## CONTENTS

**Preface** 13

### Part I Overview of Logistics 19

#### Chapter 1 AN OVERVIEW OF LOGISTICS 20

- Economic Impacts of Logistics 20
- Logistics: What It Is 22
- The Increased Importance of Logistics 24
  - A Reduction in Economic Regulation 24
  - Changes in Consumer Behavior 25
  - Technological Advances 26
  - The Growing Power of Retailers 26
  - Globalization of Trade 27
- The Systems and Total Cost Approaches to Logistics 27
- Logistical Relationships within the Firm 30
  - Finance 30
  - Production 31
  - Marketing 31
- Marketing Channels 33
- Activities in the Logistical Channel 35
  - Customer Service 36
  - Demand Forecasting 36
  - Facility Location Decisions 36
  - International Logistics 36
  - Inventory Management 36
  - Materials Handling 36
  - Order Management 37
  - Packaging 37
  - Procurement 37
  - Reverse Logistics 37
  - Transportation Management 37
  - Warehousing Management 37
- Logistics Careers 37
  - Summary 38 • Questions for Discussion and Review 38 • Suggested Readings 39
  - Case 1-1 KiddieLand and the Super Gym 39
  - Appendix 1: Logistics Professional Organizations 41
Chapter 2 LOGISTICS AND INFORMATION TECHNOLOGY  43
General Types of Information Management Systems  44
  Office Automation System  44
  Communication System  45
  Transaction Processing System (TPS)  46
  Management Information System (MIS) and Executive Information System (EIS)  48
  Decision Support Systems (DSSs)  49
  Enterprise System  53
The Internet's Influence on Logistics  54
  Online Retailing  54
  On-Demand Software  55
  Electronic Procurement  56
Information Technology Challenges  57
  Summary  58  Questions for Discussion and Review  58  Suggested Readings  58
  Case 2-1 Just-in-Time in Kalamazoo  59

Chapter 3 STRATEGIC AND FINANCIAL LOGISTICS  62
Connecting Strategy to Financial Performance  63
Basic Financial Terminology  64
  Income Statement  64
  Balance Sheet  65
Strategic Profit Model  66
  Logistics Connections to Net Profit Margin  68
  Logistics Connections to Asset Turnover  68
Balanced Scorecard  68
Common Logistics Measures  69
  Transportation Measures  69
  Warehousing Measures  70
  Inventory Measures  70
  Design and Implementation of Measures  70
  Summary  70  Questions for Discussion and Review  70  Suggested Readings  71
  Case 3-1 Brant Freezer Company  71

Chapter 4 ORGANIZATIONAL AND MANAGERIAL ISSUES IN LOGISTICS  74
Organizing Logistics Within the Firm  74
  Organizational Structure for Logistics  75
  Organizational Design for Logistics  76
Managerial Issues in Logistics  79
  Productivity  79
  Theft and Pilferage  82
Part II  Supply Chain Management  95

Chapter 5  THE SUPPLY CHAIN MANAGEMENT CONCEPT  96
Evolution of Supply Chain Management  97
Attributes Affecting SCM Implementation  99
  Customer Power  101
  Long-Term Orientation  101
  Leveraging Technology  102
  Enhanced Communication Across Organizations  103
  Inventory Control  104
  Interorganizational Collaboration  104
  Supply Chain Facilitators  105
Barriers to SCM Implementation  106
  Regulatory and Political Considerations  107
  Lack of Top Management Commitment  107
  Reluctance to Share, or Use, Relevant Information  107
  Incompatible Information Systems  108
  Incompatible Corporate Cultures  108
  Globalization  109
Supply Chain Integration  109
  Summary  110  •  Questions for Discussion
  and Review  110  •  Suggested Readings  111
  Case 5-1 Johnson Toy Company  111

Chapter 6  PROCUREMENT  115
Procurement Objectives  116
Supplier Selection and Evaluation  117
  Supplier Development (Reverse Marketing)  119
Quality Issues in Procurement  119
Global Procurement (Sourcing)  121
Investment Recovery  122
Socially Responsible Procurement  123
  Summary  124  •  Questions for Discussion
  and Review  124  •  Suggested Readings  125
  Case 6-1 Tempo Ltd.  125
Part III  Elements of Logistics Systems  129

Chapter 7  DEMAND MANAGEMENT, ORDER MANAGEMENT, AND CUSTOMER SERVICE  130

Demand Management  131
  Demand Forecasting Models  131
  Demand Forecasting Issues  132

Order Management  133
  Order Transmittal  134
  Order Processing  134
  Order Picking and Assembly  136
  Order Delivery  137

Customer Service  138
  Time  139
  Dependability  139
  Communication  140
  Convenience  140

Managing Customer Service  141
  Customer Profitability Analysis  141
  Establishing Customer Service Objectives  141
  Measuring Customer Service  143
  Service Failure and Service Recovery  145

Summary  146  • Questions for Discussion and Review  146  • Suggested Readings  147

Case 7-1 Handy Andy, Inc.  147
  Appendix 7-A  149

Chapter 8  INVENTORY MANAGEMENT  151

Inventory Classifications  152

Inventory Costs  153
  Inventory Carrying Costs  153
  Ordering Costs  155
  Trade-Off between Carrying and Ordering Costs  155
  Stockout Costs  155
  Trade-Off between Carrying and Stockout Costs  157

When to Order  157

How Much to Order  158
  Economic Order Quantity  158
  Conditions of Uncertainty  160

Inventory Flows  160

Inventory Management: Special Concerns  161
  ABC Analysis of Inventory  162
  Dead Inventory  162
Design Considerations in Warehousing  201
  General Considerations  201
  Trade-Offs  201
  Fixed versus Variable Slot Locations for Merchandise  202
  Build Out (Horizontal) versus Build Up (Vertical)  202
  Order-Picking versus Stock-Replenishing Functions  202
  Two-Dock versus Single-Dock Layout  203
  Conventional, Narrow, or Very Narrow Aisles  203
  Paperless Warehousing versus Traditional Paper-Oriented
  Warehousing Operations  203
  Other Space Needs  203

Warehousing Operations  204
  Warehousing Productivity Analysis  204
  Safety Considerations  205
  Hazardous Materials  207
  Warehousing Security  208
  Cleanliness and Sanitation Issues  210
  Summary  210  •  Questions for Discussion
  and Review  211  •  Suggested Readings  211
  Case 10-1 Minnetonka Warehouse  211

Chapter 11 PACKAGING AND MATERIALS HANDLING  213
  Product Characteristics  214
  Packaging Fundamentals  215
    Promotional and Protective Functions of Packaging  216
    Package Testing and Monitoring  217
    Labeling  219
  Issues in Packaging  221
    Environmental Protection  221
    Metric System  222
    Identifying Packaging Inefficiencies  223
    Packaging's Influence on Transportation Considerations  224
  Unit Loads in Materials Handling  225
    The Unit Load Platform  227
    Beyond the Unit Load  228
  Materials Handling  229
    Materials Handling Principles  231
    Materials Handling Equipment  232
    Summary  232  •  Questions for Discussion
    and Review  233  •  Suggested Readings  233
    Case 11-1 Let There Be Light Lamp Shade Company  234