Certified Supply Chain Professional

Supply Chain Design and Management

CSCP On-Demand Training
for Self-Study Professionals

Are you preparing for the CSCP certification through self-study? As an experienced supply chain professional, you already have strong practical knowledge—but some topics may still need expert clarification. Fhyzics Business Consultants bridges that gap with on-demand, topic-oriented CSCP training sessions designed specifically for self-learners.

Whether you need guidance on a single concept or an entire module, our focused training helps you master complex areas quickly and confidently. Get personalized support, strengthen your exam readiness, and elevate your supply chain expertise—on your schedule.

Mobile: +91-900-304-9000 (WhatsApp)
Email: Certifications@Fhyzics.net

Supply Chain Design and Management

1. Definition and Objective of Supply Chain Design

Supply chain design refers to the strategic configuration of an organization's end-to-end network—including suppliers, manufacturing sites, distribution centers, and customers—to achieve cost efficiency, service excellence, and strategic agility. Its primary objective is to align the supply chain structure with business goals, market needs, and customer expectations while managing cost, risk, and responsiveness effectively.

2. Strategic vs. Tactical Supply Chain Design

Strategic design focuses on long-term decisions such as facility location, capacity planning, and sourcing strategy, while tactical design handles medium-term issues like production scheduling, transportation modes, and inventory allocation. Together, these layers ensure that the supply chain infrastructure supports both long-term growth and short-term operational efficiency.

3. Network Design and Optimization

Network design determines the number, location, and capacity of manufacturing plants, warehouses, and distribution centers. Optimization models evaluate trade-offs among transportation costs, service levels, and inventory holding costs. Tools such as linear programming and simulation modeling are often used to determine the most efficient network configuration.

4. Global Supply Chain Configuration

Global design involves coordinating activities across multiple regions, considering factors like labor costs, trade policies, currency fluctuations, and geopolitical risks. A well-designed global supply chain balances cost advantages from low-cost regions with responsiveness and risk mitigation. Decisions must also comply with international trade regulations and sustainability standards.

5. Make-or-Buy (Outsourcing) Decisions

Make-or-buy analysis determines whether to produce goods internally or outsource to third parties. Key considerations include cost, quality, capacity, intellectual property protection, and strategic control. Outsourcing can enhance flexibility and cost-efficiency but may increase dependency on external suppliers, necessitating strong contract and relationship management.

6. Facility Location Strategy

Choosing optimal facility locations requires evaluating factors such as proximity to markets, transportation infrastructure, labor availability, and total landed cost. Analytical tools like **center-of-gravity models** and **network optimization software** help balance cost efficiency with service responsiveness. Location strategy significantly impacts lead time, logistics cost, and customer satisfaction.

7. Supply Chain Segmentation

Segmentation involves dividing products, customers, or channels into distinct groups based on demand patterns, profitability, or service needs. Each segment may have a

customized supply chain strategy—such as lean for stable demand and agile for volatile demand. Segmentation enhances alignment between operational capabilities and customer expectations.

8. Lean Supply Chain Design
A lean supply chain emphasizes waste elimination, streamlined processes, and continuous flow. It reduces excess inventory, waiting time, and transportation inefficiencies. Lean design is ideal for predictable, high-volume demand environments and focuses on maximizing value through efficiency, standardization, and continuous improvement.

9. Agile Supply Chain Design
Agility emphasizes flexibility and responsiveness to demand fluctuations and market uncertainty. Agile supply chains use flexible capacity, modular product designs, and quick changeovers. This design is essential for industries with high product variety or short product life cycles. Agility enables faster adaptation to disruptions and market shifts.

10. Hybrid (Leagile) Supply Chain Design
The hybrid or "leagile" model combines lean efficiency with agile responsiveness. Typically, lean principles apply to upstream processes (manufacturing, procurement), while agile principles govern downstream activities (distribution, customization). This balance allows organizations to achieve cost efficiency while responding quickly to customer-specific requirements.

11. Sustainability in Supply Chain Design

Sustainable design integrates environmental and social responsibility into the supply chain structure. It includes reducing carbon emissions, optimizing packaging, and using renewable energy. Companies adopt frameworks like the **Triple Bottom Line (People, Planet, Profit)** and **Circular Supply Chain** models to balance profitability with long-term ecological impact.

