

HANDBOOK OF
SUPPLY
CHAIN
MANAGEMENT

JAMES B. AYERS

The St. Lucie Press/APICS Series on Resource Management

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by James B. Ayers

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Preface

Supply chains are a hot management topic. Eyes are opening to a more global view of end-to-end material, information, and financial flows. As this introduction is written, two achievements exemplify the trend. Dell Computer has topped the Standard & Poor's 500 index for its 88,918% value gain in the decade of the 1990s. *Forbes* magazine has crowned UPS as the 1999 "company of the year" for its exploding role in e-commerce. Each distinction is a variant on the supply chain theme.

The movement isn't limited to product-making companies. Service businesses of all stripes also have lessons to learn. Intellectual inputs may be as important as physical ones. So the concept of a "supply chain" is broadening to include the intangibles as well as the tangibles. As it is with most good ideas, commercial interest drives much of the supply chain hype. My industry, management consulting, contributes with new buzzwords to stimulate and sustain interest. Substantial contingents of software purveyors also vocalize the concept. Companies investing millions in new systems don't want yesterday's solutions.

"Supply chain thinking," as noted by Riggs and Robbins, is a better characterization.* This term implies a more gradual infusion of new mind-sets and methods into traditional tasks. In many ways, not much has changed. Managers of today have the same concerns as managers had last year, 10 years ago, or 50 years ago. These concerns include products, markets, people and skills, operations, and finance. Supply chain thinking, however, brings change to the tasks managers perform to deal with these issues.

In this book I hope to clarify both the theory and practice of what has come to be called supply chain management, or SCM. The goal of this effort has been to create a handbook for practitioners of supply chain *improvement*. So we emphasize changing supply chains over maintaining supply chains. If we are successful, the reader will keep this reference at the ready. It's hoped it will be the first resource readers turn to for improving supply chains or designing new ones.

The supply chain subject is quite broad. It touches every activity in most companies — and goes beyond company boundaries to boot. To increase the "band width" of this book's coverage of supply chain topics, I've enlisted the assistance of a panel of professionals experienced in the many facets of supply chain improvement. Their contributions are noted throughout the text along with a set of case studies in a separate section. Their backgrounds are not limited to traditional supply chain turf — purchasing, transportation,

* Riggs, David A. and Robbins, Sharon L. *The Executive's Guide to Supply Chain Management: Building Supply Chain Thinking into All Business Processes*, New York, AMACOM, 1998.

and logistics. Their backgrounds include manufacturing and service businesses as well.

I assume that the reader is motivated to improve operations along the supply chain. But the reader may not know exactly what to do or how to do it. I've attempted to collect enough theory and practice to greatly shorten the time it takes to tackle an opportunity for supply chain improvement.

As a consultant, I've always tried to "practice what I preach." That is, the job isn't done until it's successfully implemented. Analysis that's not translated into action is of little use. This philosophy underpins the book. The thought processes and methods recommended here are intended to lower the risk of implementing change. However, it's hard to tinker with a business while you're running it. Someone observed it's like changing the oil in your car at 70 miles per hour on the freeway. So the ideas in the book should make the job more feasible.

The book has four sections, described below.

Section I: Supply Chain Overview (Chapters 1 to 6)

This section traces the evolution of concepts implicit in the supply chain. It seeks to establish the role of SCM in running the business and constantly improving its ability to compete. The section contains descriptions of models for competing, many of which have contributed to today's focus on chains as competitors rather than individual companies. From this work, we develop a model for classifying supply chain improvement projects according to their contribution to improving competitive position.

Use this section to add to your own understanding. Show it to your management team for a quick overview on the importance of supply chain management. Use it also to put together those often too frequent briefings for management and others in the organization on the supply chain management topic.

Section II: The Supply Chain Challenge — Five Tasks for Management (Chapters 7 to 29)

This section describes ways to perform the five SCM tasks better. They cover a variety of management techniques that, while not necessarily new, find fresh application in supply chain improvement. The five tasks and the associated chapters are shown in the following table.

1. Designing supply chains for strategic advantage	Today's success stories show that innovation in chain design is vital to competitive advantage.	Chapters 7 to 9
2. Implementing collaborative relationships	Functional command and control will give way to new structures within the enterprise.	Chapters 10 to 13
3. Forging supply chain partnerships	Working together beats going it alone. The need to partner is real.	Chapters 14 to 20
4. Managing supply chain information	Opportunities to succeed wildly or fail miserably abound.	Chapters 21 to 23
5. Making money from the supply chain	Pricing and cost always matter but ways of measuring money and managing the supply chain efficiently will change.	Chapters 24 to 29

Use this section to find your way around a particular problem. Use it also in planning a supply chain improvement project. It will yield ideas for the structure and tasks of such a program.

Section III: Supply Chain Methodologies (Chapters 30 to 33)

For those looking for more specific direction, I've included a section on performing certain important supply chain improvement tasks. The methodologies include activities needed to create a plan for supply chain improvement plus likely tasks that will be performed during implementation.

Section IV: Supply Chain Case Studies (Chapters 34 to 49)

This section contains case studies drawn from the published papers, presentations, and collective experience of contributors to this book. Each illustrates the application of one or more techniques or principles of SCM. I also attempt to show that supply chain improvement is not confined to product-only supply chains. It also extends to service businesses that must manage physical and intellectual capital.

James B. Ayers

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About the Editor

James B. Ayers is a principal with CGR Management Consultants, Los Angeles, CA (E-mail: jimayers@cgrmc.com). He has consulted in strategy and operations improvement for 29 years. His clients include large and small companies in manufacturing and distribution industries. In addition, he has served clients delivering services in transportation, healthcare, engineering, utility, and financial industries. He has authored numerous articles and has presented workshops on product and process development.

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Undertaking the writing of a book like this one, I found, soon exceeded my capacity for dispensing wisdom about the supply chain. In putting the pieces together, I found I was constantly recalling “bits and pieces” gathered in my associations with clients, other consultants, the news, and a number of publications. Fortunately, material from these sources is plentiful since the supply chain is a widely discussed phenomenon. I view my contribution as interpreting a number of models and viewpoints in a supply chain context. Because I ended up bringing together the insights of many, I have used the plural pronoun “we” instead of “I” throughout the book.

I especially appreciate the insights of Crispin Vincente-Brown, Bernhard Hadel, Pete Crosby, Keith and Jim Kennedy, Dave Malmberg, Craig Gustin, Mike Aghajanian, Joel Sutherland, and Mark Marcussen for their reviews of my work-in-progress and helpful comments, plus insights gathered over the years. No author can cover all publications but, as the reader will soon discover, much is drawn from *Harvard Business Review*, *The Wall Street Journal*, and *Logistics*. I would also like to thank St. Lucie’s Drew Gierman for his support during the project and Christian Kirkpatrick for suggesting it in the first place.

The book also has many chapters dedicated to supply chain improvement methodologies and case studies. These add a “touch of reality” to the frameworks and examples in the earlier chapters. They include both successful and not-so-successful endeavors across the supply chain spectrum. I would like to acknowledge the contributions of the authors of those cases and methodologies here.

*To the greatest family on the face of the planet — at least in my humble
opinion. Paula, Matt, Kelly, and Alex*

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