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**Determination of the competitiveness of the product and industrial energy production**

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**Annotation.** The relevance of the work is that a new definition of the competitiveness of products of enterprises is given. We consider their relationship as a hierarchy of performance indicators that can be used in the management system. The main formulas for determining competitiveness are considered. The theoretical and methodological foundations of managing the competitiveness of production systems, the problems of determining competitiveness in economic systems of various levels, the factors (management) of the competitiveness of products and enterprises are considered.

**Key words:** competitiveness of products, the competitiveness of industrial enterprises, the hierarchy of concepts competitiveness, application in the control system.

The main task of the management of industrial enterprises in a market economy is to make decisions about what goods, what quality, and in what quantity should be produced. At the same time, decision-making should pursue the goal of improving the efficiency of industrial enterprises.

Planning the results of industrial production, its goals (or tasks) gives a picture of the future state of the economic system. Given that the future does not exist at the time of the formulation of the goals, it should be recognized that they are ideal constructions set out on paper. The main goals that affect the direction of development and the viability of the production structure as a whole should be formulated as the competitiveness of enterprises and their products. This is especially important for industrial enterprises.

In industrialized countries, the effectiveness of the competition mechanism has been around for a long time and its mechanism is well established. Russia, for well-known political reasons, is a catching-up country in this sense. Therefore, it is

important to determine the terms and concepts at the initial stage of building a competition mechanism and ensuring competitiveness.

No management structure is currently engaged in improving competitiveness in Russia. Therefore, almost all of Russia's indicators are deteriorating, and in terms of competitiveness, it is already in the second hundred countries, and in terms of living standards – in the eighth ten.

At the present stage of global development, competition as a driving force for the development of society forces manufacturers of goods to constantly look for ways to improve their quality, reduce prices, improve the quality of service of goods in a particular market, and reduce operating costs for its use. In the 21st century, this factor will be decisive, since currently the operating costs of complex equipment are from 5 (in industrialized countries) to 20 times (in the rest of the world) more than production costs.

We propose to rely on the understanding of the competitiveness of products as a remote form of manifestation of the production efficiency of the enterprise that created these products. To do this, we suggest using the following formula:

$$CP = VP / (Z_1 + Z_2), \quad (1)$$

where CP - is the competitiveness of the product;

VP – consumer value of the product (useful effect for the consumer, quality, quantitative expression in the content of useful substances, energy produced);

$Z_1$  – the cost of purchasing the product (energy) (sales price);

$Z_2$  – the cost of the consumer for the use of the product (energy).

In the scientific literature, the main obstacle to the use of this formula is the measurement of the use value of the product (VP). A useful effect on the consumer. For example, for machine-building production, this can be the power of a machine, for energy, the energy output of products, for extractive industries, the quantitative expression of the content of useful substances, for the food industry - the amount of useful substances for humans (proteins, fats, carbohydrates) that are contained in a unit of product. In our opinion, the use value reflects the potential (when planning) and actual effect of the product consumption.

Considering the denominator of the proposed formula reflects the total costs of manufacturing and consuming products. Manufacturing costs ( $Z_1$ ) are usually defined as costs on the territory of the manufacturer, the second component ( $Z_2$ ) is considered as the cost of the consumer to use the product. These include life-cycle

repairs, associated product consumption costs, and so on. We believe that these costs should be considered as a continuation of the manufacturer's production costs. And the purpose of the production of the goods should be considered as the direct consumption of the useful properties of the products.

The competitiveness of products and the competitiveness of the manufacturing enterprise are related as a part and a whole. The ability of an enterprise to compete in a particular market depends on the competitiveness of its products and the combination of socio-economic and organizational factors. Having a close interdependence, the categories of competitiveness of products and enterprises differ in their essence:

- They are defined and applicable to different time periods: the competitiveness of products is determined in a short period of time of production and sale of the product, and the competitiveness of the enterprise is applicable to a calendar period of time;
- the competitiveness of an enterprise depends on the level of competitiveness of the entire product range and the efficiency of each type of activity;
- the competitiveness of products is a necessary condition for the competitiveness of the enterprise, but not sufficient. For example, the competitiveness of products by lowering prices to a level not covering production costs, lead to deterioration and even halt the competitiveness of the enterprise.

The high quality of the products is a guarantee of maintaining a high market share of these products. At the same time, there are many other factors that affect the choice of products by the buyer (national, religious, fashion, forms of advertising, etc.). This requires more careful consideration of the specifics of the market, potential consumers, and their conditions for making a decision to purchase a particular product. For example, despite the highest quality of pork sausage in Muslim regions, it will not be sold at any even the lowest price. Therefore, manufacturing enterprises should develop their strategy for creating competitive products based on a thorough analysis of the needs of customers, culture, peculiarities of national composition, etc. multiple factors.

Let us return to the formula of competitiveness as a particular from the division of the use value of a unit of goods to the costs of production and consumption of the product. This expression shows the specific return on the cost of production and consumption of products per unit of consumer effect. At the same time, the summation of competitiveness indicators is impossible, or does not give anything for the transition from the competitiveness of the product to the

competitiveness of the enterprise. But if we sum up the numerators separately for all the products produced by the enterprise for any period of time (year, month, day), then this amount will show the total or integral consumer effect (IPE) realized from the products produced. In the case of single-product production, the formula may look like this:

$$IPE = \sum_{i=1}^n VP, \quad (2)$$

where  $IPE_i$  - is the integral (total) consumer effect of the product produced (i-th type of product);

i - the type of product produced;

n – the number of products produced by the enterprise and consumed during this period.

When we move to a higher hierarchical level of determining the competitiveness of the industry, regional or even state, we should determine the competitiveness of the corresponding economic system as the degree of satisfaction of the need for industrial products of a given type in a given region. I.e., based on the numerator of this formula. The proposed approach will make it possible to ensure the competitiveness of both regions and countries.

Improving the competitiveness of an enterprise is identical to improving the economic efficiency of economic entities – one of the central problems of the development of production systems and organizations. And competitiveness itself is one of the forms of efficiency, taking into account the actual consumption of products.

The study of the competitiveness of the actual product presented on the market should be conducted continuously by the manufacturer. It should be borne in mind that when a new product enters the market immediately (as new products appear from competitors), it begins to lose its competitiveness to some extent, so the competitiveness of new products should be ahead of the curve and possibly long-term.

The objectivity of the assessment of the need for the product and the formulation of the production goal, in accordance with the real economic opportunities and production conditions, ultimately determines the effectiveness of the management of the production system.

The need for a product can be considered as the awareness of a person (a business entity, a decision - maker) of the loss from non-receipt of goods, use

values. At the same time, relatively speaking, we can meet the needs of today only tomorrow, after a certain period of time: from awareness of the need to its implementation. Therefore, the sooner the needs are met (from the moment they are realized), the less we will lose. Hence – the sooner the need is met, the lower the imputed costs. Needs always outstrip the possibilities of consumption, as they are the ideal form of future consumption. But, on the other hand, needs arise only when there are already conditions for achieving them in the production sphere.

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