



PURCHASING

and

SUPPLY CHAIN

M · A · N · A · G · E · M · E · N · T

Monczka / Trent / Handfield

Purchasing and Supply Chain Management

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To Shirley, Kathleen, Gregory, and Thomas
RMM

To Jan, Jack, and Ellen
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To Sandi, Rod, Lise, Mary, Lloyd, and Carl
RBH



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Preface

Purchasing and Supply Chain Management is the culmination of discussions with many procurement managers in different industries. We have put our combined experience into this text to create a managerial perspective of the core tasks and challenges required to effectively manage the purchasing function. This text is the first purchasing textbook to employ a truly *strategic perspective*. Although prior books have dealt with many components of buying materials, we have sought to identify the contributions that purchasing can make to corporate and business strategies through the development of integrated procurement and sourcing strategies. This approach is truly state of the art in that it develops many themes that are only beginning to emerge in the public domain.

COURSE DESCRIPTION

Purchasing and Supply Chain Management is intended for college and university courses that are variously entitled purchasing, materials management, supply chain management, sourcing management, and other similar titles. The text is also well suited for training seminars for buyers, and portions of it have been used in executive education forums. Chapters have been used in both undergraduate and MBA classes in procurement, operations management, and logistics. The text is therefore appropriate for either an elective or a required course that fulfills the American Assembly of Collegiate Schools of Business (AACSB) requirements for coverage of materials management issues. Many of the cases included in the book are based on real-life examples and have all been used and modified through classroom use by the authors. Some instructors may also elect to use sections of the book for a class in operations management or logistics.

COURSE OBJECTIVES

Depending on the placement of a course in the curriculum or the individual instructor's philosophy, this book could be used for a variety of objectives. The courses for which it is intended include several legitimate objectives:

1. Students should be made aware of the demands placed on purchasing emanating from stakeholders in business firms.
2. As prospective managers, students need to understand the impact of purchasing and materials management on the competitive success and profitability of the modern organization.
3. Students should be made aware of the ethical, contractual, and legal issues faced by the purchasing function.

4. Students need to understand the increasing strategic nature of purchasing, especially the fact that purchasing is much more than simply “buying” materials and services.
5. Students entering or currently in the workforce must understand the influence of purchasing on other major functional activities, including product design, information system design, manufacturing planning and control, inventory management, human resource development, financial planning, forecasting, sales, quality management, and many other areas.

SPECIAL TO THIS EDITION

Many of the insights in this book are based on examples developed through discussions with top purchasing executives and through an initiative known as the Global Procurement and Supply Chain Benchmarking Initiative at Michigan State University. Although we cannot mention company names, many of the concepts discussed are based on actual company practices. Each chapter also provides up-to-date Sourcing Snapshots that illustrate how the concepts are being applied in industry. Over time, we will continue to track leading-edge practices and update these examples.

The concept of teaming is emphasized throughout this book. Many of the case exercises require a team effort on the part of students. We recommend that the instructor have students work in teams for such projects to prepare them for the team environment found in most organizations.

STRUCTURE OF THE BOOK

The structure of the book reflects the theme of purchasing as a strategic function.

Section One: Understanding the Procurement and Sourcing Process

The chapters in Section One provide an understanding of the activity called *purchasing*. These chapters focus primarily on purchasing as a functional activity, with members often interacting with other functional groups. Without a solid understanding of procurement and the sourcing process, appreciating the strategic role that purchasing can play within an organization is difficult.

Chapter 1 introduces the reader to purchasing/sourcing and competitiveness. This chapter defines procurement and sourcing, introduces the notion of the supply chain, and summarizes the evolution of purchasing as an organizational activity. Chapter 2 provides an overview of the purchasing process by presenting the objectives of world-class purchasing organizations, the responsibilities of professional purchasers, the purchasing cycle, and various types of purchasing documents and types of purchases.

Chapter 3 examines the organization and administration of purchasing. This includes a discussion of purchasing in the organizational hierarchy, how the purchasing function is organized, the placement of purchasing authority, and how materials management and international purchasing are organized; it also briefly describes the team approach as part of the organizational structure. Chapter 4 describes various categories and types of purchasing policies and procedures, including an important topic to purchasing professionals, that is, purchasing ethics. Most firms have a set of policies outlining the directives of execu-

tive management. These directives guide behavior and decision making and place boundaries on the behavior of personnel.

