ESTIMATION METHODOLOGY OF EFFICIENCY OF PRODUCTION CAPACITY MANAGEMENT AT TEXTILE ENTERPRISES

МЕТОДИКА ОЦЕНКИ ЭФФЕКТИВНОСТИ УПРАВЛЕНИЯ ПРОИЗВОДСТВЕННОЙ МОЩНОСТИ НА ТЕКСТИЛЬНЫХ ПРЕДПРИЯТИЯХ

©Krivyakin K.,
Ph.D., Voronezh State Technical University,
Voronezh, Russia, brad@bk.ru
©Кривякин К. С.,
канд. экон. наук,
Воронежский государственный технический университет,
г. Воронеж, Россия, brad@bk.ru
©Tursunov B.,
Ph.D. student,
Tashkent State University of Economics,
Tashkent, Uzbekistan, tursunov-bobir@mail.ru
©Турсунов Б. О.,
Ташкентский государственный экономический университет,
г. Ташкент, Узбекистан, tursunov-bobir@mail.ru
©Хакимов З. А.
Ташкентский государственный экономический университет,
г. Ташкент, Узбекистан
©Hakimov Z.
Ph.D. student,
Tashkent State University of Economics,
Tashkent, Uzbekistan

Аннотация. В статье сделана попытка разработки теоретических положений и методических рекомендаций по оценке эффективности управления производственными мощностями предприятий в текстильной промышленности. Методологической основой данного исследования явились труды зарубежных и отечественных ученых-экономистов в данной области. Данное исследование базируется на обще научной методологии, предусматривающей использование статистического анализа и экономико-математических методов. Практическая значимость результатов исследования состоит в том, что полученные научно-методические результаты могут использоваться предприятиями текстильной промышленности для решения задач по управлению производственными мощностями. Методика оценки эффективности управления производственной мощности может быть использовано руководителями и специалистами текстильных предприятий в процессе разработки мероприятий по наращиванию производственных мощностей и повышению уровня их использования. Выработанные автором результаты выполненного исследования предлагаются к использованию в учебном процессе при изучении дисциплин «Экономика предприятия», «Операционный менеджмент», «Производственный менеджмент», «Управлении производством» студентами и слушателями экономических специальностей вузов.

Abstract. In this article have been made an attempt to develop theoretical provisions and methodological recommendations for evaluating the efficiency of managing the production capacity of enterprises in the textile industry. Methodological basis of this research was works of foreign and domestic scientists-economists in this field. This research has been based on a general scientific methodology that involves the use of statistical analysis and economic-mathematical methods. The practical significance of the research results is that the obtained scientific and methodological results can be used by textile industry enterprises to solve the tasks of managing production capacities. The methodology for assessing the effectiveness of management of production capacity can be used by managers and specialists of textile enterprises in the process of developing measures to increase production capacity and increase the level of their use. The developed by the author results of the research are proposed for use in the educational process when studying the disciplines "Enterprise Economics", "Operational Management", "Production Management", "Production Management" by students and students of economic specialties of universities.

Introduction

The management of the production capacity of enterprises in the real sector of the Uzbek economy is one of the most important tools for bringing it out of the crisis, strengthening, developing and ensuring competitiveness. Scientific-based management of production capacity positively affects the economic performance of enterprises, namely: the growth of output is ensured and its cost is reduced; the investments necessary for increasing output are reduced; the economy of labor embodied in the basic production assets is ensured due to the more intensive use of equipment. Increase in the level of use of production capacities of industrial enterprises is ensured as a result of planned and persistent implementation of a whole set of purposeful management decisions. The activity of the leading enterprises of a high-tech complex determines the overall industrial and technological level and the competitiveness of domestic products. The maintenance on the balance of enterprises of unloaded capacities of any enterprises can significantly restrain the motivation to invest and renew production, to prevent savings in production costs and, thus, is a powerful factor of inflationary pressure on the economy.

