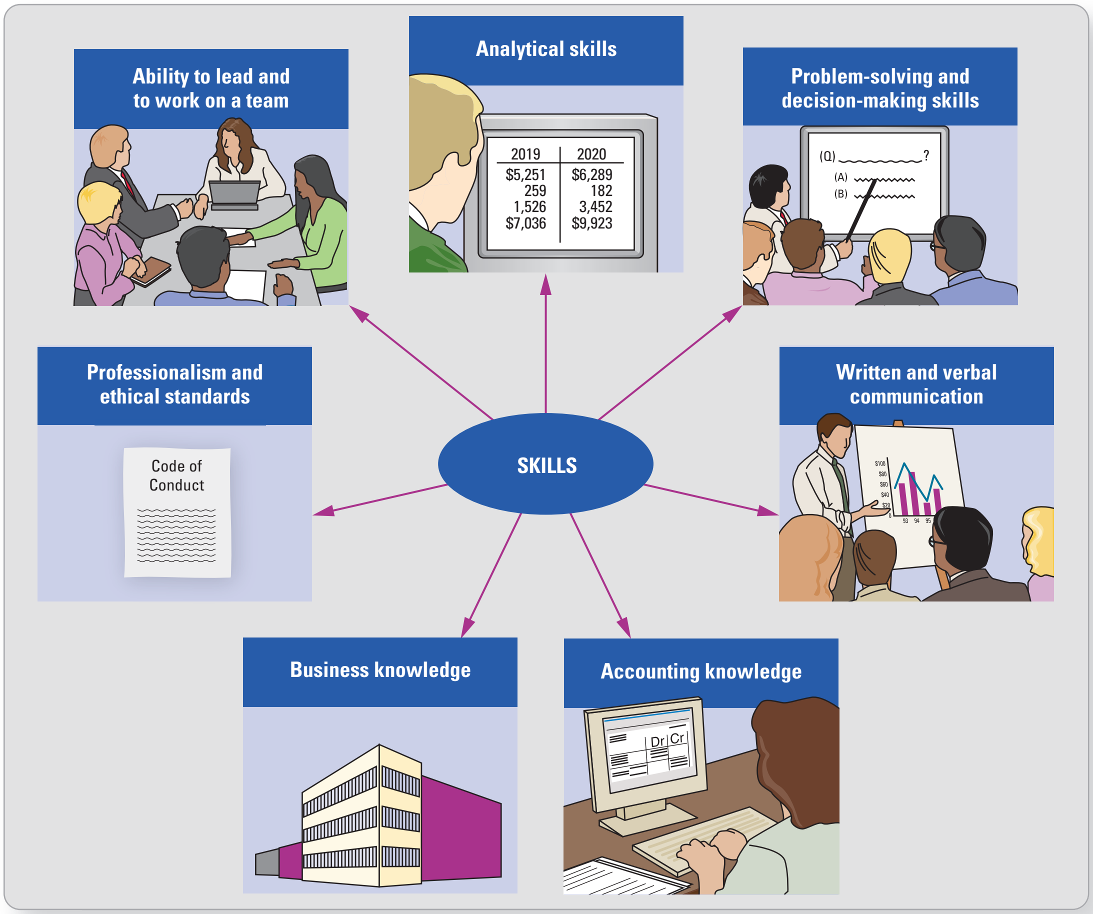
[4] Institute of Management Accountants, *Counting More, Counting Less: The 1999 Practice Analysis of Management Accounting,* Used by permission of the Institute of Management Accountants.
[5] Gary Siegel and James Sorenson, *What Corporate America Wants in Entry-Level Accountants*, Institute of Management Accountants, Montvale, NJ, 1994, Used by permission of the Institute of Management Accountants.
[6] Institute of Management Accountants, *Counting More, Counting Less: The 1999 Practice Analysis of Management Accounting,* Used by permission of the Institute of Management Accountants.

EXHIBIT 1-4 The Skills Required for Management Accountants



- The Certified General Accountants Association of Canada, which awarded members the Certified General Accountant (CGA) designation.