Chapter 5, the final chapter in Section One, examines purchasing as a boundary spanning function. Much of what purchasing does requires interacting and working with other functional areas and suppliers. This chapter examines the intrafirm linkages between purchasing and other functional groups, buyer-seller linkages, the use of cross-functional purchasing teams, and purchasing's contribution within team-based product development.

The chapters in Section One should give the reader an appreciation of the role of purchasing and how it fits within a larger organization. With this appreciation, students can begin to develop a greater in-depth understanding of the procurement and sourcing process.

Section Two: Strategic Supply Management

A major premise underlying this book is that purchasing is as important an activity as manufacturing, marketing, or engineering in a firm's pursuit of its strategic objectives. Progressive firms have little doubt about purchasing's impact on total quality, cost, delivery, technology, and responsiveness to the needs of external customers. Within highly competitive industries, purchasing must become more than a reactive order placer that negotiates purchase contracts. Purchasing must begin to assume a strategic role.

Section One familiarizes the student with the basics of purchasing and how purchasing interacts with other parts of an organization. With this understanding, we next focus on how purchasing evaluates, selects, manages, and improves supplier performance. Section Two addresses what firms must do to achieve a competitive advantage from their procurement and sourcing processes. Realizing these advantages requires shifting our view of purchasing from a tactical or clerically oriented activity to one focusing on strategic supply management. Strategic supply management involves developing the strategies, approaches, and methods for realizing a competitive advantage and improvement from the procurement and sourcing process, particularly through direct involvement and interaction with suppliers.

Section Two includes six chapters, each focusing on some aspect of strategic supply management. Chapter 6, Procurement/Sourcing Strategy Development, develops the notion that a firm's procurement/sourcing approaches should be the result of a rigorous strategic planning process. This process should include a vision and plan of what a firm must do in its purchasing/sourcing efforts to support achieving corporate goals and objectives. Clearly, the strategic planning process should be the starting point for any discussion of strategic supply management. Chapter 7 describes an increasingly important topic today, namely, insourcing/outourcing. The insourcing/outourcing process defines what activities a firm will perform internally and what activities it will outsource to suppliers. Once a firm decides to outsource a service, component, subassembly, or product, it must then support the outsourcing through its procurement and sourcing activities.

Chapter 8 focuses on one of the most important activities performed by firms today—that is, supplier evaluation and selection. Selecting the right suppliers supports satisfying the quality, cost, delivery, and technology requirements of the purchaser. Selecting the right suppliers also creates the foundation for working closely with suppliers, when required, to improve performance further. Chapter 9 describes how a firm can manage and improve supplier quality once it selects its suppliers. Firms that improve supplier quality will make greater strides toward improving their own internal quality, since suppliers

provide major inputs to a firm's production processes. Improving supplier quality may also create advantages that are not available to competing firms. Next, Chapter 10 describes what firms must do to manage and develop world-class supply-base performance. Finally, Chapter 11 focuses on global sourcing, which is becoming an important part of strategic supply management as firms search worldwide for the best sources of supply.

Section Three: Approaches for Managing the Procurement and Sourcing Process

Purchasing professionals rely on an assortment of tools, techniques, and approaches for managing the procurement and sourcing process. Some of these approaches support the sourcing process directly; others help in decision making and in implementing improvements. The approaches presented in Section Three can influence how well purchasing managers contribute to meeting an organization's goals and objectives.

Chapter 12 presents five tools and techniques that purchasers use when problem solving and pursuing performance improvements. These techniques include learning curve analysis, value analysis/value engineering, project management, quantity discount analysis, and process mapping. The use of these tools and techniques can help purchasers achieve specific outcomes such as reducing cost/price, improving quality, reducing time, or improving delivery performance from suppliers.

Chapter 13 focuses on cost/price analysis. Progressive firms focus on cost control and reduction with suppliers as a way to improve (i.e., reduce) purchase price over time. Understanding basic cost fundamentals and appreciating how and when to use advanced costing techniques is critical for purchasers. This chapter details various types of costs, presents cost analysis techniques, and discusses the factors that affect a supplier's price. The chapter also discusses total cost analysis, cost-based pricing, and other innovative cost-accounting techniques designed to provide accurate and timely cost data. Once a purchaser focuses on cost rather than price, he or she must measure and manage costs within the buyer-seller relationship.

