

## **CHAPTER 1**

### **BASIC COST MANAGEMENT CONCEPTS**

The study of cost management accounting requires an understanding of fundamental cost concepts, terms, and a related systems framework. Students should understand what cost management is all about, how it is changing over time, and what different costs need to be emphasized for different managerial purposes. Students will not be able to master topics covered in subsequent chapters if they have failed to master the basic cost concepts of this chapter. This chapter is also a good place to introduce a discussion on ethical behaviour. It may be a good idea to ask students to research the code of ethics of any of the three Canadian professional accounting designations. Several exercises on ethics are provided at the end of the chapter.

### **LEARNING OBJECTIVES**

After studying Chapter 1, students should be able to:

1. Describe a cost management information system, its objectives, and its major subsystems, and indicate how it relates to other operating and information systems.
2. Explain the cost assignment process.
3. Define tangible and intangible products, and explain why there are different product cost definitions.
4. Prepare income statements for manufacturing and service organizations.
5. Understand the importance of ethical behaviour for management accountants.

### **KEY TOPICS**

The following major topics are covered in this chapter (related learning objectives are listed for each topic):

1. A Systems Framework (LO 1)
2. Cost Assignment: Direct Tracing, Driver Tracing, and Allocation (LO 2)
3. Product and Service Costs (LO 3)
4. Financial Statements (LO 4)
5. Ethical Behaviour (LO 5)

## I. A SYSTEMS FRAMEWORK

A *system* is a set of interrelated parts that performs one or more processes to accomplish specific objectives. An *accounting information system* consists of objectives, interrelated parts, processes, and outputs. Inputs are generally economic events and the operational model of an accounting system is critically involved with the user of information. Exhibit 1-1 (p. 4) presents an operational model of an accounting information system.

There are two basic accounting information systems: the financial accounting information system and the cost management information system. Each system is designed to satisfy different purposes. The *financial accounting information system* is an accounting information subsystem that is primarily concerned with producing outputs for external users. The *cost management information system* is an accounting information subsystem that is primarily concerned with producing outputs for internal users using inputs and processes needed to satisfy management objectives.

The cost management information system provides information for (1) costing services, products, and other objects of interest to management; (2) planning and control; and (3) decision making. Because managers in many different areas of a business require cost information, a high-quality cost management system should have an organization-wide perspective and be able to interact with other information systems within the organization.

*Teaching hint:* You may wish to discuss Exercise 1-9 at this time.

The *value chain* is the set of activities required to design, develop, produce, market, deliver, and provide post-sales service for the products and services sold to customers. Emphasizing customer value forces managers to determine which activities in the value chain are important to customers. Exhibit 1-2 (p. 5) illustrates the business processes of the value chain.

The cost management information system also has two major subsystems: the cost accounting information system and the operational control information system. The *cost accounting information system* is a cost management subsystem designed to assign costs to individual products and services and other objects of interest to managers. The *operational control information system* is designed to provide accurate and timely feedback concerning the performance of managers and others relative to their planning and control of activities.

Students should understand factors that will impact a company's cost management system.

1. Global competition—Vastly improved transportation and communications have led to a global market for many manufacturing and service firms. This global focus highlights the need for cost information to reduce costs, improve productivity, and assess product-line profitability.
2. Growth of the service industry—Traditional manufacturing industries have declined in importance. In most western nations the service sector comprises approximately two-thirds to three-quarters of the economy and employment. Deregulation of many services such as airlines and utilities has increased competition in the service industry.

3. Advances in information technology—Automation and integration increase the need for timely, detailed information. Significant advances in technology include computer-integrated manufacturing and the availability of personal computers, spreadsheet software, and graphics packages.
4. Advances in the manufacturing environment—Manufacturing management approaches continue to be utilized to ensure quality, reduce inventories, eliminate waste, and reduce costs.
  - a. *Theory of constraints*—A method used to continuously improve manufacturing activities and nonmanufacturing activities.
  - b. *Just-in-time manufacturing*—A demand-pull system that strives to produce a product only when it is needed and only in the quantities demanded by customers.
  - c. Computer-integrated manufacturing – The automation of the manufacturing environment.