Literature review

In process of formation of the theory of resources and factors of production the representation about industrial potential of the enterprise is formed. A significant contribution to the development of this direction was made by the works of neoclassicists: JB Clarke, A. Marshall, V. Pareto. The works of I. Ansoff, Stanley L. Bru, R. Campbell, F. Kotler, K. McConnell, P. Samuelson, F. Taylor, G. Ford, as well as Russian economists are devoted to the study of reserves and to increase the efficiency of the use of the production potential of enterprises. : B.H. Avdeenko, Yu. T. Bubnova, LM Vaina, A. E. Karlika, V. A. Kotlova, D. S. Lvov, Yu. O. Plekhovoy, L. D. Revutskiy, V. K. Faltzman, R. A. Fatkhutdinova, T. S. Khachaturova and others of the same national scientific economists: M. Sharifkhodzhayev, SS Gulyamov, Khodiyev, Yo., NKYuldashev, M. Boltabaeva, Z. Adylova, N. Mahmudova and others. Analysis of the state and problems of the

functioning of textile enterprises at the present stage of economic development is presented in the works of S. Novosadov [1], Talasov M. Zh., Tulemetova A. S. [2], Baskaran V., Nachiappan S., Rahman S., Hasanbeigi A., [3] Hasanabadi A., Abdorrazaghi M. [4],. Loo B. P., [5]. Mazumdar D., [6] McAdam R., McClelland J., [7] Sondergård B., [8] Hansen O. E., Holm J., Truett L. J., Truett D. B. [9] and other authors. Despite the fact that the above-mentioned scientists and practitioners have obtained very significant results both in general theoretical and applied aspects, a number of issues related to the development of methods for assessing the effectiveness of management of industrial, especially textile enterprises, remain unexplored or controversial and predetermine the need further research, development of methodology for developing strategies for increasing the use of textile production capacity enterprises.

Approaches to the methodology for assessing the effectiveness of management of production capacity in industrial enterprises

Obligatory conditions for strategic management of an enterprise are the evaluation and analysis of its real state, taking into account the possibilities of the actual resource base and the prospects for further development of production. In scientific works on the economy, to date, a large number of different methods for assessing the status and effectiveness of the use of specific types of resources in the enterprise, as well as methods for measuring the final results of economic activities. Constant and significant changes occur in technologies used to assess the current state and develop effective and efficient strategies for the long-term development of the enterprise. However, there is still no holistic, systematic approach to measuring the enterprise's production potential, which takes into account the efficiency of using the potential of the enterprise in order to ensure an acceptable level of its financial sustainability and competitiveness. For this reason, there is a need to search for and select an optimal method for assessing the level of use of the enterprise's production potential in order to increase the efficiency of its activities, which allows the operative identification of internal opportunities, identify weaknesses, and identify hidden reserves of the organization.

The methods for assessing and diagnosing the level of utilization of the industrial potential of industrial enterprises, existing at the present time, are based on certain principal approaches, most of them using economic and statistical dependencies [11, 15, 16]. These methods make it possible to thoroughly study and systematically analyze the activities of industrial enterprises, establish dependence and mutual conditioning, as well as a quantitative description of the relationship between performance indicators and production factors.

The most widespread and application in the practice of measuring and researching the industrial potential of industrial enterprises was the correlation-regression analysis. It allows us to solve the same problems of studying connections and regularities, as well as the well-known method of analytic groupings, but it has much more advantages in comparison with it. The use of the method of analytical groupings does not allow us to establish the numerical influence of factors on the effective indicator, the form of the connection, and its tightness [12].

The main advantage of the regression equations is the possibility of determining the normative result of production activity, which is an effective indication of the use of actual production resources (factors) in the study of their aggregate.

Multifactorial regression equations characterize the activity of the enterprise from several sides. First, the equations allow to identify and quantify in one effective integrated indicator all the objective conditions and opportunities for production activity, ensuring the enterprise with production resources. The production potential in this case is considered as an integral indicator characterizing the intensity of the economic activity of the enterprise. The main production resources are summarized taking into account the justification of their importance in the process of forming the production result.

When using regression equations, there is an additional opportunity to compare individual industrial enterprises according to the level of potential, and consequently, to obtain a comprehensive picture of the efficiency of the use of production resources and the capabilities of an enterprise. Secondly, by examining the deviations of the actual and potential results, one can get more accurate representation of the use of potential opportunities by an economic entity [13]. When comparing the actual and potential results of production activities, three situations are possible, as discussed below.

1 High level of use of production resources and the capabilities of the enterprise in the event that there is a significant positive absolute deviation of actual and potential production results;

2 The average level of use of production resources and the capabilities of the enterprise, if the absolute difference between the actual and potential results of production activity slightly deviates from 0 (or their ratio is close to 1).

3 Low level of efficiency of use of production resources and opportunities of the enterprise, if the absolute deviation of the actual and potential production results is negative [14].