Chapter 14 deals with purchase negotiation. Effective purchasers know how to plan for and negotiate contracts that create value within a buyer-seller relationship. Increasingly, purchase contracts emphasize more than simply purchase price. Buyers and sellers may negotiate cost reductions, delivery requirements, quality levels, payment terms, or anything else important to the parties. Purchase negotiation will become increasingly important as firms focus on nonprice issues and longer-term, complex purchase agreements.

Chapter 15 addresses the fundamentals of contracting. The formal contracting process creates the framework for conducting business between two or more firms. As such, an understanding of contracting is essential for managing the procurement and sourcing process.

Section Four: Issues and Activities That Support the Procurement and Sourcing Process

Section Four presents the major activities that relate to or directly support the procurement and sourcing process. Some of these activities involve specific disciplines, such as legal or transportation support; others relate to the development of procurement and sourcing support systems. These systems include performance measurement systems and computerized information technology systems. The activities presented in this section may or may not be a formal part of the purchasing organization. These activities and sys-

tems, however, are key parts of the purchasing and sourcing process. Without them, purchasing probably cannot effectively pursue its goals and objectives. Therefore, purchasing students must be familiar with a range of support activities.

Chapter 16 addresses the major legal considerations in purchasing, including the legal authority of the purchasing manager. The chapter also discusses sources of U.S. law, warranties, purchase order contracts, breaches of contract, and patent and intellectual property rights. Because purchasing reaches legal agreements with suppliers, law is an integral part of the procurement and sourcing process.

Chapter 17 focuses on a topic of increasing interest—the management of a firm’s inventory investment. The money that a firm commits to inventory usually involves a significant commitment of financial resources. This chapter discusses the function of inventory within a firm, factors leading to inventory waste, approaches for managing a firm’s inventory investment, and future trends related to managing inventory. At some firms, purchasing is responsible for the day-to-day management of inventory.

Another area of interest involves the purchase of transportation services. We have witnessed major changes in transportation over the last fifteen years, many of which have affected purchasing. Since Congress deregulated the transportation industry in the early 1980s, the role of the buyer has changed dramatically. More than ever, purchasing is involving itself in the evaluation, selection, and management of transportation carriers. Even if a buyer does not get involved directly with transportation, having a working knowledge of this dynamic area is critical. Chapter 18 highlights purchasing’s role in transportation buying, presents a decision-making framework for developing transportation strategy, discusses ways to control and influence inbound transportation, and evaluates trends affecting the purchase of transportation services.

Information technology systems are changing business. Purchasing, too, can benefit from the development of current information technology systems. Chapter 19 examines the role of purchasing databases and the use of basic automated purchasing systems. It also provides a thorough discussion of the electronic linkage between firms through Electronic Data Interchange (EDI). Finally, this chapter discusses some advanced and future purchasing systems applications. The availability of information technology systems greatly enhances purchasing’s ability to operate at the highest levels of efficiency and effectiveness.

Chapter 20 focuses on performance measurement and evaluation. Increasingly, firms must develop measurement systems that reveal how well a firm is performing, including the performance of its purchasing effort. Measurement systems support procurement and sourcing decision making by providing accurate and timely performance data. This chapter examines why firms measure performance, defines various purchasing performance measurement categories, and discusses how to develop a purchasing performance measurement system. The chapter also discusses the importance of benchmarking when a firm establishes performance objectives.

Section Five: Future Directions

Chapter 21 focuses on what purchasing and sourcing will look like in the twenty-first century. These trends, which are adapted directly from recent surveys of key executive managers from a variety of global organizations, can help students identify how the field of purchasing and sourcing management is changing and what skills they will need to develop in view of these changes.

CASE STUDIES AND INSTRUCTOR'S MANUAL

Purchasing and Supply Chain Management contains twenty-one cases that have been developed and used in the classroom. An instructor's manual is available to help the instructor identify how to proceed. Of particular interest are the negotiation and supplier evaluation cases, which allow students to experience the purchasing decision-making process in real-time.

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We hope that students will benefit from the experiences and examples shown in this book and will consider the field of purchasing as an exciting career opportunity.



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