SECOND EDITION

MANAGEMENT ACCOUNTING

AN INTEGRATIVE APPROACH

C.J. McNAIR-CONNOLLY | KENNETH A. MERCHANT

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WILEY

Management Accounting

AN INTEGRATIVE APPROACH

SECOND EDITION

DEDICATED TO:

To Cyndi, who at her first job interview for accounting asked, "What answer do you want?" While there are better or worse answers, her spirit will always live on.

— C. J.

To my wife, Gail Worth Merchant.

— KENNETH

Management Accounting, Second Edition

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About the Authors

C.J. MCNAIR-CONNOLLY, PH.D., CMA, is known for her innovative work in cost management and control systems. Based on a multitude of field studies conducted over almost 35 years, plus a lifetime of working in practical settings, she brings a common-sense perspective that emphasizes how management accounting is applied by modern organizations. Dr. McNair-Connolly has published extensively on such topics as performance management, capacity cost management, lean/process management, and strategic cost management.

KENNETH A. MERCHANT, PH.D., CPA, is the Deloitte & Touche LLP Chair of Accountancy at the University of Southern California where he previously served as the Dean of the Leventhal School of Accounting. He previously taught at Harvard University and the University of California, Berkeley. His research interests span the areas of management accounting, management control systems, accounting ethics, and corporate governance, and, on those topics, he has written 11 books and more than 80 articles.

Preface

Management Accounting: An Integrated Approach, authored by Dr. C.J. McNair-Connolly and Dr. Kenneth A. Merchant, reflects the lessons learned from a combined 75+ years of applied research into modern management accounting practice in a wide variety of organizations. As such, the approach taken differs significantly from that used in other management accounting textbooks today. Starting from a basic set of tools developed in Chapters 1-5, these tools are then applied across five decision domains: product, process, entity, customer/market, and value chain. Unifying the discussion is the core management process: Plan-Do-Check-Adjust. The learning objective behind this approach is best stated as: Use a range of realistic settings to build students' ability to effectively analyze problems and opportunities and communicate recommendations to management. The result? Students complete the course with an integrated, powerful set of analytical tools and approaches that they can apply throughout their academic and organizational careers. Topics and analyses each have a logical placement within the text—as part of the set of key management accounting tools or a situation where the tools can be applied.

In addition to building students' analytical skills, the text is also developed around three companies: Easy Air (airline; Chapters 1-5), Kinkaid Cabinets (manufacturing; Chapters 6-9), and

Prestige Auto (dealership/service; Chapters 10-14). A set of database problems, constructed as separate workbooks in Excel, reflect the performance issues these companies face. Combined with the integrative framework—which includes both financial and nonfinancial metrics, analyses, and potential behavioral impacts of measurement—these three company settings reinforce the message that companies use management accounting tools and techniques to address a multitude of problems and opportunities.

In this, the second edition, the basic structure of the text and its focus on building an integrated analytical tool set applicable to a broad range of settings and issues remain intact. The focus in the revision process has been on ensuring that errors and omissions have been addressed and that formulas and discussions have been analyzed to ensure their clarity and informativeness. Specifically, the following changes have been made:

- The data tables for the airline industry and Easy Air, the first focus organization, have been updated to incorporate 2017 results.
- An extensive, comprehensive line-by-line edit of the entire text was conducted.
- Verification that all numerical detail and the related discussions are consistent.
- Structural and content analyses of all tables in the text were completed, including problem material, to identify any errors, omissions, or related issues and make necessary changes.
- All database problem instructions were reviewed to ensure that designated worksheets and templates are correctly identified and instructions for problem completion are clear and logical.
- All problem material in the text was checked and modified, if necessary, to ensure correctness and consistency.
- Review, and correction/modification if necessary, of all formulas used in the text to enhance clarity was completed.
- Careful examination of all examples, discussions, and definitions to ensure clarity and consistency was undertaken.
- Correction of all identified typos, awkward grammar, and related issues was completed.
- Review of all figures used in the text, making corrections and adjustments where needed, was conducted.
- Full editorial review of all author and early adopted recommended changes was completed.
- "In the News" and "Looking Back" sections were updated where needed improvements were identified.
- Review and correction/clarification of solutions in Solutions Manual where needed has been completed.

