RAS_601_20200409
Day-6
Unit-3 Lecture-4

Production

Production is related to the conversion of raw materials into finished goods. This conversion process involves a number of steps such as deciding what to produce, how to produce, when to produce, etc. These decisions are a part, of production planning.

Production planning and control is a predetermined process that plans, manages and controls the allocation of human resource, raw material, and machinery to achieve maximum efficiency.

Production planning is a sequence of steps that empower manufacturers to work smarter and optimize their production process in the best possible manner. This helps manufacturers work smarter by efficiently managing internal resources to meet customer demand.

Objectives of Production Planning and Control (PPC)

- Arranging production schedules according to the needs of marketing demands.
- Ensure cost-efficient production process
- Promote timely delivery of goods
- Minimize production time
- Improve customer satisfaction
- Coordinate with departments about production, to ensure things are on the same page
- Ensure the right man is assigned the right work.
- To operate plant at planned level of efficiency.

Benefits of production planning and control

- It ensures that optimum utilization of production capacity is achieved, by proper scheduling of the machine items which reduces the idle time as well as over use.
- It ensures that inventory level are maintained at optimum levels at all time, i.e. there is no over-stocking or under-stocking.
- It also ensures that production time is kept at optimum level and thereby increasing the turnover time.
- Since it overlooks all aspects of production, quality of final product is always maintained.

Production Planning

Production planning is one part of production planning and control dealing with basic concepts of what to produce, when to produce, how much to produce, etc. It involves taking a long-term view at overall production planning. Therefore, objectives of production planning are as follows:

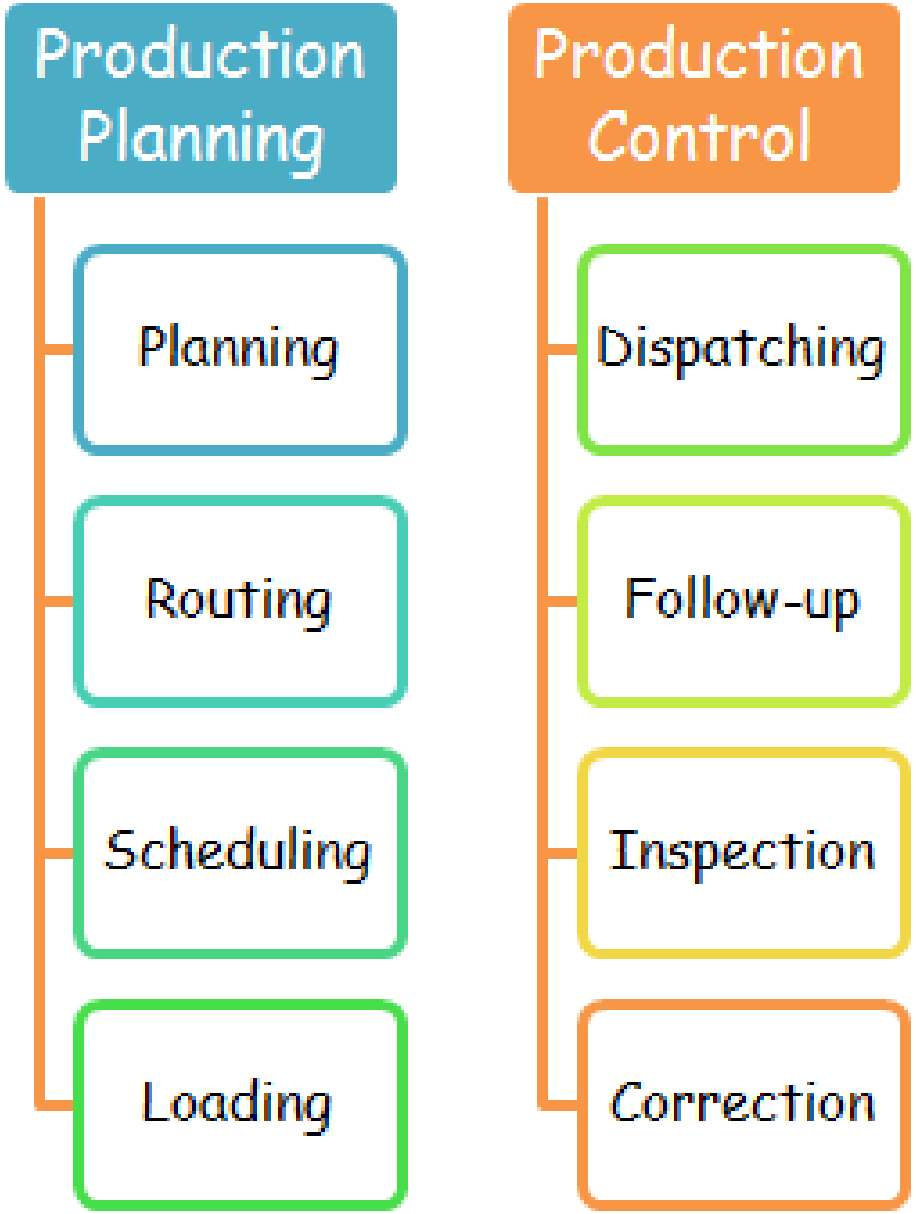
- To ensure right quantity and quality of raw material, equipment, etc. are available during times of production.
- To ensure capacity utilization is in tune with forecast demand at all the time.
- A well thought production planning ensures that overall production process is streamlined providing following benefits:
- Organization can deliver a product in a timely and regular manner.
- Supplier are informed will in advance for the requirement of raw materials.
- It reduces investment in inventory.
- It reduces overall production cost by driving in efficiency.

