Quality improving issue and competitiveness of oil and gas products

Entering the international market, integration into the world economy, boundless interest of transnational companies in the country's hydrocarbon resources; require discussion and resolution of existing problems to improve the quality and competitiveness of oil and gas products.

Keywords: *Oil, economy, products, quality, price, cost, indicator.*

In a market economy one of the important tasks is to produce competitive products. The quality and competitiveness of products is also of great importance for the oil and gas industry. The oil and gas complex both in the Soviet period and present situation plays a significant role in the formation and development of the economy of the Republic of Azerbaijan and determines the development of other industries. It is no coincidence that almost half of the revenue part of the state budget is formed at the expense of the results of economic activity of the oil and gas complex.

In Azerbaijan, the new oil strategy based on the "Contract of the Century" and subsequent agreements have played a significant role in the consistent, stable and dynamic development of the country. In the balance of "import and export" of the country the priority is given to the production of oil and gas complex.

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Oil was produced in Azerbaijan more than a hundred and fifty years ago, and the commercial exploitation of oil fields began in the 70s of the XIX century. So far, more than 1.4 billion tonnes of oil (with condensate) and more than 490 billion m^3 of gas have been extracted from the country's oilfields. In the oilfields of the Republic, which are at the stage of development, the remaining recoverable reserves of oil are in sufficient quantity and their effective exploitation should be aimed at increasing the competitiveness of products of the oil and gas complex.

The oil and gas industry has several specific features that need to be taken into account from the point of view of systematization of quality indicators and competitiveness of products in any economic behaviour. These features are as follows:

- Production in this industry is constantly associated with risk;
- Products of this industry are capital-intensive;
- Production of oil and gas complex products is mainly profitable;
- Development time and reserves of oilfields are constantly decreasing here;
- Oil and gas products are constantly international in nature;
- There is always a political motive in the activity of this branch.

It should be noted that the stabilization and increase of production, satisfaction of demand for petroleum products and entry into the world market put the full use of existing production capacities and development of new fields at the forefront. All this happens due to the increase in the production well stock, reduction of flowing wells, increase in the share of mechanized production method, increase in watering of products, etc. There are also other conditions for oil production: the corrosion activity of products and viscosity of oil produced increases, salt and paraffin deposits increase in oilfield facilities, and well depth increases. All this puts new, higher demands on the strength and quality of machines and tools of oilfield equipment. Improvement of the quality and durability of equipment is one of the main directions of scientific and technological progress for oil production, and this, in turn, is an important problem for further development of the oil industry and a necessary factor for the production of competitive products. As it is known, the oil and gas complex has a peculiar feature, which is expressed in a variety of machines and equipment, technological facilities, operated in the complex, finally, as a competitive product.

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In some economic literature [1,2] the competitiveness of products is considered as the ability to meet its market demand. As a rule, the term "competitiveness" refers to products (goods) [3]. Such formulation of the concept can be adopted unilaterally, without reflecting the position of the producer as a competitor. Competitiveness of products can also be achieved at the expense of dumping price, and this does not always take into account the cost of production. All this, in turn, indicates the expediency of assessing the competitiveness of products.

Competitiveness as a quantitative indicator is the ratio of the upper limit of the product price to the lower limit, and this is determined by the economic interest of the producer.

Analysis of economic, normative-technical and methodical literature [1-3] shows that the term "competitiveness" is considered mainly in a static state, and this complicates understanding of the process of competitiveness management. In our opinion, competitiveness is a complex and multidimensional property that reflects the ability of products in the period of production to meet quality requirements in a particular market adapts to the taste of the consumer to the ratio of quality and price and provides benefits to the producer.

Assessing the success of the world civilization of the end of the last century, it is possible to form a paradigm of its progressive development: limited resources-competition and the result of their effective use. This means that successful development of the industry, the state and the world economy as a whole is connected with competition. The experience of such economically successful countries like the USA, England, Japan, etc. shows that the best condition for competition is born under the market economy. Therefore, all market participants should tune into competitive activities, i.e. produce and render competitive products and services.