The **Chartered Professional Accountant (CPA)** designation (in French, comptable professionnel agréé) is the designation by which all new accountants will be known following the unification process and the completion of legislation in each of the provinces and territories of Canada. Individuals that held any of the legacy designations will retain their previous credential and also join the new designation (i.e., Bill Smith, CA, will become Bill Smith, CPA, CA).

One of the reasons the accounting profession in Canada pursued unification was to bring together the strength of training, knowledge, and practice into one accounting body to provide the greatest benefit to the public, to the profession, and to businesses in Canada. For management accountants, this means the diverse set of skills required (see Figure 1-4) are supported by a greater number of educational and peer mentor supports. There are over 190,000 members of CPA Canada, and the numbers continue to grow.

Ethics

PROFESSIONAL COMPETENCY

Management accountants continually face ethical challenges. Our accounting bodies have developed principles, standards, and codes of ethics to help management accountants deal with these challenges. You will find information regarding the ethical principles, standards, and codes of conduct on CPA Canada's and each provincial CPA association's websites, reminding us that professional accountants must exhibit the highest level of ethical behaviour.

Why is this important?

At the **root** of all business relationships is **trust**. Would you put your **money** in a bank that you didn't trust, invest in a company you knew was "**cooking the books**," or lend money to someone you thought would never pay you back? As a **manager**, your trust in the other party's **ethical** behaviour, and vice versa, will be a vital component of the business **decisions** you make.

In Canada, Bill 198C was passed in 2002 in response to a series of large international corporate scandals. In the United States, a parallel legislation (the Sarbanes-Oxley Act) was passed in 2002. Similar legislation was enacted in other countries around the world. The regulations, among other things, delineate a process for employees to report violations or illegal and unethical acts. (These employees are called whistleblowers.)

CPA Canada provides guidelines for codes of conduct for all individuals that hold the CPA designation. CPA Canada works with provincial accounting bodies, which are responsible for the regulation of the accounting profession in their respective provinces. This includes the development, maintenance, and enforcement of a code of ethics for CPAs. CPA Canada and the provincial affiliates provide guidance on ethical behaviour (see Exhibit 1-5), which alongside provincial codes of conduct is meant to foster important qualities of ethical behaviour, such as integrity, leadership, and trust.

EXHIBIT 1-5 CPA Guidelines for Ethical Behaviour

Guideline	Evidence	Example
Adherence to Rules of Professional Conduct	Compilation of allowed and disallowed behaviours	No ownership interest in an audit client
Enabling Competencies	Adherence to laws and professional standards for knowledge and behaviour	Having the requisite knowledge to perform certain tasks
Assessing the Situation	Recognition of ethical issues that may arise in work to be performed	Planning and identifying possible conflicts of interest
Integrative Analysis	Anticipation of issues and identification of possible alternatives	Scrutinizing ethical constraints to determine the best way forward
Conclude/Advise and Communicate	A clear and transparent decision based on the ethical analysis	

Source: Karen W. Braun, Wendy M. Tietz, and Louis Beaubien, *Managerial Accounting*, 3rd Ed., © 2018, Pearson Education, Inc., New York, NY.

To resolve ethical dilemmas, management accountants should first follow their company's established policies for reporting unethical behaviour. If the conflict is not resolved through the company's procedures, the management accountant should consider the following steps:

- Discuss the unethical situation with the immediate supervisor, unless the supervisor is involved in the unethical situation. If so, notify the supervisor at the next higher managerial level. If the immediate supervisor involved is the CEO, notify the audit committee or board of directors.
- Discuss the unethical situation with an objective advisor.
- Consult an attorney regarding legal obligations and rights.

Examples of Ethical Dilemmas

Unfortunately, the ethical path is not always clear. You may want to act ethically and do the right thing, but the consequences can make it difficult to decide what to do. Let us consider several ethical dilemmas:

Dilemma #1

> Ileana Spilca is examining the expense reports of her staff who counted inventory at Canadian Car Parts' distribution centre in Brampton, Ontario. She discovers that Mike Flinders has claimed but not included hotel receipts for over $1,000 of accommodation expenses. Other staff, who also claimed $1,000, did attach hotel receipts. When asked about the receipts, Mike admits that he stayed with an old friend, not in the hotel, but he believes that he deserves the money he saved. After all, the company would have paid his hotel bill.

