

高等院校双语教学适用教材·会计

# Cost Accounting

(International Edition)

Maryanne M. Mowen Don R. Hansen

# 成本会计

(国际版)

(美) 玛丽安娜·M. 莫文 唐·R. 汉森 著

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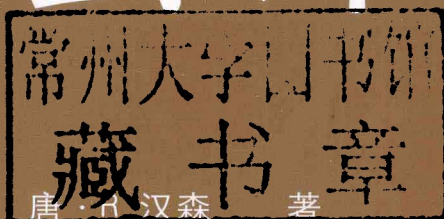
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Maryanne M. Mowen, Don R. Hansen  
Cost Accounting

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# 出版者的话

当前,在教育部的大力倡导下,财经和管理类专业的双语教学在我国各大高校已经逐步开展起来。一些双语教学开展较早的院校积累了丰富的经验,同时也发现了教学过程中存在的一些问题,尤其对教材提出了更高的要求;一些尚未进入这一领域的院校,也在不断探索适于自身的教学方式和方法以及适用的教材,以期时机成熟时加入双语教学的行列。总之,对各类院校而言,能否找到“适用”的教材都成为双语教学成功与否的关键因素之一。

然而,国外原版教材为国外教学量身定做的一些特点,如普遍篇幅较大、侧重于描述性讲解、辅助材料(如习题、案例、延伸阅读材料等)繁杂,尤其是许多内容针对性太强,与所在国的法律结构和经济、文化背景结合过于紧密等,却显然不适于国内教学采用,并成为制约国内双语教学开展的重要原因。因此,对国外原版教材进行本土化的精简改编,使之变成更加“适用”的双语教材,已然迫在眉睫。

东北财经大学出版社作为国内较早涉足引进版教材的一家专业出版社,秉承自己一贯服务于财经教学的宗旨,总结自身多年的出版经验,同麦格劳—希尔教育出版公司、培生教育出版集团和圣智出版集团等国外著名出版公司通力合作,在国内再次领先推出了会计、工商管理、经济学等专业的“高等院校双语教学适用教材”。尤其是此次双语教材是与东北财经大学萨里国际学院共同推出。东北财经大学萨里国际学院是教育部批准的、与英国萨里大学共建的中外合作办学机构。学院所有课程采取双语和全英文授课方式,因而,东北财经大学出版社与萨里国际学院携手推出此系列双语教材。这套丛书的出版经过了长时间的酝酿和筛选,编选人员本着“品质优先、首推名作”的选题原则,既考虑了目前我国财经教育的现状,也考虑了我国财经高等教育所具有的学科特点和需求指向,在教材的遴选、改编和出版上突出了以下一些特点:

- 优选权威的最新版本。入选改编的教材是在国际上多次再版的经典之作的最新版本,其中有些教材的以前版本已在国内部分高校中进行了试用,获得了一致的好评。
- 改编后的教材在保持英文原版教材特色的基础上,力求内容精要,逻辑严密,适合中国的双语教学。选择的改编人员既熟悉原版教材内容,又具有本书或本门课程双语教学的经验。
- 改编后的教材配有丰富的辅助教学支持资源,教师可在网上免费获取。
- 改编后的教材篇幅合理,符合国内教学的课时要求,价格相对较低。

本套教材是在双语教学教材出版方面的一次新的尝试。我们在选书、改编及出版的过程中得到了国内许多高校的专家、教师的支持和指导,在此深表谢意,也期待广大读者提出宝贵的意见和建议。

尽管我们在改编的过程中已加以注意,但由于各教材的作者所处的政治、经济和文化背景不同,书中的内容仍可能有不妥之处,望读者在阅读中注意比较和甄别。

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# "CORNERSTONES"— THE FOUNDATION FOR SUCCESSFUL LEARNING

Carefully crafted from the ground up, the "Cornerstones" in this text will help you set up and solve fundamental calculations or procedures. And the "Cornerstones" go beyond simple preparation by focusing on the underlying accounting principle. There is a "Cornerstone" for every major concept in the book, serving as a "How To" guide for when you are struggling to complete homework assignments. By being able to master the foundations of cost accounting, it will be easier for you to understand how accounting is used for decision making in the business world, making you more marketable to future employers!

