Content

Part I: Princip	oles of Supply Chain Management	
Chapter 1	Supply Chain Management – An Overview	3
Part II: Suppl	y Chain Planning & Design	
Chapter 2	Supply Chain Integration	17
Chapter 3	Demand Forecasting in a Supply Chain	28
Chapter 4	Managing Demand and Supply in a Supply Chain	48
Chapter 5	Facility Network Design	65
Part III: Supp	ly Chain Processes	
Chapter 6	Purchasing and Supply Chain Management	83
Chapter 7	Manufacturing in a Supply Chain Context	97
Chapter 8	Inventory Management	109
Chapter 9	Managing Transportation in a Supply Chain	128
Chapter 10	Warehousing	147
Chapter 11	Returns Management	162
Chapter 12	Customer Service in a Supply Chain	180
Chapter 13	Order Fulfillment	193
Part IV: Supp	ly Chain Coordination	
Chapter 14	Cooperation and Coordination in a Supply Chain	209
Chapter 15	Role of Outsourcing in a Supply Chain	221
Chapter 16	Measuring Supply Chain Performance	238
Part V: Conte	mporary Issues in Supply Chain Management	
Chapter 17	Information Technology in Supply Chain	253
Chapter 18	E-Business and the Supply Chain	273
Chapter 19	Financial Flow in Supply Chain	289
Glossary		302
Bibliography		309
Index		320

Detailed Contents

Part I: Principles of Supply Chain Management

Chapter 1: Supply Chain Management – An Overview: Definition of a Supply Chain – Components of a Supply Chain: Customers, Distributors, Manufacturers, Suppliers – The Concept of Supply Chain Management – Schools of Thought: Functional school, Linkage/ Logistics School, Information School, Integration/ Process School – Supply Chain Management Processes: Customer Relationship Management, Customer Service Management, Demand Management, Order Fulfillment, Manufacturing Flow Management, Procurement, Product Development and Commercialization, Returns Management – Factors Driving the Evolution of SCM: Customer Expectations, Globalization, Competition, Advances in Information Technology – Objectives of SCM.

Part II: Supply Chain Planning & Design

Chapter 2: Supply Chain Integration: Nature of Supply Chain Integration: Cross Functional Process Integration, External Integration – Factors Driving Supply Chain Integration: Increasing Customer Satisfaction, Improving Supply Chain Productivity, Changing Competitive Environment – Role of Organizational and Channel Support for Supply Chain Integration – Elements of Supply Chain Strategy; Demand Flow Strategy, Customer Service Strategy, Collaboration Strategy, Information Technology Strategy – Framework for Supply Chain Integration: Understanding the Supply Chain (Market Segmentation, Describing the Supply Chains), Evaluating the Organization's Position in the Supply Chain, Building the Supply Chain Infrastructure Needed for Successful Integration, Create and Communicate a Common Supply Chain Vision, Develop Integrative Mechanisms, Constantly Reevaluate and Continuously Improve – Benefits of Supply Chain Integration: Increased Customer Responsiveness, Increased Supply Chain Productivity – Barriers to Supply Chain Integration: Increase in Product Variety, Shorter Product Life Cycles, Customer Demands, Increased Outsourcing of the Firm's Activities.

Chapter 3: Demand Forecasting in a Supply Chain: Forecast Components – Forecasting Approaches – Steps Involved in Demand Forecasting Process: Understand the Objectives of Forecasting, Integrate Demand Planning and Forecasting, Identify the Major Factors that Influence Demand Forecast, Understand and Identify Customer Segments, Determine the Appropriate Forecasting Technique – Forecasting Techniques – Time Series Forecasting Methods: Static Forecasting Method, Adaptive Forecasting – Measures of Forecast Error: Mean Absolute Deviation, Mean Squared Error, Mean Absolute Percentage Error.