By asking to be reimbursed for hotel expenses he did not incur, Flinders violates the basic tenet of adherence to rules of professional conduct. Because Spilca discovered the inflated expense report, she would not be fulfilling her ethical responsibilities of integrity and credibility if she allowed the reimbursement.

Dilemma #2

> As the accountant of Entrée Computer, you are aware of your company's weak financial condition. Entrée is close to signing a lucrative contract that should ensure its future. To do so, the controller states that the company must report a profit this year (ending December 31). He suggests, "Two customers have placed orders that are really not supposed to be shipped until early January. Ask production to fill and ship those orders on December 31 so we can record them in this year's sales."

The resolution of this dilemma is less clear-cut. Many people believe that following the controller's suggestion to manipulate the company's income would violate the standards of competence, integrity, and credibility. Others would argue that because Entrée Computer already has the customer orders, shipping the goods and recording the sale in December is still ethical behaviour. You might discuss the available alternatives with the next managerial level in order to determine what course of action would be warranted.

Dilemma #3

> As a new accounting staff member at the YMCA, your supervisor has asked you to prepare the yearly GST/HST report, which the government uses to determine its reimbursement to the charity for allowable GST/HST expenditures. The report requires specialized knowledge that you do not believe you possess. The supervisor is busy planning for the coming year and cannot offer much guidance while you prepare the report.

This situation is not as rare as you might think. You may be asked to perform tasks that you do not feel qualified to perform. The competence standard requires you to perform professional duties in accordance with laws, regulations, and technical standards; but laws and regulations are always changing. For this reason, the competence standard also requires you to continually develop knowledge and skills. Accounting professionals are required to complete annual continuing professional education to fulfill this responsibility. However, even continuing professional education courses will not cover every situation you may encounter.

In this case, advise your supervisor that you currently lack the knowledge required to complete the GST/HST report. By doing so, you are complying with the competence standard that requires you to recognize and communicate any limitations that would preclude you from fulfilling an activity. You should ask for training on the report preparation and supervision by someone experienced in preparing the report. If the supervisor denies your requests, you should ask him or her to reassign the GST/HST report to a qualified staff member.

Dilemma #4

> Your company is negotiating a large multiyear sales contract that, if won, would substantially increase the company's future earnings. At a dinner party over the weekend, your friends ask you how you like your job and the company you work for. In your enthusiasm, you tell them not only about your responsibilities at work but also about the contract negotiations. As soon as the words pop out of your mouth, you worry that you have said too much.

This situation is difficult to avoid. You may be so excited about your job and the company you work for that it is difficult to keep information from unintentionally slipping out during casual conversation with friends and family. The confidentiality standard requires you to refrain from disclosing information or using confidential information for unethical or illegal advantage. Was the contract negotiation confidential? If so, would your friends invest in company stock in hopes that the negotiations increase stock prices? Or were the negotiations public knowledge in the financial community? If so, your friends would gain no illegal advantage from the information. Cases such as those involving Martha Stewart remind us that insider trading (use of inside knowledge for illegal gain) has serious consequences. Even seemingly mundane information about company operations could give competitors an advantage. Therefore, it is best to disclose only information that is meant for public consumption.

DECISION GUIDELINES

A company made the following considerations in designing its managerial accounting system to provide managers with the information they need to run operations efficiently and effectively.*

