PRODUCTION PLANNING

Shivam Bansal
Mechanical Department
Dronacharya College of Engineering
Khentawas, Farukhnagar,Gurgaon
Email-shivamb990@gmail.com

Yogesh Vashiath
Mechanical Department
Dronacharya College of Engineering
Khentawas, Farukhnagar,Gurgaon
Email-yogeshvashiath.vash40@gmail.com

Ujjwal Batra
Mechanical Department
Dronacharya College of Engineering
Khentawas, Farukhnagar,Gurgaon
Email-ujjwal28@gmail.com

INTRODUCTION

Production planning is he planning of production and manufacturing processes in a company or industry. It utilizes theresource allocation of activities of employees, materials and production capacity, in order to serve different customers.

Different types of production methods, such as single item manufacturing, batch production, mass production,continuous production etc. have their own type of production planning. Production planning can be combined with production control into production planning and control, or it can be combined and or integrated into enterprise resource planning.

Production planning is used in companies in several different industries, including agriculture, industry, amusement industry, etc.

The administrative process that takes place within a manufacturing business and which involves making sure that sufficient raw materials, staff and other necessary items are procured and ready to create finished products according to the schedule specified. A typical large manufacturing business engaging in production planning will aim to maximize profitability while maintaining a satisfied consumer base.

FACTORS OF A PRODUCTION PLAN

1. **Forecast market expectations**
   To plan effectively you will need to estimate potential sales with some reliability. Most businesses don't have firm sales or service figures. However, they can forecast sales based on historical information, market trends and/or established orders.

2. **Inventory control**
   Reliable inventory levels feeding the pipeline has to be established and a sound inventory system should be in place.

3. **Availability of equipment and human resources**
   Also known as open time, this is the period of time allowed between processes so that all orders flow within your production line or service. Production planning helps you manage open time, ensuring it is well-utilized, while being careful not to create delays. Planning should maximize your operational capacity but not exceed it. It's also wise not to plan for full capacity and leave room for the unexpected priorities and changes that may arise.

4. **Standardized steps and time**
   Typically, the most efficient means to determine your production steps is to map processes in the order that they happen and then incorporate the average time it took to complete the work. Remember that all steps don't happen in sequence and that many may occur at the same time.

5. **Risk factors**
   Evaluate these by collecting historical information on similar work experiences, detailing the actual time, materials and failures encountered. Where risks are significant, you should conduct a failure mode effect analysis method (FMEA) and ensure that controls are put in place to eliminate or minimize them. This method allows you to study and determine ways to diminish potential problems within your business operations. This type of analysis is more common in manufacturing and assembly businesses.

Production control

There is lot of disagreement between different experts of management regarding the meaning of production control. The term itself appears to be quite confusing and misleading. In literary sense control means action to check/regulate.

In the opinion of Mary Gushing Niles, "Control is maintaining a balance in activities towards a goal or set of goals evolved during production planning." Planning only outlines some course of action whereas control is an execution process involving standardisation, evaluation and corrective functions.

According to Fayol, "Control consists in verifying whether everything occurs in conformity with the adopted plan and established principles. The objective of control is to point out weaknesses and shortcomings, if any, in order to rectify them and prevent recurrence. It operates on everything viz. material, equipment, men, operations etc. For control to be effective, it must be applied within reasonable time and be followed-up sanctions."

Thus production control is some scientific procedure to regulate an orderly flow of material and co-ordinate various production operations to accomplish the objective of producing desired item. In right quantity of desired quality at the required time by the best and the cheapest method i.e., to attain highest efficiency in production.

FUNCTIONS OF PRODUCTION CONTROL

(i) Provision of raw material, equipment, machines and labour.

(ii) To organise production schedule in conformity with the demand forecast.

(iii) The resources are used in the best possible manner in such a way that the cost of production is minimised and delivery date is maintained.

(iv) Determination of economic production runs with a view to reduce setup costs.

(v) Proper co-ordination of the operations of various sections/departments responsible for production.

(vi) To ensure regular and timely supply of raw material at the desired place and of prescribed quality and quantity to avoid delays in production.

(vii) To perform inspection of semi-finished and finished goods and use quality control techniques to ascertain that the produced items are of required specifications.

(viii) It is also responsible for product design and development.

STRATEGIES USED IN PRODUCTION PLANNING & SCHEDULING

1. **Chase strategy**
   Companies that use the chase strategy, or demand matching strategy, produce only enough goods to meet or exactly match the demand for goods. Think of this strategy in terms of a restaurant, which produces meals only when a customer orders, therefore matching the actual production with customer demand. The chase strategy has several advantages—it keeps inventories low, which frees up cash that otherwise can be used to buy raw materials or components, and reduces inventory carrying costs that are associated with holding inventory in stock. Cost of capital, warehousing, depreciation, insurance, taxes, obsolescence and shrinkage are all inventory carrying costs.

2. **Level production**
   In a manufacturing company that uses a level production strategy, the company continuously produces goods equal to the average demand for the goods. Scheduling consistently arranges the same quantity of goods for production based on the total demand for the goods. So, if for three months a company wants to produce 20,000 units of a certain item and there are a total of 56 working days, it can level production to 358 units per day.

3. **Make-to-stock**
   In the make-to-stock environment, goods are produced before customers place orders. The retail environment is an example of make-to-stock as goods are produced and put into inventory at the retailer’s location. The make-to-stock strategy typically allows manufacturers to

produce goods in long production runs, taking advantage of production efficiencies. Because the make-to-stock environment produces goods on a consistent basis, a master production schedule determines the exact number of units to produce for each production run.

4. **Make-to-order**
   Companies that use a make-to-order strategy produce goods after receiving an order from the customer. Most often a company that uses the make-to-order strategy produces one-of-a-kind goods. Examples include custom-tailored clothing, custom machinery and some fine jewelry.

5. **Assemble-to-order**
   Certain fast-food restaurants use an assemble-to-order strategy. A customer walks in, places an order for a hamburger “his way” and the hamburger gets assembled from a stock selection of ingredients. This strategy forces the restaurant to carry enough ingredients to make every hamburger combination a customer might request. Automobile manufacturers also use the assemble-to-order strategy. A customer can pick and choose from many features including interior fabrics, exterior paints, and seat, engine, wheel or tire options. Once the dealer places the customer’s order, the manufacturing plant assembles the standard component parts to the customer’s exact specifications. In this environment the production scheduler uses a final assembly timetable.

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