In the opinion of a number of economists, a method aimed at an average value of the level of utilization of productive resources must be supplemented by calculating the production potential, taking into account the possibility of the progressive use of factual factors of production. The definition of the progressive production potential should be based on the average models, therefore, on the average value of the potential, since these technologies are statistically more objective and unambiguous. When solving complex management problems (for example, related to optimal production planning), the formation of a model of problems and the subsequent solution of it on a computer are carried out on the basis of a preliminary analysis of the role of each investigated factor. From this it follows that correlation-regression analysis contributes to solving linear programming problems.

With all the merits of the correlation-regression method, the weighted values obtained on its basis, as well as their probabilistic basis, have several serious drawbacks.

1. The methods of variation statistics allow one to estimate the contribution of an individual factor to the variation of the productive production index around the mean level, but not the contribution to the level itself. Moreover, the regression coefficients can only characterize this contribution to the result with only a certain amount of conventionality. For this reason, the basis of the method under consideration is not the direct synthesis of productive resources, but the indirect one, through the calculation of the effective indicator. The share of the contribution of a particular type of resource in such a potential is unknown, since the free term of the equation can not be decomposed into factors.

2. Regression analysis allows us to correctly explain the patterns only within the framework of the considered population covered by the model. Because of this, one and the same type of resource receives a non-identical estimate in different models, which is manifested in the absence of the additivity property. For example, by summing the regression estimates for each enterprise, you can not calculate the industry's integral indicator.

For this purpose, a new model is required, which will cover all enterprises of this industry. The scope of qualitative analysis makes it possible to eliminate the shortcomings of the correlation-regression method [13].

In addition to the methods of estimating the level of use of production potential, the method of analyzing hierarchies proposed by the American scientist T. Saati in 1973 [18, 19] has now been widely applied and made possible the solution of the problem of accounting for the organizational and managerial factor. The method of analyzing hierarchies is a universal mathematical apparatus that is used in practice to solve multicriteria optimization problems. This method can be used in areas where analytical methods are extremely inefficient, and the use of expert estimates does not

always lead to success. The method of analyzing hierarchies is based on the fact that any problem can be represented structurally as a hierarchy of elements that form its essence. The hierarchy is constructed in such a way that the vertex is usually a specific goal, and the intermediate levels are the criteria that influence the subsequent levels of the hierarchy. The number of criteria in the hierarchy depends on the sectoral conditions of management, on the purpose of the assessment being conducted, and also on the object of research. Criteria can be divided into sub-criteria, as a result of which the number of hierarchical levels increases. This method allows you to prioritize the elements of each level in terms of their impact on the elements of subsequent levels of the hierarchy up to the top. The priorities of the elements are determined by compiling a matrix of paired comparisons. Elements of each hierarchical level are compared in pairs in relation to their impact (weight) on the overall characteristic. If it is possible to conduct appropriate measurements, then the matrix cells are filled with numerical values of the criteria, otherwise they are filled with estimates based on subjective judgments of the person or group of persons conducting the research. Subjective judgments are numerically estimated using a scale of relative importance [13].

T. Saati recommends the following mathematical operations for solving the matrix: finding local priorities in each matrix, computing the set of eigenvectors for each matrix; calculation of the priority vector for each matrix; computation of the consistency index for each matrix; use hierarchical synthesis, starting from the second level down, to obtain a global priority for each of the alternatives at the lowest level [18].

Methodology for assessing the effectiveness of management of production capacity in textile enterprises

Priorities of alternatives to the goal (global priorities) are calculated in the final stage. They allow to draw a conclusion about the degree of correspondence of each alternative to the goal, i.e. the highest level of the hierarchy. The highest value of the global priority indicates the highest value of the production potential of the enterprise, and vice versa.

The main indicator characterizing the production potential is the production capacity of the main shops, sites, leading production units, units. The enterprise's capacity is calculated from all its production units - from a group of technically similar equipment to production sites, from sites to workshops, and so on. The power of the leading unit of this stage determines the power of the subdivision of the next stage; The capacity of the leading section is determined by the capacity of the workshop, etc. Calculation of this indicator is associated with certain difficulties, in particular, in the framework of assessing the production potential, there is a need to take into account assortment shifts. In the framework of solving this problem, it is proposed to use graph-matrix modeling and other similar models in the management accounting literature. The issue of assessing the production capacity of industrial enterprises is an independent aspect of the methodology for assessing production capacity and requires further study [22].

