Adil Indira,
Doctoral student of Business Administration
Almaty Management University (Almaty, Kazakhstan)

MAIN PRINCIPLES OF ORGANIZATION OF PRODUCTION PROCESS IN MODERN CONDITIONS IN DEVELOPING PRODUCTION ORGANIZATION

Abstract. The article deals with the main aspects of the organizational and economic organization of the production process at the enterprise. Modern production is a complex process of converting raw materials, materials, semi-finished products and other objects of labor into finished products that meet the needs of society. The totality of all the actions of people and tools carried out at the enterprise for the manufacture of specific types of products is called the production process. In Kazakhstan it is very important to improve production processess in order to increase competitive advantage in the developing competitive market conditions.

Keywords: organization of production, principles of production, production systems, production companies.

According to their purpose and role in production, processes are divided into: main, auxiliary and service and non-core facilities. The main are called production processes, during which the production of the main products manufactured by the enterprise is carried out. The timeliness and high-quality implementation of the main production largely depends on how the work of auxiliary and service production is established, which are subordinated to the task of better providing the enterprises of the main production with materials, equipment, etc. In modern conditions, especially in automated production, there is a tendency to integrate the main and service processes[1]. So, in flexible automated complexes, the main, picking, warehouse and transport operations are combined into a single process.

Auxiliary production enterprises are enterprises that, not being directly related to the manufacture of the main product, serve and create conditions for the normal operation of the main production. Auxiliary production enterprises include enterprises that manufacture products consumed by the main production and thereby contribute to the production of final products, ensuring the normal operation of the main production. Service enterprises are organized to serve the main and auxiliary enterprises. A service production process is a labor process, as a result of which no product is created. Service enterprises include enterprises engaged in the supply

[1] Taschereau-Dumouchel M. Cascades and fluctuations in an economy with an endogenous production network. SSRN Electronic Journal. 2019. URL: https://doi.org/10.2139/ssrn.3115854

of materials and spare parts, laboratories, design and research institutes, transport enterprises, etc[1].

The organization of production processes consists in combining people, tools and objects of labor into a single process for the production of material goods, as well as in ensuring a rational combination in space and time of the main, auxiliary and service processes. The spatial combination of elements of the production process and all its varieties is implemented on the basis of the formation of the production structure of the enterprise and its constituent units[2]. In this regard, the most important activities are the choice and justification of the production structure of the enterprise, i.e. determination of the composition and specialization of its constituent units and the establishment of rational relationships between them.

The spatial combination of elements of the production process and all its varieties is implemented on the basis of the formation of the production structure of the enterprise and its constituent units. In this regard, the most important activities are the choice and justification of the production structure of the enterprise, i.e. determination of the composition and specialization of its constituent units and the establishment of rational relationships between them. During the development of the production structure, design calculations are carried out related to determining the composition of the equipment fleet, taking into account its productivity, interchangeability, and the possibility of effective use. Rational planning of divisions, placement of equipment, jobs are also being developed. Organizational conditions are created for the smooth operation of equipment and direct participants in the production process – workers[3].

One of the main aspects of the formation of the production structure is to ensure the interconnected functioning of all components of the production process: preparatory operations, basic production processes, maintenance. It is necessary to comprehensively substantiate the most rational organizational forms and methods for the implementation of certain processes for specific production and technical conditions. An important element in the organization of production processes is the organization of the labor of workers, which specifically implements the combination of labor power with the means of production. Labor organization methods are largely determined by the forms of the production process. In this regard, the focus should be on ensuring a rational division of labor and determining on this basis the professional and qualifica-

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[3] Mangin S. A theory of production, matching, and Distribution. Journal of Economic Theory,– 172. 2017.– P. 376–409. URL: https://doi.org/10.1016/j.jet.2017.09.009

tion composition of workers, the scientific organization and optimal maintenance of workplaces, and the all-round improvement and improvement of working conditions[1].

The organization of production processes also implies a combination of their elements in time, which determines a certain order for performing individual operations, a rational combination of the time for performing various types of work, and the determination of calendar and planning standards for the movement of objects of labor. The normal course of processes in time is also ensured by the order of launch-release of products, the creation of the necessary stocks (reserves) and production reserves, the uninterrupted supply of workplaces with tools, blanks, materials. An important direction of this activity is the organization of the rational movement of material flows. These tasks are solved on the basis of the development and implementation of systems for operational planning of production, taking into account the type of production and the technical and organizational features of production processes. Finally, in the course of organizing production processes at an enterprise, an important place is given to the development of a system for the interaction of individual production units[2].