12. Resilient Supply Chain Design

Resilient design builds the ability to anticipate, absorb, and recover from disruptions such as natural disasters or supplier failures. It involves diversifying suppliers, building redundancy, and enhancing visibility through digital tools. Resilient supply chains maintain continuity and customer service during uncertainty, safeguarding business performance.

13. Total Cost of Ownership (TCO) Analysis

TCO analysis evaluates the complete cost of supply chain decisions, including procurement, logistics, maintenance, quality, and risk costs—not just the purchase price. Understanding TCO ensures better sourcing, manufacturing, and network decisions that consider long-term financial and operational impacts rather than short-term savings.

14. Supply Chain Risk Management

Risk management identifies, assesses, and mitigates potential threats within the supply network. Key risks include supplier failure, demand volatility, geopolitical instability, and cyber threats. Risk mitigation strategies

include dual sourcing, buffer inventory, flexible contracts, and scenario planning. Effective risk management ensures supply chain stability and continuity.

15. Technology and Digitalization in Design
Modern supply chain design leverages digital technologies such as **Artificial Intelligence (AI)**, **IoT**, **Blockchain**, and **Digital Twins**. These technologies enhance visibility, simulate network scenarios, and optimize decision-making. Digitalization enables predictive analytics and real-time adjustments, improving efficiency, traceability, and responsiveness across the network.

16. Capacity Planning and Scalability
Capacity planning ensures that production and logistics infrastructure can handle projected demand levels. It involves balancing fixed and flexible capacities to accommodate seasonal or growth fluctuations. Scalable supply chain design allows organizations to expand or contract operations efficiently as market conditions change.

17. Demand-Driven Supply Chain Design
A demand-driven design aligns production and distribution with actual customer consumption patterns rather than forecasts. Using real-time data, demand-driven models minimize inventory and reduce the bullwhip effect. This approach improves service levels, shortens lead times, and enhances synchronization between upstream and downstream partners.

18. Supply Chain Visibility and Transparency

Visibility refers to the ability to track products, materials, and information across the supply chain in real time. Enhanced visibility improves coordination, reduces risks, and supports decision-making. Transparency ensures that all stakeholders have accurate, shared data—critical for traceability, compliance, and customer trust.

19. Performance Measurement and Continuous Improvement

Effective supply chain design includes establishing key performance indicators (KPIs) such as cost, service level, lead time, and asset utilization. Continuous improvement methods like **PDCA (Plan-Do-Check-Act)** and **Six Sigma** drive ongoing optimization. Performance measurement ensures that the design evolves with business needs and market conditions.

20. Strategic Alignment and Governance

Supply chain design and management must align with corporate strategy and governance frameworks. Strategic alignment ensures that operational goals support broader business objectives such as market expansion, cost leadership, or innovation. Clear governance structures define decision-making authority, accountability, and collaboration across supply chain functions.

*****

Micro-Learning Programs in Supply Chain Management & Procurement

Enhance your professional edge with Fhyzics Business Consultants' Micro-Learning Programs in Supply Chain Management and Procurement. Designed as focused, two-hour Executive Development Programs, these sessions deliver practical insights and tools to solve real-world business challenges. Conducted in small batches for personalized learning, participants gain a deeper understanding of key supply chain and procurement strategies that drive efficiency and profitability. Each participant receives a certificate of completion, adding value to their professional profile and career growth. Whether you aim to advance in your current role or explore new opportunities, this program equips you with the knowledge and confidence to excel.

Micro-Learning Programs in Supply Chain Management

1. Fundamentals of Supply Chain Management
2. Supply Chain Planning and Optimization
3. Demand Forecasting Techniques
4. Inventory Control and Management
5. Distribution and Logistics Strategy
6. Warehouse Layout and Operations Efficiency
7. Supply Chain Risk Management
8. Supply Chain Performance Metrics (KPIs)
9. Lean Supply Chain Practices
10. Agile and Responsive Supply Chains
11. Sales and Operations Planning (S&OP)
12. Supply Chain Network Design
13. Supply Chain Digital Transformation
14. AI and Data Analytics in Supply Chain
15. Supply Chain Sustainability and Green Logistics
16. Reverse Logistics and Returns Management
17. Supply Chain Collaboration and Integration
18. Supplier Relationship Management in SCM
19. Global Supply Chain Strategy
20. Transportation Management Systems (TMS)
21. Inventory Optimization Models
22. Demand-Driven MRP (DDMRP) Concepts
23. Blockchain Applications in Supply Chain
24. Supply Chain Cost Reduction Techniques
25. SCOR Model and Process Improvement

