



# A Comprehensive Study on Production Planning and Control

Reshma Bandekar<sup>1</sup>, Aniket Mayekar<sup>2</sup>, D.NRaut<sup>3</sup>, P.M Ravanan<sup>4</sup>  
M.Tech Student (Project Management)<sup>1,2</sup>, HOD & Associate Professor<sup>3,4</sup>  
Department of Production Engineering  
VJTI Mumbai, India

## Abstract:

Production planning and control (PPC) is about executing the plans like the scheduling of production of jobs, planning for allocation of workloads to machines (and people), and controlling the actual flow of work through the system or production line. An activity of converting raw materials into finished goods is called Production. A wide range of manufacturing and service sectors undertakes the production activity. Production system requires the optimal utilization of resources like men, money, machine, materials and time. PPC coordinate with different internal or external departments depending upon the nature of organization. PPC receives data related to orders from marketing departments and coordinate with logistics, engineering, stores & business to plan the production. Production plan document based on marketing and production data is prepared in production planning and control. Planning of production provides clear idea about utilization of manufacturing resources for production. Production department manufacture products according to that plan. This paper contributes to some detailed aspects of Production Planning and Control in terms of objectives, factors and functions of PPC in any small and medium sized manufacturing firm.

**Keywords:** Production planning and control (PPC), Objectives, Aspects affected by production planning and control, Role of production planning and control.

## 1. INTRODUCTION

Production planning and control is real core for the production operation. This function aims at efficient utilization of material resources, people and facilities by planning, monitoring and controlling the production activities that transform the raw material into finished products. 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. 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. Consequently, it coordinates with other departments and provides relevant information.

## 2. OBJECTIVES OF PPC

- 1) Various types of inputs required to manufacture a product. The quality of the product depends upon the nature of the inputs are used. Therefore, the planning is done to determine the nature of various types of inputs which is a complicated.
- 2) It ensures the proper coordination among the workforce, machines and equipment. This leads to avoidance of wastages and smooth flow of production.
- 3) 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.
- 4) 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.

- 5) Production planning is the method of control. For a better control, planning is a precondition. Then Only, one can compare the performance and calculate the deviations which lead control of the production.
- 6) There is a need to use the available resources effectively. It is helpful in bringing down various costs of production.
- 7) If production planning and control is done proper, there will be timely production and time to market for finished goods will be faster. It also ensures the better relationship with the customers and market segment.

## 3. ASPECTS AFFECTING PRODUCTION PLANNING AND CONTROL

- a) Technology: Nowadays, Companies are using office automation equipment like PC, punch cards, CCTV camera etc. It ensures accurate computation of required of resources (men, machines & materials).
- b) Demand: Demand of certain products is affected by seasons, for example umbrellas and raincoats during the monsoons, sweaters & jackets during winters. Production planning and control must take such changes into consideration while planning and control activities of inputs and outputs.
- c) Testing: New products are to be test marketed to capture the trends of consumption, services in Market. This leads to change controls on production planning & alignment of existing or new machines to caters the changes.
- d) Service: This is key factor for success. In after sales services, many items are returned for repair. These are unscheduled work to be managed on production line to avoid overloading.

- e) Production Orders: Due to some external factors, prioritization of existing orders takes place at end moments. These changes in priority are often decided by top management.
- f) Change in Design: R&D Department floats out changes in design for the products or system which makes production planning control change the input materials and process.
- g) Quality: When semi-finished or finished products are rejected during stage or final inspection. PPC must develop contingency plans to take care of rework without affecting scheduled quality.

#### 4. ROLE OF PRODUCTION PLANNING AND CONTROL

- a) Forecast the Quantity of products to be produced is based on future & past trends which are provided by Sales Department.
- b) Estimate the manpower, machine capacity and materials required to meet the planned production targets.
- c) Design the sequence or flow of the process on which manufacturing operations will take place to manufacture a product. This route path is pre-determined. Routing also helps to prepare machine loading charts and schedules.
- d) Scheduling involves planning & prioritizing each job, determining the start and finish time for each operation, the start and finish dates for each part, sub assembly and final assembly. Scheduling lays down a checklist for production, consisting the time required for carrying out the operation for each part on each machine or equipment.
- e) Loading of jobs on system and assigning it to work station. It ensures maximum possible utilization of man, machines & materials and avoids bottleneck in production.
- f) Dispatching is the part of production control that translates the paper work into actual production. Dispatching deals with setting the production activities in motion through the release of orders as per production schedules.
- g) Expediting ensures the schedules are aligned and met. It also ensures work is carried out as per the plan. Expediting also includes production tracking, status reporting, attending to bottlenecks or constraints 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 needed.
- h) Inspection is the process of examining and verification of quality and quantity of the product. Inspection is an appraisal activity to benchmark the goods or services to a standard.

#### 5. CONCLUSION

Production planning and control deals with vast amount of information as input or output to various departments within organization. It provides information of availability of manufacturing resources to marketing department. Marketing department takes the orders from customers & feeds the information to production planning and control department. There is a challenge at every stages & functions of production planning and control. Analytical understanding of manufacturing process is very important to function in PPC Department.

Production planning and control is an essential part to run any business operations since it is the only department which makes money & a factor of determining success. Timely delivery of high-quality product with minimum cost is defined only by PPC in any manufacturing business.

#### 6. REFERENCES

- [1].DEEPAK SHARMA, DEEPA SHARMA, "Production Planning and Control" IJSRET, Vol 3, Issue 3, June 2014
- [2].PHILIP KOTLER, KEVIN LANE KELLER, ABRAHAM KOSHY, MITHILESHWAR JHA, "Marketing Management" Pearson, 13th Edition, 2009.
- [3].GRUBBSTROM, R.W. & TANG, O.: "An overview of input-output analysis applied to production – inventory systems", Economic Systems and Research, 12(1), pp.3-25, 2000.
- [4].DR. T.N CHHABRA, "Communication for Management" Sun India Publications, Present Edition 2009-10.
- [5].ROGER D.BLACKWELL, PAUL W.MINIARD, JAMES F.ENGEL, "Consumer Behavior" Ch.09ppt, 10th Edition
- [6].C.N SONTAKKI, "Marketing Management" Kalyani Publishers, Second Edition 2010.
- [7].K.ASWATHAPPA, K.SHRIDHARA BHAT, "Production and Operation Management" Himalaya Publishing House Pvt. Ltd, Second Revised Edition 2009.
- [8].BONNEY, M.C.; HEAD, M.A.; ZHANG, Z. & BARSON, R.J.: "A framework for Production Management". Proceedings of POM 99 Conference, Charleston SC, March 20-23, 1999b.
- [9].DR. T.N CHHABRA, DR. S.K GROVER, "Marketing Management" Dhanpat Rai & Co. (Pvt.) Ltd, Fourth Revised Edition 2010.
- [10].RAJAN SAXENA, "Marketing Management" Tata McGraw-Hill Publishing Company Limited, 3rd Edition 2008.
- [11].DEEPAK SHARMA, "Consumer Knowledge", IJAERT, Volume 1 Issue 1, pp- 12-14, December 2013
- [12].DEEPAK SHARMA, "Business Communication", IJAERT, Volume 2 Issue 1, pp- 7-10, April 2014.