Production planning takes care of two basic strategies' product planning and process planning. Production planning is done at three different time dependent levels i.e. long-range planning dealing with facility planning, capital investment, location planning, etc.; medium-range planning deals with demand forecast and capacity planning and lastly short term planning dealing with day to day operations.

Production Control

Production control looks to utilize different type of control techniques to achieve optimum performance out of the production system as to achieve overall production planning targets. Therefore, objectives of production control are as follows:

- Regulate inventory management
- Organize the production schedules
- Optimum utilization of resources and production process
- The advantages of robust production control are as follows:
- Ensure a smooth flow of all production processes
- Ensure production cost savings thereby improving the bottom line
- Control wastage of resources
- It maintains standard of quality through the production life cycle.
- Production control cannot be same across all the organization. Production control is dependent upon the following factors:
- Nature of production(job oriented, service oriented, etc.)
- Nature of operation
- Size of operation
- Production planning and control are essential for customer delight and overall success of an organization.


Production Planning
Planning
Routing
Scheduling
Loading
Production Control
Dispatching
Follow-up
Inspection
Correction

Routing

Routing determines the path from which the raw materials flow within the factory. Once, the sequence is followed, raw materials are transformed into finished goods.

- Setting up time for every step is important to measure the overall duration of the production process. Simply saying, routing in manufacturing states the sequence of work and operations. Routing throws light on the quantity and quality of materials to be used, resources involved (men, machine, and material), the series of operations and place of production.
- Routing manages “How”, “What”, “How much”, & “Where” to produce in a manufacturing company. It systematizes the process and nurtures optimum utilization of resources to get the best results.

Scheduling

Scheduling is the second step that emphasizes on "When" the operation will be completed. It aims to make the most of the time given for completion of the operation.

- As per Kimball and Kimball, scheduling is defined as –
- *"The determination of the time that should be required to perform the entire series as routed, making allowance for all factors concerned."*
- Organizations use different types of schedules to manage the time element. These include Master Schedule, Operation Schedule, Daily Schedule and more.

Dispatching

The third step ensures that operations are done successfully and everything is loaded on the software. Dispatching includes the release of orders, in accordance with the scheduled charts.

- Issue of materials or fixtures that are important for the production
- Issue of orders or drawings for initiating the work
- Maintain the records from start to end
- Initiate the control procedure
- Cascade the work from one process to another

TYPES:

- Centralised despatching section from where orders and instructions are directly issued to workmen and machines. This system of despatching ensures greater control and flexibility in its operation.
- Decentralised despatching: This is just the reverse of the first method. Under this system, work orders are sent to the foreman of each department. It is the duty of the departmental head to adjust the process and sequence of work in accordance with the requirements of the department.