Decision	Guidelines
I need information that will help me make decisions and determine the future of the organization. The information provided by the financial accounting system doesn't seem to provide what I really need. Is there something else that I can use?	Managerial accounting provides information that helps managers plan, direct, and control operations and make better decisions. The information has a • *future* orientation • focus on relevance to business decisions
I've been told that I don't need to follow ASPE or IFRS guidelines when I create my managerial accounting system. What do I use as guidelines for how to establish a managerial accounting system?	Managers design the managerial accounting system so that the benefits (from helping managers make wiser decisions) outweigh the costs of the system.
Where should management accountants be placed within the organizational structure?	In the past, most management accountants worked in isolated departments. Now, management accountants are deployed throughout the company. Accountants are trained in strategic leadership and planning, which may be the reason why many are employed as managers or senior analysts and often rise to the position of president or vice president.
I'm considering hiring a management accountant for my organization. What skills should I be looking for in this individual?	Because of their expanding role within the organization, most management accountants need financial and managerial accounting knowledge, problem-solving and decision-making skills, knowledge of how a business functions, the ability to lead and to work on teams, knowledge of professional and ethical standards, and written and oral communication skills.
I have encountered an ethical dilemma. Are there some guidelines or principles that I can use to help me make an appropriate decision?	CPA Canada Principles of Ethical Conduct Professional Behaviour: *conduct which maintains the good reputation of the profession* Integrity and Due Care: *practise diligently, in accordance with applicable technical and professional standards* Professional Competence: *maintaining of professional skill and competence knowledge and compliance of and with professional standards and pertinent legislation* Confidentiality: *information acquired as a function of professional activity will not be disclosed to any third party, without proper cause and specific authority* Objectivity: *judgment will not be compromised by bias, conflict of interest, or undue influence*

*Used with the permission of Certified Management Accountants of Ontario.

SUMMARY PROBLEM 1

Requirements

1. Each of the following statements describes a responsibility of management. Match each statement to the management responsibility being fulfilled.

Statement	Management Responsibility
1. Identifying alternative courses of action and choosing among them	a. Planning
2. Running the company on a day-to-day basis	b. Decision making
3. Determining whether the company's units are operating according to plan	c. Directing
4. Setting goals and objectives for the company and determining strategies to achieve them	d. Controlling

2. Are the following statements more descriptive of managerial accounting or financial accounting information?

a. Describes historical transactions with external parties

b. Is not required by any authoritative body, such as the provincial securities commissions

c. Reports on the company's subunits, such as products, geographical areas, and departments

d. Is intended to be used by creditors and investors

e. Is formatted in accordance with ASPE or IFRS

3. Each of the following statements paraphrases an ethical responsibility. Match each statement to the standard of ethical professional practice being fulfilled. Each standard may be used more than once or not at all.

Responsibility	Standard of Ethical Professional Practice
1. Do not disclose company information unless authorized to do so.	a. Professional Competence
2. Continue to develop skills and knowledge.	b. Confidentiality
3. Do not bias the information and reports presented to management.	c. Integrity and Due Care
4. If you do not have the skills to complete a task correctly, do not pretend you do.	d. Professional Behaviour
5. Do not base decisions for the organization on what might serve your own personal interests best.	e. Objectivity
6. Avoid actual *and* apparent conflicts of interest.	

SOLUTIONS

Requirement 1

1. (b) Decision making

2. (c) Directing

3. (d) Controlling

4. (a) Planning

Requirement 2

a. Financial accounting

b. Managerial accounting

c. Managerial accounting

d. Financial accounting

e. Financial accounting

Requirement 3

1. (b) Confidentiality

2. (a) Professional Competence

3. (d) Professional Behaviour

4. (a) Professional Competence

5. (c) Integrity and Due Care

6. (e) Objectivity

What Regulatory and Business Issues Affect Today's Management Accountants?

5 Discuss and analyze the implications of regulatory and business trends.

The business world is continually changing. Let us look at some of the current regulatory and business issues that affect managers and the managerial accounting systems that support them. These issues include the **Sarbanes-Oxley Act (SOX)**, International Financial Reporting Standards (IFRS), **Extensible Business Reporting Language (XBRL)**, and the shifting economy. After considering these issues, we will look at some of the tools companies use to compete in the global marketplace.

