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Issue Article

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ABOUT THE FEATURES OF THE FORMATION OF THE PRIORITY OF MANUFACTURED PRODUCTS AMONG CONSUMERS OF THE REGIONS OF THE SOUTHERN FEDERAL DISTRICT AND THE NORTH CAUCASUS FEDERAL DISTRICT

Abstract: *The article pays special attention to assessing the role of one or another position of the assortment for the results of the work of enterprises in the production of the entire assortment of footwear for consumers in the following groups, namely: the main group of goods (which bring the main profit and are in the growth stage); supporting group of goods (products that stabilize sales revenue and are in the stage of maturity); strategic group of goods (goods designed to provide future profits to the enterprise); tactical group of goods (products designed to stimulate sales of the main product group and are in the stage of growth and maturity); product group under development (products that are not present on the market, but ready to enter the market); goods leaving the market (which do not make a profit and must be removed from production, withdrawn from the market). When implementing it, it is necessary to take into account the share of each group in the total volume of products sold. For a stable financial position of the enterprise in the assortment structure, the strategic and tactical groups of goods must be at least 70% with 100% of their implementation. Thus, this makes it possible to evaluate the existing assortment set at the enterprise and, correlating it with the profit received, evaluate the correctness of the assortment planning, its balance for the consumer market. The implementation of the proposed measures will lead to the elimination of the shortage of domestic footwear, including children's footwear, making it not only and not so much competitive and in demand, but, most importantly, safe and comfortable for the child's foot.*

Key words: *quality, import substitution, demand, competitiveness, market, profit, demand, buyer, manufacturer, financial stability, sustainable TEP, priority, assortment policy, paradigm, economic policy, success.*

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Introduction

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Formation of the assortment is a problemspecific goods, their individual series, determining the relationship between "old" and "new" goods, goods of single and serial production, "high-tech" and "ordinary" goods, embodied goods, or licenses and "know-how". When forming the assortment, there are problems of prices, quality, guarantees, service, whether the manufacturer is going to play the role of a leader in the creation of fundamentally new types of products or is forced to follow other manufacturers. The formation of the assortment is preceded by the development of an assortment concept by the enterprise. It is a directed construction of an optimal assortment structure, a product offer, while on the one hand, consumer requirements of certain groups (market segments) are taken as a basis, and on the other hand,

The assortment concept is expressed as a system of indicators characterizing the possibilities for the optimal development of the production assortment of a given type of goods. These indicators include: a variety of types and varieties of goods (taking into account the typology of consumers); the level and frequency of updating the assortment; the level and ratio of prices for goods of this type, etc.

The assortment formation system includes the following main points:

- determination of current and future needs of buyers, analysis of the ways and use of footwear and features of consumer behavior in the relevant market;
- assessment of existing analogues of competitors;
- critical assessment of products manufactured by the enterprise in the same range as in paragraphs. 1 and 2, but from the position of the buyer;
- deciding which products should be added to the assortment and which should be excluded from it due to changes in the level of competitiveness; whether it is necessary to diversify products at the expense of other areas of production of the enterprise that go beyond its established profile.
- consideration of proposals for the creation of new models of footwear, improvement of existing ones;
- development of specifications for new or improved models in accordance with customer requirements;
- exploring the possibilities of producing new or improved models, including issues of price, cost and profitability;
- carrying out tests (testing) of shoes, taking into account potential consumers in order to determine their acceptability in terms of the main indicators;
- development of special recommendations for the production departments of the enterprise regarding quality, style, price, name, packaging, service, etc. in accordance with the results of the tests carried out, confirming the acceptability of the characteristics of the product or predetermining the need to change them;
- assessment and revision of the entire range.

Assortment planning and management is an integral part of marketing. Even well-thought-out sales and advertising plans will not be able to neutralize the consequences of mistakes made earlier in assortment planning.

The optimal assortment structure should ensure maximum profitability, on the one hand, and sufficient stability of economic and marketing indicators (in particular, sales volume), on the other hand.

Achieving the highest possible profitability is ensured through constant monitoring of economic indicators and timely decision-making to adjust the range.

The stability of marketing indicators is ensured, first of all, by constantly monitoring the situation on the market and promptly responding to changes, and even better, taking proactive actions.

In addition, it is important that there are not too many product names. For the majority of Russian enterprises, the main reserve for optimizing the assortment is still based on a significant reduction in the assortment range. Too large assortment has a bad effect on economic indicators - there are many positions that, in terms of sales, cannot even break even. As a result, the overall profitability falls sharply. Only the exclusion of unprofitable and low-profit items from the assortment can give the company an increase in overall profitability by 30-50%.

In addition, a large assortment disperses the strength of the company, makes it difficult to competently offer goods to customers (even sales department employees are not always able to explain the difference between one or another position or name), and disperses the attention of end consumers.

Here it would be appropriate to recall the psychology of human perception of information. The reality is that the average person is able to perceive no more than 5–7 (rarely up to 9) semantic constructs at a time. Thus, a person, making a choice, first chooses these same 5-7 options based on the same number of criteria. If the seller offers more selection criteria, the buyer begins to experience discomfort and independently weeds out criteria that are insignificant, from his point of view. The same thing happens when choosing the actual product. Now imagine what happens if a person has a hundred practically indistinguishable (for him) goods in front of him, and he needs to buy one. People in such a situation behave as follows: they either refuse to buy at all, because they are not able to compare such a number of options, or prefer what they have already taken (or what seems

familiar). There is another category of people (about 7%), lovers of new products, who, on the contrary, will choose something that they have not tried yet.

Thus, from the point of view of the buyer (to ensure a calm choice from perceptible options), the assortment should consist of no more than 5–7 groups of 5–7 items, i.e. the entire assortment, from the point of view of perception, should optimally consist of 25–50 items. If there are objectively more names, then the only way out is an additional classification.

It is generally accepted that the buyer needs a wide range. This widest range is often referred to even as a competitive advantage. But in reality, it turns out that for a manufacturer, a wide range of products is hundreds of product items, and for a consumer, 7 items are already more than enough. Thus, the consumer does not need a wide assortment at all, but the necessary variety.

Main part

If an enterprise professes a wide assortment approach, then it is enough to analyze sales, look at statistics to make sure that sales leaders are 5–10, 15% at most of the items, all other positions are sold very little, the demand for them is small, although the costs differ little from costs by top sellers. It turns out a situation where several items "feed" the entire wide range of the enterprise. And this is far from always justified from the point of view of ensuring the completeness of the assortment (a favorite argument of sellers), that is, the availability of various items to cover the maximum possible options for customer needs. In practice, it turns out that completeness is fully ensured, even if the existing assortment is halved or even tripled. The main thing in this case is to correctly classify all goods and ensure that so that the assortment includes goods from each possible group of this classification. Moreover, the more grounds for classification the company can identify, the more balanced the decision will be. So, the classification of goods can be according to the needs of customers, according to the functional purpose of the goods, according to the benefits for the enterprise. Of particular importance in such a situation is the role played by certain positions of the assortment. Thus, it makes it possible to evaluate the existing assortment set in the company and, correlating it with the profit received, assess the correctness of the assortment planning, its balance. The classification of goods can be according to the needs of customers, according to the functional purpose of the goods, according to the benefits for the enterprise. Of particular importance in such a situation is the role played by certain positions of the assortment. Thus, it makes it possible to evaluate the existing assortment set in the company and, correlating it with the profit received, assess the correctness of the assortment planning, its balance. The classification of goods can be according to the needs of customers, according to the functional purpose of the goods, according to the benefits for the enterprise. Of particular importance in such a situation is the role played by certain positions of the assortment. Thus, it makes it possible to evaluate the existing assortment set in the company and, correlating it with the profit received, assess the correctness of the assortment planning, its balance.

In addition, not always an increase in the volume of goods of groups that bring the main income will increase the profits of the enterprise. Here it is important to pay attention to the balance of unsold goods (what increase it will give and the possibility of its further sale).

Production volume planning is one of the important problems of assortment policy. In the economy, forecasting of future expenses and incomes is widely used on the basis of calculating the cost of production at variable costs. The essence of this method lies in the fact that the costs of the enterprise are divided into fixed and variable, depending on the degree of their response to changes in the scale of production.

The basis of fixed costs is the costs associated with the use of fixed assets (fixed capital). These include the cost of depreciation of fixed assets, rent of industrial premises, as well as salaries of management personnel, deductions for social needs of these personnel. The basis of variable costs is the costs associated with the use of working capital (working capital). These include the cost of raw materials, materials, fuel, wages of production workers and deductions for their social needs.

It should be emphasized that the total fixed costs, being a constant value and not depending on the volume of production, can change under the influence of other factors. For example, if prices rise, total fixed costs also rise.

The method of calculation by the amount of coverage provides for the calculation of only variable costs associated with the production and sale of a unit of output. It is based on the calculation of the average variable costs and the average coverage, which represents the gross profit and can be calculated as the difference between the price of the product and the sum of the variable costs. Limiting the cost of production only to variable costs simplifies the rationing, planning, and control due to the sharply reduced number of cost items. The advantage of this method of accounting and costing is also a significant reduction in the complexity of accounting and its simplification.

When applying the calculation method by the amount of coverage, it is advisable to use such indicators as the amount of coverage (marginal income) and the coverage ratio. The coverage amount (marginal income) is the difference between the sales proceeds and the total amount of variable costs. The amount of coverage can be calculated in another way - as the sum of fixed costs and profits. The calculation of the amount of coverage allows you to determine the

funds of the enterprise received by it in the sale of its products in order to recover fixed costs and make a profit. Thus, the coverage amount shows the overall level of profitability, both for the entire production and for individual products: the higher the difference between the selling price of the product and the sum of variable costs, the higher the amount of its coverage and the level of profitability.

The coverage ratio is the share of the coverage amount in the sales proceeds or the share of the average coverage in the price of the goods.

It is also important to determine at what volume of sales the gross costs of the enterprise will pay off. To do this, it is necessary to calculate the break-even point, at which revenue or production volume is accepted that provides coverage of all costs and zero profit. Those. the minimum amount of proceeds from the sale of products is revealed, at which the level of profitability will be more than 0.00%. If a business earns more than the breakeven point, then it is profitable. By comparing these two values of revenue, one can estimate the allowable decrease in revenue (sales volume) without the danger of being at a loss. The revenue corresponding to the break-even point is called the threshold revenue. The volume of production (sales) at the break-even point is called the threshold volume of production (sales).