Each "Cornerstone" has five parts: Information, Why, Required, What If, and Solution. Through this learning system, students understand both the calculations and the conceptual meaning behind them.

The *Information* portion of each "Cornerstone" provides the necessary data to arrive at a solution.

The *Why* section explains the reason each exercise is important and how it fits into the big picture of cost accounting.

The *Required* section of each example provides you with each step that must be solved. The *What If* aspect of the example asks you to consider the implications if a variable were to change. This helps you to grasp the true conceptual meaning behind the calculation.

The *Solution* ends each "Cornerstone," showing the calculations for each of the required steps in the problem. This helps you understand the necessary concepts.

**CORNERSTONE 2-1**

**The HOW and WHY of Calculating Prime Cost, Conversion Cost, Variable Product Cost, and Total Product Cost**

**Information:**  
Carreker Company manufactures cell phones. For next year, Carreker predicts that 30,000 units will be produced, with the following total costs:

Direct materials	
Direct labor	\$150,000
Variable overhead	90,000
Fixed overhead	30,000
	450,000

**Why:**  
Product costs are basic to management control and decision making. Managers use these costs for budgeting to check the impact of an increase or a decrease in unit sales on operating income. Since fixed costs stay the same when units change, knowledge of prime cost, conversion cost, variable product cost, and overall product cost give important information, allowing analysis of costs at differing levels of production.

**Required:**

1. Calculate the prime cost per unit.
2. Calculate the conversion cost per unit.
3. Calculate the total variable product cost per unit.
4. Calculate the total product (manufacturing) cost per unit.
5. **What if** 32,000 cell phones could be manufactured next year? Explain in words how that would affect the unit prime cost, the unit conversion cost, the unit variable product cost, and the unit total product cost.

**Solution:**

1. Unit prime cost = (Direct materials + Direct labor)/Number of units  
= (\$150,000 + \$90,000)/30,000  
= \$8
2. Unit conversion cost = (Direct labor + Overhead)/Number of units  
= (\$90,000 + \$30,000 + \$450,000)/30,000  
= \$19

## Cornerstone Exercises

### Cornerstone Exercise 2-1 PRODUCT COSTS

Sodowsky Manufacturing, Inc., produces brightly colored clog-style shoes. For next year, Sodowsky predicts that 150,000 units will be produced, with the following total costs:

Direct materials	\$300,000
Direct labor	90,000
Variable overhead	45,000
Fixed overhead	420,000

#### Required:

1. Calculate the prime cost per unit.
2. Calculate the conversion cost per unit.
3. Calculate the total variable cost per unit.
4. Calculate the total product (manufacturing) cost per unit.
5. *What if* the number of units increased to 165,000 and all unit variable costs stayed the same? Explain what would happen on the following:

OBJECTIVE 3  
CORNERSTONE 2-1

**End-of-Chapter Cornerstone Exercises** are linked to specific "Cornerstone" examples in the text, providing a valuable reference as you try to complete homework on your own. This provides a model for you as you go on to complete more complex problems, helping you become an independent learner!

**Our Conclusions:** The primary driver of success in accounting is homework. Students believe a textbook helps them succeed, but they are using books differently than the previous generations. Students use books as a source of examples and descriptions to help them complete homework. They may "skim" the text before or after class, but very few read the text from beginning to end. As a result of this research, Cornerstones was fine-tuned to provide you with greater efficiency and more relevance, promising better results. Cornerstones provides you with the confidence to be more independent, allowing you more time to learn additional concepts.

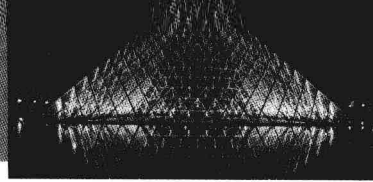
The **Cornerstones Learning System** is based on how students learn accounting today. This system incorporates the following key features:

- The actual "Cornerstones" within the chapters – unique to this family of texts!
- The "Cornerstones" references within the end-of-chapter Cornerstones Exercises.
- The summary of "Cornerstones" at the end of each chapter with page references.
- Online reinforcement of "Cornerstones" concepts with powerful CengageNOW tools

"I have recently tried the problems in *Cornerstones* and found that the step-by-step examples that are placed within the text helped extremely ... I compared the chapters in *Cornerstones* to our textbook and felt that *Cornerstones* was much easier to understand by just reading the chapter."