26. Capacity Planning and Resource Allocation
27. Managing Supply Chain Disruptions
28. End-to-End Supply Chain Visibility
29. Cold Chain Logistics Management
30. Supply Chain Compliance and Ethics
31. Import–Export Procedures and Documentation
32. Managing Third-Party Logistics (3PL) Providers
33. Supply Chain Collaboration Technologies
34. Production Planning and Scheduling
35. Strategic Supply Chain Design Using Case Studies
36. Circular Economy in Supply Chain
37. Vendor-Managed Inventory (VMI)
38. Transportation Optimization Techniques
39. E-Commerce Supply Chain Models
40. Omni-Channel Fulfillment Strategies
41. Warehouse Automation and Robotics
42. SCOR DS Roadmap for Supply Chain Excellence
43. Customer-Centric Supply Chain Strategies
44. Supply Chain Finance and Working Capital Management
45. Supply Chain Data Visualization Using Power BI
46. Strategic Sourcing in Supply Chain Context
47. Supply Chain Benchmarking and Best Practices
48. Integrated Business Planning (IBP)
49. Supply Chain in Crisis Management and Recovery
50. Future Trends and Technologies in Supply Chain

Micro-Learning Programs in Procurement

1. Fundamentals of Procurement Management
2. Strategic Sourcing and Category Management
3. Supplier Selection and Evaluation
4. Contract Management Essentials
5. Cost and Price Analysis in Procurement
6. Negotiation Strategies for Procurement Professionals
7. E-Procurement and Digital Tools
8. Procurement Planning and Budgeting
9. Risk Management in Procurement
10. Supplier Relationship and Performance Management
11. Sustainable and Ethical Procurement
12. Total Cost of Ownership (TCO) Analysis
13. Make-or-Buy Decision Frameworks
14. Procurement Policies and Governance
15. Procurement in Public vs. Private Sectors
16. Procurement Audit and Compliance
17. Procurement Data Analytics and Reporting
18. Procurement Scorecards and KPIs
19. Strategic Supplier Partnerships
20. Category Strategy Development
21. Managing Global and Offshore Procurement
22. Negotiation Simulation Workshop
23. Contract Law for Procurement Managers
24. Cost Reduction Strategies in Procurement
25. Supplier Risk Assessment Models

Micro-Learning Programs in Procurement ...

26. Procurement Process Mapping and Improvement
27. Procurement Automation and AI Applications
28. Managing Procurement Teams Effectively
29. Procurement Ethics and Transparency
30. Procurement in the Digital Supply Chain
31. Vendor Consolidation Strategies
32. Spend Analysis and Optimization
33. Demand Forecasting for Procurement
34. E-Auction and Reverse Bidding Techniques
35. Inventory and Procurement Alignment
36. Procurement in Project-Based Organizations
37. Supplier Onboarding and Development
38. Procurement Market Intelligence
39. Measuring Supplier Innovation
40. Procurement in Times of Supply Disruption
41. Cross-Functional Collaboration in Procurement
42. Writing Effective RFPs, RFQs, and RFIs
43. Contract Negotiation Best Practices
44. Green Procurement and Circular Economy
45. Legal Aspects of Procurement Contracts
46. Performance-Based Contracting
47. Procurement Leadership and Strategic Influence
48. Cost Avoidance and Value Creation in Procurement
49. Managing Procurement with Power BI Dashboards
50. Future Skills and Trends in Procurement

Fhyzics Business Consultants Pvt. Ltd.
Professional Training Partner of ASCM, USA
www.Fhyzics.net

ASCM Referral Code
XEFHYZ88

Certifications@Fhyzics.net
+91-900-304-9000

CSCP aspirants may buy the CSCP
Learning System and Examination
Credits directly through ASCM Portal.
When purchasing CSCP Examination
Credit, please enter Referral
Code **XEFHYZ88** to receive CSCP
Recertification Guidance for life.