In general, the application of these indicators within the framework of the methodological approach proposed in this article makes it possible to fulfill one of the most important tasks, that is, to obtain the most complete and accurate description of the production potential of the enterprises of ferrous textile.

Based on the study of existing approaches to the PCM and identified shortcomings, we proposed the PCM mechanism, (see Figure 1). Note that in the structural plan, the proposed mechanism consists of 6 blocks: an analysis block, an analysis of employee motivation block, an evaluation unit, a planning block, a financial security unit, a control unit and the components of this block are refined.
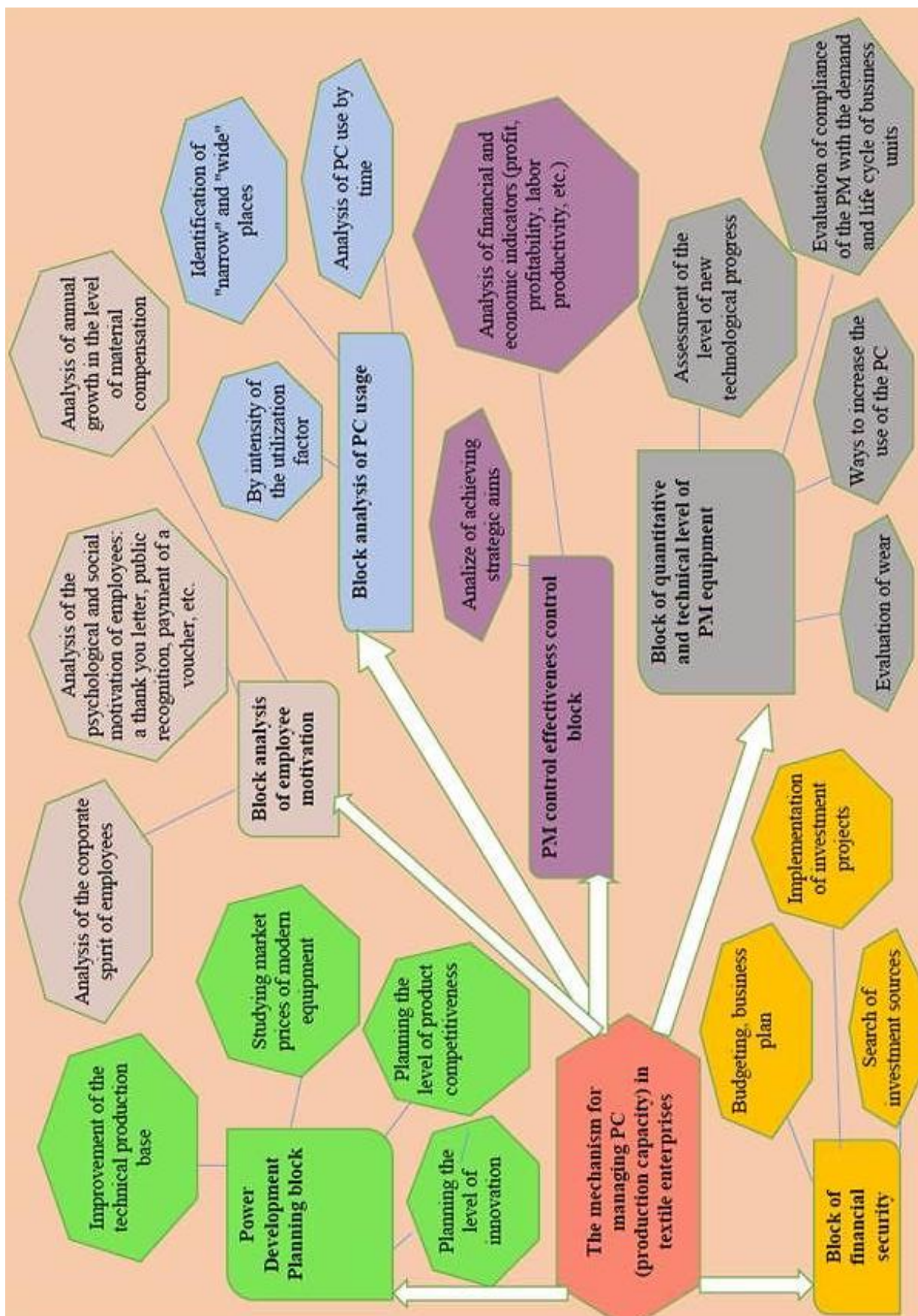
Fig.-1. The mechanism of production capacity management in textiles (CM)