Follow-up

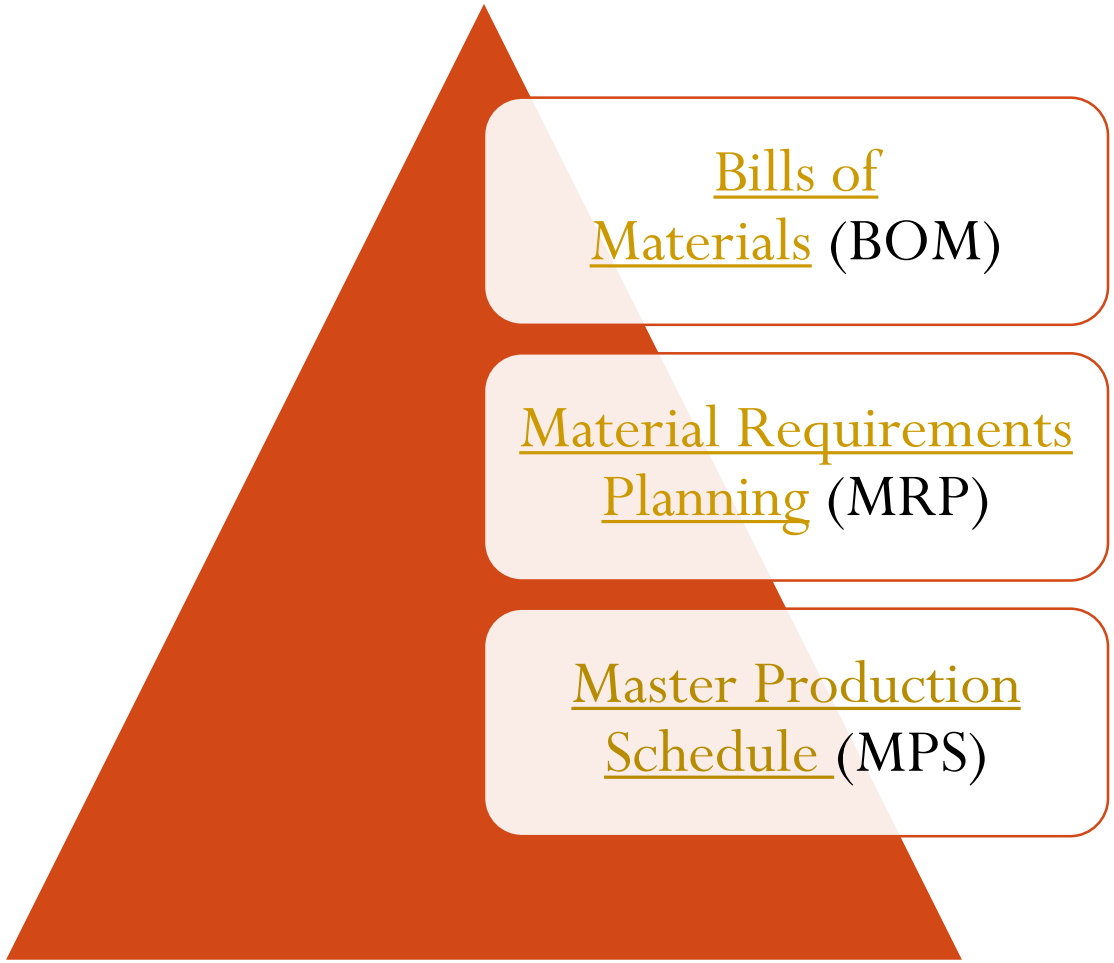
- Also known as expediting, follow-up is the final step that finds faults or defects, bottlenecks and loopholes in the entire production process. In this step, the team measures the actual performance from start till the end and then compares it with the expected one.
- Expediters or stock chasers are responsible for performing follow-up process. It is quite obvious that any of the processes may undergo break-downs or machine failure. Follow-up promotes smooth production by eliminating these defects.