In other words, the entire text has been carefully read, edited, analyzed, clarified, and, where necessary, corrected. While it is quite likely some issues may remain, significant effort has gone into identifying and eliminating errors and clarifying discussions, formulas, tables, figures, and analyses. All remaining issues are the responsibility of the authors.

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CONTENTS

CHAPTER ONE

Business Planning and Analysis: An Integrative Framework for Management Accounting

The culminating point of administration is to know well how much power, great or small, we ought to use in all circumstances.

MONTESQUIEU[1]

CHAPTER ROADMAP

1. The World of Management: An Overview
   - *What Is a Manager?*
   - *Types of Managerial Work*
2. The Management Process and the Role of Management Accounting
3. What Is Business Planning and Analysis?
   - *BPA as a Tool to Integrate Management Accounting Practices*
   - *A Financial vs. Managerial Perspective*
4. The BPA Integrated Framework and Management Accounting
   - *The BPA Database*
   - *The Decision Domains*
5. Management Accounting: Real World—Real Issues
   - *Analyzing Performance*
   - *Management Accounting in Action*
6. *IMA Statement of Ethical Professional Practice*
7. The Management Accounting Professional

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

1. Explain the basic nature of managerial work.
2. Discuss the management process and describe how management accounting supports these efforts.
3. Describe how a BPA lens affects management accounting practices and how these differ from financial accounting.
4. Identify the primary types of information in a management accounting database and analyze the concept of a decision domain and how it is applied to organizations.
5. Illustrate how measurements influence decision making and behavior in organizations.
6. Interpret the *IMA Statement of Ethical Professional Practice* that guides the use and presentation of information within organizations.
7. Describe the various career paths open to management accounting professionals.

1 *The Forbes Scrapbook of Thoughts on the Business of Life*, Chicago: Triumph Books, 1992: p. 182.

SUCCESS IN BUSINESS BOILS DOWN TO MANAGERS MAKING GOOD DECIsions. Behind every such decision lies a management accounting database supported by an information network that either formally (for example, with rules or policies) or informally (for instance, the culture of an organization) links the organization's people and progress across space and time. This network of information, and the data that flows through this network, defines and shapes the practice of management accounting, which is the focus of this textbook.

This book is built around three unique features:

1. An integrative framework that uses a business planning and analysis perspective to emphasize the relationship between management accounting and management decision making, control, and information.
2. Three Excel-based databases that illustrate how organizations use information to complete the management accounting processes of planning, decision making, and control.
3. Three industry settings (an airline, a kitchen cabinet manufacturer, and an automobile dealership) to help you understand management accounting in action.

The overriding objective is to improve your existing critical thinking skills by helping you learn to analyze and respond to the challenges faced every day by organizations and the managers who run them.

The World of Management: An Overview

This chapter introduces the **management process**—*what managers do to ensure that their organization achieves its objectives*. We will approach management accounting from a business planning and analysis (BPA) perspective, which, when applied to management accounting issues, includes all of the activities in which managers use information, whether for planning, decision making, or control.

OBJECTIVE 1
Explain the basic nature of managerial work.

Information lies at the center of the management process. Information is data that has been organized to meet a specific need during decision making and analysis. It is the lifeblood of any organization, essential to effective decision making and the actions of management. A key focus of this book is to illustrate and explain what types of information are used during the various stages of the management process. This chapter focuses on understanding the basic elements of the integrative management accounting framework and how it relates to the work done by business managers. Attention then turns to how management accounting informs BPA, the key differences between a management accounting vs. a financial accounting perspective, and what career options exist for the management accounting professional.

