



Certified in Planning and Inventory Management

Aggregate Demand and Supply Plans



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Aggregate Demand and Supply Plans

1. Purpose of Aggregate Planning

Aggregate planning focuses on determining the optimal production, inventory, workforce, and capacity levels over a medium-term horizon (typically 6–18 months). Its purpose is balancing demand and supply at a product-family level instead of individual SKUs. This process helps organizations maintain stable operations, manage resources efficiently, and align production rates with market needs. For CPIM, understand how aggregate planning supports cost minimization, service-level targets, and organizational goals. It also creates an important link between the S&OP plan and master scheduling.

2. Product Families and Grouping

Aggregate planning works at the level of product families rather than individual items. Product families are grouped by similar manufacturing processes, demand patterns, or resource requirements. This simplifies planning, reduces complexity, and supports strategic decision-making. CPIM focuses on how proper grouping improves forecasting accuracy, capacity planning, and scenario development. Understanding grouping criteria, benefits, and implications for material and capacity planning is essential. A solid product-family structure ensures smoother transitions when moving from aggregate plans to detailed master schedules.

3. Time Horizons of Aggregate Plans

Aggregate demand and supply plans operate in the medium term, bridging long-term strategic planning and short-term execution. Time horizons typically range from 6 to 18

months, with monthly or quarterly time buckets. The exam tests your ability to differentiate between long-term resource planning, medium-term aggregate planning, and short-term MPS/MRP processes. Understanding the purpose of each horizon helps explain how decisions such as hiring, overtime, subcontracting, and inventory changes are timed and evaluated at the aggregate level.

4. Demand Forecasting for Aggregate Planning

Aggregate demand planning integrates multiple inputs: statistical forecasts, sales intelligence, seasonality, and promotions. At the product-family level, forecasting smooths variability and improves reliability. CPIM emphasizes forecast techniques, accuracy metrics, demand patterns, and factors influencing aggregate demand assumptions. Understanding how demand uncertainty affects capacity, inventory, and cost trade-offs is critical. The exam also covers rolling forecasts, demand reconciliation, and identifying the most likely demand scenario to support aggregate planning decisions.

5. Aggregate Supply Planning

Aggregate supply planning determines the capacity and production levels required to meet the aggregated demand. It involves analyzing available resources, production rates, lead times, labor capacity, machine availability, and supplier capabilities. CPIM tests your ability to match supply options with demand requirements while minimizing cost and maintaining service. The concept includes evaluating alternatives such as adjusting workforce size, changing production rates, or modifying inventory levels to meet demand responsibly and sustainably.

6. Demand–Supply Balancing

Balancing demand and supply is the central outcome of aggregate planning. It requires evaluating capacity constraints, forecast accuracy, workforce capabilities, and inventory strategies. CPIM explores both demand-shaping (pricing, promotions, sales prioritization) and supply-shaping (overtime, subcontracting, hiring, inventory adjustments) methods. Mastery involves knowing how to select the best balancing strategy based on cost, service, and operational feasibility. This prevents shortages, excess inventory, and unstable production schedules.

7. Aggregate Planning Strategies (Level, Chase, Hybrid)

Organizations choose from three main aggregate planning strategies:

- **Level strategy:** Maintain constant output and workforce.
- **Chase strategy:** Adjust workforce or production to match demand.
- **Hybrid strategy:** Combine aspects of both.
Understanding cost implications, stability considerations, and suitability based on demand patterns is important for CPIM. Companies select strategies depending on labor flexibility, inventory policies, product characteristics, and customer service expectations. Questions frequently test your ability to match the right strategy with a given scenario.

8. Workforce Planning and Capacity Adjustment

Aggregate planning includes decisions about hiring, layoffs, overtime, cross-training, and shift structures. Workforce planning helps organizations balance demand without excessive cost or operational disruption. CPIM emphasizes

understanding capacity profiles, productivity assumptions, labor constraints, and workforce flexibility. Knowing how workforce decisions affect aggregate supply, cost structures, and stability is critical. Workforce planning is closely linked to production strategy selection and long-term resource planning.

9. Inventory Policy in Aggregate Planning

Inventory acts as a buffer to absorb fluctuations in demand or supply constraints. Aggregate plans must specify inventory targets, safety stock policies, and desired ending inventory levels. CPIM emphasizes understanding how inventory influences cost, service level, and capacity utilization decisions. Inventory strategy is integral to balancing plans, especially under a level production strategy. Mastery includes the relationship between aggregate plans and the organization's overall inventory management objectives.