In order to assess how much actual revenue exceeds the break-even revenue, it is necessary to calculate the margin of safety (percentage deviation of actual revenue from the threshold). To determine the impact of a change in revenue on a change in profit, the indicator of production leverage is calculated. The higher the effect of the production lever, the more risky in terms of reducing profits is the position of the enterprise.

To separate the total costs into fixed and variable, we use the method of the highest and lowest points, which involves the following algorithm:

– among the data on the production volumes of various types of footwear and the costs of its production, the maximum and minimum values are selected;

– the differences between the maximum and minimum values of production volume and costs are found;

– the rate of variable costs per product is determined by referring the difference in cost levels for a period to the difference in production levels for the same period;

– the total value of variable costs for the maximum and minimum volume of production is determined by multiplying the rate of variable costs by the corresponding volume of production;

– the total value of fixed costs is determined as the difference between all costs and the value of variable costs (example 1).

The minimum production volume falls on the production of model A - 500 pairs, the maximum - on the production of model B - 1600 pairs.

The developed methodology for assessing and analyzing the competitiveness of an enterprise, in contrast to the existing ones -

firstly, it takes into account the specifics of the "light industry" industry;

secondly, it reduces the subjective factor in the assessment;

thirdly, it allows for an in-depth analysis, thanks to the proposed indicators for analyzing the competitiveness of enterprises, namely, on the basis of innovative technological solutions in combination with the assortment policy, these same enterprises always have a message to ensure effective work results for themselves, guaranteeing themselves and their employees from bankruptcy . In the traditional for our case, the assortment formation scheme was based on differentiation based on the classification

– purpose (household; special);

– gender and age (the basis is GOST 3927-88. Shoe blocks - booties, for toddlers, little children, preschool, for schoolgirls, girls, for schoolboys, boys, boys, women, men);

– operating conditions (type of professional activity, seasonality, climatic zone).

Based on other sources, shoes according to their purpose can be divided into household (everyday, model, home) and special (industrial, sports, orthopedic, medical).

However, this division of the assortment has a number of significant drawbacks. It does not allow to identify population groups with different styles, living standards and taste preferences. The division by gender and age implied different anthropometric characteristics of consumers depending on age and gender, but did not take into account age differences in lifestyle and priorities of needs.

The needs of the population for goods are laid down historically. They are determined by the level of development of social production, the welfare and culture of society and can change over time.

The characteristic of the assortment includes such a thing as mobility. According to the definition of marketing, mobility is the urgent execution of decisions made, the conduct of research within a strictly defined time frame.

The use of the term "mobility" in relation to the shoe range is the rapid change of models of the range, depending on market conditions and consumer requirements for shoes.

Each era is characterized by adherence to certain tectonic forms, color, scale, proportions, etc. This stable character of formal means of artistic expression is called the style of the era. Style in art is understood as a historically established stable commonality of the figurative system of means and methods of artistic

expression, due to the unity of the ideological content of the art of the era. The main condition for the formation of style is the unity of the worldview and the means of its expression. The factors influencing the formation of style include:

- socio-economic relations,
- prevailing philosophical ideas,
- outlook,
- aesthetic ideal of the era,
- way of life,
- natural and climatic conditions,
- customs, etc.

For a long time, used, there was a clear division into four main styles: romantic, classical, sports, folklore. In recent years, these four styles have been supplemented by an independently existing fifth style in shoes - ethno.

In marketing practice, there is another principle that takes into account the degree of extravagance or conservatism of consumers. According to their reaction to new phenomena, consumers are divided into five categories:

- super innovators (2.5%);
- innovators (13.5%);
- ordinary (34%);
- conservatives (34%);
- super conservatives (16%).

According to domestic and foreign researchers, such differentiation must also be taken into account when forming the assortment structure.

According to the degree of commitment to brands, consumers can be divided into the following groups:

- unconditional adherents are consumers who constantly buy the product of the same company;
- tolerant adherents are consumers who are committed to two or three product brands;
- fickle adherents are consumers who transfer their preferences from one brand to another;
- wanderers are consumers who do not show commitment to any firm.

It is advisable to use such a division of consumers when a product is bought with a short-term frequency, for example, once a week or a month.

The principle of economic differentiation of consumers is practically recommended to be carried out according to the level of income, and the presence of this or that property (car, real estate, etc.). One of the most common ways of such product differentiation, used in foreign markets, is the division of the assortment by price points. For stable markets, economic differentiation involves a combination of economic and semantic properties of products, and quantitatively has a well-established share of segments. Such a close combination of properties is not typical for our regions, where the level of income does not imply a single cultural basis and consumer psychology. Therefore, it is obvious that borrowing the Western structure of consumers is impossible.

A way of dividing groups of people according to their belonging to a particular consumer type is known as the scale of Values and Lifestyles (VALStm). This version of the classification was originally developed in 1978 by Arnold Mitchell of SRI International (formerly the Stanford Research Institute).

Within the framework of the VALStm system, resources are allocated, including a full range of psychological, physical and demographic potential, on which the consumer relies. The concept of resources includes education, income, self-confidence, health, desire to buy, intelligence and vigor.

Summarizing the information obtained as a result of the study, a block diagram of the formation of the mentality, presented in the figure, was compiled. The proposed structuring can be used when planning the industrial assortment for the regions of the Southern Federal District and the North Caucasus Federal District. And only in the interrelation of all the above factors, it will be possible to assert the high stability of the financial results of the activities of shoe enterprises in the regions of the Southern Federal District and the North Caucasus Federal District, united in an innovation center.

The formation of a range of footwear, taking into account its competitiveness, is a complex process, carried out taking into account the action of a number of factors, the study of which should be based on an analysis of the existing footwear market, as well as on forecasting trends in social, economic and industrial areas.

The formation of the assortment is preceded by the development of an assortment concept by the enterprise. It is a targeted construction of the optimal structure of high-quality footwear products, while taking as a basis, on the one hand, the need to ensure the most efficient use of raw materials, technological, financial and other resources by the enterprise in order to produce products at low costs, and on the other hand, meeting the requirements of certain consumer groups, taking into account their characteristics and capabilities.

In order to create competitive high-quality products, shoe enterprises need to expand and update their assortment, ensure high dynamics of model turnover, increase the volume and efficiency of model and design studies, the quality and satisfaction of the population with shoes.

When developing or updating the assortment, a shoe company must take into account not only its capabilities, but also the presence of competing companies on the market for shoes of a similar purpose, as well as the preferences of buyers in certain market segments.

It is impossible to talk about the quality or competitiveness of shoes in general without taking into account the needs of buyers of a certain group in the markets of the corresponding type. Shoe markets are a heterogeneous collection of buyers with different tastes and preferences.

The activity of identifying potential groups of consumers of specific types of goods is called market segmentation. Segmentation focuses on differences in the behavior of different types of buyers (consumers) in their respective markets. For shoe companies, segmentation of customers is the basis for adjusting the existing structure of the assortment of shoes or for developing new models.

Thus, the segmentation of footwear markets is an important component and the beginning of work to ensure the competitiveness of modern footwear. Its practical significance lies in the fact that the specification of consumer types creates the prerequisites for adjusting and updating the structure and range of footwear, improving technology and organizing production.

The shoe market is an integral element of economic relations, the main participants of which are, on the one hand, shoe manufacturers, and on the other hand, consumers. Footwear is one of the most complex groups of non-food products with a very diverse assortment as a product in this market.

Footwear is one of the most important goods produced by the light industry of the Russian Federation and imported from abroad. The degree of satisfaction of consumer demand, the profitability and profitability of organizations depend on the correct determination of the quantity and quality of models produced by shoe enterprises, on the competitiveness of the assortment. The result of the interaction of the constituent parts of the market (demand, supply, prices for shoes) is the possibility of supply to satisfy the demand for products at a specific price as much as possible.

Thus, the value of the footwear market is to meet the needs of the population. Accordingly, the development of the market leads to an increase in the level of security of an individual member of society. Markets are made up of buyers, and buyers differ from each other in a variety of ways: by their needs, financial and other opportunities, location, buying attitudes and buying habits. In this sense, the Southern and North Caucasian federal districts are of the greatest interest for market segmentation due to the homogeneity of the total consumer, who reacts the same way to the product and how it is evaluated for purchase. The characteristics of regions with market segmentation are presented in Tables 1 and 2, and their geographical location is shown in Figure 1. Taking into account the climatic features of the two districts, namely, relatively mild and humid climate in winter, high temperature in summer and comfortable conditions in autumn and spring, it is necessary, taking into account these features, to form an assortment policy for the manufacture of such an assortment of shoes in order to guarantee its demand and demand not only due to pricing policy, but also providing consumers, especially children, with comfort and prevention of pathological deviations of the feet. Unfortunately, today filling the market with imported products does not ensure the elimination of these problems, which provokes the import substitution of footwear in order to satisfy the demand of consumers of these entities in precisely such footwear that would satisfy them in all aspects,

In market segmentation, businesses subdivide large heterogeneous markets into smaller (and more homogeneous) segments that can be served more efficiently, according to the specific needs of these segments. Shoe enterprises for the successful implementation of their products, first of all, need to segment the consumer market and determine the target segment of this market.

In a general sense, market segmentation refers to the process of dividing the market into groups of consumers according to predetermined characteristics, which allows you to concentrate funds on the most effective market segment. A market segment is a homogeneous set of consumers who react in the same way to a product and how it is presented.

Target segment (market) - a segment selected as a result of a study of the sales market of a particular product or service, characterized by minimal costs for the means of promoting the product and providing the enterprise with the main share of the result of its activities (profit or other criteria for the enterprise to enter this market).

Segmentation of the footwear market in the Southern Federal District and the North Caucasus Federal District can be carried out both on the basis of one and with the consistent use of several indicators, clearly shown in Figure 1.