The principles of the organization of the production process are the starting points on the basis of which the construction, operation and development of production processes are carried out.

The principle of differentiation involves the division of the production process into separate parts (processes, operations) and their assignment to the relevant departments of the enterprise. The principle of differentiation is opposed by the principle of combination, which means the unification of all or part of the diverse processes for the manufacture of certain types of products within the same area, workshop or production. Depending on the complexity of the product, the volume of production, the nature of the equipment used, the production process can be concentrated in any one production unit (workshop, section) or dispersed over several units. The principles of differentiation and combination also apply to individual jobs. A production line, for example, is a differentiated set of jobs. In practical activities for the organization of production, priority in the use of the principles of differentiation or combination should be given to the principle that will provide the best economic and social characteristics of the production process. Thus, in-line production, which is 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. However, excessive differentiation increases worker fatigue, a large number of operations

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increases the need for equipment and production space, leads to unnecessary costs for moving parts, etc.

The principle of concentration means the concentration of certain production operations for the manufacture of technologically homogeneous products or the performance of functionally homogeneous work in separate workplaces, sections, workshops or production facilities of the enterprise. The expediency of concentrating homogeneous work in separate areas of production is due to the following factors: the commonality of technological methods that necessitate the use of the same type of equipment; equipment capabilities, such as machining centers; an increase in the output of certain types of products; the economic feasibility of concentrating the production of certain types of products or performing similar work[1].

When choosing one or another direction of concentration, it is necessary to take into account the advantages of each of them. With the concentration of technologically homogeneous work in the subdivision, a smaller amount of duplicating equipment is required, the flexibility of production increases and it becomes possible to quickly switch to the production of new products, and the load on equipment 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 space is reduced.

The principle of specialization is based on limiting the diversity of the elements of the production process. The implementation of this principle involves assigning to each workplace and each division a strictly limited range of works, operations, parts or products. In contrast to the principle of specialization, the principle of universalization implies such an organization of production, in which each workplace or production unit is engaged in the manufacture of parts and products of a wide range or the performance of heterogeneous production operations. The nature of the specialization of departments and jobs is largely determined by the volume of production of parts of the same name. Specialization reaches its highest level in the production of one type of product. The most typical example of highly specialized industries are factories for the production of tractors, televisions, cars. An increase in the range of production reduces the level of specialization. A high degree of specialization of departments and workplaces contributes to the growth of labor productivity due to the development of labor skills of workers, the possibility of technical equipment of labor, minimizing the cost of reconfiguring machines and lines. At the same time, narrow specialization reduces the required qualifications of

[1] Strategy switching and industrial policies. The Process of Economic Development, 2014.– P. 369–409. URL: https://doi.org/10.4324/9780203080580-20

workers, causes monotony of labor and, as a result, leads to rapid fatigue of workers, and limits their initiative[1].

Violation of the principle of proportionality leads to disproportions, the appearance of bottlenecks in production, as a result of which the use of equipment and labor is deteriorating, the duration of the production cycle increases, and the backlog increases. Proportionality in the workforce, space, equipment is already established during the design of the enterprise, and then refined during the development of annual production plans by conducting so-called volumetric calculations – when determining capacities, number of employees, and material requirements. Proportions are established on the basis of a system of norms and norms that determine the number of mutual relations between various elements of the production process. The principle of proportionality implies the simultaneous execution of individual operations or parts of the production process. It is based on the premise that the parts of a dismembered production process must be combined in time and performed simultaneously[2].

In modern conditions, the tendency towards the universalization of production is increasing, which is determined by the requirements of scientific and technological progress to expand the range of products, the emergence of multifunctional equipment, and the tasks of improving the organization of labor in the direction of expanding the labor functions of the worker. The principle of proportionality lies in the regular combination of individual elements of the production process, which is expressed in a certain quantitative ratio of them to each other. Thus, proportionality in terms of production capacity implies equality in the capacities of sections or equipment load factors. In this case, the throughput of the procurement shops corresponds to the need for blanks in the machine shops, and the throughput of these shops corresponds to the needs of the assembly shop for the necessary parts. This implies the requirement to have in each workshop equipment, space, and labor in such a quantity that would ensure 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.

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