Chapter 4: Managing Demand and Supply in a Supply Chain: Aggregate Planning and its role in a Supply Chain – Aggregate Planning Process: Aggregate Planning Problem, Aggregate Planning Strategies (Chase Strategy, Stable workforce, Level Strategy), Aggregate Planning Techniques (Cut and Try Method, Aggregate Planning Using Linear Programming) – Managing Predictable Variability in a Supply Chain: Decisions Options in Varying Supply (Managing Capacity, Managing Inventory), Decision Options in Varying Demand (Demand for the Product, Product Margins, Cost of Holding Inventory, Cost of Changing Production Capacity).

Chapter 5: Facility Network Design: Factors Influencing Facility Network Design Decisions: Strategic Factors, Technological Factors, Tariffs and Tax Incentives, Political Stability, Infrastructure, Proximity to Suppliers, Resources and Markets, Facility Costs, Other Factors – Facility Network Design Process: Developing a Supply Chain Strategy, Studying the Regional Market Configuration, Identifying a Set of Potential Sites, Selecting the Location – Models for Facility Network Design and Capacity Allocation: Gravity Location Models, Linear Programming Models, Simulation Technique.

Part III: Supply Chain Processes

Chapter 6: Purchasing and Supply Chain Management: Activities of the Purchasing Department – Evolution of the Purchasing Function: Transactional Stage, Price Negotiation Stage, Coordination Stage, Cross-Functional Purchasing Stage, External Integration Stage – Selecting and Managing Suppliers: Discovering Potential Suppliers, Evaluating Potential Suppliers, Selecting Suppliers (Bidding vs. Negotiation, Two-step bidding or negotiation, Solicitation and Responsibility for Selection, Personnel Involved in Source Selection), Managing Suppliers – JIT Purchasing: Buyer Benefits, Supplier Benefits.

Chapter 7: Manufacturing in a Supply Chain Context: Intrafirm Production: Craft Production, Mass Production, Lean Production, JIT Production (Revised Layouts, Reduced set-up times, Kanban Controls) –

Interfirm Production: JIT Interfirm Production, Tiered Production – Supply Chain Production: Dispersed Production, Build-to-order production, Manufacturing Postponement.

Chapter 8: Inventory Management: Role of Inventory in a Supply Chain: Decoupling, Balancing Supply and Demand, Buffer Uncertainities – Inventory Related Definitions – Cost of Carrying Inventory – Basic Inventory Management Decisions: Determining the Order Point, Determining Lot Size – Inventory Decisions in a Supply Chain: Cycle Inventory Decisions (Fixed Costs, Quantity Discounts, Trade Promotions), Safety Inventory Decisions (Calculating Safety Inventory Under Demand Uncertainity, Calculating Safety Inventory Under Lead Time Uncertainity).

Chapter 9: Managing Transportation in a Supply Chain: Role of Transportation in a Supply Chain – Function of Transportation in a Supply Chain: Product Movement, Product Storage – Participants in Transportation Decisions: The Shipper, The Carrier, The Receiver, The Government – Costs that Influence Transportation Decisions: Costs Affecting Shipper's Decisions (Transportation Costs, Processing Costs, Inventory Costs, Customer service Level Costs), Costs Affecting Carriers Decisions (Fixed Costs, Variable Costs) – Modes of Transport: Road Transport, Rail Transport, Water Transport, Pipelines, Air Transport, Intermodal Transport – Transportation Network Design: Direct Shipment Network, Direct Shipping with Milk Runs, Shipments Managed from a Centralized Distribution Center, Shipping via Distribution Center using Milk Runs, Tailored Networks (Tailored Transportation based on Customer Density and Distance, Tailored Transportation according to the Size of the Customer, Tailored Transportation According to the Product Demand and Value) – Trade-offs in Transportation Network Design Decisions: Transportation and Inventory Cost Trade-offs (Choice of Transportation Mode, Inventory Aggregation), Trade-offs Between Transportation Cost and Customer Service Level – Transportation Analysis Decisions: Transportation Analysis Techniques (Heuristic Approaches, Exact Approaches, Interactive Approaches, Combination Approaches).