Segmentation subject	Segmentation object	Segmentation by population	Segmentationin terms of profitability	Segmentationaccording to the average salary
All enterprises producing or intending to produce footwear in the territories of the Southern and North Caucasian Federal Districts	Southern and North Caucasian Federal Districts of the Russian Federation	The larger the population of the segment, the more profitable for the enterprise	The higher the profitability of each resident, the greater the chance to purchase the company's products	The higher the salary of a resident, the more likely it is that he will spend it on shoes

Figure 1 - Criteria for segmenting the footwear market for the subjects of the Southern Federal District and the North Caucasus Federal District

The results of segmentation of the analyzed basic footwear market of the Southern and North Caucasian federal districts can be presented in the form of a table of ratings. The segment with the minimum number of seats in the end is the most attractive.

As a result of the analysis of tables 1 and 2, one republic, a federal city, two territories and three regions were identified in the Southern Federal District, where the largest segmentation of the consumer market is observed from two districts: the Republic of Crimea - 2.25. Sevastopol - 2.4. Rostov region - 2.5%, Krasnodar region - 2.65%, Astrakhan region - 2.7%, Volgograd region - 3.25%, Stavropol region - 5.4%.

However, when performing segmentation, it is necessary to take into account the goals of segmentation.

When creating new enterprises in the regions of the Southern Federal District and the North Caucasus Federal District for the production of footwear, it is necessary to proceed from the demand for the entire range of footwear in order to provide consumers in these regions with demanded and competitive products.

Table 1. The results of segmentation of the consumer market of the Southern Federal District by the method of the sum of places, taking into account weight coefficients

Name of the territorial unit	Population thousand people	Square,km2	Rating positions			
			yield, score×0.45	salary, score×0.30	number, score × 0.25	Sum points, %
Southern Federal District, c. including:						
Republic of Adygea	451.5	7792	3.6	2.1	2.75	8.45
Astrakhan region	1018.6	49024	0.9	0.3	1.5	2.7
Volgograd region	2545.9	112877	1.35	0.9	1.0	3.25
Republic of Kalmykia	278.8	74731	4.95	2.4	3.25	10.6
Krasnodar region	5513.8	75485	1.8	0.6	0.25	2.65
Republic of Crimea	1907.1	26100	1.3	0.5	0.45	2.25
Rostov region	4236.0	100967	0.65	1.25	0.6	2.5
federal city values Sevastopol	416.3	864	1.65	0.55	0.2	2.4
Total	16368.0	447821				

Table 2. The results of segmentation of the consumer market of the North Caucasus Federal District by the method of the sum of places, taking into account weight coefficients

Name of the territorial units	Population thousand people	Square,km2	Rating positions			
			yield, score×0.45	salary, score×0.30	number, score×0.25	Sum points, %
North Caucasian Federal District, incl.						
The Republic of Dagestan	3015.7	50270	4.5	3.9	1.25	9.65
The Republic of Ingushetia	0.473	3628	5.4	1.8	2.5	9.7

Kabardino-BalkarianRepublic	0.862	12470	2.7	3.6	1.75	8.05
Karachay-Cherkess Republic	0.468	14277	4.05	3.3	3	10.35
Republic North Ossetia Alania	0.704	7987	2.25	3.0	2.0	7.25
Stavropol region	2.802	66160	3.15	1.5	0.75	5.4
Chechen Republic	1.394	15647	5.85	2.7	2.25	10.8
Total	9718	170439				

As a result of segmentation, it was determined that the population of the two districts is unevenly distributed over the territory. The income of the population is much less than the average for Russia. When forming the assortment of footwear, one should also take into account the fact that a large proportion of the population is rural residents. In addition, it is necessary to take into account the national characteristics of the inhabitants of these regions, their traditions.

For the efficient operation of domestic enterprises for the production of competitive children's shoes, it is advisable to provide for the use of innovative flexible technological processes, the use of universal and multifunctional equipment, various methods of attaching the bottom of shoes, expand shoe production, production of technical equipment, accessories, production of auxiliary materials, which will significantly reduce the cost of its production and increase competitiveness not only in the markets of the Southern and North Caucasian Federal Districts, but also in the domestic markets of other regions of Russia, guaranteeing its stable demand and implementation, thereby ensuring a less painful and more effective replacement of one shoe model with another, guaranteeing the formation of new jobs within small and medium enterprises,that is, their social security.

Since in the work the competitiveness of an enterprise is considered as a property of an object to produce competitive products due to the more efficient use of its competitive potential compared to competitors, the following are proposed as factors for assessing competitiveness: product competitiveness (considered as a result) and competitive potential (considered as an enterprise resource) . The competitiveness of an enterprise is assessed in a particular market. The environmental factors for the regions of the same market will be the same, so they are not included in the assessment. However, in planning the competitiveness of enterprises, environmental factors must be taken into account.

The third problem is the choice of a method for reducing dimensional indicators to dimensionless ones. To assess the competitiveness of an enterprise, researchers propose a system of dimensional (with different units of measurement) indicators. In order to bring them to comparable (dimensionless) units of measurement, we use the index method.

Index (Aleksandrovich Ya.M., N.K. Moiseeva, M.V. Konysheva) - to convert the dimensional units of measurement of competitiveness indicators into dimensionless ones, the index is calculated as the ratio of the dimensional indicator of the competitiveness factor assessment to the maximum value of the indicator in this market. It seems that this method of comparing indicators for assessing the competitiveness of an enterprise has the following advantages: firstly, it allows you to compare the analyzed indicators with those of the leader in the industry, which corresponds to the essence of the category "competitiveness" as a comparison with a competitor; secondly, it is less laborious and easily algorithmized; thirdly, it is more suitable for comparing quantitative than qualitative indicators.

Thus, a methodology for analyzing and evaluating the competitiveness of an enterprise based on measuring the competitive potential is proposed, which includes the following steps.

1. The choice of indicators for assessing the factors of enterprise competitiveness.
2. Determining the significance of indicators in the overall assessment of competitiveness.
3. Calculation of dimensionless estimates of enterprise competitiveness indicators.
4. Assessment of the competitiveness of the goods.
5. Calculation of a generalizing indicator of the competitiveness of an enterprise.
6. Analysis of the competitiveness of the enterprise.

Table 3 shows a system of indicators for assessing the competitive potential of enterprises.

Table 3. The system of indicators for assessing the competitive potential of an enterprise

Factors of competitive potential	Assessment indicators
	The ratio of the quality of the product and the costs of its production and marketing

1. Marketing effectiveness	Marketable output growth rate
	Growth in sales and profits
	Profitability
	Market share, image
2. Management effectiveness	return on total assets, return on equity; return on investment
	Net profit per 1 rub. sales volume; profit from product sales for 1 rub. sales volume; profit otch. period for 1 rub. sales volume
3.Financial condition of the enterprise	Equity ratio; current liquidity ratio; coverage ratio, autonomy ratio, fixed asset index, overall enterprise profitability, return on equity, product profitability
4. The level of organization of production	Capacity utilization rate; production and marketing capacities; volume and directions of investments
	The share of certified products in accordance with the international standards of the ISO 9000 series
	Depreciation of fixed assets, growth in labor productivity
5. Efficiency of MTO	Quality and prices of supplied materials. Material return, commodity circulation, allowing direct connections; coefficient of uniformity of receipt of goods; return on transaction costs; profitability of the purchase of goods
6. Activity of innovative activity	Annual expenditure on R&D, number of patents for inventions
	Share of innovative goods, share of product exports, number of advanced technologies created
	The volume of shipped innovative products (services), the number of patented technologies, the number of patent-free technologies, the cost of innovation, the number of acquired and transferred new technologies, software
7. Competitiveness of personnel	Staff turnover rate, coefficient of labor productivity in relation to wages, educational level of the labor force, level of professional qualification of workers

For each factor of the competitive potential of enterprises, indicators of the competitiveness of the enterprise and their significance were selected (Table 4).

Table 4. The system of indicators for assessing the competitiveness of an enterprise and their significance

Factorsenterprise competitiveness	Indicators	Significance, %
1.Competitiveness of goods	Product range weighted average competitiveness	50
2. Marketing effectiveness	Exceeding the allowable level of stocks of finished products	5
	Sales growth rate	5
	Total	10
3. Management efficiency	Return on investment	3
	Costs per 1 rub. products sold	3
	Total	6
4. Financial condition of the enterprise	Working capital ratio	3
	Current liquidity ratio	3
	Total	6
5. The level of organization of production	Capacity utilization rate	2
	Labor productivity	2
	Depreciation of fixed assets	2
	Total	6
6. Efficiency of MTO	Reducing the level of material consumption	3
	Material return	3
	Total	6
7. Activity of innovative	Share of innovative products	5

activity	Innovation costs	5
	Total	10
8. Competitiveness of staff	The coefficient of advancing the growth of labor productivity in relation to the growth of wages	3
	Staff turnover rate	3
	Total	6
	Total significance of competitive potential	50
	Total Maximum Significance Score	100

Determining the significance of indicators in the overall assessment of competitiveness. The economic meaning embedded in the content of the concept of "competitiveness of an enterprise" (as the ability of an enterprise to produce competitive goods due to the higher value of its competitive potential compared to competitors), the authors came to the conclusion that the importance of the components of the competitiveness of enterprises is equal, i.e. 50% is the “contribution” of the competitiveness of the product and 50% is the “contribution” of the competitive potential, and then the economic and mathematical model for assessing the competitiveness of the enterprise will look like

Kp= f (50% Kt, 50% Pk),

where *Kp*- competitiveness of the enterprise,

ct- product competitiveness,

PC- the competitive potential of the enterprise.

The significance of private indicators for assessing the competitive potential is defined as follows. The most significant (10%) in the assessment is occupied by such factors as the activity of innovative activity and the effectiveness of marketing, which is justified by the specifics of the industry: the high importance for consumers of such a property, a product as conformity with the fashion direction; frequent change in fashion and its impact on changing consumer preferences; the choice of "fashion goods" is dictated by aesthetic considerations and public recognition; high differentiation of consumer preferences by market segments; a wide range and lack of a reference material with which to compare to assess competitiveness.

The significance of the remaining five factors of competitive potential (management efficiency, financial condition of the enterprise, level of production organization, logistics efficiency, personnel competitiveness) is taken equal to each other and is determined by mathematical calculations:

(50% - 20%) / 5 = 6%.

The significance of private indicators for assessing each factor of competitive potential is determined by dividing the significance for each factor by the number of indicators for evaluating the factor. Another solution is possible, but the authors of the conducted studies found this approach reasonable and effective.