It should be noted that in the Soviet times there were a sufficient number of oil engineering plants in Azerbaijan. The products produced in these oil machine-building plants were 70-90% in demand throughout the former Soviet Union [1]. But with the break in economic relations between the republics and the states of socialist orientation, sales of such products decreased. On the other hand, in these plants, due to the physical and moral deterioration of the operating equipment, the products produced do not fully meet modern requirements. The unsatisfactory work of this branch, closely connected with the oil industry, had a negative impact on the production of competitive products in the oil and gas complex.

The ongoing oil strategy in the republic sets new requirements for the development of the oil and gas complex. Therefore, the quality of the equipment used in the oil and gas complex must comply with ISO International Standard and the requirements of the American Petroleum Institute. But so far the products of the country's oil engineering plants do not meet the requirements of these standards.

Often in the economic literature the concept of "efficiency" and "competitiveness" are considered identical, that has its disadvantages. It is known that economists have given various definitions of the term "competitiveness" [3-6]. Analyzing their positive and negative sides, we consider the following formulation acceptable: competitiveness - considers potential possibilities of the industrial enterprise in corresponding conditions, includes planning, designing of manufacture, manufacture and realization of such production which would meet the quality requirements and the comparison would surpass similar production in the market on price and off-price features (parameters).

In our opinion, in order to meet the above requirements, competitive products should have the following main characteristics:

- Competitiveness is a relative value and is determined by comparison;
- Competitiveness is a dynamic value, variable over time and depends on the life cycle of the product;
- The individual demand of individual consumers makes it possible to say that competitiveness is individual in the broad sense of the word;
- Competitiveness refers to a market and a type of product; it depends on the level of scientific and technological progress;
- As a result of a certain managerial decision, competitiveness can undergo any changes.

It should be noted that evaluating the quality of petroleum engineering products, it becomes known that they lag behind foreign counterparts in the use of resources, design, convenience and performance of services. Consequently, the public costs per unit of final product far exceed the costs of such products of developed countries.

The low operational characteristics of production facilities lead to an increase in their physical volume in the process of production and consumption. The interconnected use of production facilities in general has a very large impact on the quality and competitiveness of the production facility. The world experience and corresponding scientific theory show that during the period of Azerbaijan's integration into the world economy in order to increase the competitiveness of products, an effective industrial policy should include the following: specific and basic features of scientific and technical structure, financial, monetary, investment, and regional, international economic, institutional and organizational production policy. In addition to quality and price, the main components of commodity competitiveness are also related to services. Managing competitiveness means ensuring an optimal balance between these three factors.

Each of the three factors has a multifactor level and should be considered as a complex object management. So,

for example, if we consider the price of a product, it should include the quality and cost of raw materials, their management, etc.

Maximization of profit at market relations is the main purpose of enterprise activity. For the analysis of a condition of a product in the market, its possibilities of sale on prospect, a way and forms of activity of the enterprise and the organization on sale the concept “life cycle of the goods” is used. Taking into account different stages within the period of goods’ life, this concept pursues the aim to determine the volume of sales and profitability of realization.

Depending on the life cycle, the competitiveness production strategy covers the following stages:

- Implementation of new technical principles in products, market formation;
- Development of various product modifications and market segmentation;
- Reduction of production costs and price competition;
- Usage of existing infrastructure and reduction of operating costs;
- Preservation of the product in the market at the last stage of its life cycle.

As the analysis shows, every year the share of the industry producing oilfield equipment is decreasing not only in the CIS market, but also in the market of Azerbaijan. The main reasons for the decline were mentioned above. Here it is possible to note that other reasons are connected with inadequacy of reaction of oil-machine building firms on questions of strategic planning of quality of production. The fact is that oil mechanical engineering is a traditional branch of the republic and there are all possibilities to improve the organization of works on production, satisfying the requirements of the market. So, performance of these works embodies technical, technological, personnel and other factors existing in the enterprises, which, in our opinion, can be grouped as follows:

- There is a technical, technological, human resources and production experience for the activity of the enterprise producing oilfield equipment and entering the world market;
- Consumers of these enterprises have already risen to a new level of development;
- Rapid pace of development of the oil and gas complex limits the prospect of acquisition of used oilfield equipment from remote producers;
- The need to purchase ISO certificates and API monograms to meet the requirements of international standards for the quality of oilfield equipment, and to produce products that meet these requirements.