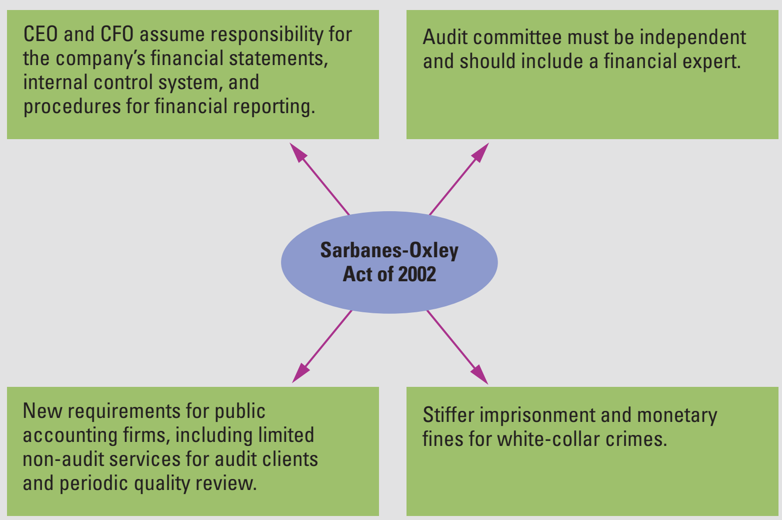
Why is this important?

SOX puts more pressure on companies, their **managers**, and their auditors to ensure that **investors** get financial information that **fairly reflects** the company's **operations.**

Sarbanes-Oxley Act of 2002

As a result of corporate accounting scandals, such as those at Enron and WorldCom, the U.S. Congress enacted the Sarbanes-Oxley Act of 2002 (SOX). The purpose of SOX is to restore trust in publicly traded corporations, their management, their financial statements, and their auditors. SOX enhances internal control and financial reporting requirements and establishes new regulatory requirements for publicly traded companies and their independent auditors. Publicly traded companies have spent millions of dollars upgrading their internal controls and accounting systems to comply with SOX regulations. Although this legislation originated in the United States, it has had a major impact on Canadian financial reporting practices. Our standards have incorporated many similar features with respect to auditor independence and internal controls. Some of the impacts on the Canadian market are shown in Exhibit 1-6.

EXHIBIT 1-6 Some Important Results of SOX



Source: Karen W. Braun, Wendy M. Tietz, and Louis Beaubien, *Managerial Accounting*, 3rd Ed., © 2018, Pearson Education, Inc., New York, NY.

International Financial Reporting Standards (IFRS)

As a result of globalization, the need for consistent reporting standards for all companies in the world has grown. In response, the securities commissions of many countries have recently moved to adopt International Financial Reporting Standards (IFRS) for all publicly traded companies within the next few years. In Canada, this adoption took place in 2011. Currently, a company operating in several different countries often must prepare several sets of financial statements using different accounting standards. These companies will need to prepare only one set of financial statements if all the countries have adopted IFRS. While the transition to IFRS may be time consuming and expensive, in the long run it should actually save companies money and make the markets more efficient. You can keep abreast of current IFRS developments and implications for accounting information at www.IFRS.org.

Extensible Business Reporting Language (XBRL)

Wouldn't it be nice if managers, analysts, investors, and regulators could easily access public company information over the internet without having to *manually* read PDF documents and extract the data they need for decision making? Extensible Business Reporting Language (XBRL) enables companies to release financial and business information in a format that can be quickly, efficiently, and cost-effectively accessed, sorted, and analyzed over the internet. XBRL uses a standardized coding system to "tag" each piece of reported financial and business data so that it can be read by computer programs rather than human eyes. For example, *Sales Revenue* would be tagged with the same code by all companies so that a computer program could extract *Sales Revenue* information from an individual company or a selected group of companies.

XBRL has several advantages:

- It decreases the need for laborious, manual searches though corporate reports for specific pieces of information.
- It decreases the time companies spend converting their financial information into various government-prescribed formats.
- It allows managers to easily compare their results to those of other companies and to industry averages.
- Investors and managers can "slice and dice" financial information however they want to suit their decision-making needs.
- It should promote the more consistent use of financial terminology, since all data must be tagged using a preset, yet extensible, classification system.

Canadian organizations began filing their annual financial statements using XBRL codifications on a voluntary basis in May 2007. The financial statements are filed in both XBRL format and PDF format on the online database for Canadian public companies, SEDAR.com. The **Canadian Securities Administrators (CSA)** published rules regarding the need for the CEO and the CFO to sign, and authorize the accuracy of, annual reports. These CSA rules, implemented over a span of about four years starting in 2003, also specify the role of the audit committee on boards of directors, internal controls, and a number of other rules. These CSA rules are similar to the SOX requirements. The CSA also actively encourages participation of companies in the voluntary implementation because of the benefits that may be realized through the improved access to information. You can keep abreast of XBRL developments at www.XBRL.org and www.securities-administrators.ca.