As already mentioned, we use the index method to calculate dimensionless estimates of enterprise competitiveness indicators. Indices of dimensionless indicators are determined by formula (2) for positive indicators with a positive trend - growth (for example, profitability of sales, labor productivity) and by formula (3) for negative indicators with a positive trend - decrease (for example, depreciation of fixed assets, excess of the balance of finished products in the warehouse compared to the norm, the staff turnover rate).

For the maximum (minimum) value for each indicator, the value of the indicator of the leading enterprise in the industry is taken. The proposed methodological approach is a method for constructing a model of an industry "leading enterprise". In its capacity is a conditional enterprise, which is formed according to the highest indicators of the analyzed enterprises of the industry. This approach to the formation of a leader enterprise model is acceptable, as it allows taking into account the desire of each enterprise to improve in a competitive environment.

We believe that a more effective way to translate indicators that have a “negative value”, that is, the lower the level of material intensity, the more effective the competitiveness of the product, is to consider it as “+ 1”, and with an increase in the level of material intensity, the indicator of the competitiveness of the product will decrease in this case as well the level of material consumption will tend to zero. Thus, the value of the technological process efficiency coefficient will always have a positive value and tend to unity, thus confirming the most reasonable choice of innovative technological solutions that guarantee competitive advantages for the enterprise and products in the demand markets.

Assessment of the competitiveness of the goods. Light industry goods, due to its diversified nature, are diverse in their consumer and technical properties and have a wide range. In order to reduce the complexity of calculations, it is proposed to assess the competitiveness of the assortment group of goods. An assortment group is understood as an assortment of goods united by common characteristics into certain sets of goods. Light industry goods have different properties due to their industry (clothing, knitwear, footwear, fabrics, etc.). The parameters for assessing

the consumer properties of light industry goods are divided into the following groups: aesthetic, functional and cost. Each group of parameters is characterized by a system of single indicators. To determine them, it is proposed to use the sociological method using the developed questionnaires, in which the author has prepared a list of assessment indicators for the types of goods (shoes, clothing). Respondents can supplement this list by including indicators that are important for them when evaluating a product. The developed questionnaires make it possible to assess the significance of individual consumer parameters of goods for various market segments, for which they include questions that characterize the signs of customer segmentation.

For the qualitative characteristics of the obtained assessments of competitiveness, a scale for assessing the quality level is required. In economic practice, the principle of building scales with equal steps, progressive and regressive scales are used. Progressive and regressive scales are most often used for material incentives. We believe that the scale with an equal step is the most appropriate, since, firstly, it corresponds to the solution of a practical problem (specification of the quality level of competitiveness), and secondly, it is easy to build and use. The scale step is defined as 100 (maximum score): 4 (number of levels) = 25. As a result of the calculation, the following scale was obtained (table 5).

Table 5. Scale for assessing the quality level of enterprise competitiveness

Percentage score	Quality level
0 to 24.9	very low
from 25.0 to 49.9	short
from 50.0 to 74.9	average
from 75.0 to 100	high

The economic meaning of the obtained generalized assessment of competitiveness is that it shows the degree of satisfaction with the product and the degree of use of the competitive potential of the enterprise. Stage 6. Analysis of the competitiveness of the enterprise. An analysis of the competitiveness of an enterprise is proposed to be carried out in the following areas:

1. Calculation of the comparative competitiveness of enterprises.
2. Analysis of the implementation of the plan for competitiveness.
3. Analysis of the dynamics of the level of competitiveness of the enterprise.
4. Identification of competitive advantages and competitive problems in the internal environment of the enterprise.

1. Calculation of the comparative competitiveness of enterprises.

The comparative competitiveness of an enterprise shows the degree of advantage (or lag) over the main competitor. Its results are necessary for developing a competition strategy. The calculation formula looks like

To = Ko / Kk,

Wed. P P

where Ksr is a comparative assessment of the competitiveness of an enterprise, coefficient;

Kno- assessment of the competitiveness of the assessed enterprise,%;

Knk– assessment of the competitiveness of a competitor enterprise, %.

If the comparative assessment of the competitiveness of an enterprise is greater than 1, then the analyzed enterprise has a higher level of competitiveness and vice versa.

2. Analysis of the implementation of the plan for competitiveness. It is carried out on the basis of comparing the actual level of competitiveness of the enterprise with the planned value.

3. Analysis of the dynamics of the level of competitiveness of the enterprise. The dynamics shows the change in the indicator over time, and the frequency should be at least 1 year.

4. Identification of competitive advantages and competitive problems in the internal environment of the enterprise. This analysis is carried out based on the results of assessing the competitiveness of enterprises. Competitive problems will be those factors of competitiveness that will receive the smallest (in comparison with competitors) dimensionless assessmentindicators; competitiveAdvantages - factors that received a higher rating. The identified competitive advantages and competitive problems of enterprises are the information base for developing a strategy to increase the competitiveness of enterprises.

The developed methodology for assessing and analyzing the competitiveness of an enterprise, in contrast to the existing ones:

firstly, it takes into account the specifics of the "light industry" industry;

secondly, it reduces the subjective factor in the assessment;

thirdly, it allows for an in-depth analysis, thanks to the proposed directions and indicators for analyzing the competitiveness of enterprises.

The assortment policy consists in developing the implementation of decisions regarding the

nomenclature (names) of manufactured products, the diversity of the assortment of one name, the need to expand the range of products produced.

To determine the volume of expected demand by consumers for new products and ensure a balance between supply and demand, it is advisable for shoe enterprises to use the method of expert assessments.

A survey of experts (professionals in trade and industry) is conducted when the samples of new products required for examination are ready.

Based on the results of the expert survey, a final report is drawn up, where the expected volumes of demand for the company's products are determined. Based on these predictive recommendations, a survey of consumers and the production capabilities of the enterprise, an optimal assortment structure is compiled.

One of the most difficult issues in the methodology of expert surveys is the selection of experts and the formation of a commission of experts with the highest degree of agreement of opinions and a high level of competence.

The level of competence - the key criterion for selecting experts - is a subjective concept, a unified methodology for assessing the competence of experts has not been developed.

To form an optimal assortment policy and demand for the products of a shoe company, it is proposed to use one of the methods for assessing the competence of experts, which is based on the calculation of the coefficient of competence Kj.

The coefficient of competence Kj is calculated on the basis of the expert's judgment about the degree of awareness of the problem being solved and the indication of the sources of argumentation of his own opinion.

The competence coefficient is calculated by the formula:

$$Kj = 1/2 = (Kuj + Kaj)$$

where Kuj is the coefficient of awareness on the problem;

Kaj- coefficient of argumentation on the same problem.

The considered method for evaluating the competence of experts can be used if there is sufficient reasoning about the reliability of the results of their work.

For the reasonable formation of a commission of experts with the highest degree of agreement of opinions, an algorithm has been developed, the mathematical justification of which is presented in the article.

This software product allows you to select a subgroup of experts from the existing group of experts with the highest degree of agreement of opinions (Figure 2)

The causes of the first group of problems - technical andtechnological backwardness of light industry from foreign countries are:

– low potential of equipment installed in the industry, most of which is morally and physically obsolete. The share of equipment in the machine park of the industry (according to Rosstat), operated up to 5 years, amounted toat the beginning of 2022 1.2%, 6-10 years - 39.6%, 11-20 years - 45.4%, more than 20 years - 13.8%.

Worn-out and obsolete equipment is not only unable to produce a modern range of high-quality products, but also creates unsatisfactory working conditions, leading to increased industrial injuries. As a result of this factor, the specific labor intensity of production in the industry is 3-5 times higher than abroad;

– lack of modern technological repartitions and automated production management systems;

– lower, in comparison with the world's accepted standards, the pace of technological renewal. The coefficient of equipment renewal at Russian enterprises is 1-2% per year and is carried out at the expense of credit and own funds, at foreign firms this figure is 16-19%, which is largely due to investment support from their states interested in the development of light industry. The low level of equipment renewal leads to a reduction in production capacity (due to a significant excess of the output of obsolete and physically worn out equipment over the commissioning of new equipment). Over the past 5 years, production capacity has decreased:

– for cotton gray fabrics by 14%;

– for linen fabrics by a third, and for woolen fabrics by almost 4 times;

– for knitwear by 1.8 times, hosiery by 10%;

– shoes by 62%.

Summary: the state of fixed assets, especially their active part, does not meet modern requirements in terms of indicators characterizing the competitive and technical level of the industry's production potential.

– a significant lag behind foreign enterprises in the level of production organization, in the operational control of the technological process, in the efficiency of the marketing services of enterprises and a long 2-2.5 times the duration of the execution of orders for the manufacture of products.

PROBLEMS OF LIGHT INDUSTRY	CAUSES OF PROBLEMS	RESULT OF IMPACT
The technical and technological backwardness of the industry foreign countries	◆Moral and physical depreciation of BPF, especially their active part. ◆Absence at many enterprises of modern technological conversions: bleaching, dyeing, printing and final finishing of fabrics, which mainly affect the consumer properties of finished products. ◆Low OPF renewal ratio - 3-5% per year, against 14-16% in economically developed countries, whose products prevail on the Russian market. ◆Lack of automated control systems for the production process.	◆High raw material intensity, labor intensity, energy intensity of production. Low level of equipment productivity and production profitability, high share of unprofitable enterprises (30.7%). ◆Low quality, "uninteresting" design and high cost of production. ◆The gap between the development of the world market for light industry products and the development of the Russian industry, its capabilities in increasing the growth rate of production of goods and the volume of their supply to the market.
Low level of innovation and investment activity	◆Insufficient level of investment for the modernization and restructuring of production (0.75% of the total volume of capital investments invested in the fixed capital of manufacturing industries). ◆Shortthe level of use of production capacities (35-50%) and the development of advanced technologies. ◆Violation of the harmonious development of industrial production and branch science. ◆Decreased budget financing of scientific developments, low level of assimilation of positive results and achievements of science at enterprises.	◆Degradation of knowledge-intensive industries, a small share of innovative science-intensive products on the market, including nanoproducts. ◆A growing gap between consumer requirements for the quality of finished goods and the ability of enterprises to satisfy them. ◆High commodity dependence on foreign countries. ◆Formation of a negative attitude towards Russian producers in the world market.
High specific shadow weight economy	◆Non-compliance of production, assortment and quality of products with the demand of the Russian and world markets, due to: *lagging behind Russian fashion from European trends by 2-3 years, exceeding the competitiveness of imported products over Russian ones in terms of design, quality and price; *high production costs (reasons - the galloping rise in prices for raw materials, services and products of natural monopolies); *lack of own raw material base, new types of fibers, dyes and TVV, low quality and narrow range of raw materials.	◆Weak competitive positions of Russian producers; ◆The increasing expansion of imported goods and counterfeit products in the Russian marketke, whose share in the volume of sales of goods is about 70-75% Bankruptcy of domestic enterprises. ◆Strengthening the strategic and commodity dependence of the state on foreign countries.