—Katie Hogan, Student at University of Cincinnati





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Developed by Dan Heitger of Miami University, videos in the **Experience Accounting Video Series** showcase Accounting success! These brief videos demonstrate how today's top companies incorporate costing techniques to fuel better business performance. You will be exposed to a wide variety of high-profile companies to better visualize *manufacturing* and *service* examples.

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- Washburn Guitars — Job Order Costing
- Hard Rock Café — Investments
- Cold Stone Creamery — Activity-Based Costing
- High Sierra Sport Company — Budgets and Profit Planning
- Boyne Resorts — Cost-Volume-Profit Analysis
- Navistar — Relevant Costs
- Zingerman's Delicatessen — Cost Behavior

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—Dr. Solochidi Ahiaiah, SUNY College at Buffalo

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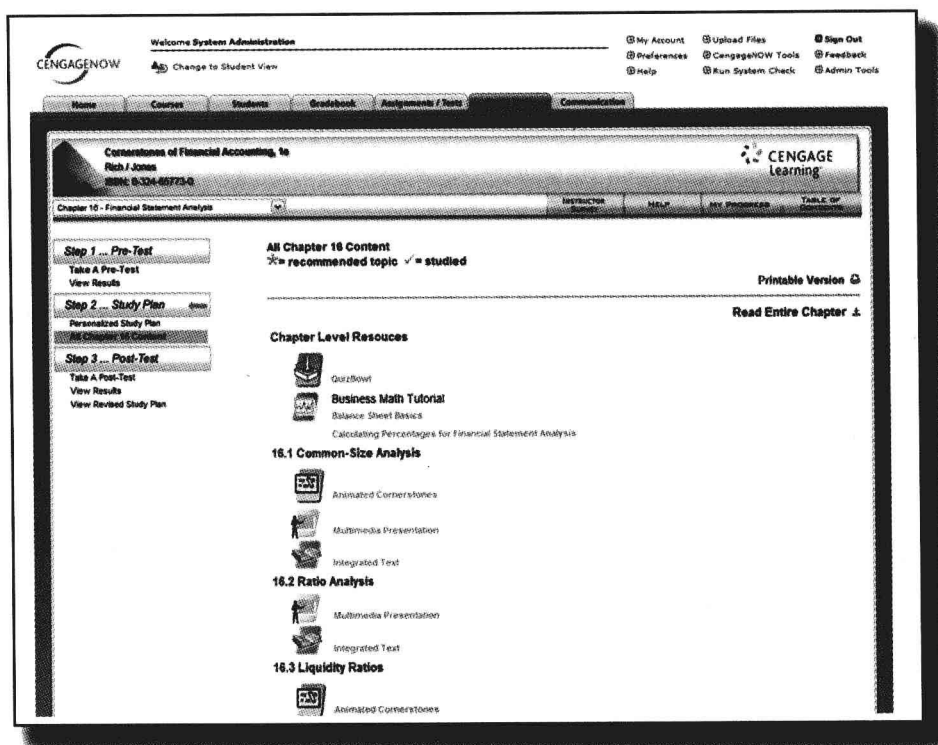


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Purdue University	Xavier University
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Permission has been received from the Institute of Certified Management Accountants to use questions and/or unofficial answers from past CMA examinations.

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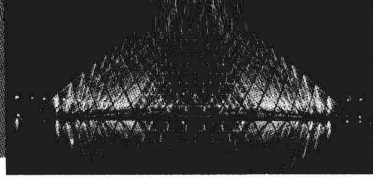
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# About the **Authors**

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After studying this chapter,  
you should be able to:

- **1** Describe cost management and explain how it differs from financial accounting.
- **2** Identify the current factors affecting cost management.
- **3** Describe how management accountants function within an organization.
- **4** Understand the importance of ethical behavior for management accountants.
- **5** Identify the three forms of certification available to internal accountants.



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CHAPTER

1

# Introduction to Cost Management

## Financial Accounting versus Cost Management: A Systems Framework

A systems framework helps us understand the variety of topics that appear in the field of cost management. It also facilitates our ability to understand the differences between financial accounting and cost management. An **accounting information system** consists of interrelated manual and computer parts and uses processes such as collecting, recording, summarizing, analyzing, and managing data to transform inputs into information that is provided to users.

