Certified Supply Chain Professional

Planning Operations

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Planning Operations

1. Purpose of Operations Planning

Operations planning ensures that supply chain resources—materials, capacity, and workforce—are aligned with demand forecasts and organizational objectives. It bridges strategic goals with tactical execution, balancing efficiency, service levels, and cost. Effective planning minimizes waste, optimizes lead times, and enables smooth production flow while meeting customer delivery expectations.

2. Hierarchy of Planning (Strategic, Tactical, Operational)

Supply chain planning operates on three levels: **strategic** (long-term network and policy decisions), **tactical** (mid-term resource allocation), and **operational** (short-term execution). Aligning these levels ensures consistency between corporate goals and day-to-day operations. Integration across horizons is key to agility and responsiveness in dynamic markets.

3. Sales and Operations Planning (S&OP)

S&OP aligns supply and demand through a cross-functional process involving sales, marketing, production, and finance. It focuses on balancing capacity, inventory, and demand forecasts to ensure business objectives are met. Successful S&OP enhances visibility, improves collaboration, and supports proactive decision-making across the enterprise.

4. Master Production Schedule (MPS)

The MPS translates the S&OP plan into a detailed production schedule that specifies what products to make, when, and in what quantities. It drives material and

capacity planning. A well-maintained MPS preventsstockouts, minimizes excess inventory, and ensures stableproduction flow.

5. Material Requirements Planning (MRP)
MRP determines what materials are needed, in what quantities, and when they should be ordered or produced. It relies on inputs from the MPS, bill of materials (BOM), and inventory records. MRP improves material availability, production efficiency, and customer satisfaction while minimizing working capital.

6. Capacity Requirements Planning (CRP)
CRP evaluates whether available capacity (labor, machines, work centers) can meet the production schedule. It identifies bottlenecks and supports resource adjustments, such as overtime or subcontracting. Accurate CRP ensures realistic production plans and avoids disruptions due to capacity shortfalls.

7. Rough-Cut Capacity Planning (RCCP)
RCCP is a high-level analysis used to verify that the master production schedule is feasible based on critical resource constraints. It focuses on key work centers or labor groups. RCCP helps prevent overloading early in the planning cycle before detailed CRP is performed.

8. Distribution Requirements Planning (DRP)
DRP plans the replenishment of finished goods across the distribution network. It aligns warehouse inventory, transportation schedules, and customer demand. DRP

ensures product availability at the right location and timewhile minimizing carrying costs and optimizing logisticsefficiency.

9. Advanced Planning and Scheduling (APS)
APS systems integrate production, distribution, and procurement planning using real-time data and optimization algorithms. They provide dynamic scenario analysis to balance constraints and objectives. APS enhances agility, reduces planning cycles, and enables better synchronization across global supply chains.

10. Finite vs. Infinite Capacity Planning
Finite capacity planning respects resource limits when scheduling, while **infinite capacity planning** assumes unlimited resources. Understanding both helps planners choose the right approach based on business priorities. Finite planning creates more realistic schedules but requires greater computational effort and flexibility.

11. Push vs. Pull Planning Systems
Push systems schedule production based on forecasts (e.g., MRP), while **pull systems** trigger replenishment based on actual consumption (e.g., Kanban). Effective planning integrates both to balance responsiveness with efficiency. Push-pull boundaries define where forecast-driven versus demand-driven control should occur.

12. Demand-Driven MRP (DDMRP)
DDMRP combines traditional MRP with lean and TOC (Theory of Constraints) principles. It uses strategically positioned buffers to decouple lead times and absorb

variability. DDMRP improves responsiveness and reduces inventory volatility by aligning production with actual demand signals.

13. Lean Production Planning
Lean planning focuses on eliminating waste, reducing variability, and improving flow. It uses tools such as takt time, heijunka (level loading), and visual scheduling to maintain steady production. Lean principles ensure planning supports continuous improvement and customer value delivery.

14. Theory of Constraints (TOC) in Planning
TOC identifies and manages system bottlenecks to maximize throughput. In operations planning, it ensures that schedules and resources prioritize constraint utilization. By focusing on the weakest link, TOC improves flow efficiency, reduces lead times, and enhances profitability.

15. Lot Sizing Techniques
Lot sizing determines how much to produce or order each time. Common methods include Economic Order Quantity (EOQ), Lot-for-Lot (L4L), and Period Order Quantity (POQ). Proper lot sizing minimizes total cost by balancing ordering/setup costs with inventory holding costs.

16. Lead Time Management
Lead time includes the total time from order placement to delivery. Planning accuracy depends on understanding and managing cumulative lead times across procurement, production, and logistics. Reducing lead times increases responsiveness and improves customer satisfaction.

17. Safety Stock and Buffer Planning

Safety stock protects against uncertainty in demand or supply. Determining optimal safety stock levels requires analyzing variability, service level goals, and lead times. Inadequate safety stock leads to stockouts; excessive levels increase carrying costs. Balancing both is essential for efficient planning.

18. Planning Bill of Materials (BOM)

A planning BOM groups related products or options into families for aggregate forecasting and scheduling. It simplifies planning for product variants and supports efficient resource allocation. Planning BOMs bridge high-level demand with detailed production requirements.

19. Collaborative Planning, Forecasting, and Replenishment (CPFR)

CPFR promotes joint planning between supply chain partners by sharing forecasts, production schedules, and inventory data. It improves visibility, reduces bullwhip effects, and enhances trust. Effective CPFR requires synchronized information systems and well-defined collaboration frameworks.

20. Key Performance Indicators (KPIs) in Operations Planning

Important KPIs include plan adherence, forecast accuracy, schedule attainment, and order fulfillment rate. Measuring these indicators ensures alignment between planning and execution. Continuous performance tracking helps organizations refine their planning process, identify inefficiencies, and drive ongoing improvement.

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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

Micro-Learning Programs in Supply Chain Management …

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

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