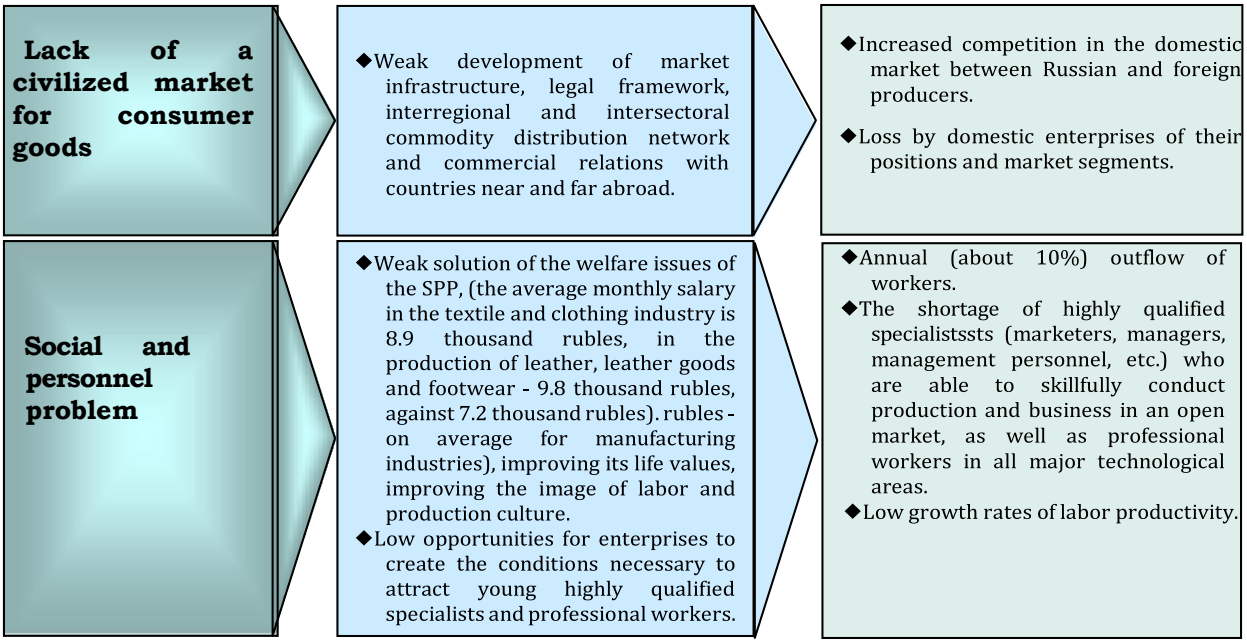

Figure 2 - Problems of light industry and their causes

As a result of the impact of these reasons, there is a high dependence of textile enterprises on the quality of raw materials, dyes and textile auxiliaries (TVA) and, as a result, high production costs due to the high cost of raw materials, dyes, TVA and accessories (a large share of which are imported due to border), and high energy costs, the prices of which are growing unreasonably at an ultra-fast pace; and weak competitiveness in the domestic and European markets of Russian goods in comparison with imported ones, both in terms of quality, design and price, and in terms of assortment, which is the main obstacle to the successful competition of domestic producers with foreign ones.

The second group of problems is the low level of innovation and investment activity due to the following reasons:

– the lack of investments necessary for the modernization of the industry and the introduction of "breakthrough" innovative and investment projects that make it possible to remove structural restrictions on the development of the industry and enter the production of completely new (in terms of consumer properties) types of products that are in demand in the foreign and domestic markets;

At the same time, it is important to keep in mind that if today the domestic light industry can cover the needs in the public procurement sector, then tomorrow, when the demand for products increases, domestic production will not be able to satisfy the growing demand even in this segment - which is unacceptable. In this regard, the development of import substitution through an increase in the production of quality products is the only possible way to solve the problem of production potential, the growth of which, having begun in the public sector, will move to the market as a whole.

– a reduction in the volume and effectiveness of research and development due to a decrease in the volume of budgetary financing of R&D (in 2020, R&D was performed at the expense of the budget by 22.7 million rubles, in 2021 - by 25.0 million rubles). To the greatest extent, this affected fundamental and exploratory research. Many scientific developments that can form a new technological basis for the industry to expand the production of competitive science-intensive products have not been brought to completion and require continuation and deepening of developments.

Scientific organizations are not allocated funds for the development of their experimental base,which reduces the effectiveness of scientific research. And this, despite the fact that the achievements of Russian scientists are not inferior and even many of them surpass the world level in the field of creating new technologies and a new competitive range of products. The importance of industry science is evidenced by the fact that in 2018-2021 six scientific papers were awarded the Prize of the Government of the Russian Federation in the field of science and technology.

Leading foreign countries invest 6-9% of their product turnover in the development of science and its experimental base, which allows them to consistently achieve high achievements in science, improve the technological level of production and the competitiveness of goods in accordance with the requirements of the world market.

Failure to take measures to solve problems related to the development of science and the effectiveness of scientific support for the industry will inevitably lead to the emergence of possible risks of an economic and social nature in its work. Deprived

of the influx of new technologies, the industry will no longer be able to compete with foreign firms, which will affect the ability of Russian producers to maintain their positions in the domestic market and conquer new segments in foreign markets. The technological backwardness of the industry in the foreseeable future may become an irreversible process, which will increase the strategic and economic danger of Russia.

– low level of development in the industry of positive results of scientific developments and innovations (less than 1% of enterprises). This negatively affects technological modernization, expanding the range of products (both civilian and strategic) and quality, the ability to give them new functional and consumer properties using modern technologies, including nanotechnologies.

Without taking effective measures to improve the current situation in the industry, its developmentcan reach a critical level.

The reasons for the high share of the shadow economy are:

– non-compliance of production, assortment and quality of products with the demand of the Russian and world markets

– weak development of the Russian fashion industry, its lagging behind European and world trends by 3-4 years

– the result of the impact of the first group of systemic problems.

The main reasons for the absence of a civilized consumer goods market are:

– poor development of market infrastructure, interregional and intersectoral commodity distribution network and commercial relations with countries near and far abroad;

– imperfection of legislation in the field of production,export and import of Russian products. Given the complex and multifaceted nature of the problems of this group, cardinal measures are needed to solve them, including state support, as is done in foreign countries. For example, the recognition by the governments of China, Turkey and some other countries of light industry as a strategic industry allowed them to quickly turn outdated industries into modern ones and promote the powerful development of raw materials, chemical and machine-building complexes in these countries.

In Russia, in recent years, some steps have been taken by the state to normalize the situation in the light industry. The Government of the Russian Federation has provided a number of preferences to enterprises in the industry. For the third year now, technological equipment has been imported into the country at zero import duties and without VAT. There is a mechanism for subsidizing interest rates on loans for the purchase of raw materials and materials. Since 2014, this mechanism has been extended to loans received for technical re-equipment. Support and incentives are provided for exporters of industrial products by reimbursement from the federal budget of part of the cost of paying interest on loans received for the production of export products. Although not large, funds are allocated from the federal budget for R&D in the interests of light industry.

Efficiency of preferences: - each ruble invested in the industry in the form of subsidies on loans provides additional revenues to the budgets of all levels and state non-budgetary funds from 6 to 7 rubles, and for individual enterprises - from 20 to 30 rubles.

Operative and preventive measures "Counterfeit" were carried out to curb the illegal circulation of light industry goods. In particular, in 2020, as a result, more than 700 crimes were identified, for which material damage in criminal cases amounted to more than 2.7 billion rubles. In the course of the investigation of criminal cases, property worth more than 73 million rubles was seized, property, money, valuables were confiscated and the damage inflicted in the amount of more than 57.6 million rubles was voluntarily repaid. In many constituent entities of the Russian Federation, there is also a wider list of benefits, including property taxes, land taxes, and others.

At the same time, the existing preferences and the problems of the industry being solved to some extent at the federal and regional levels are still insufficient to eliminate the influence of negative factors on the development of the industry and turn it into a competitive and self-developing sector of the country's economy, and for domestic producers to strengthen their positions. In the domestic market and compete on an equal footing in the world market not only with the EU countries and the USA, but also with manufacturers in China, Turkey, India and a number of other countries.

Hence the key task is to accelerate the qualitative modernization of the industry and its supporting infrastructures using cluster approaches, the widespread use of the best world and domestic achievements in the field of technology and technology of textile, clothing, fur and leather and footwear production, including nanotechnologies and nanoproducts.

Social and personnel problems are caused by the state of the qualitative component of the personnel potential, which in many enterprises is in the zone of critical values, and in some - already beyond them.

The deteriorating situation in the professional and qualification training of workers, low wages and the prestige of work lead to an annual reduction in the number of, mainly, young and promising workers under the age of 30–40. Over the decades alone (from 1990 to 2008), the number decreased by 3 times, and over the next thirteen years - by 2.8 times, which led to a drop in output. At the same time, the measures taken for anti-crisis management of unprofitable

enterprises by the state administration and management failed to influence the course of development of structural imbalances in the industry.

Failure to solve the problems of this group will significantly affect the ability of the industry to boost its economy and increase the production of competitive products in the volumes necessary to ensure the national security of the country.