Let us begin by taking a look at the role of management in organizations and how management accounting serves the organizations' information and decision-making needs. As the "In Context" discussion of Easy Air suggests, these needs span the gamut of a business, from strategic decisions such as what markets and customers to serve, to basic operational details (for example, what food to serve on a specific flight). The "In Context" discussions are used throughout the text to help illustrate the role of management accounting in a realistic business setting.

IN CONTEXT ➤ Easy Air: Confronting the Problem

Easy Air Chief Operating Officer (COO) Fran Conte stared out of the window of her office. Lying open on the desk behind her were the most recent figures from the finance department. Profits were down for the third quarter in a row, lost and damaged baggage claims were soaring, and Easy Air's on-time arrival and departure performance was abysmal. The trends were troubling, and it was Fran's job to change them. In the 20 years since she and Frank Russo founded Easy Air, they had faced constant challenges. But at the end of the day, they had always found a way to improve performance and make money at the same time—until now.

Easy Air, headquartered in the Midwest, flies only one type of plane, the Airbus 321. This means one kind of spare parts and one maintenance routine, which greatly simplifies Easy Air's operations. Each plane has the same seating configuration, making it quite simple to switch aircraft (or "tails") between routes and flights. Easy Air offers only one class of service—no-frills coach seating—and only one fare for each flight. No matter when or how the passengers for a specific flight book and pay for their travel, they pay the same price.

Emphasizing point-to-point service, Easy Air flies directly between secondary airports located near major cities and population centers. Initially a regional carrier serving the Chicago/Milwaukee/Indianapolis market, the company has grown steadily over the last 20 years to become the 10th largest air carrier in the United States, serving all major cities from Kansas City, Mo., to the eastern seaboard.

With this growth, operations have become increasingly complex. Corporate headquarters has been relocated five times, each time to a significantly larger space. Flight operations, once housed in a single room, now has its own dedicated wing. Advertising, initially run by Frank, now has more than 150 employees who coordinate ad campaigns, design promotions, and manage a wide-ranging set of corporate programs. While Frank still has the first chair he bought for himself when Easy Air was founded, the company bears little resemblance to the fledgling airline of its early years.

Unfortunately, some of the differences between the Easy Air of the past and today's company are not as positive. Easy Air built its reputation on hassle-free, on-time, dependable air travel. But with growth has come a rapid decline in performance, as the most recent financial and operational reports so clearly demonstrate. Fran's challenge is to determine what Easy Air can do to reverse these trends. How can profits be improved without increasing fares or reducing the level of service Easy Air provides to its customers? Should some routes be cut, or should new ones be added? Would it be better to lower fares to fill empty seats, or raise them to increase the revenue earned per passenger mile flown?

Before she could answer these questions, Fran knew she needed more information in order to properly analyze the current situation, identify options for improvement, make choices, and track the impact of any changes made. For this, she would have to call upon her management accounting systems and analysts.

WHAT IS A MANAGER?

An organization is the sum of the skills and efforts of its people. Every individual is an essential part of the complex web of actions and relationships that define and shape the modern business organization. The coordinated effort of these actions and relationships results in products and services that customers are willing to buy.

In an effective business organization, individuals have different roles and responsibilities. Not everyone makes the product or calls on customers to secure sales of these products. Some individuals are directly involved in producing the firm's goods and services, while others support these efforts. Some perform the tasks they are assigned, while others—the managers—determine what should be done.

Managers *are those individuals in an organization who are responsible for the work performed by one or more other people.* Managers define the goals and objectives for those under their direction. They organize the work so that the team, or work group, can achieve these objectives. Managers also take on the responsibility for ensuring that the efforts of the work group yield the desired outcomes. This includes securing and mobilizing needed resources, evaluating progress towards defined goals, and making adjustments to both plans and individual or group actions when needed.

TYPES OF MANAGERIAL WORK

As Table 1.1 shows, there are many different types and levels of managers in organizations. Management accounting supports each level of management, providing the specific type of information needed to make strategic, tactical, and operational decisions; control operations at all levels; and make adjustments to how work is done.