The accounting information system within an organization has two major subsystems: (1) *the financial accounting information system* and (2) *the cost management accounting information system*. One of the major differences between the two systems is the targeted user.

### OBJECTIVE ➤ **1**

Describe cost management and explain how it differs from financial accounting.



## Financial Accounting Information System

The **financial accounting** information system is primarily concerned with producing outputs for external users. It uses well-specified economic events as inputs, and its processes follow certain rules and conventions. For financial accounting, the nature of the inputs and the rules and conventions governing processes are defined by the Securities Exchange Commission (SEC) and the Financial Accounting Standards Board (FASB). Among its outputs are financial statements such as the balance sheet, income statement, and statement of cash flows for external users (investors, creditors, government agencies, and other outside users). Financial accounting information is used for investment decisions, stewardship evaluation, activity monitoring, and regulatory measures.

## The Cost Management Information System

The **cost management** information system is primarily concerned with producing outputs for internal users using inputs and processes needed to satisfy management objectives. The cost management information system is not bound by externally imposed criteria that define inputs and processes. Instead, the criteria that govern the inputs and processes are set by people in the company. The cost management information system has three broad objectives that provide information for:

1. Costing out services, products, and other objects of interest to management
2. Planning and control
3. Decision making

The information requirements for satisfying the first objective depend on the nature of the object being costed and the reason management wants to know the cost. For example, product costs that satisfy the FASB rules are needed to value inventories for the balance sheet and to calculate the cost of goods sold expense on the income statement. These product costs include the cost of materials, labor, and overhead. In other cases, managers may want to know all costs that are associated with a product for purposes of tactical and strategic profitability analysis. If so, then additional cost information may be needed concerning product design, development, marketing, and distribution. For example, pharmaceutical companies may want to associate research and development costs with individual drugs or drug families.

Cost information is also used for planning and control. It should help managers decide what should be done, why it should be done, how it should be done, and how well it is being done. For example, information about the expected revenues and costs for a new product could be used as an input for target costing. At this stage, the expected revenues and costs may cover the entire life of the new product. Thus, projected costs of design, development, testing, production, marketing, distribution, and servicing would be essential information.

Finally, cost information is a critical input for many managerial decisions. For example, a manager may need to decide whether to continue making a component internally or to buy it from an external supplier. In this case, the manager would need to know the cost of materials, labor, and other productive inputs associated with the manufacture of the component and which of these costs would vanish if the product is no longer produced. Also needed is information concerning the cost of purchasing the component, including any increase in cost for internal activities such as receiving and storing goods.

Cost management has a much broader focus than that found in traditional costing systems. It is not only concerned with how much something costs but also with the factors that drive costs, such as cycle time, quality, and process productivity. Thus, cost management requires a deep understanding of a firm's cost structure. Managers must be able to determine the long- and short-run costs of activities and processes as well as the costs of goods, services, customers, suppliers, and other objects of interest. Causes of these costs are also carefully studied.

## Different Systems for Different Purposes

The financial accounting and cost management systems show us that different systems exist to satisfy different purposes. As indicated, these two systems are subsystems of the accounting information system. The cost management information system also has two major subsystems: the *cost accounting information system* and the *operational control information system*. The objectives of these two subsystems correspond to the first and second objectives mentioned earlier for the cost management information system (the costing and control objectives). The output of these two cost systems satisfies the third objective (the decision-making objective).

The **cost accounting information system** is a cost management subsystem designed to assign costs to individual products and services and other objects as specified by management. For external financial reporting, the cost accounting system must assign costs to products in order to value inventories and determine cost of sales. Furthermore, these assignments must conform to the rules and conventions set by the SEC and the FASB. These rules and conventions do not require that all costs assigned to individual products be causally related to the demands of individual products. Thus, using financial accounting principles to define product costs may lead to under- and overstatements of individual product costs. For reporting inventory values and cost of sales, this may not matter. Inventory values and cost of sales are reported in the aggregate, and the under- and overstatements may wash out to the extent that the values reported on the financial statements are reasonably accurate.