In addition, all of the above problems are exacerbated by the impact of the global financial crisis. In a crisis, the light industry, like no other, beginsfeel his actions. Even those enterprises that in recent years have achieved positive results in innovative development, paying considerable attention to the modernization of production, are already forced and will be forced in the coming years to reduce production volumes and abandon long-term investments. This is due to the difficulties that have arisen associated with attracting bank loans (the share of borrowed funds in working capital has reached 40 percent in recent years), on the one hand, an increase in the volume of official imports, counterfeit and contraband products, a drop in demand and a slowdown in the sale of many types of goods, a reduction in workers and professionals on the other hand. Some enterprises began to experience delays in the payment of wages from 2 weeks to 1.5 months, temporary suspensions of work began and, according to experts, by the end of 2021, a reduction in the number of employees by 10-15 percent is possible. This is especially true for the three federal districts - the Central Federal District, the Volga Federal District, the Southern Federal District, which are the most significant in social terms. The capital structure of the industry, being concentrated in these districts, makes their territories the most critical in terms of the consequences of a deepening decline in production, which increases the significance of the social consequences arising from the shutdown of production. The share of Russian goods in the domestic market will decrease even more and may be less than 20 percent in 2022. the most important socially. The capital structure of the industry, being concentrated in these districts, makes their territories the most critical in terms of the consequences of a deepening decline in production, which increases the significance of the social consequences arising from the shutdown of production. The share of Russian goods in the domestic market will decrease even more and may be less than 20 percent in 2022. the most important socially. The capital structure of the industry, being concentrated in these districts, makes their territories the most critical in terms of the consequences of a deepening decline in production, which increases the significance of the social consequences arising from the shutdown of production. The share of Russian goods in the domestic market will decrease even more and may be less than 20 percent in 2022.

It is possible to change the current situation only by developing and implementing anti-crisis measures aimed at intensifying innovation, increasing production efficiency at a new technical and technological level and creating favorable conditions that ensure a stable growth over the years in the production of competitive goods.

It is gratifying that the meeting held on August 24, 2017 in Ryazan "On measures to develop light industry" with the participation of government officials, heads of trade enterprises and scientists with the personal participation of the President of the Russian Federation V.V. Putin forced them - the participants - to give answers to the President to uncomfortable questions about the reasons for the unsatisfactory state of the light industry and about the failure to fulfill the tasks that were formulated in 2013 in Ivanovo at a similar meeting and with practically the same participants. I would like to believe that the deafness syndrome and the desire to boycott the implementation of their own proposed tasks will decrease in the municipal, regional and federal branches of power, since the president will definitely check and ask about the reasons for their non-fulfillment. In any case, such confidence appeared in the majority of participants in this meeting, because the president at the Eastern Economic Forum, which took place on September 5-8, 2021 in Vladivostok at a closed meeting in a tough form, demanded from those responsible for the disruption of similar events in the Far East, which provoked the dismissal and dismissal of those officials who are more did not achieve the tasks assigned to them. We have such confidence due to the fact that the situation of light industry is extremely bad and can lead to a catastrophe not only economic but also social. All experts objectively expressed their opinion on the questionnaires they proposed with factors in order to answer the main question posed in the heading - “To be or not to be a light industry?”. Another thing is that their vision on this issue can be subjective and, of course, has the right to be. But, the researcher himself must decide on the results of the a priori ranking, guided by the opinions of other research scientists on identical problems, comparing them with those obtained and deciding on the eligibility of including them in the object of study. Such a decision requires the competence of not only the experts-respondents themselves, but also a deep knowledge of the problems by the researchers themselves.

It is encouraging that all expert respondents are unanimous in assessing the role of assortment policy and the need to use effective innovative technological solutions to guarantee manufacturers the manufacture of such products that would be in demand by consumers in the regions of the Southern Federal District and the North Caucasus Federal District and would provide them with effective technical and economic performance indicators their activities, and

products - its demand not only in the domestic, but most importantly, in foreign markets. The fact was again confirmed that there is every reason to trust the results of a priori ranking, and the software developed by the authors for assessing the competence of survey participants has a long life. This use of software is especially justified when assessing the competence of expert respondents, invited by customs committees for their work in customs commissions. Customs managers receive an objective assessment of each expert-respondent based on the results of their participation in the work of customs commissions, since in this case the expert cannot but agree with the received objective assessment of his competence, and customs committees receive a ranking methodology, giving preference to the most qualified and objective experts to ensure that only high quality products enter the domestic markets, and guarantee the safety of the consumer.

I would like to warn the customs committees about the haste in making decisions about the competence of experts if they do not have an objective testimonial received from highly qualified specialists. All this presupposes a correct attitude not only to one's duties, but also to the invited specialists, creating a trusting atmosphere and interest in obtaining positive results of the examination. If we sum up the effectiveness of the software for assessing the competence of respondents participating in the survey, then the researcher has a tool for selecting those respondents whose opinion has a high degree of confidence, confirmed by the value of the concordance coefficient (W), which tends to unity. Thus, summing up the effectiveness of a priori ranking and the software developed by the authors.

Roadmap for the implementation of the strategy for the development of light industry until 2025

The implementation plan of the Strategy provides for cross-cutting activities implemented throughout the entire period of the Strategy:

- ❖ support for the creation and development of Russian clothing and footwear brands;
- ❖ combating illegal and illegal turnover of light industry goods;
- ❖ export promotion in competitive light industry segments
- ❖ preservation of leather raw materials for own production of leather and footwear;
- ❖ formation of personnel potential of the industry;
- ❖ promotion of R&D and technology transfer;
- ❖ information and marketing support for the development of the industry;
- ❖ monitoring the effectiveness of the implementation of the strategy and adjusting the plan.

In addition, a number of strategic initiatives will be implemented in stages:

Stage 1. The main activities are implemented in the period 2019-2020:

- ▪ preparation for the implementation of the strategy;
- ▪ stimulating the development of the production of synthetic textiles (synthetic fabrics);
- ▪ stimulating the growth of consumption of technical textiles;
- ▪ creation of an eco-system of enterprises for the production of technical textiles and nonwovens within clusters / industrial parks;
- ▪ stimulation of demand for special and protective clothing and footwear;
- ▪ creation of favorable conditions for contract clothing and footwear production;
- ▪ reorientation of clothing production to competitive products with advantageous access to materials and a low share of manual labor;
- ▪ support for the creation of a production infrastructure within the framework of ASEZs based on footwear industry clusters;
- ▪ providing profitable access for manufacturers to the functional components of clothing and footwear;
- ▪ stimulating the production of automotive leather and increasing the degree of localization of auto components.

Stage 2. The main activities are implemented in the period 2021-2023:

- ▪ formation of demand for chemical fibers;
- ▪ support for projects to localize the production of chemical fibers;
- ▪ stimulating the processing of leather production waste and the introduction of new technologies to improve the environmental safety of production.

Stage 3. Monitoring of results and implementation of cross-cutting initiatives in the period 2024-2025

Conclusion

If customer satisfaction is formed at the expense of the level of the manufacturer, i.e. its test level is formed by the affordability of the product, which is offered by the assortment range, of course, by quality, and at the expense of the level of the consumer, i.e. its test level implies the existence of a customer service culture, product priority, customer satisfaction, and, of course, the solvency of the consumers themselves; those respondents who took part in the survey believe that consumer satisfaction will be ensured by the reliability of the product, its affordability, the ability of buyers to make purchases, i.e. their ability to pay. The natural quality of products, the diversity of the product range, the priority of the design decision, i.e. fit the fashion products must have a sufficiently long

warranty period, and interestingly, all respondents are unanimous that manufacturers should fight for the respectful attitude of buyers towards them, win their trust and desire to buy the products of these enterprises, i.e. the brand and image are always in demand, which together solves the main problem - providing consumers with domestic products in the framework of import substitution.

The criteria for assessing the competitiveness of a light industry enterprise using the software developed by the authors for the first time made it possible to formalize the role of experts - respondents on the basis of their competence in the problem under consideration. The need for such an approach is due to the desire to have an objective assessment of competence, taking into account not only the opinion of the invited party of expert respondents to participate in the survey, but also with the help of an evaluation criterion - the concordance coefficient (W) - the value of which varies from 0 to 1. And if W=0–0.5, then this is their lack of agreement with the opinion of those experts whose concordance coefficient (W) tends to 1, which confirms their high competence and the possibility of their further participation as expert respondents.

Table 6. Results of a survey of respondents on the influence of factors on the competitiveness of an enterprise and the competitiveness of goods

Factors	Expert opinion							
	Characteristics of survey participants							
	Opinion of survey participants with heretics				Opinion of survey participants without heretics, those. Whose opinions do not agree with the majority of survey participants			
	students	Specialists	All participants survey	Agreedopinion respondents	students	Specialists	All participants survey	Agreedopinion respondents
1	1	1	1	1	3	1	3	3
2	2	4	2	2	1	6	1	1
3	4	6	4	4	4	11	4	4
4	3	3	3	3	2	7	2	2
5	6	23	7	6	10	16	10	10
6	7	8	6	7	12	3	12	12
7	9	13	9	9	6	26	6	6
8	12	22	14	8	11	8	11	11
9	5	15	5	5	7	27	7	7
10	13	16	19	16	5	13	5	5
11	16	17	18	17	8	18	8	8
12	26	28	27	10	13	28	13	13
13	10	11	11	11	16	9	16	16
14	20	27	25	27	15	23	15	15
15	8	26	13	13	17	20	17	17
16	31	21	31	31	21	19	21	21
17	11	15	12	12	18	2	18	18
18	13	5	8	14	19	4	19	19
19	21	31	26	15	20	31	20	20
20	15	20	20	18	22	29	22	23
21	14	18	16	20	24	10	24	24
22	29	24	28	28	26	22	26	25
23	27	29	30	21	25	21	25	26
24	19	25	22	19	23	25	23	22
25	23	10	21	23	27	5	27	27
26	18	14	15	24	14	17	14	14
27	24	9	17	25	28	24	28	28
28	25	19	24	26	29	30	29	29
29	30	12	29	29	30	15	30	30
30	28	7	23	30	31	12	31	31
31	22	2	10	22	9	14	9	9

Respondents identified the most significant factors:

X1 The ratio of the quality of the product and the costs of its production and marketing

X2 Performance labor

X4 Expenses per 1 ruble of sold products

x3 Coefficient outstripping labor productivity in relation to the growth of wages

x9 Profit units of sold products

x5 weighted average in terms of product range competitiveness of goods X6 Quantity assortment groups at the enterprise