Chapter 10: Warehousing: Nature and Importance of Warehousing in a Supply Chain – Functions of Warehousing: Economic Benefits (Consolidation, Cross-docking, Processing. Stockpiling), Service Benefits (Stock Spotting, Product Mixing, Production Support, Market Presence) – Warehousing Activities: Product Movement, Product Storage, Information Transfer – Warehousing Alternatives: Private Warehousing, Public Warehousing, Contract Warehousing – Factors to be Considered in Warehousing Strategy: Presence Synergies, Industry Synergies, Operating Flexibility, Location Flexibility, Scale Economies – Planning Warehouse: Site Analysis, Product Mix Considerations, Material Handling Equipment, Warehouse Design (Design Criteria, Material Handling Technology, Storage Plan) – Managing a Warehouse: Stocking the Warehouse, Personnel Training, Developing Work Procedures, Security Arrangements at the Warehouse, Product Deterioration, Billing and Inventory Control.

Chapter 11: Returns Management: Reverse Logistics: Packaging Return and Reuse, Product Recall, Returns Management – Need for Returns Management – Returns Management Processes: Strategic Returns Process (Review of Environmental and Legal Compliance Guidelines, Developing Return Avoidance, Gatekeeping and Disposition Guidelines, Developing Return Network and Flow Options, Developing Credit Rules Governing the Returns Process, Developing the Framework of Performance Metrics), Operational Returns Process (Receiving Return Request, Determining Routing, Receiving Returns, Selecting the Disposition Option, Crediting Consumer, Analyzing Returns and Measuring Performance) – Disposition Options: Direct Reuse, Product Recovery Management, Waste Management – Challenges in Returns Management: Retailer-Manufacturer Conflict, Lack of Information, Not Understanding the Importance of returns Management – Use of Information Technology in the Returns Management Process: Capability, Compatibility, Technologies.

Chapter 12: Customer Service in a Supply Chain: Elements of Customer Service: Pre-Transaction Elements, Transaction Elements, Post-transaction Elements – Approaches to Develop Customer Service Strategy: Understanding Customer Reactions to Product or Service Failures, Analyzing Cost-revenue trade-off, Activity Based Costing, Product-Customer Matrix, Internal and External Customer Service Audits, Competitive Position Matrix – Customer Service as a Performance Outcome to Create a Differential Advantage: Product Availability, Operational Performance, Reliability, Market Access, Market Creation, Impediments to Implementing an Effective Customer Service Strategy: Metrics Not Well Defined, Conflicting Metrics, Not Understanding the Trade-off Issues, Failure to Watch Industry Shifts and Changes in the Competitive Environment – Use of Technology in Customer Service.

Chapter 13: Order Fulfillment: The Order Fulfillment Process: Strategic Order Fulfillment Processes, Operational Order Fulfillment Process (Order Generation, Order Processing, Order Preparation, Order Shipment, Post Delivery Activities) – E-Fulfillment vs. Traditional Order Fulfillment Process: Developing an E-Fulfillment Strategy (Distributed Delivery Centers, Partner Fulfillment Operations, Dedicated Fulfillment Centers, Third-party Fulfillment Centers, Build-to-order) – Responsive Order Fulfillment Process: Factors Influencing the Responsiveness of the Order Fulfillment Process (Nature of the Product, Production triggering, Meeting Customer Demand), Elements of Responsive Order Fulfillment Process (Stimuli, Awareness, Capabilities, Goals) – Order Fulfillment Systems: Order Capture, Order Management, Order Fulfillment, Reverse Logistics, Characteristics of an Ideal Order Fulfillment System.