The lowest level of management is the **operational manager,** *who structures, manages, and directly participates in the day-to-day activities that result in the production or support of the products and services offered by the firm*. Also known as a "supervisor," the operational manager is only one step removed from the actual daily work of the organization. Work at this level is organized along two primary dimensions: horizontal (process-based) or vertical (function-based). Management accounting supports analysis and decision making across both dimensions.

Functional managers *translate organizational objectives into practical goals, establish performance evaluation criteria, ensure that leading-edge practices are applied, and assign individuals to purposeful tasks and activities.* They focus on a specific type of work, such as finance, marketing, or manufacturing. For example, when you choose a major in college, you are making the choice of a "function" or type of work that you will do when you graduate. A functional manager oversees the "vertical" or top-to-bottom flow of work, information, relevant objectives, and decisions in an organization.

TABLE 1.1 MANAGEMENT LEVELS AND ACTIVITIES

Management Level	Types of Activities Performed
Top Management Team	Establish the vision for the organization.
	Develop strategy and key objectives.
	Secure required capital and other key resources.
	Define the organizational structure.
	Assign responsibility for decision making and results.
	Establish expectations and criteria for evaluation performance.
	Set the tone for management and the organizational culture.
Process Managers	Establish effective relationships with key customers and suppliers of process output.
	Define standards of performance for activities within the process.
	Coordinate individual and group efforts to optimize performance and minimize disruptions, variance, and errors.
	Effectively negotiate for and obtain needed process resources.
	Identify and implement best practices.
	Create and execute continuous improvement initiatives.
Functional Managers	Translate organizational objectives into functional goals and objectives.
	Identify key activities and performance requirements.
	Organize and assign operational managers to specific activities and functional goals and objectives.
	Establish performance evaluation criteria for the operational managers and their work groups.
	Negotiate and obtain required resources.
	Ensure that leading-edge practices are implemented.
Operational Managers	Translate functional and process objectives into key activity and task goals to guide their employees' efforts.
	Organize and assign individuals to specific activities.
	Assign specific goals and evaluate resulting progress.
	Negotiate and secure needed resources.
	Identify and resolve operational problems.
	Ensure coordination with other work groups.
	Support learning and continuous improvement within the work group.
	Report results and problems to affected managers.

Process managers, on the other hand, *define standards of performance, establish relationships with key customers and suppliers, and coordinate individual and group efforts to achieve objectives*. They oversee specific clusters or chains of activities—in other words, how the efforts of individuals, teams, and functional groups are linked together to produce products and services for the firm's customers. A process manager emphasizes the organization's "horizontal" or cross-functional efforts. Process and functional managers jointly oversee the work of operational managers.

The top management team *establishes the vision; sets the strategy; secures required capital and key resources needed to produce, deliver, and support the firm's products and services; builds the culture of the organization; defines the organization's structure; and assigns responsibility for achieving organizational objectives.* Like an army general, top management either directly or indirectly performs command and control activities that shape the efforts of every individual in the organization. Responsible for the performance of the entire organization, the top management's vision shapes the organization's potential and performance.

LOOKING BACK ➤ The Five Basic Tasks of a Manager

More than 60 years ago, Peter Drucker published his first major book on the work of managers in organizations. It is as pertinent today as it was then.

The manager has the task of creating an organization that is larger than the sum of its working parts, making it a productive entity that turns out more output than the sum of the resources used to produce this output. The task of organizing the entity to be productive requires the manager to make effective use of whatever benefits there are available in his resources—especially in the human resources—and neutralize whatever weaknesses are discovered.