X8 Degree of satisfaction with each assortment group X7 Share of the assortment group in the total volume of production X13 Break-even per unit of sold products

X17 Assessment of the level of partnerships with the stakeholders of the enterprise,

Experts considered the following to be significant factors:

X10 Conditionally variable costs per unit of products sold

X11 Semi-fixed costs per unit of products sold

X12 The weight of the total price per unit of products sold

X15 Sales growth rate

X18 Company's market share X19 Return on investment

X20 Return on total assets X21 Innovation costs

X24 Material return,

and not significant respondents called the following factors:

X14 Margin of financial strength from the volume of products sold

X16 Exceeding the allowable level of stocks of finished products

X22 Equity ratio

X23 Capacity utilization rate

X25 Percentage of certified products in accordance with international standards of the ISO series

X26 Reducing the level of material consumption X27 Share of innovative products

X28 Trade turnover allowing direct links

X29 Coefficient of uniform supply of goods to sales markets X30 Depreciation of fixed assets

X31 Staff turnover rate

The results of a survey of experts on assessing the competitiveness of an enterprise and the competitiveness of light industry goods (Table 6), although they received a value of the concordance coefficient (W) in the range of 0.4-0.6, but excluding heretics, that is, those respondents whose opinions do not coincide with the opinion most other experts, we found a pleasant fact that the opinion of those respondents whose authority is not in doubt, and those who were classified as heretics by the program, have an unambiguous or close opinion that the factors characterizing their influence on the competitiveness of an enterprise and the competitiveness of a product are identical, and they can be used in further research when assessing this very competitiveness of enterprises, assuming that it is capable of manufacturing import-substituting products for consumers in the regions of the Southern Federal District and the North Caucasus Federal District. Wherein, manufacturers have every reason for these criteria, namely: the ratio of the quality of the goods and the costs of its production and marketing; sales growth rates; innovation costs; labor productivity; the level of partnerships between interested participants in the production of import-substituting products; costs per 1 ruble of sold products, and the main criterion; the weighted average competitiveness of the product range is considered to be in demand.

But at the same time, all expert respondents were unanimous that the competitiveness of the enterprise will be more stable over time if the share of the enterprise in the demand market is stable. In any case, it will not decrease over time if it is guaranteed a return on investment and, of course, a stable profitability of the total assets of the light industry engaged in the production of import-substituting products is ensured. The opinion of all experts is justified that the competitiveness of an enterprise is also affected by a stable turnover on the basis of direct contractual relations with the distributors of the products of these same enterprises.

We also agree with them on the issue of the role of highly qualified personnel, which, of course, although it was reflected in the questionnaire in the form of one criterion - the staff turnover rate - but, unfortunately, did not cause concern among experts due to the liquidation of lyceums, colleges, on the basis of which highly qualified workers and middle managers were trained - foremen, technicians, mechanics, technologists, engaged in servicing not only the innovative technological process, but also innovative equipment. And it is quite sad that the training of engineering and technical personnel has practically ceased, motivating all this by the lack of demand for them, although the heads of enterprises themselves are at a loss. There is also a downside to this situation, namely, managers have avoided the training of these most highly qualified specialists through targeted training in colleges and universities, not wanting to bear the costs of this very training, forgetting the Russian proverb: "The miser pays twice." It is also disappointing that most business leaders believe that everything will resolve itself, but if a shoemaker, a seamstress, a furrier can be trained at the workplace, then a lead engineer - manager and

production organizer can be trained for filled technological processes with an effective innovative solution, unlikely.

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Issue Article

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PREREQUISITES FOR ENSURING THE PRODUCTION OF COMPETITIVE AND DEMANDED PRODUCTS

Abstract: *in the article, the authors motivate the manufacturer to recommend to the market due to their motivation, managing quality, to produce import-substituting products for the consumer, to revise their concept of forming a market with demanded and competitive goods, taking into account their priority. Such a mutual understanding will fully correspond to the desire of the consumer to satisfy his desire to make a purchase, taking into account his social status, to ensure that manufacturers sell their products in full and guarantee themselves sustainable TEP from their activities and financial stability. And here it is important not to make a serious methodological mistake - to reduce economic policy to economic analysis, but to maintain the spirit of solidarity in the team - one for all and all for one - and success will surely find the seeker.*

Key words: *quality, import substitution, demand, competitiveness, market, profit, buyer, manufacturer, financial stability, sustainable TEP, attractiveness, assortment, assortment policy, demand, paradigm, economic policy, economic analysis.*

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Introduction

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For a shoe company seeking a strong market position, setting the selling price of shoes is key to the success of the chosen strategy. The price is a tool to stimulate demand and at the same time is the main factor in long-term profitability. Getting the maximum profit is possible with the optimal combination of sales volume and prices for products. However, it is not possible to sell an unlimited number of units of shoes at the same price. An increase in sales leads to market saturation and a drop in effective demand for products. At some point in time, in order to sell a large number of shoes, it will be necessary to reduce the price. In addition, the enterprise can go for an initiative price reduction in case of underutilization of production capacities, reduction of market share under the pressure of aggressive competition from competing enterprises, etc. The choice of pricing strategy depends not only on the type of product, but also on the market in which the company operates. Two types of strategy can be applied: "high prices - sale - high prices" or "even prices" strategy.

The first strategy is used by companies selling expensive fashionable shoes, the mark-up for which in a season can exceed 100%, which makes a profit. But usually these are types of shoes with a short life cycle. If the sandals are not sold in the summer, then most likely they will lie in the warehouse until next spring. Therefore, it is very important in this case to get rid of the leftovers as soon as possible and free up the warehouse for new models, reducing storage costs, effectively using the area. Such businesses can afford to run a sale once or twice a year, selling shoes at a discount of 30 to 70%, operating without profit, but making money during the period when the new collection is sold at normal prices. If the types of shoes have a long life cycle and are little subject to obsolescence, it makes no sense to arrange sales. These types include classic men's shoes, comfortable models made using proven technologies and designed for people who prefer a strict style. Collections of classic men's shoes are produced, because. She is not very influenced by fashion trends. In this case, discounts are 15-20%. In addition, any sale is a kind of information campaign, during which new customers are attracted, who often purchase shoes at a discount and at regular prices, which also allows you to more effectively sell the entire range of shoes. Price reduction occurs when a company uses a discount system to increase sales. Their need is best tracked by the break-even point. The break-even point shows the behavior of total costs and the role of the influence of variable costs on them, which, in comparison.

The growth in production and sales is accompanied by a constant price reduction. The minimum allowable price per unit of production, providing coverage of total costs, will correspond to the second break-even point; the maximum allowable - the first breakeven point. This means that there are two levels of output and sales of products at which total costs are equal to sales revenue, that is, two break-even points. The behavior of total costs is most strongly influenced by variable costs, which change in accordance with changes in the volume of production and sales of products. On the field between the two break-even points, there is an area within which the optimal ratios of volume, selling price and, accordingly, profit are achieved. As noted above, the maximum profit will be obtained when selling products with a margin of more than 100%. For the break-even operation of the enterprise, the selling price should not be less than the cost of a pair of shoes, but if the price is less than the cost, losses will immediately arise.

When evaluating the impact of a price reduction on a change in the break-even point, it is necessary to additionally assess the effect of a price reduction on an increase in sales volumes. In other words, an increase in price may have such an effect on the decline in sales that the additional profit per unit resulting from the impact of the price factor will be offset by the amount of loss from the decrease in sales. Conversely, the decrease in the amount of difference between revenue and variable costs per unit of output caused by a decrease in price can be fully offset by the profit from selling additional volume of production at lower prices.

Thus, the calculated threshold values of production set the area of production volume and sales of products, within which the break-even activity of the enterprise is ensured.

For this purpose, in order to respond to lower prices of competitors, to reduce too high costs, to get rid of damaged, defective shoes, to eliminate leftovers, to attract more footwear consumers, discounts are used. In world practice, there are about twenty types of discounts, of which the following are most often used: progressive, seasonal, for accelerating payment for trial lots of goods, special, functional, barter offset, hidden, complex.

For shoes, the most common are the following types of discounts used at various levels: enterprises, own organizations, trade.

When determining the size of discounts, it is very important to find the line when it remains possible to earn money, but at the same time get rid of the remnants of shoes. In addition, footwear is a seasonal product, and adjusting prices according to the season is a difficult task for business leaders. One of the constants of this task is to determine the period for establishing a discount on a product. In general, a discount is necessary in the event of a fall in demand for shoes, and, as a result, a decrease in sales. The entire period of the shoe's stay on the market can be represented as a hyperbole, similar to the hyperbole of the product life cycle. There is a period of implementation, for shoes it is very short, because. the change of season in Central Russia sometimes occurs in a couple of weeks. Then a period of growth and maturity, ie. the season itself, in which shoes are most in demand (1-2 months). Then comes a period of recession. It is also very short (2-3 weeks).

Therefore, updating or frequently changing the assortment of shoes for domestic enterprises is one of the most important areas of their marketing activities in order to secure a stable position for themselves and prevent themselves from bankruptcy.

In enterprises, the marketing service must closely monitor the dynamics of sales and profits in order to take appropriate measures in time. For example,with a decrease in the pace of sales, you need to think about new markets, adjusting the price of the manufactured assortment of shoes, and improving after-sales service.

Among these elements of marketing activities, when developing a new range of footwear, special attention should be paid to:

- shape, color and materials for the range of shoes offered for sale;

- fashion, style and market occupancy with domestic footwear;

- assessment of the market demand for new types of footwear in the sales markets;

- forecasting the sales of a new range of footwear;

- the development of the company's commodity policy, which, of course, is an elementary truth, but without which the success of the whole business is impossible.

When developing a new range, it is necessary to create a style for shoes, including its shape, color and range of materials, the development of appropriate packaging that ensures the demand for new types of shoes and the creation of a modern brand and image.

