The Main Principles of Production Management

Kudratov R. T, Ph.D
Associate Professor, Independent Researcher of Samarkand Institute of Economics and Service

Abstract: The fundamental principles of the effective functioning of the modern production management system are identified and analyzed. The application of the principles contributing to the achievement of the set goals of the activities of economic entities has been studied. The quality of decisions made at enterprises is analyzed.

Keywords: production management, production process, principles of production management.

Modern production is characterized by constantly changing parameters of the external and internal environment, which, in turn, determines the need, firstly, the use of advanced manufacturing technologies, and secondly, the introduction of effective technological processes that reduce the costs of various types of resources, third, improving the quality of products and services.

To ensure the competitiveness of the products manufactured by the enterprise, it is necessary to develop and implement new effective management solutions. At the same time, the quality of the decisions made is largely it depends on knowledge of the principles of effective functioning of the modern production management system, mastering the technology of organization management and the basics of production management.

Various principles of production management are considered in the economic literature [6]. Let’s analyze some of them in more detail.

The first principle concerns science in combination with elements of art. The significance of this principle lies in the fact that it is necessary to use data and conclusions of various sciences in the manager's activities with simultaneous improvisation, search for individual approaches to the current situation, to the personnel of the enterprise. This, in turn, implies mastery of the art of interpersonal communication, the ability to find a way out of any situation.

The second principle is purposefulness. This principle presupposes the orientation of activities to solve specific problems, its implementation in order to achieve a specific goal.

The third principle sounds like functional specialization combined with versatility. The significance of this principle lies in the fact that in addition to applying a universal approach in the management process, it is necessary to take into account the specifics of each management object.

The fourth principle is the consistency of the management process. Certainly, the main elements or stages of which the production process consists should follow each other in a certain order. At the same time, we note that the sequence of managerial actions may be cyclical.

Equally important is the fifth principle, which consists in the common interest of all participants in the production process in achieving their goals. As is known, the implementation of this principle is possible due to the moral and material encouragement of distinguished employees, as well as the maximum involvement of performers in the process of preparing decisions at the earliest stages of work on them.

In addition to the principles considered, it is also necessary to pay special attention to such principles as ensuring compliance with rights, duties and responsibilities; ensuring the
competitiveness of management participants; taking into account the personal characteristics of employees.

It should be noted that in practical activities on the organization of production, priority in using the principles of differentiation or combination should be given to the principle that will ensure the best economic and social characteristics of the production process.

Thus, in-line production, characterized by a high degree of differentiation of the production process, makes it possible to simplify its organization, improve the skills of workers, and increase labor productivity.

At the same time, excessive differentiation increases the fatigue of workers, a large number of operations increases the need for equipment and production areas, leads to excessive costs for moving parts, etc. [7].

The expediency of the concentration of homogeneous works on individual production sites is due to such factors as the commonality of technological methods that determine the need for the use of the same type of equipment; an increase in the volume of output of any types of products; the economic feasibility of concentrating production or performing one type of work. At the same time, the choice of a certain direction of concentration should be based on an analysis of the advantages of each of them [2].

For example, with the concentration of technologically homogeneous works in a division, fewer duplicate equipment is needed, production flexibility increases and it becomes possible to switch to the production of new products, equipment utilization increases.

With the concentration of technologically homogeneous products, the costs of transporting materials and products are reduced, the duration of the production cycle is reduced, the management of the production process is simplified, and the need for production areas is reduced.

The implementation of the principle of specialization consists in assigning to each workplace and each division a certain range of works, operations, parts or products. At the same time, to determine the level of specialization of workplaces, the coefficient of consolidation of operations is used, characterized by the number of detail operations performed at the workplace for a certain period of time.

The nature of specialization of departments and workplaces is largely determined by the volume of production of the same parts. Specialization reaches the highest level with the release of one type of product. The most typical example of highly specialized industries are factories for the production of tractors, televisions, cars. Increasing the range of production reduces the level of specialization.

The implementation of the principle of proportionality in terms of production capacity implies the equality of the capacities of the sites or the coefficients of equipment loading. In this case, the throughput capacity of the procurement workshops corresponds to the need for blanks of mechanical workshops, and the throughput capacity of these workshops corresponds to the needs of the assembly shop for the necessary parts. Therefore, it is necessary to have equipment, space, and labor in each workshop in an amount that ensures the normal operation of all departments of the enterprise. The same ratio of throughput should exist between the main production, on the one hand, and auxiliary and service units, on the other.

Of course, violation of the principle of proportionality leads to disproportions, which can lead to deterioration of the operation of equipment and labor, an increase in the duration of the production cycle.

The principle of proportionality presupposes the simultaneous execution of individual operations or parts of the production process and is based on the provision that parts of the dismembered production process must be combined in time and performed simultaneously. Note that the
principle of parallelism is achieved in the process of processing a certain part on one machine with several tools; simultaneous processing of different parts of the same batch for this operation at several workplaces; simultaneous processing of the same parts for various operations at several workplaces; simultaneous manufacture of various parts of the same product at different workplaces. Compliance with the principle of parallelism leads to a reduction in the duration of the production cycle and the time spent on parts, to saving working time.

Achieving the principle of straightness is possible due to the spatial arrangement of operations and parts of the production process in the order of technological operations. It is also necessary, when designing enterprises, to seek the location of workshops and services in a sequence that provides for a minimum distance between adjacent units. We should strive to ensure that the parts and assembly units of different products have the same or similar sequence of stages and operations of the production process. When implementing the principle of straightness, the problem of optimal arrangement of equipment and workplaces also arises [8].

The rhythmicity of output implies the release of the same or uniformly increasing or decreasing quantity of products in equal time intervals, the performance of equal amounts of work, including in quantity and composition in equal time intervals. The rhythmicity of production means compliance with the rhythmic output of products and the rhythmicity of work.

As a rule, the full implementation of the principle of continuity is carried out on automatic and continuous production lines, including the manufacture or assembly of labor items having operations of the same or a multiple of the cycle of the line duration. Of course, the violation of the principle of continuity leads to interruptions in work, an increase in the duration of the production cycle and the size of the work in progress.

In general, we note that the principles of the organization of production in practice are closely intertwined in each production process. When analyzing special attention should be paid to the paired nature of some of them, their interrelation, the transition to their opposite (for example, differentiation and combination, specialization and universalization). At the same time, the principles of the organization develop unevenly, in certain periods of time, certain principles may acquire secondary importance. Currently, the principle of differentiation is increasingly being replaced by the principle of combination, the application of which allows you to build a production process based on a single flow. At the same time, in the conditions of automation, the importance of the principles of proportionality, continuity, and straightness increases.

It should be particularly noted that the degree of implementation of the principles of the organization of production has a quantitative dimension, which necessitates the development and application in practice of additional forms and methods of analyzing the state of the organization of production and the implementation of its scientific principles. At the same time, it is compliance with the principles of the organization of production processes that contributes to their efficiency.

LIST OF USED LITERATURE

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