There are five basic activities that comprise the work of the manager:

1. Managers **set objectives** for their employees and determine what needs to be done to reach these objectives. Through effective communication of these objectives to the workforce, managers optimize organizational actions.
2. Managers **organize** the activities of the organization. They analyze the activities, decisions, and relations needed to get work done and then select the people who will manage the work and ensure that it is done effectively and efficiently.
3. Managers **motivate and communicate** with their employees. Using effective team-building approaches, they ensure the smooth functioning of work units.
4. Managers **measure outcomes**. By analyzing outcomes using accurate and effective measurements, they ensure that the workforce understands what needs to be done and why each activity and outcome is important. A manager analyzes performance, appraises it, and interprets it.
5. Managers **develop people**. Based on the way that they deal with their workforce, managers either improve or destroy employee motivation, focusing their attention on either the right or wrong things. They bring out what is

best in each individual, or what is worst in them. All of this is done based on the manner in which the manager deals with the workforce.

All managers perform these activities when they manage—whether they are conscious of these facts or not. They may do them well, or they may do them quite poorly, but they always do them.

Peter Drucker, *The Practice of Management*, New York: Harper & Row Publishers, 1954: pp. 341-344.

The Management Process and the Role of Management Accounting

OBJECTIVE 2

Discuss the management process and describe how management accounting supports these efforts.

Managers work in all parts of the organization, overseeing everything from the processing of an invoice to the development of new products and services. Even so, the work that managers do has a common structure, as Peter Drucker suggests. This structure reflects key management work of setting objectives, organizing work flows, motivating and communicating, measuring, and developing their staff so they are better able to do their work. We call this structure the **management process,** *a continuous cycle of effort, action, achievement, target setting, and growth that underlies all managerial work*. It has four primary components: Plan, Do, Check, and Adjust; it is often referred to in organizations and management literature as PDCA. It uses resources to accomplish organizational goals and is illustrated in Figure 1.1. Managers are responsible for planning how the resources will be deployed. They also provide leadership, making sure that the work their subordinates do is well-organized and controlled. With a constant eye on the targeted objectives, effective managers coordinate, support, and direct the efforts of their work group to achieve desired results.

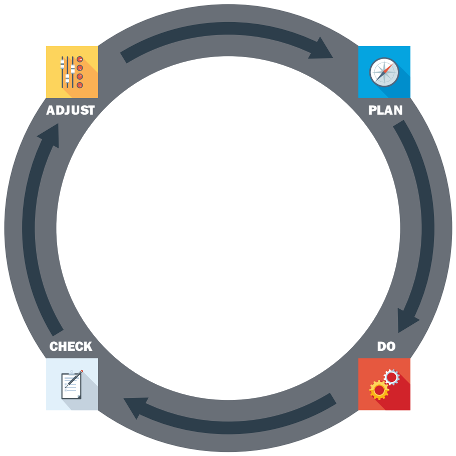

FIGURE 1.1 THE MANAGEMENT PROCESS

The first PDCA component—**"plan"**—*requires making a decision about something that has not yet happened*. When managers plan, they are projecting into the future, thinking through the many different paths and potential pitfalls that may lie ahead. Like an explorer in a new world, the manager is constantly scanning the environment, looking for clues and confirmation that the path being followed will lead to the desired goal—maximizing the value the organization creates for its stakeholders.[2]

Let us think about the various plans an organization might make. For instance, a cell phone producer such as Apple or Motorola has to determine what features it wants to offer in its various models. It has to plan on the size of the phone, its weight, the features it will provide, and the service providers with which it wants to partner. Should the cell phone have a built-in keyboard like a BlackBerry, or have one that digitally "pops up" like an iPhone? How big should the screen be? These are all decisions that are made during the planning phase of the management process.

Manufacturers must consider a variety of options when designing their products. In this case, the decision revolves around the options that cell phone manufacturers must take into account when designing new models or versions. Color, size, weight, options, battery life, and type of display screen are just a few of the issues that have to be considered.