Shifting Economy

Managerial accounting has its roots in the industrial age of manufacturing. Most traditional managerial accounting practices were developed to fill the needs of manufacturing firms. However, since the Canadian economy has shifted away from manufacturing, managerial accounting has shifted, too. The field of managerial accounting has *expanded* to meet the needs of service and merchandising firms as well as manufacturers. For example, consider the following:

1. Manufacturers still need to know how much each unit of their product costs to manufacture. In addition to using this information for inventory valuation and pricing decisions, manufacturers now use cost information to determine whether they should outsource production to another company or to an overseas location.
2. Service companies also need cost information to make decisions. They need to know the cost of providing a service rather than manufacturing a product. For example, banks must include the cost of servicing chequing and savings accounts in the fees they charge customers. And hospitals need to know the cost of performing appendectomies to justify reimbursement from insurance companies and government.

3. Retailers need to consider importing costs when determining the cost of their merchandise. Because many goods are now produced overseas rather than domestically, determining the cost of a product is often more difficult than it was in the past. Management accountants need to consider foreign currency exchange, shipping costs, and import tariffs when determining the cost of imported products.

How Do Companies Compete in Today's Global Marketplace?

The barriers to international trade have fallen over the past decades, allowing foreign companies to compete with domestic firms. Firms that are not highly efficient, innovative, and responsive to business trends will vanish from the global market. However, global markets also provide highly competitive domestic companies with great opportunities for growth.

Globalization has several implications for managerial accounting:

- Stiffer competition means managers need more accurate and timely information to make wise business decisions. Companies can no longer afford to make decisions by the "seat of their pants." Detailed, accurate, and real-time cost information has become a necessity for survival.
- Companies must decide whether to expand sales and/or production into foreign countries. To do so, managers need comprehensive estimates of the costs of running international operations and the benefits that can be reaped.
- Companies can learn new management techniques by observing their international competitors. For example, the management philosophy of **lean production**, first developed in Japan by Toyota, is now being used by many North American companies to cut costs, improve quality, and speed up production.

In the following sections we briefly describe several tools that companies use to compete in the global marketplace. How do managers decide which of these initiatives to undertake? They use **cost–benefit analysis**, which weighs the expected costs of taking an action against the expected benefits of the action.

Sustainability, Social Responsibility, and the Triple Bottom Line

In recent years, there has been an increasing awareness and growing interest in **sustainability** and social responsibility by both consumers and corporations. Sustainability is most often defined as the ability to meet the needs of the present without compromising the ability of future generations to meet their own needs.[7] Others define it as an expansion on the golden rule: "Do unto others (including future generations) as you would have them do unto you."[8] The first definition focuses more on environmental responsibility, while the second definition recognizes the additional component of social responsibility. As a result, many companies are beginning to adhere to the notion of a **triple bottom line**. The triple bottom line recognizes that a company's performance should not only be viewed in terms of its ability to generate economic profits for its owners, as has traditionally been the case, but also by its impact on people and the planet. Thus, sustainability can be viewed in terms of three interrelated factors that influence a company's ability to survive and thrive in the long-run: profit, people, and planet.

To move toward environmental sustainability, companies are introducing "green initiatives"—ways of doing business that have fewer negative consequences for the earth's resources. They've also recognized the need to be socially responsible—carefully considering how their business affects employees, consumers, citizens, and entire

[7]1987 World Commission on Environment and Development, www.un.org/documents/ga/res/42/ares42-187.htm

[8]Gary Langenwalter, *Business Sustainability: Keeping Lean but with More Green for the Company's Long Haul*, 2010, AICPA, Lewisville, Texas.

communities. Many companies have introduced means of giving back to their local communities by monetarily supporting local schools and charities. Businesses are now viewing sustainability and social responsibility as opportunities for innovation and business development. These initiatives not only allow a company to "do the right thing," but they also can lead to economic profits by increasing demand for a company's products and services.

