

SOP: Master Production Schedule (MPS) Creation Steps

This SOP details the **master production schedule (MPS) creation steps**, covering demand forecasting, capacity planning, resource allocation, production batch sizing, timeline establishment, inventory level coordination, and schedule validation. The objective is to develop an accurate and efficient MPS that aligns production activities with customer demand while optimizing resource utilization and minimizing lead times.

Scope

This procedure applies to the production planning department and other key stakeholders involved in the creation and review of the Master Production Schedule.

Responsibilities

- **Production Planner:** Oversees schedule creation and coordination.
- **Sales & Marketing:** Provides demand data and customer insights.
- **Inventory Manager:** Assesses material and finished goods inventory levels.
- **Operations Manager:** Confirms capacity and resource availability.
- **Quality Assurance:** Ensures compliance with standards throughout scheduling.

Procedure

1. **Demand Forecasting**
 - Gather historical sales data, customer orders, and sales forecasts.
 - Analyze trends, seasonality, and market intelligence to estimate future demand.
 - Validate forecast accuracy by reviewing with relevant departments.
2. **Capacity Planning**
 - Assess current production line capacities, workforce availability, and equipment effectiveness.
 - Identify bottlenecks and constraints affecting output.
 - Match forecasted demand to available capacity, highlighting variances.
3. **Resource Allocation**
 - Allocate machines, labor, and materials based on demand and capacity assessment.
 - Ensure critical resources are balanced across different products or product families.
4. **Production Batch Sizing**
 - Determine optimal batch sizes by considering economic order quantity (EOQ), setup times, and inventory holding costs.
 - Coordinate batch sizes with production flow and lead time requirements.
5. **Timeline Establishment**
 - Develop a timeline for production runs, taking into account lead times, changeovers, and delivery deadlines.
 - Sequence order of production batches to optimize throughput and minimize idle time.
6. **Inventory Level Coordination**
 - Verify raw material and finished goods inventory status.
 - Schedule replenishment orders for materials as needed to meet production demand.
 - Integrate safety stock requirements and supply chain considerations.
7. **Schedule Validation and Approval**
 - Review the draft MPS with stakeholder teams (production, inventory, sales, quality).
 - Validate feasibility against capacity, material availability, and customer priorities.
 - Adjust as necessary and obtain formal approval before release.
8. **MPS Communication & Execution**
 - Publish the finalized MPS to all relevant departments.
 - Ensure understanding of schedule, key milestones, and responsibilities.
 - Monitor ongoing performance and update the schedule as required by unforeseen demand or supply changes.

Documentation & Records

- Demand forecasts and associated data sources
- Capacity assessment reports
- Resource allocation matrices
- MPS draft and final versions
- Approval records

Revision History

Version	Date	Description	Author
1.0	2024-06-20	Initial SOP creation	Production Planning Team