Unfortunately, there is no one right way or one right approach for an organization—just a series of better-or-worse options. The manager uses various types of tools and techniques to identify and compare, and then chooses among these options. After the required choices are made, *actions are set in motion to achieve the desired results. The actions that are taken make up the* **"do"** *that is the primary purpose of an organization*. "Do" is the basis for satisfying customers and earning revenues. The decisions the cell phone developer makes during the planning stage define what needs to be done to bring the phone to the market.

As events unfold and actions are taken, it becomes important for managers to measure progress toward the organization's goals. A **measure** *is a quantification of the dimensions, size, or capacity of any object of interest based on comparing it to a standard or defined scale or measurement system*. Measures are used both to keep track of ongoing operations and to assess progress toward defined goals. **"Check"** *describes the comparison of actual results to the original plan.* Managers can use many different tools to complete this part of the process, including variance analysis, trend analysis, and profitability analysis. These are all part of the basic tool set that shapes the analysis completed by management accountants. You will learn more about these tools in Chapter 5. As you will see, they are an integral part of organizational and management learning and improvement. For the cell phone companies, the number of customers who choose their various models define the profitability of the cell phones offered to the public.

If the measured outcomes are in line with expectations, work continues. On the other hand, if outcomes are not acceptable or if any unexpected changes have occurred in the situation, managers may need to make adjustments. "Adjust" is the final activity in the PDCA cycle, or the management process. *The goal of the* **"check and adjust"** *sequence is to ensure that good outcomes can be repeated and bad ones eliminated, or at least minimized.* In some cases, it may even become necessary to change the defined goals and objectives

2 A *stakeholder* is anyone who has an interest in, or is affected by, the performance of an organization. A customer is a stakeholder. Other stakeholders include the owners, employees, and organization's business partners.

to address new challenges or opportunities. For our cell phone example, Apple might find problems like it did with the placement of the antenna on the iPhone 4. This problem led to adjustments in how the model was designed in order to improve the phone's network connectivity.

The management process, therefore, includes all of the activities and actions taken to keep the organization on track[3]—to check on outcomes and then make adjustments to improve performance against goals. Managing an organization is a dynamic process of planning and control, action, and adjustment. An effective management accounting system has to be equally dynamic. It has to be designed to fit the unique needs of the organization, reflect the goals and objectives being pursued, and change as conditions or organizational needs evolve over time. When we merge the structures, objectives, and tenets of the management process with the measurements, analytical approaches, and focus of the management accounting system, we are adopting an integrated approach that is the essence of all business planning and analysis.

What Is Business Planning and Analysis?

OBJECTIVE 3

Describe how a BPA lens affects management accounting practices and how these differ from financial accounting.

Business planning and analysis (BPA) is a discipline that can trace its roots back to the earliest days of the "managed" organization.[4] BPA is, in fact, the application and extension of the focus and practices that define management accounting. The resulting integrated approach emphasizes how resources are used to complete work in the organization, assess progress toward goals, analyze results and opportunities, and develop performance evaluation systems..

BPA AS A TOOL TO INTEGRATE MANAGEMENT ACCOUNTING PRACTICES

BPA and management accounting have the same roots in effective management practice, but BPA moves beyond traditional management accounting logic and analysis in several ways:

1. BPA emphasizes the entire management process, while traditional management accounting tends to focus more on cost and profitability analysis.
2. BPA creates an integrated analytical approach, underscoring the fact that management accounting analysis is based upon a logical set of tools, techniques, and concepts all focused on understanding and improving organizational performance and decision making.

3 This definition was first developed and presented in the context of management control in Kenneth A. Merchant, *Control in Business Organizations*, Boston: Pitman Publishing, 1985. In this text, the control function is presented as an integral part of the management process, not as a separate management function.

4 In much of the early management writing in the 20th Century, the term "cost accounting" was used in place of, or interchangeably with, "management accounting." By the mid-1950s, these two terms had taken on quite different meanings, with cost accounting defined as an extension of financial accounting that emphasized inventory valuation issues. At this point, management accounting became the dominant term used to describe the use of financial information in planning, decision making, and control.