Block analysis of PC usage. The optimal level of PC and increasing the efficiency of using these capacities is the main task of managing PC in the current period. From the solution of this problem depends the place of the enterprise in the pre-production, the way out of the crisis, its financial status, competitiveness in the market. Our analysis of existing production capacities showed that in Russia over the last 5 years, the average annual capacity increased by 5.5%, and output by 3.4%, which indicates a poor practice of capacity utilization [6].One of the most important indicators of the use of production capacity should be the utilization factor of production capacity. It characterizes the level of use of the current production capacity. In turn, the production capacity is divided into certain types, each of which has a distinctive feature in solving the issues of planning and organization of production. Therefore, the level of use of different types of capacities should be considered separately. So, first of all, it is necessary to estimate the level of use of the adopted planned, average annual and actual production capacity. The utilization factor of each of them can be obtained by the ratio of the planned or actual volume of gross, marketable, net output (B) to the corresponding type of production capacity (C). By the value of the utilization factor of a particular type of capacity, it is possible to assess the level and effectiveness of its use. However, the achieved high level of the utilization factor of production capacity does not always give grounds for asserting its intensive use. This is explained, first of all, by the fact that in the enterprises of the leading industries, when determining their production capacities, they are guided by the capacity of those units that are "bottlenecks". Consequently, production capacities are underestimated and do not reflect the actual value of their value, which enterprises have. In this regard, one can not judge the rational use of technological equipment, the available potential reserves to increase its utilization. The increase in the level of use of production capacity largely depends on the fullest use of an effective fund of equipment operation, i.e. Time that excludes planned downtime of equipment in repair. However, this indicator, we believe, takes into account only the losses in the operation of equipment, which directly depend on the age characteristics of the equipment. The growth of the latter contributes to the reduction of the effective fund of equipment operating time, since it increases the time for maintaining various kinds of equipment in an efficient state. Significant opportunities to improve the use of production capacity of the enterprise are laid in improving the age and technological structure of the main technological equipment park. A younger equipment park has less time lost, especially for over-scheduled and emergency repairs. In general, for the group of enterprises under analysis, equipment used to calculate production capacity is used only by 30-40%, which indicates that there are significant over-planned downtime. The level of utilization of the production capacity of the enterprise as a whole depends on the balance of the capacity system of the individual links. Nonconjugacy of production links arises when there are "bottlenecks" and reserves. It is necessary to eliminate "bottlenecks" by equalizing the throughputs of individual workshops, sections, groups of interchangeable equipment to the level of throughput of the leading units.

We turn to a detailed consideration of the next block, i.e. to the *block for estimating the quantity and technical level of the equipment.* The improvement of the qualitative composition of the park depends on how objectively designed and quickly implemented the plan of organizational and technical measures for the active replacement of physically worn out and obsolete equipment. Strict competition in the market of production and consumer goods requires a constant review of the current technology in the direction of increasing the share of modern and high-performance equipment that ensures the growth of labor productivity and the reduction of current costs by reducing the material and energy intensity of the products. The technical gap between new and old models, which continue to be used, is constantly increasing.

At all stages of the life cycle, the equipment is subject to physical deterioration and moral

aging. For new models, the moral wear is insignificant and grows gradually. In the old equipment, physical wear and tear reaches such a magnitude that further exploitation is not economically justified, and moral wear does not provide the corresponding requirements that meet the conditions for producing products that meet market requirements.

Taking into account the stringent requirements of modern production and taking into account the technical component of the macro environment of business, we note that the need for machines and equipment makes the introduction of scientific and technological progress the actual direction. The use of such equipment in production equipment should ensure:

-introduction of resource-saving technology;

-Increasing the technical level of products and their competitiveness;

-Increased mechanization and automation of production.

To increase the level of use of existing production facilities it is necessary:

-Carry out an active replacement of obsolete and physically worn out equipment, i.e. replace it with modern, high-performance;

-Increase the coefficient of shifts by eliminating unnecessary equipment and ensuring the release of production facilities for the most effective use of them;

-To increase the qualification of workers serving unique, special and limiting equipment;

-Eliminate cases of exceeding the actual machine capacity over the planned value;

-Revise the current technological processes of machining to eliminate bottlenecks and increase the level of use of unique equipment.