In every chapter of this text, you will see a special section illustrating how management accounting can help companies pursue environmentally sustainable and socially responsible business practices. These sections will be marked with a green recycle symbol and will also point you to corresponding homework problems.

Integrated Reporting

The corporate reporting landscape is constantly changing. One of the most notable recent global movements is toward integrated reporting. According to the International Integrated Reporting Committee (IIRC), **integrated reporting** (symbolized as < IR >) "is a process that results in communication, most visibly a periodic 'integrated report,' about value creation over time. An integrated report is a concise communication about how an organization's strategy, governance, performance and prospects lead to the creation of value over the short, medium and long term."[9] As such, it is a broader, more holistic, balanced, and future-looking report than traditional financial statements, which tend to focus on short-term financial measures of past performance.

An integrated report essentially describes and measures all material elements of value creation, not just those relating to financial capital. In addition to financial capital, the report considers manufactured, intellectual, human, social, and natural (environmental) capital, which are often more difficult for investors to access through traditional financial reporting.

Integrated reporting, which is still in its infancy, is being driven by businesses and institutional investors who want more information for better decision making than that offered by traditional financial statements. Several well-known companies, including Microsoft, Prudential, and Coca-Cola, as well as the Big Four accounting firms, the Chartered Financial Analyst (CFA) Institute, and Goldman Sachs, are working closely with the IIRC to help further develop and refine the < IR > reporting framework. You may keep abreast of current developments in < IR > by visiting www.theiirc.org.

Tools for Time-Based Competition

The internet, electronic commerce (e-commerce), and other new technologies speed the pace of business. Think about your last trip to the grocery store or hardware store. Did you use the self-scanning checkout? Retailers install expensive self-scanning technology to cut labour costs and give shoppers an alternative to standing in checkout lines. Some studies have shown that, on average, the self-scanning checkout process is really not faster. However, shoppers *perceive* the checkout time to be faster because they are actively engaged rather than passively standing in line. Businesses are doing whatever they can to shorten the time customers have to wait for their orders. Why? Because *time* is the latest competitive weapon in business.

Advanced Information Systems

Many small businesses use QuickBooks or Sage 50 [Note that Sage changed the name of the software back in 2013 (or thereabouts)] accounting software to track their costs, prepare reports, and present information needed to run the business. But large companies are turning to enterprise resource planning (ERP) systems that can integrate all of a company's worldwide functions, departments, and data. ERP systems such as SAP, Oracle, and PeopleSoft gather company data into a centralized data warehouse. The system feeds the data into software for all of the company's business activities, from budgeting and purchasing to production and customer service.

[9]International Integrated Reporting Council (IIRC), Retrieved from www.theiirc.org

Advantages of ERP systems include the following:

- Companies streamline their operations before mapping them into ERP software. Streamlining operations saves money.
- ERP helps companies respond quickly to changes. A change in sales instantly ripples through the ERP's purchases, production, shipping, and accounting systems.
- An ERP system can replace hundreds of separate software systems, such as different software in different regions, or different payroll, shipping, and production software systems.

However, ERP systems are expensive and require a large commitment of time and people. For example, major installations at Fujitsu and Allstate cost each of these companies approximately \$40 to \$60 million. However, the expected benefits from the system are greater, with Allstate reporting to have saved \$100 million in processing costs within 18 months.[10]

Web-Enabled Business

To survive in a competitive, globally wired economy, companies use the internet in everyday operations such as budgeting, planning, selling, and customer service. Companies use business-to-business e-commerce to complete transactions with each other. Electronic purchases between businesses are often untouched by human hands, generate little if any paper, and avoid the time and cost of processing paperwork.

Advances in information and communication technology (ICT), such as Internet of Things (IoT) applications, provide an important means of **supply-chain management**, where companies exchange information with suppliers to reduce costs, improve quality, and speed delivery of goods and services from suppliers to the company itself. For example, companies that supply component parts to Dell use the internet to access Dell's daily inventory levels and current demand for parts. Access to real-time information lets suppliers automate the size of the next day's shipment, which in turn helps Dell cut order-to-delivery times and control costs.