However, at the individual product level, distorted product costs can cause managers to make significant decision errors. For example, a manager might erroneously deemphasize and overprice a product that is, in reality, highly profitable. For decision making, accurate product costs are needed. If possible, the cost accounting system should produce product costs that simultaneously are accurate and satisfy financial reporting conventions. If not, then the cost system must produce two sets of product costs: one that satisfies financial reporting criteria and one that satisfies management decision-making needs.

The **operational control information system** is a cost management subsystem designed to provide accurate and timely feedback concerning the performance of managers and others relative to their planning and control of activities. Operational control is concerned with what activities should be performed and assessing how well they are performed. It focuses on identifying opportunities for improvement and helping to find ways to improve. A good operational control information system provides information that helps managers engage in a program of continuous improvement of all aspects of their businesses.

Product cost information plays a role in this process, but by itself, is not sufficient. The information needed for planning and control is broader and encompasses the entire value chain. For example, every profit-making manufacturing and service organization exists to serve customers. Thus, one objective of an operational control system is to improve the value received by customers. Products and services should be produced that fit specific customer needs. (Observe how this affects the design and development system in the value chain.) Quality, affordable prices, and low post-purchase costs for operating and maintaining the product are also important to customers.

A second, related objective is to improve profits by providing this value. Well-designed, quality products that are affordable can be offered only if they also provide an acceptable return to the owners of the company. Cost information concerning quality, different product designs, and post-purchase customer needs is vital for managerial planning and control.

## Factors Affecting Cost Management

Worldwide competitive pressures, deregulation, growth in the service industry, and advances in information and manufacturing technology have changed the nature of our economy and caused many manufacturing and service industries to dramatically

### OBJECTIVE 2

Identify the current factors affecting cost management.

change the way in which they operate. These changes, in turn, have prompted the development of innovative and relevant cost management practices. For example, activity-based accounting systems have been developed and implemented in many organizations. Additionally, the focus of cost management accounting systems has been broadened to enable managers to better serve the needs of customers and manage the firm's business processes that are used to create customer value. A firm can establish a competitive advantage by providing more customer value for less cost than its competitors. To secure and maintain a competitive advantage, managers seek to improve time-based performance, quality, and efficiency. Accounting information must be produced to support these three fundamental organizational goals.

## Global Competition

Vastly improved transportation and communication systems have led to a global market for many manufacturing and service firms. Several decades ago, firms neither knew nor cared what similar firms in Japan, France, Germany, and Singapore were producing. These foreign firms were not competitors since their markets were separated by geographical distance. Now, both small and large firms are affected by the opportunities offered by global competition. Stillwater Designs, a small firm that designs and markets Kicker speakers, has significant markets in Europe. The manufacture of the Kicker speakers is mostly outsourced to Asian producers. At the other end of the size scale, Procter & Gamble, The Coca-Cola Company, and Mars, Incorporated, are developing sizable markets in China. Automobiles, currently being made in Japan, can be in the United States in two weeks. Investment bankers and management consultants can communicate with foreign offices instantly. Improved transportation and communication in conjunction with higher-quality products that carry lower prices have upped the ante for all firms. This new competitive environment has increased the demand not only for more cost information but also for more accurate cost information. Cost information plays a vital role in reducing costs, improving productivity, and assessing product-line profitability.

## Growth of the Service Industry

As traditional industries have declined in importance, the service sector of the economy has increased in importance. The service sector now comprises approximately three quarters of the U.S. economy and employment. Many services—among them accounting services, transportation, and medical services—are exported. Experts predict that this sector will continue to expand in size and importance as service productivity grows. Deregulation of many services (e.g., airlines and telecommunications in the past and utilities in the present) has increased competition in the service industry. Many service organizations are scrambling to survive. The increased competition has made managers in this industry more conscious of the need to have accurate cost information for planning, controlling, continuous improvement, and decision making. Thus, the changes in the service sector add to the demand for innovative and relevant cost management information.

## Advances in Information Technology

Three significant advances relate to information technology. One is intimately connected with computer-integrated applications. With automated manufacturing, computers are used to monitor and control operations. Because a computer is being used, a considerable amount of useful information can be collected, and managers can be informed about what is happening within an organization almost as it happens. It is now possible to track products continuously as they move through the factory and to report (on a real-time basis) such information as units produced, material used, scrap generated, and product cost. The outcome is an operational information system that fully integrates manufacturing with marketing and accounting data.