Block capacity development planning. The implementation of the task of further intensification of production is carried out through technical development plans. These plans are developed in accordance with the scientific and technical policies of a particular enterprise in two main areas:

-increasing the level of competitiveness of products;

-improving the technical base of production.

Traditionally, the planning of the development of the technical base of production includes the development of a set of organizational and technical measures aimed at the introduction of progressive methods of manufacturing products and ensuring the growth of competitiveness as a result of improving the quality of the product, reducing machine capacity (labor intensity), material intensity, cost. In a market economy, which is characterized by fierce competition, the commodity producer must constantly monitor the level of progressiveness of the production process and product quality. Ensuring an appropriate level of competitiveness of production can not be achieved without improving the existing technology or developing a new one. The development of a new technology is carried out based on the production capacity of each unit and groups of interchangeable equipment, taking into account the location of equipment in the shops and areas. Determining the production capacity and technological capabilities of the equipment makes it possible to create the most progressive technology. The introduction of a new technology into production is very expensive. Therefore, it is economically justifiable to develop a flexible technology in advance, which in the future, without attracting significant capital investments, can be quickly restructured to produce the newly introduced nomenclature.

The essence of *the financial security block* consists in drawing up a well-grounded business plan for the implementation of an innovative project is a very important indicator of not only the high efficiency of the enterprise, but also the real professionalism of its creators. In modern conditions, the business plan serves as a reliable tool for conducting business processes for investors, and for investors - the main reference point for lending and financing of the forthcoming project. The growth and use of production capacity is dictated by objective conditions for the

economic development of industrial production. The realization of this most important direction depends to a large extent on the volume and rate of advance of capital investments. The directions of using capital costs include: improving the technological and reproduction structure. Each of the directions provides for building up and improving the use of existing production facilities.

Under the conditions of the administrative command system of management, capital investments by the nature of their formation are subdivided into centralized and decentralized ones. At present, budgetary allocations of capital investments are used, but their share in real need does not exceed 30%. Therefore, the need for a one-off cost each industrial enterprise provides at its own expense or by attracting private investors.

The block of the control of efficiency PCM. The most important function of production management is the operational accounting and control of the enterprise. The main objects of operational accounting and production control are many planning and economic indicators: from hourly or shift-day assignments to annual production volumes. Operational accounting and control over the implementation of production production plans should contribute to the correct solution of such current tasks as ensuring rhythmic work in all parts of production, reducing breaks in the movement of labor items in separate technological stages, increasing the flexibility of current production and sales plans taking into account the dynamic changes in market requirements etc.

An essential part of the enterprise's full utilization of production capacities is that the company is able to produce planned products during the planning period, allowing for the maintenance of proportionality between workshops, divisions and equipment groups.

Efficient use of production capacities machinery, fast technology, qualified professionals, production scientific organization of fields, raw materials quality and production factors. Increasing the efficiency of use of production capacities measures are fully stocked with internal resources, workshops and styles it is necessary to enlarge the volume of production by reducing the time of use and introduction of new capacities [10].

The block of the control of motivation of the personnel. In our time, the effective work of the personnel is a key aspect of obtaining the results and profit of the company. Over time, the uniqueness of each employee has increased, which has entailed a change in incentive systems, because the needs of the worker have changed. The main task of the HR manager is to identify the best qualities of the employee, to use his abilities and skills to the maximum. This task will be possible only if the employee is sufficiently motivated to work for the benefit of the organization.

One of the key parameters in motivating staff is the incentive. There is a misconception that stimulus is the reward of a person for his work. In fact, the stimulus means a compulsory action to work, it is an external motivator for a person, turns needs into interests. "Stimulation of labor activity is the desire of the organization, with the help of moral and material means of influence, to induce workers to work, intensify it, increase productivity and improve the quality of labor in order to achieve the organization's goals" [20, p.508]. The incentives include wage increases, a system of bonuses, a bonus, a thank you letter, public recognition, payment of a voucher, etc. There are also negative incentives that force employees to work, such as reprimand, demotion, retention of wages . But it should be borne in mind that not all external influences have the desired effect, to some of them the employee remains indifferent. Incentives can be indifferent to the employee in case they:

Do not meet the requirements and needs of staff;

-time-out;

-Inadequate in size.