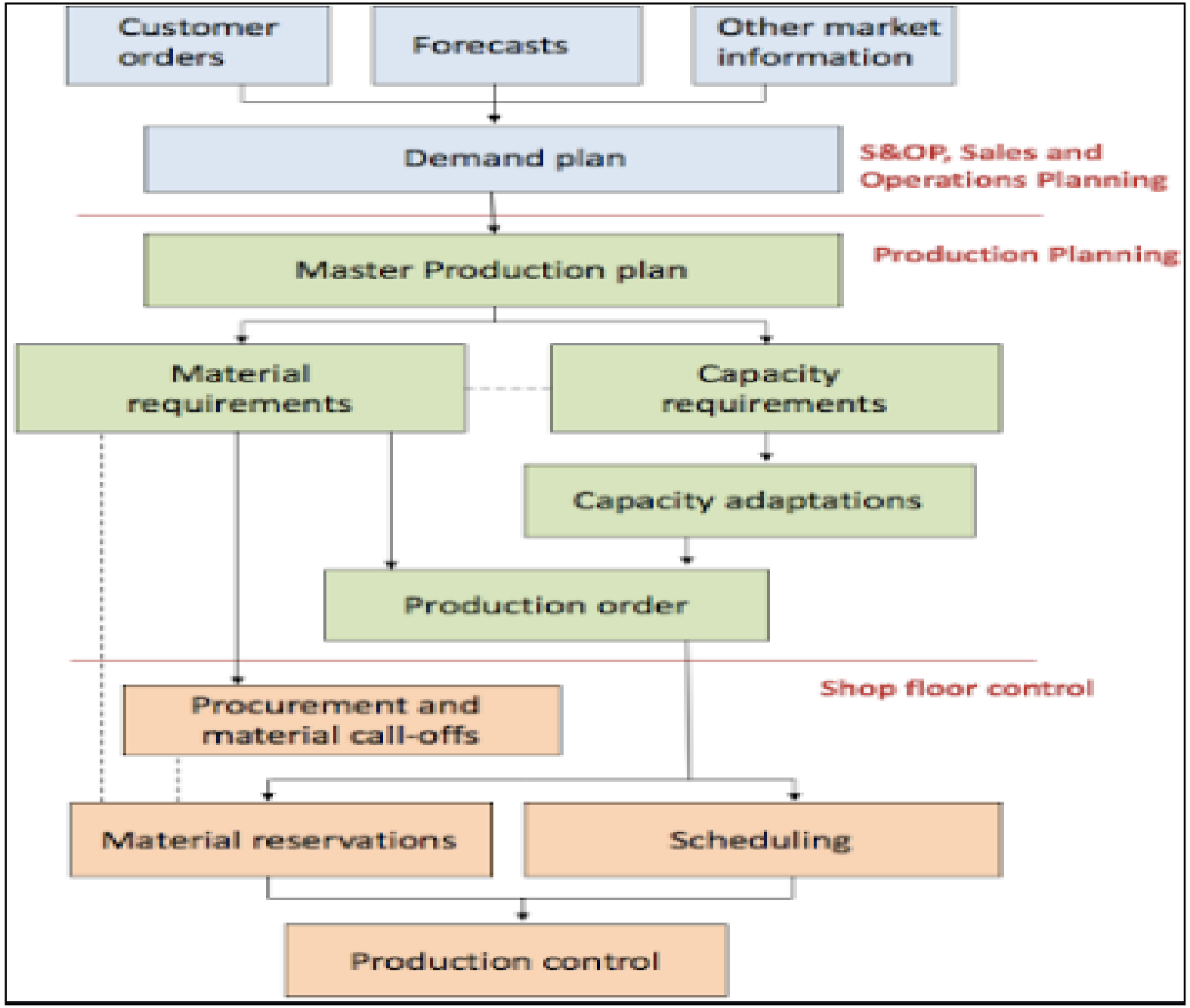
Master Production Schedule

A **master production schedule** (MPS) is a plan for individual commodities to be produced in each time period such as **production**, staffing, inventory, etc. It is usually linked to **manufacturing** where the plan indicates when and how much of each product will be demanded.