## II. COST ASSIGNMENT: DIRECT TRACING, DRIVER TRACING, AND ALLOCATION

The section introduces and clarifies several concepts and terms relating to cost and the assignment of cost.

1. *Cost*: The cash or cash equivalent value sacrificed for goods and services that are expected to bring a current or future benefit to the organization.  
*Expense*: An expired cost or a cost used up in the production of revenues (e.g., merchandise inventory of a retailer).
2. *Cost object*: Any item for which costs are measured and assigned. Examples include products, customers, departments, projects, activities, and so on. For example, a bicycle is a cost object when you are determining the cost to produce a bicycle.
3. *Activity*: A basic unit of work performed within an organization (e.g., setting up equipment, moving materials, maintaining equipment, and designing products).
4. *Indirect costs*: Costs that cannot be easily and accurately traced to a cost object (e.g., the salary of a plant manager, where departments within the plant are defined as the cost objects).
5. *Direct costs*: Costs that can be easily and accurately traced to a cost object (e.g., the salary of a supervisor of a department, where the department is defined as the cost object, or bricks delivered to a house that is being constructed by a contractor, where the house is the cost object).
6. *Traceability*: The ability to assign a cost to a cost object in an economically feasible way by means of a causal relationship.
7. *Tracing*: The process of assigning costs to a cost object using an observable measure of the resources consumed by the cost object. Tracing costs is accomplished through direct tracing or driver tracing.
  - a. *Direct tracing*: The process of identifying and assigning costs to a cost object that is specifically or physically associated with the cost object. This is the most precise method as it relies on physically observable causal relationships.

- b. *Driver tracing*: The use of *drivers* to assign costs to cost objects. The precision of driver tracing depends on the strength of the causal relationship described by the driver.
- 8. *Allocation*: The least accurate cost assignment method. Often, no causal relationship exists between the cost and the basis used to assign the cost to the cost object.

### III. PRODUCT AND SERVICE COSTS

One of the most important cost objects is the output of organizations. The two types of output are tangible products and services. *Tangible products* are goods produced by converting raw materials through the use of labour and capital inputs. *Services* are tasks or activities performed for a customer or an activity performed by a customer using an organization's products or facilities. Services differ from tangible products on three important dimensions: intangibility, perishability, and inseparability. *Intangibility* means that buyers of services cannot see, feel, hear, or taste a service before it is bought. *Perishability* means that services cannot be stored (there are a few unusual cases where tangible goods cannot be stored). *Inseparability* means that producers of services and buyers of services must usually be in direct contact for an exchange to take place.

An important objective of a cost management system is the calculation of product costs for external financial reporting. Costs are subdivided into two major functional categories: production and nonproduction. *Production (Product) costs* are those costs associated with the manufacture of goods or the provision of services. *Nonproduction costs* are those costs associated with the functions of selling and administration.

Product costs can be further classified as direct materials, direct labour, and overhead. *Direct materials* are those materials that are directly traceable to the goods or services being produced (e.g., the cost of tires on an automobile). *Direct labour* is the labour that is directly traceable to the goods or services being produced (e.g., wages of assembly-line workers). *Overhead* includes all other manufacturing costs not directly traceable to the cost object (e.g., plant depreciation, utilities, property taxes, indirect materials, and indirect labour). *Prime cost* is the sum of direct materials costs and direct labour costs. *Conversion cost* is the sum of direct labour costs and overhead costs. An example of how to calculate prime cost, conversion cost, and product cost is displayed in Cornerstone 1-1 (p. 14).

Nonproduction costs can be classified as marketing costs and administrative costs. *Marketing costs* are the costs necessary to market, distribute, and service a product or service (e.g., commissions, storage costs, and freight). *Administrative costs* are the costs associated with research, development, and general administration of the organization that cannot reasonably be assigned to either marketing or production (e.g., legal fees and the salary of the chief executive officer).