There are certain requirements for the organization of labor incentives: complexity, differentiation, efficiency and flexibility. Complexity includes the unity of moral and material incentives, the importance of which depends on the system of approaches to personnel management. Differentiation implies an individual approach to stimulating different strata and

groups of workers. Approaches to wealthy and low-income workers should be different, as well as to qualified and young. Efficiency and flexibility are manifested in the constant revision of incentives, depending on the changes taking place in the team [21, p. 71].

An important role in the effective work of any organization is played by corporate culture. Corporate culture is a kind of behavior, the face of the company, the most important motivational resource of each enterprise. "When the employees of the organization have a clear understanding of its values, goals and objectives, they find in themselves energy and enthusiasm for great achievements" [22]. Thus, the main task of the leadership is the formation of the organization's value system, and the main goal of the motivational policy is to maintain the productivity and efficiency of staff and the desire to increase the effectiveness of its work.

Fundamentally important, in the author's opinion, in this chapter is the direct formation of a mechanism for managing the PC with a demonstration of the links between the key blocks and their components, which are indicated above. This formation gives us a basis for a comprehensive assessment of the effectiveness of PCM. We developed a methodology for assessing the level of PC management. It includes two complex indicators. The first reflects the quality of the PCM mechanism itself, and the second its effectiveness. Particular indicators included in these two complex indicators are shown in Figure 1.

For grading of complex indicators, scales were developed on the basis of studying the state of PM in the glass industry (Tables 1, 2). The scale for assessing the quality of the PCM includes the following parameters: the quality of PC planning, the performance of the PCM functions, the motivation of personnel in the use of the PCM, the staffing, the methodological support, and the scale for assessing the performance of the PCM - the sustainability of the performance of production plans, the investment security of the PC, the renewal factor of the PM, the level of PM use, the competitiveness index of products produced at these capacities.

Table 1.

SCALE FOR ASSESSING THE QUALITY OF PRODUCTION CAPACITY MANAGEMENT

Quality management parameters of production capacity	*Parameter value*	*The significance of the parameter*	*Points*
Quality planning of the PC	Plan for the development of the PC is absent	0,26	0
	The plan is available, but not linked to the overall strategy of the enterprise		2,5
	The PC development plan is an organic part of the overall enterprise strategy		5
Performance of capacity management functions	are not met	0,14	0
	are partially implemented		2,5
	are fully implemented		5
Motivation of personnel in the use of capacity management	not motivated	0,20	0
	weakly motivated		0,25
	high level of motivation		5
Staffing	not sufficient provision of qualified personnel	0,16	0
	partially qualified staff		2,5
	fully qualified staff		5
Methodical support	absent	0,24	0
	partial security		2,5
	full security		5

Table 2.

SCALE FOR EVALUATING THE EFFECTIVENESS OF PRODUCTION CAPACITY MANAGEMENT

Performance parameters of the PCM	Parameter value	Value of the parameter	Points
Stability of implementation production plans	Absolute value deviation of actual from planning		
	- higher 10%	0,22	0
	-from 5 to 10%		2,5
	- till 5%		5
Investment securing the PC	The volume of investments in the PM in the total structure of investments:		
	- till 30%		0
		0,17	
	-from 30 to 40%		2,5
	-higher 40%		5
Update rate PC (annually)	-from 2 to 5%		0
	-from 5 to 10%	0,20	2,5
	-higher 10%		5
Level of use PC	Coefficient of PC use:		
	- till 0,5		0
	-from 0,5- to 0,7	0,11	2,5
	- from 0,7- to 0,85		5
Index competitiveness products produced on of these capacities	Share of products with index К>1:		
	а) less 80%	0,30	0
	б) 80-100%		2,5
	в) 100%		5

Based on the value of the calculation of the coefficient of the PCM, we can conclude on what level in the enterprise the management of the production capacity is carried out [23]

Conclusion

Production capacity depends on many factors, for example technical, social, economic, organizational [24]. Evaluation of the PC and its use, as well as an analysis of the factors that affect these production parameters, is the most important function of the PCM. We agree with those authors who believe that the effectiveness of the analytical assessment largely depends not so much on the organization and its practical implementation as on the justification of the system of indicators by which it is possible to determine the level of intensity of the use of production capacities. It is important to develop methods for calculating indicators, as well as ways to determine the normative values of each of the indicators. The indicator system should be understood as an interrelated set of them, which provides a comprehensive quantitative assessment of the state and identification of reserves to improve the intensive use of production capacity.

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