STOP & THINK

Electronically billing customers has become popular. Analysts estimate the following:

1. Companies save \$7 per invoice by billing customers electronically.
2. The average large company issues 800,000 invoices a year.
3. The average cost of installing an e-billing system is \$500,000. Should companies that issue 800,000 invoices a year consider e-billing?

Answer: Yes, these companies should consider e-billing. Comparing expected benefits to costs reveals significant expected net benefits from e-billing:

Expected benefits:	
800,000 invoices × \$7 savings per invoice	\$5,600,000
Expected costs:	
Installation of e-billing system	(500,000)
Net expected benefits	\$5,100,000

Traditional Production Systems

6 Describe a lean production system.

Traditional production systems are often described as "push" systems. Once the production schedule for the period has been determined, products are "pushed" through the manufacturing process and then stored in finished goods inventory until sold. Traditional

[10]R. Banham, "Better Budgets: Replacing a whim and a prayer with relevant data," *Journal of Accountancy*, February 2000, www.journalofaccountancy.com/Issues/2000/Feb/BetterBudgets.htm

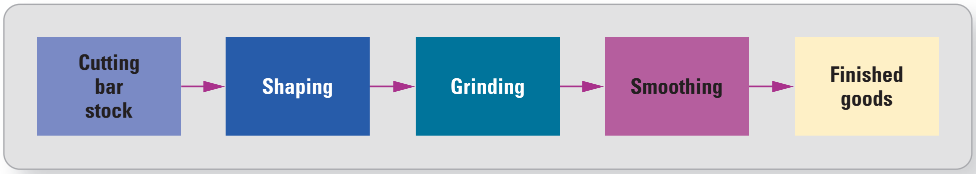
systems often keep large inventories of raw materials, work in process, and finished goods on hand. Why?

1. Companies often buy more raw materials than they need because the materials may be of poor quality. As a result, the materials may not be usable or may break during production and require replacement.
2. Companies often make products in large batches to spread set-up costs over many units. As a result, companies often buy large quantities of raw materials and then have large quantities of finished units.
3. Companies often keep extra work in process inventory *between* departments so that each department will have something to continue working on in the event production stops or slows in an earlier department. For example, in Exhibit 1-7, we see the series of production steps required to produce drill bits from bar stock (the raw materials). If the company keeps some work in process inventory *between* the grinding and smoothing operations, the smoothing operation can continue even if the shaping or grinding operations slow or come to a halt as a result of machine breakdown, absence due to sick workers, or other production problems.

Why is this important?

To survive in the **global marketplace**, businesses must quickly respond to customer **demand**, providing high-quality products and **services** at a reasonable price.

EXHIBIT 1-7 Sequence of Operations for Drill-Bit Production



Companies often keep large inventories to protect themselves from uncertainty. Large raw material inventories protect against delayed deliveries from suppliers. Large finished goods inventories protect against lost sales if customer demand is higher than expected. These are all valid reasons for keeping large inventories. However, large inventories can be a problem:

1. Inventories use cash. Companies incur interest expense or forgo interest revenue on that cash. If a company has to borrow money to pay for inventory, it incurs interest expense on the loan. Even if a company uses its own cash to fund the inventory, it misses the opportunity to earn interest on that cash. In other words, if the cash were not used to purchase excessive inventory, the company could invest it and earn a return.
2. Large inventories often hide quality problems, production bottlenecks, and obsolescence. Inventory may spoil, be broken or stolen, or become obsolete as it sits in storage and waits to be used or sold. Companies in the high-tech and fashion industries are particularly susceptible to inventory obsolescence. What would a computer manufacturer do with computer chips purchased six months earlier? The chips are obsolete and unusable.
3. The activities of storing and taking items out of storage are very expensive. Inventory management software such as activity-based costing (ABC) and activity-based management (ABM) have helped uncover the cost of these non-value-added activities.

Because of the problems associated with large inventories, many companies are now striving to use lean production systems that keep inventories to a minimum.

Lean Production Systems

Lean production is both a philosophy and a business strategy of manufacturing without waste. One primary goal of a lean production system is to eliminate the waste of time and money that accompanies large inventories. Therefore, lean companies adopt a **just-in-time (JIT)** inventory philosophy. As the name suggests, JIT inventory focuses on purchasing