As it is known, there is certain dependence between significant factors of production of competitive products, i.e. price, quality and its cost price, and varying this dependence, it is possible to achieve improvement of competitiveness of products. In general, [2-6] the dependence between these factors are shown in (Fig.1).

Fig.1. is dependent on between the price (P), the cost price (ÑP) and quality (QL) where 1 - the price; 2 - the cost price; QL(min), QL_{lim}(max) - a limit of profitability of manufacture depending on quality level; QL1, QL2 - the bottom and top limit of the goods; QL_{opt}.- the optimum level of quality providing the maximum profitability of unit of production.

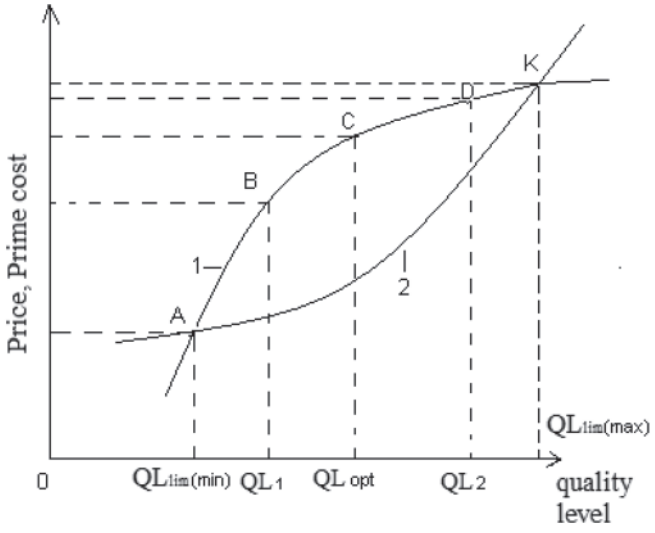

Fig.1

In our opinion, this dependence can be expressed by the following formula:

$$P_{goods} = (P/CP\text{-}1) \rightarrow MAX \quad \text{... (1)}$$

Interpreting this formula from an economic point of view, we see that the following cases are possible when determining the profitability of production:

I. Case: CP>P, thenP/CP<1 and formula (1) will be (P/CP-1) <0. This indicates the unprofitability of production; in this case, there is no economic sense for the producer.

II. Case: P=CP, then in the formula (1) P/CP=1 or (P/CP-1)=0; which makes it difficult to draw a conclusion about the quality of the products produced.

III. Case: P>CP, thenP/CP>1 and the formula (1) takes on (P/CP-1) >0; In this case, from an economic point of view, the producer is interested in producing quality products.

Looking at the graph, we see that the P=CP condition is met at both the K and A points; this case is considered to be the upper and lower margin of profitability. On the other hand, for points B and D, the condition (P-CP)>0 is always met, and these points are considered to be the upper and lower limit of the production quality level. At point C, the difference (P-CP)

is the most important, and it is this point that characterizes the quality level, which ensures the maximum profitability of a unit of production.

Researches have shown that recently the price factor has played a minor role in determining the competitiveness of products, along with other conditions. In this sense, consumer values (functionality, design) and the level of service become very important.

In economic theory, the level of competitiveness (C) is defined as the ratio of the value of the level of competitiveness of the company's products (K_{corr}.) to the corresponding indicator of the competitor (K_{comp}.); and if the condition K>1 is met; it is considered that the products produced are competitive. This leads to the opinion that qualitative characteristics are proportional to the competitiveness indicators. So, competitiveness is characterized by the following factors: satisfaction of consumer demand (quality), solvency of the consumer (price), the exact time of shipment, the cost of operation, service, belief in the product (prestige of the manufacturer, certification, consumer satisfaction, etc.)

Overall, it should be noted that the correct use of existing potentials in the basic branches of the oil and gas complex, such as oil engineering, petro-chemistry, oil refining and oil production, introduction of modern equipment and technology to improve the quality of products, production of products with greater demand in the domestic and global markets on the basis of marketing research, improvement of the management system, adoption of more flexible management decisions to reduce the life span of products and other activities

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STUDY ON SURFACE SETTLEMENT OF JINCHUAN COPPER-NICKEL AREA IN TIME SERIES InSAR

(Continued from page 536)

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