10. Subcontracting and Outsourcing

Organizations may use subcontracting or outsourcing to address temporary capacity shortages or reduce operational burden. These options help meet demand spikes without major workforce or equipment changes. CPIM requires understanding criteria for subcontracting decisions, cost implications, risks, lead-time concerns, and quality considerations. Subcontracting serves as a key mechanism within aggregate supply planning, especially in hybrid strategies where flexibility is needed without increasing fixed resources.

11. Aggregate Production Planning Costs

Understanding cost categories is vital: regular time, overtime, hiring, layoffs, training, inventory holding, backorders, and subcontracting costs. Aggregate planning seeks to minimize these costs while meeting service-level requirements. CPIM frequently tests how different planning decisions affect the total cost. Knowing cost trade-offs helps evaluate alternative scenarios and select the best plan based on operational and financial objectives.

12. Rough-Cut Capacity Planning (RCCP)

Rough-Cut Capacity Planning ensures the aggregate production plan is feasible at the critical resource level. RCCP analyzes bottleneck resources, labor hours, machine hours, and critical work centers. CPIM focuses on capacity profiles, available capacity calculations, and identifying overload or underload conditions. RCCP acts as a screening mechanism before converting aggregate plans into detailed master schedules. Understanding this link is essential for exam performance.

13. Resource Planning vs. Aggregate Planning

Resource planning is long-term (years) and focuses on major investments: equipment, facilities, technology, and workforce structure. Aggregate planning is medium-term and focuses on adjusting existing resources. The exam tests your understanding of how these two planning levels align. Resource planning informs aggregate planning by defining capacity boundaries, while aggregate planning guides master scheduling by defining feasible production rates.

14. Role of S&OP in Aggregate Planning

S&OP provides the governance and cross-functional alignment required to develop and approve aggregate demand and supply plans. Aggregate plans form the tactical output of the S&OP cycle, ensuring consensus on demand, inventory, capacity, and financial targets. CPIM emphasizes the importance of using a single set of numbers, executive approval, and scenario evaluation. Understanding this linkage helps explain how aggregate planning supports organizational strategy.

15. Aggregate-Level Demand Management

Demand management at the aggregate level includes forecasting, demand shaping, order management policies, and prioritization. CPIM requires understanding how demand variability impacts aggregate supply decisions. Techniques such as pricing changes, promotions, and lead-time management may influence demand to match supply constraints. Mastering these concepts is essential because they directly impact cost, service, and stability.

16. Material Planning Considerations

Although aggregate planning operates at a product-family level, it has implications for material availability. Significant aggregate-level decisions—such as ramping up production—trigger increased material requirements. CPIM expects you to understand lead times, supplier capacity, and material constraints. Aggregate plans must be realistic not only from a capacity perspective but also from a materials point of view.

17. Backlog and Backorder Management

Backlogs and backorders may be permitted as part of the aggregate plan, especially under a level strategy. CPIM emphasizes understanding the financial and service-level implications of backlog acceptance. Backlogs influence customer satisfaction, cost, capacity utilization, and future workload. Knowing how to manage backlog levels helps organizations balance the trade-off between operational stability and customer service.

18. Scenario Evaluation in Aggregate Planning

Scenario planning assesses alternative production, inventory, and workforce options under different demand and supply assumptions. CPIM focuses on evaluating cost, feasibility, and service implications for each scenario. You must understand how what-if analysis helps organizations plan for uncertainty, identify risks, and select optimal strategies. Scenario evaluation is central to decision-making at the aggregate level.

19. Link between Aggregate Plan and Master Production Schedule (MPS)

The aggregate plan defines the feasible production rates and capacity constraints that guide the MPS. It ensures the detailed schedule stays realistic and aligned with cross-functional agreements. CPIM tests your understanding of how aggregate plans create the boundaries within which MPS operates. Proper linkage ensures stability in production, fewer changes, and better execution.

20. Performance Metrics for Aggregate Planning

Evaluating aggregate plan performance requires monitoring metrics such as service levels, inventory turns, capacity utilization, schedule stability, workforce stability, and cost variance. KPIs help organizations identify issues early, track improvement, and maintain alignment with financial and operational objectives. CPIM frequently tests the ability to connect metrics with plan quality and decision-making effectiveness.

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39. Measuring Supplier Innovation
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44. Green Procurement and Circular Economy
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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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