Part IV: Supply Chain Coordination

Chapter 14: Cooperation and Coordination in a Supply Chain: Bullwhip Effect: Causes of the Bullwhip Effect, Overcoming the Bullwhip Effect – Partnering in Supply Chain Management: Strategic Partnering, Operational Partnering, Environmental Pressures Inducing Partnering, Prerequisites for Effective Partnering – Obstacles in Supply Chain Coordination: Incentive Obstacles, Information Processing Obstacles, Operational Obstacles, Pricing Obstacles, Behavioral Obstacles – Managerial Levers to Achieve Coordination – Designing Effective Supply Chain Partnerships that Help Build Cooperation and Trust

Chapter 15: Role of Outsourcing in a Supply Chain: Outsourcing – Reasons for Outsourcing: Strategic Reasons for Outsourcing, Tactical Reasons for Outsourcing, Transformational Reasons for Outsourcing – Deciding What to Outsource – Outsourcing Process: Assessing Technology and Demand Trends, Assess Strategic Alignment and Core Competencies, Conducting Cost Analysis, Considering Non-Cost Factors – Issues in Outsourcing: Involvement of Suppliers, Supplier Base, Single Vs Multiple Sourcing, Local, National and International Sourcing – Areas of Outsourcing: Transportation, Warehousing, Inventory Management, Information Systems, Packaging – Advantages and Disadvantages of Outsourcing – Outsourcing Practices: Vendor Managed Inventory, Third Party Logistics, Fourth Party Logistics Providers.

Chapter 16: Measuring Supply Chain Performance: Supply Chain Performance Measurement – Framework for Developing Supply Chain Metrics: Identify Key Supply Chain Links, Evaluate the Links, Draw up Profit and Loss Statements, Realign Supply Chain Processes, Align Non-financial Measures with P&L Statements, Compare Across Firms and Replicate – Performance Metrics and Measures in a Supply Chain: Metrics for Performance Evaluation of Planned Order Procedures (Order Entry Method, Order Lead-time, Customer Order Path), Supply Chain Relationship Metrics, Production Level Measures and Metrics (Product Range, Capacity Utilization, Effectiveness of Scheduling Techniques), Measures for Evaluating Delivery Links, Measures for Delivery Performance Evaluation, Measures of Levels of Customer Service and Satisfaction – Requirements for Designing an Ideal SCPM System: Process-based Metrics, Metrics that are defined at Executive and Operational Levels, Metrics Aligned to Overall Business Objectives, Metrics that can Measure Cross-enterprise Processes – Approaches to SCPM: The Balanced Scorecard, The Supply Chain Council's Model, The Logistics Scoreboard, Activity-Based Costing, Economic Value Analysis.

Part V: Contemporary Issues in Supply Chain Management

Chapter 17: Information Technology in a Supply Chain: Value of Information Flow in a Supply Chain – Use of Information in a Supply Chain: Inventory, Transportation, Facilities – Changing Role of Information Technology in a Supply Chain: Role of IT in Decision Making (Strategic Level IT Systems, Tactical Planning Level IT Systems, Operational Level IT Systems) – IT Solutions for SCM: Electronic Data Interchange, Internet Technologies, Enterprise Resource Planning – Supply Chain Management Software: Supply Chain Planning, (Strategic Level Planning Applications, Tactical Level Planning Applications, Operational Planning Applications), Supply Chain Execution Systems – Process of Implementing an IT- Enabled SCM System: Evaluating Organizational Requirements, Evaluating the External Environment, Identification of IT Infrastructure, Actual Implementation of the IT System, Scaling up the System.

Chapter 18: E-Business and the Supply Chain: Impact of Internet on a Supply Chain – Impact of E-business on Supply Chain: Revenue Impact of E-Business, Cost Impact of E-Business, Cost Disadvantage of E-Business – Types of E-Business Applications: E-Commerce, E-Procurement, E-Collaboration –

Implementing the E-Business Proposition: Start with an Enterprise Wide Strategy Driven from the Top, Removing Bottlenecks in Information Flow, Integrating Business Processes with Trading Partners.

Chapter 19: Financial Flow in a Supply Chain: Components of Financial Flow in a Supply Chain: Purchase-to-pay Process, Order-to-Cash Process – Automating Financial Flow in a Supply Chain: Electronic Invoice Presentment and Payment Solutions (EIPP Implementation Models, Benefits of EIPP Trade Financing Systems (Bolero, Trade Card), Credit Information and Management Systems – Integrating Material and Financial Flow in a Supply Chain.