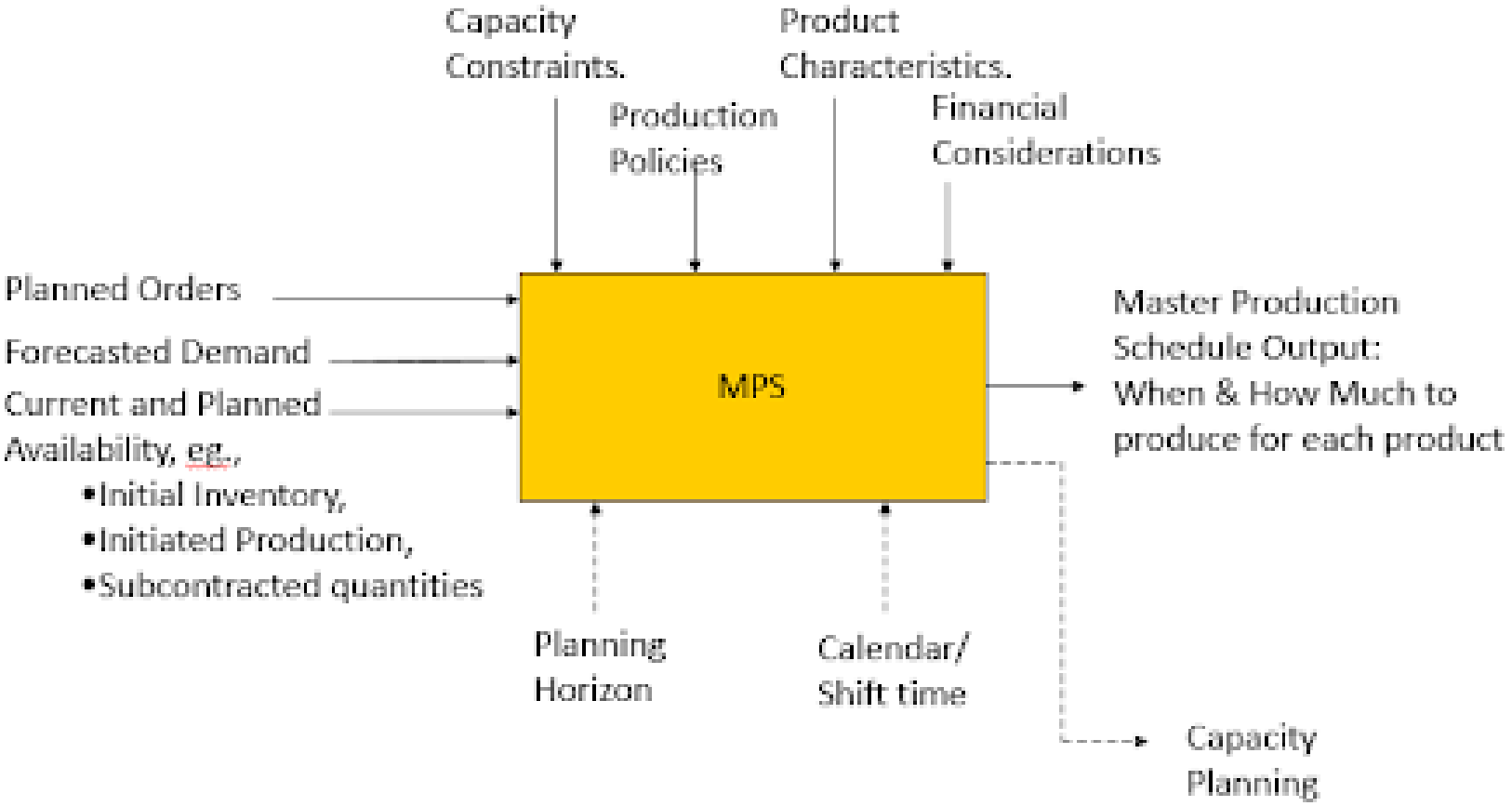
- It decides what products are manufactured and when. The required raw materials are then identified by the finished goods BOM, the data from which is then integrated with current inventory data to create the MRP for raw materials procurement.
- It forms the basis of communication between sales and manufacturing.
- The MPS is not a rigid plan. MPS is a dynamic plan and can be changed when there are changes in demand or capacity.

3 legs of the Inventory Planning Tripod.




Customer orders
Forecasts
Other market information
Demand plan
S&OP, Sales and Operations Planning
Master Production plan
Production Planning
Material requirements
Capacity requirements
Capacity adaptations
Production order
Shop floor control
Procurement and material call-offs
Material reservations
Scheduling
Production control

The Master Production Scheduling



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