## IV. FINANCIAL STATEMENTS

### Income Statement: Manufacturing Firm and Service Organization

Production costs are assigned to products or services and do not become expenses until the point of sale. Marketing and administrative costs are period costs and are deducted as an expense on the income statement in the period incurred. Nonproduction costs do not appear on the balance sheet. Exhibit 1-3 (p. 15) illustrates the distinction between production and nonproduction costs.

The income statement for a manufacturing firm is frequently referred to as *absorption-costing income* or *full-costing income*. Under the absorption-costing approach used to prepare the income statement, expenses are separated according to function and then deducted from revenues to arrive at operating income.

Cornerstones 1-2 (p. 17) and 1-3 (p. 19) present a statement of cost of goods manufactured and a statement of cost of goods sold. This is a good time to discuss the flow of costs through the statement of cost of goods manufactured to the income statement. Cornerstone 1-4 (p. 20) shows how the results of the statement of cost of goods sold are included with nonmanufacturing expenses to calculate operating income. Finally, these two examples provide students with enough skills to prepare an income statement for a manufacturing firm.

*Teaching hint:* Ask the class how the income statements of merchandising firms and service firms will differ. Classification of the expenses by function should be emphasized. The differences between income statements of manufacturing firms and those of merchandising firms and service firms should be discussed. Merchandising and service firms will not have a schedule of cost of goods manufactured. You may want to present examples of an income statement of a manufacturing firm and an income statement of a service provider.

### The Role of the Management Accountant

The cost and management accountant is responsible for collecting, processing, and reporting information that will help managers in their planning, controlling, and decision-making activities. This is a good time to discuss what line and staff positions are, as well as who the controller and treasurer are and what they do.

The *controller* is the chief accounting officer who supervises all accounting departments. The controller is responsible for financial reporting, reporting, tax planning and reporting, performance reporting, internal auditing, budgeting, accounting systems, and internal controls. The *treasurer* is responsible for the finance function. This includes collection of cash, monitoring cash payments, monitoring cash availability, short-term investing, and short and long-term borrowing.

You should include a brief discussion of the management process. The basic functions of management include planning, controlling, continuous improvement, and decision making. *Planning* requires setting objectives and identifying methods to achieve those objectives. *Controlling* is the managerial activity of monitoring a plan's implementation and taking

corrective action as needed. Control is usually achieved with the use of *feedback*, which is information that can be used to evaluate or correct the steps being taken to implement a plan. *Continuous improvement* requires firms to continually improve their performance to remain competitive or to establish a competitive advantage. *Decision making* is the process of choosing among competing alternatives.

This section briefly discusses the purposes of creating the CMA program. Many firms now sponsor and pay for classes that prepare their management accountants for the qualifying examination, as well as provide other financial incentives to encourage acquisition of the CMA certificate.

## V. ETHICAL BEHAVIOUR

Teaching values is considered by many to be an important part of the current educational process. In part, this feeling stems from a number of unethical practices that have been highly publicized. Some examples of moral lapses are reported in the chapter. You may want to cite some with which you are familiar.

Types of ethical issues include abuse of accounting information, acceptance of bribes or gifts, conflict of interest, and disclosure of confidential information. Ten core values of ethical conduct are honesty, integrity, promise keeping, fidelity, fairness, caring for others, respect for others, responsible citizenship, pursuit of excellence, and accountability. Some believe that teaching ethics to students is a waste of time. Those holding this view generally believe that by university age it is too late to change the ethical behaviour of individuals. Evidence exists, however, that moral reasoning can be taught and that age is not a barrier. Furthermore, learning what is considered acceptable in a business environment is certainly a valid objective. Many, if not most, students will not have a well-developed understanding of “business” ethical issues.

*Teaching hint:* After discussing the reasons why teaching value judgments is important, ask the students to define ethical behaviour. This usually provokes a lively discussion.

The role of professional codes of ethics should be discussed. Professional associations often provide a well-defined set of ethical standards, which helps to define acceptable and unacceptable behaviour. There are problems and cases in this chapter and throughout the book that provide additional ethical dilemmas. The chapter briefly discusses the three major accounting designations available to accounting students. Most students are probably aware of the *Canadian Institute of Chartered Accountants (CICA)*, the *Certified Management Accountants (CMA)*, and the *Certified General Accountants (CGA)*. Explain why these designations are providing interesting career choices for accounting students. The CMA Code of Professional Ethics is provided in Exhibit 1-5 (p. 25).

