

## **8. Supply Chain Management**

Supply Chain Management (SCM) covers the movement, production, and storage of raw materials, work-in-process inventory, finished goods, and services from point of origin to point of consumption or use. Suppliers, manufacturers, intermediaries, stores, and service enterprises are involved in delivery of products and services to end customers in a supply chain.

### **8.1. Supply Chain Management Fundamentals**

- 8.1.1. Supply chain management processes
- 8.1.2. Make / buy analysis
- 8.1.3. Adding value to organizations
- 8.1.4. Importance of aligning supply chain strategy with corporate strategy
- 8.1.5. Supply chain risk management strategies
- 8.1.6. Assessment and measurement of effectiveness of supply chains
- 8.1.7. Fundamentals of green supply chain initiatives

### **8.2. Building Competitive Operations, Planning, and Logistics**

- 8.2.1. Dynamics within the supply chain to optimize performance and increase profitability
- 8.2.2. Designing agility into a supply chain
- 8.2.3. Lean principles in a supply chain
- 8.2.4. Assessing the value of demand
- 8.2.5. Reducing complexity in demand planning
- 8.2.6. Establishing collaborations to replace or improve demand estimates
- 8.2.7. Including supply chain factors in product design
  - 8.2.7.1. Cost
  - 8.2.7.2. Packaging
- 8.2.8. Aligning distribution and transportation options with supply chain strategy
- 8.2.9. 3PL and 4PL service providers
- 8.2.10. Supply chain network design
  - 8.2.10.1. Tiers
  - 8.2.10.2. Number, size, and location of facilities

### **8.3. Reverse logistics**

- 8.3.1. Shared-resource, closed-loop systems
- 8.3.2. Capacity utilization from multi-directional product flow
- 8.3.3. Remanufacture/reuse
- 8.3.4. Combined forward and closed loop supply chains

### **8.4. Managing Product Flow**

- 8.4.1. Inventory control methodologies (see Operations Engineering & Management knowledge area).
- 8.4.2. Material handling systems
- 8.4.3. Work sourcing management
- 8.4.4. Transportation management
  - 8.4.4.1. Mode/Carrier selection
  - 8.4.4.2. Consolidation
  - 8.4.4.3. Vehicle routing
  - 8.4.4.4. Two or three echelon routing

#### 8.4.4.5. Synchronization of multi-tier transportation

### **8.5. Managing Customer Relationships**

- 8.5.1. Customer stratification based on their profiles and needs
- 8.5.2. Understanding customer loyalty and lifetime value of a customer
- 8.5.3. Establishing measures of customer satisfaction
- 8.5.4. Supplier support and oversight

### **8.6. Managing Supplier Relationships**

- 8.6.1. Insourcing vs. outsourcing decisions
  - 8.6.1.1. On-shore
  - 8.6.1.2.b. Off-shore
- 8.6.2. Strategic importance of purchasing and supplier relationships
- 8.6.3. Supplier scorecard systems
- 8.6.4. Managing the supplier lifecycle
  - 8.6.4.1. Supplier selection
  - 8.6.4.2. Contracting
  - 8.6.4.3. Onboarding
  - 8.6.4.4. Order-to-cash
  - 8.6.4.5. Decommissioning a supplier
- 8.6.5. Customer data
  - 8.6.5.1. Service performance
  - 8.6.5.2. Increasing value to suppliers and customers
- 8.6.6. Selection of and understanding Tier 2, 3, etc. suppliers
- 8.6.7. Supplier risk management
- 8.6.8. Resilience and agility

### **8.7. Smart supply chain (Logistics 4.0)**

- 8.7.1. Machine-to-machine communication
- 8.7.2. Internet of things
- 8.7.3. Possibility of zero lead time
- 8.7.4. Enhanced visibility and traceability across the value chain
- 8.7.5. Automated real time data collection, processing, and decision making

### **8.8. Sharing economy and SCM**

- 8.8.1. Integration of core logistics systems with shared platform
- 8.8.2. Management of ecosystem of partners and crowdsourced supply chain assets
- 8.8.3. Technology-enabled coordination

### **8.9. Information flow through supply chain**

- 8.9.1. Bull-whip effect
- 8.9.2. Vendor managed inventory (VMI)
- 8.9.3. Enterprise resource planning (ERP)

### **8.10. Sustainability in supply chain**

- 8.10.1. Sourcing and operating guidelines
- 8.10.2. Code of conduct for responsible business
- 8.10.3. Social compliance programs
- 8.10.4. Sustainability risk mapping

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