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Production Planning and Control

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Abstract: Production planning and control is concerned with implementing the plans, i.e. the detailed scheduling of jobs, assigning of workloads to machines (and people), and the actual flow of work through the system. Production is an organized activity of converting raw materials into useful products. Production activity takes place in a wide range of manufacturing and service sectors. Production system requires the optimal utilization of natural resources like men, money, machine, materials and time. Production planning and control coordinate with different departments: such as production, marketing, logistics, warehouse and other departments depending upon the nature of organization. Production planning and control receives data related to orders from marketing departments. Production plan based on marketing and production data is prepared in production planning and control. This production plan provides clear idea about utilization of manufacturing resources for production. Prepared production plan is delivered to production department. Production department manufacture products according to that plan.

Keywords: Objectives of production planning and control, Factors affecting production planning and control, Functions of production planning and control.

I. INTRODUCTION

Production planning and control can be viewed as nervous system of the production operation. This function aims at efficient utilization of material resources, people and facilities in any undertaking through planning, coordinating and controlling the production activities that transform the raw material into finished products or components as a most optimal manner. All the activities in manufacturing or production cycle must be planned, coordinated, organized and controlling to its objectives.

Production planning and control as a department plays a vital role in manufacturing organizations. It is clear from name that it is something about planning. Planning is defined as setting goals. Production planning and control provides different kinds of information to different departments. It provides information about available manufacturing resources to marketing department.

Marketing department receives orders according to that information. Similarly, it coordinates with other departments and provides relevant information.

II. OBJECTIVES OF PRODUCTION, PLANNING AND CONTROL

a) Nature of Inputs

To manufacture a product, different types of inputs are used. The quality of the product depends upon the nature of the inputs are used. Hence the planning is done to determine the nature of various types of inputs which is a complicated process.

b) Quantity of Inputs

To achieve a level of production, determination of quantity of the inputs and their composition is very important. A product can be prepared only when there is an estimate of the required composition of inputs.

c) Proper Coordination

It ensures the proper coordination among the workforce, machines and equipment. This leads to avoidance of wastages and smooth flow of production.

d) Better Control

Production planning is the method of control. For a better control, planning is a precondition. Only then, one can compare the performance and calculate the deviations which lead control of the production.

e) Ensure Uninterrupted Production

The planning of materials ensures the regular supply of raw materials and other components. The regular flow of materials and supplies are helpful in the uninterrupted production.

f) Capacity Utilization

There is a need to use the available resources effectively. It is helpful in bringing down various costs of production.

g) Timely Delivered

If there is good production planning and control, there will be timely production and the finished product will be rushed to the market in time. This also ensures the better relationship with the customers.

III. RESEARCH METHODOLOGY

Secondary data is collected through reference books, research papers, articles, and websites.

IV. FACTORS AFFECTING PRODUCTION PLANNING AND CONTROL

a) Use of Computers

Modern factories are using office automation equipment like PC, punch cards etc. It helps accurate computation of required of men and machine.

b) Seasonal Variations

Demand of certain products is affected by seasons, for instance umbrellas and raincoats during the monsoons and outputs. Production planning and control must take such changes into consideration while planning and control activities of inputs and outputs.

c) Test Marketing

In an aggressive marketing strategy new products are to be test marketed in order to know the trends. This is a short- cycle operation, intermittent in nature and often upsets regular production.

d) After Sales Service

This has become an important parameter for success. In after sales services, many items are returned for repair. These are unscheduled work and also overload the production line.

e) Losses due to Unpredictable Factors

Losses occur due to accidents, fire and theft of production inputs, mainly materials and components. These are unpredictable. Shortage of input due to such factors upset the planned production schedule in time and quantity.

f) Losses due to Predictable Factors

There are losses of inputs, due to natural engineering phenomena like production losses and changes in consumption of materials and occurrence of defectives.

g) Production of Order

There are occasions when last minute prioritization of existing orders due to external pressure takes place. These changes in priority are often decided by sufficiently high level of management.

h) Design Changes

Design changes are issued by R & D and the engineering department. This will necessarily force production planning control change the input materials and process.

i) Rejection and Replacement

There are occasions when sub-assemblies or finished goods are rejected during stage or final inspection. Production planning and control must cater for contingent plans to take care of rework without affecting scheduled quality.

V. FUNCTIONS OF PRODUCTION PLANNING AND CONTROL

- Production Planning Functions:-

a) Estimating

Estimating involves deciding the quantity of products to be produced and cost involved in it on the basis of sales forecast. Estimating manpower, machine capacity and materials required to meet the planned production targets are the key activities before budgeting for resources.

b) Routing

Routing means, determination of path or route on which manufacturing operations will travel, establishing the sequence of operations to be followed in manufacturing a particular product. This route path is determined in advance. Routing information is provided by product or process engineering function and it is useful to prepare machine loading charts and schedules.

c) Scheduling

Scheduling involves fixing priorities for each job and determines the starting time and finishing time for each operation, the starting dates and finishing dates for each part, sub assembly and final assembly. Scheduling lays down a time table for production, indicating the total time required for the manufacture of a product and also the time required for carrying out the operation for each part on each machine or equipment.

d) Loading

Facility loading means loading of facility or work center and deciding which jobs to be assigned to which work center or machine. Loading is the process of converting operation schedules into practice. Loading ensures maximum possible utilization of productive facilities and avoids bottleneck in production.

- Production Control Functions:-

a) Dispatching

The functions of routing and scheduling as discussed above are paper work only. No actual production has yet been started. Dispatching is the part of production control that translates the paper work into actual production in accordance with the details

worked out under routing and scheduling functions. Dispatching deals with setting the production activities in motion through the release of orders and instructions in accordance with the previously planned timings as embodied in production schedules.

b) Expediting/ Follow-up/ Progressing

Expediting or progressing ensures that, the work is carried out as per the plan and delivery schedules are met. Expediting includes activities such as status reporting, attending to bottlenecks or holdups in production removing the same, controlling variations or deviations from planned performance levels, following up and monitoring progress of work through all stages of production, coordinating with purchase, stores, tool room and maintenance departments and modifying the production plans and re-plan if necessary.

c) Inspection

Inspection is the process of examining an object for identification or checking it for verification of quality and quantity in any of its characteristics. It is an important tool for ascertain and controlling the quality of a product. Inspection is an appraisal activity that compares goods or services to a standard.

VI. CONCLUSION

Production planning and control provides different kind of information to different departments. It provides information about available manufacturing resources to marketing department. Marketing department receives orders according to that information. Employment in production planning and control depends upon education and experience. Working in production planning and control is challenging task. It requires analytical skills and understanding of manufacturing process. Production planning and control is an essential part to run any business in the market because it can affect the quality of the product.

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