*Teaching hint:* Ask students why certification is needed. You may wish to point out that other professions such as engineering and data processing also have certifications.

## INFORMATION ABOUT EXERCISES, PROBLEMS, AND CASES

Exercises and problems are described below and on the following page according to coverage of content, learning objective(s), and level of difficulty. The time required to solve the problems is roughly proportional to the level of difficulty.

In general, *basic* exercises/problems are fairly simple and straightforward. The text material is relatively brief; only one or two concepts are covered. Basic exercises and problems should take about 15 to 20 minutes each.

*Moderate* exercises/problems may take longer and involve more concepts. These problems may have a “twist” and require more thought. Moderate exercises and problems may take 20 to 40 minutes each.

*Challenging* problems are more comprehensive and may cover more concepts. The text material is relatively longer and may include some ambiguity. Challenging problems may take 60 to 90 minutes each.

### Cornerstone Exercise (CS)/

Exercise/ Problem	Topic	Learning Objective	Degree of Difficulty
CS 1-1	Product Costs	LO 3	Basic
CS 1-2	Cost of Goods Manufactured	LO 4	Basic
CS 1-3	Cost of Goods Sold	LO 4	Basic
CS 1-4	Income Statement	LO 4	Basic
CS 1-5	Costs of Services	LO 3	Basic
CS 1-6	Cost of Services Produced	LO 4	Moderate
CS 1-7	Cost of Services Sold	LO 4	Moderate
CS 1-8	Income Statement	LO 4	Moderate
1-9	Systems Concepts	LO 1	Basic
1-10	Cost Accounting Information System	LO 1	Basic
1-11	Cost Assignment Methods	LO 2	Basic
1-12	Product Cost Definitions	LO 3	Basic
1-13	Cost Definitions	LO 3, 4	Basic
1-14	Cost Definitions and Calculations	LO 3, 4	Basic
1-15	Cost of Goods Manufactured and Sold	LO 4	Basic
1-16	Prime Cost, Conversion Cost, Preparation of Income Statement: Manufacturing Firm	LO 3,4	Basic
1-17	Cost of Goods Manufactured and Sold	LO 4	Basic
1-18	Income Statement, Direct and Indirect Cost Concepts, Service Company	LO 3, 4	Basic
1-19	Product Cost Definitions, Value Chain	LO 1	Basic
1-20	Direct Materials Cost, Prime Cost, Conversion Cost, Cost of Goods Manufactured	LO 3, 4	Basic

**Cornerstone  
Exercise (CS)/  
Exercise/  
Problem**

<b>Problem</b>	<b>Topic</b>	<b>Learning Objective</b>	<b>Degree of Difficulty</b>
1-21	Cost of Goods Sold, Income Statement	LO 4	Basic
1-22	Cost Assignment Methods	LO 3, 4	Moderate
1-23	Income Statement, Cost of Goods Manufactured	LO 3, 4	Moderate
1-24	Cost of Goods Manufactured, Cost Identification, Solving for Unknowns	LO 2, 4	Moderate
1-25	Income Statement, Cost of Services Provided, Service Attributes	LO 3, 4	Moderate
1-26	Cost of Goods Manufactured, Income Statement	LO 3, 4	Moderate
1-27	Ethical Issues	LO 5	Moderate
1-28	Ethical Issues	LO 5	Moderate
CMA 1-1	Ethical Issues	LO 5	Moderate
CMA 1-2	Ethical Issues	LO 5	Moderate
CMA 1-3	Ethical Issues	LO 5	Moderate

**LIST OF ILLUSTRATIONS**

<b>Illustration</b>	<b>Topic</b>
Exhibit 1-1	Operational Model of an Accounting Information System
Exhibit 1-2	The Value Chain
Exhibit 1-3	Production and Nonproduction Costs
Exhibit 1-4	Performance Report Illustrated
Exhibit 1-5	CMA Code of Professional Ethics