Main part

The quality of products is formed by the functional features of these types of shoes, the development of which is the prerogative of both designers and technologists, as well as artist-designers, in the formation of which the marketer must also take an obligatory part. The most important means used in the development of new types of shoes, embodying the appearance of shoes: the shape, color, last style, more varied and high-quality materials that correspond to fashion trends, from which this range will be realized. The South of Russia has all the possibilities for applying various solutions. Climatic features, geographical location allow you to focus on bright life-affirming shades. Saturation, brightness, multicolor will emphasize the traditions, taste, mood of consumers. Materials for new types of shoes have an invaluable influence on the perception of finished shoes. But at the same time, it must be taken into account that some materials cause sympathy, while others, on the contrary, cause antipathy. The development of a color scheme for the appearance of shoes should be the main task of the marketing service. Very significant importance should be given to ensuring the quality of footwear and assessing its competitiveness, the attractiveness of demand. The final stage before launching a new range of shoes into production should be given to testing small series of the developed range, aimed at markets in order to identify a price niche acceptable for the financial activities of the enterprise. Every company, including a shoe company, needs a policy, the basis of which should be an assessment of its real capabilities, so that any newly introduced to the market, shoe models served as its position and competitive advantage. As part of a product strategy, specialists determine market needs and ways to meet them, based on a study of consumer demand and its characteristics. To create a specific marketing advantage, an enterprise must analyze the current needs of potential customers and determine what matters most to them. This also requires the use of a set of marketing techniques: branding, participation in industry exhibitions, the creation of various advertising options, assortment policy. No less important for maintaining the sustainable development of shoe production, including for consumers in the regions of the Southern Federal District and the North Caucasus Federal District, is to determine the period of economic life of the model and optimize the period of existence of the goods by means of rational pricing and the correct application of marketing techniques. In addition, in order to avoid problems with the sale of shoes, the creation of new models in the design departments of the enterprise should be carried out after a preliminary study of the real market needs for these products. However, the experience of Russian shoe enterprises shows that the main reason for the sales crisis is the inconsistency between the assortment of manufactured shoes and the structure of consumer demand. Domestic shoe manufacturers tend to sell what they produce rather than produce what can be sold. This is due to the fact that for most of them the problem of sales orientation is more relevant than marketing.

- commodity producers are forced to concentrate their efforts on the product, and not on the needs of consumers, as they have very limited investment opportunities;

- a wide product range is possible in the presence of flexible industries, the introduction of which is constrained by technological backwardness;

- the transformation of shoe packaging into a means of generating demand is possible with the creation of an industry in the Southern Federal District and the North Caucasian Federal District of full-time production;

- in order for the production program to be determined by marketers, it is necessary not only to have flexible production, but also to have significant production reserves, including reserves of production capacities, financial resources, etc.;

- the possibility of using market equilibrium prices and the advantage of non-price methods of competition for domestic producers are limited by the lack of professional marketers;

- The relatively narrow planning horizons for our businessmen are determined by the still remaining economic and political instability of Russian society.

This also explains the price orientation of the business to maximize current profits, its concealment for taxation, and not to obtain a long-term effect from the market orientation of production.

With the transition from a seller's market to a buyer's market, the competitiveness of a shoe company increasingly depends on how perfect and viable its marketing and sales of products are. If an enterprise is to be successful in the buyer's market, it must conduct business in such a way that it does not depend on selling what it can make, but on producing what it can sell at a profit. Under these conditions, it is necessary to manage the enterprise, focusing on the

market, and not on the product. At the center of this way of thinking is the customer with his desires and expectations, which should be satisfied as fully as possible. This has become especially relevant in recent years, when seasonal production of various types of footwear and its sale are carried out. Production is essentially the link between supply and demand. Only the knowledge of the true demand for specific types of shoes allowed shoe companies to provide an appropriate offer. Pricing takes into account the laws of price elasticity of demand, when, taking into account costs, a possible change in the level of demand is determined, justifying a decrease in the price of shoes or discounts from them.

At the same time, it is important to remember that an excessively low price for shoes may not increase, but decrease demand, since in relation to these models a stable image of a typically cheap and low-quality offer may form in the consumer. The enterprise first of all tries to determine at what price it can sell its shoes on the market, based on the nature of demand, and then determines its production, selling and administrative costs corresponding to that price and changing depending on market conditions. In a dynamically changing market environment, the performance of an enterprise, including a shoe one, largely depends on the effective results of the production, sales, financial and marketing policies of the enterprise itself, which creates the basis for protection against bankruptcy and a stable position in the domestic market. When developing a competitive range of footwear, manufacturers need to take into account many factors that affect consumer demand: compliance with the main fashion trends, economic, social and climatic features of the regions of the Southern Federal District and the North Caucasus Federal District. Demand, supply and prices are elements of the market mechanism. The supply is the result of production activities and is a lot of shoes intended for sale, while, as a rule, consumption does not coincide with the volume of production of shoes. This is a paying need. supply and prices are elements of the market mechanism. The supply is the result of production activities and is a lot of shoes intended for sale, while, as a rule, consumption does not coincide with the volume of production of shoes. This is a paying need. supply and prices are elements of the market mechanism. The supply is the result of production activities and is a lot of shoes intended for sale, while, as a rule, consumption does not coincide with the volume of production of shoes. This is a paying need.

The nature and possibilities of mutual adjustment of supply and demand are determined by the ability of these factors of the market mechanism to influence changes in the price level of retail goods and commodity groups. The quantitative side of this dependence is expressed by the concept of price elasticity of supply and demand at prices, which is understood as the degreethe corresponding response of supply and demand to a relative change in the level of the market price. The shoe industry is a material-intensive industry, so the constant value of costs in the total cost of shoes is small, therefore, the price elasticity of demand is high. This means that a decrease in the price of footwear must be accompanied by a significant increase in output.

The price of shoes must be sufficient to recover all the costs of production, management, its sale (fixed and variable), and also provide an acceptable return on investment.

In the conditions of shoe production, one of the main factors in the need to create flexible production is a large assortment of products. It is necessary to ensure the minimization of time and money spent in the development of a competitive range of footwear and the technology of its production. The effectiveness of the use of flexible technological processes for the production of a frequently changing range of products in small volumes (including single items) is possible if universal equipment and a higher level of skills of performers are used, which may roughly resemble the use of new forms of handicraft production. So that shoe enterprises do not find themselves in a situation of unprofitable production, a serious approach is needed to justify their products in terms of the costs of their manufacture.

Consumer demand acts as the main factor influencing the formation of the assortment, which, in turn, is aimed at maximizing the expansion and satisfaction of the population's demand.

Consumer demand combines a whole group of indicators that will form their niche, namely:

- shoes, taking into account age characteristics and work activity:

children's;

shoes for the elderly;

leisure shoes;

footwear for special purposes;

office shoes.

shoes for a socially unprotected group of people:

shoes for the unemployed on welfare;

footwear for pensioners;

shoes for people with chronic diseases.

shoes, taking into account the peculiarities of the regions:

national footwear;

footwear exclusive;

elite shoes.

The range of shoes for different customer groups is shown in Figure 1.

Thus, the implementation of the requirements of the main parameters that form consumer demand makes it possible to form the distinctive features that a new range of footwear must satisfy.

Demand factors include:

- comparative competitive advantages; the product must have distinct features or distinct

advantages over existing analogues, products or services of competitors on the market;

- social orientation; it is necessary that the product fits into existing social conditions, so that the proposed product corresponds to the existing lifestyle and value system of the consumer;

- ability to satisfy the consumer; the product must perform all the functions to meet the key needs and requests of the buyer.

Quality is the most ancient value of mankind. And it is precisely in terms of the quality of Russian goods, services, and the quality of management that we lose in global competition.

Long hoped for a worldwide ISO system. Alas, in Russian conditions it has slipped into a crisis.

- One entrepreneur once said: “We have been certified byISO. And then he added: “Don’t think, we were certified by such and such a Norwegian company.” Guess what it's about? Yes, sale of certificates. Not everyone, of course, sells, but reputation does not happen by chance.

So what now, you say, and not to deal with quality? Let's agree on terms. Quality is what? Compliance with standards, most will answer. Of course, where standards are possible, this is the case. Although the standards have tolerances. And the difference between the upper and lower divisions in these tolerances is significant. And there are limits to standardization. Let's say a customer contact. Everyone knows that the quality of such contact is critical for business success when prices, assortment, terms are aligned under the pressure of competition. A certain set of friendly words, a dress code, etc. can be considered the standard. Although we know well what is covered by them

The current craze for describing business processes is also gradually approaching absurdity. And somewhere it has already reached it: in different companies we already meet a rigid description of the interview, not only when applying for a job, but even the standard for a meeting and for negotiating.

Now a different approach appears: quality is compliance with the needs of the client, the user. Who buys, he evaluates. You just need to understand exactly what he appreciates. If you hit - here it is, the required quality, that is, the degree of consumer satisfaction with the properties of the product.

But even this approach is limited and stretches from the last century. Then the formula was considered indisputable: the buyer is always right. In our time, another imperative is much more accurate: the buyer does not know our capabilities.

What are we leading to? The understanding of quality as conformity (to a standard, a need) is becoming obsolete. Today, it becomes much more capacious to understand it as a comparison - with another product or with the same, but the same. Comparison gives the superiority of product over product, service over service, specialist over specialist, organization over organization. Comparison with a standard or need does not imply superiority. There is only equality. The standard and the need indicate the minimum. Who needs the minimum? Few. But superiority is interesting to everyone, because the law of increasing needs is inexorable. In practice, this means switching the quality assessment system to levels, for example:

Sufficient quality, below which the defect goes, i.e. the minimum allowable, the use of which does not incur damage.

A. Reference quality- according to the principle of compliance with the standard, i.e. the best available. The standard can appear from the standard, but any sample can serve as it: from what we have live in our company, from competitors, or at least somewhere in the form known to us.

B. Avant-garde quality - what is achieved for the first time, surpasses the standards, but can count on solvent demand and profitability immediately or in the future.

Here is such a quality vertical. It may allow even more degrees. And one more thing: it's time to abandon the idea that any quality can be measured. Everything can be evaluated, but few things that are important to us can be measured.

The model is a closed control (regulation) system that implements the principle of regulation "by deviation". The quality of products in the consumer market can be characterized by a multidimensional quality indicator Q. In the process of confirming conformity, testing and certification of products, a documented indicator of product quality Q d is formed. The required high quality indicator Q 0 is set in the technical documentation for the best world samples, in technical regulations, national GOST and international ISO standards. by the tender commission, the deviation of the actual quality indicator from the specified one is determined Δ Q \u003d Q 0 - Q d. This is deviation Δ Q (mismatch in control systems) in our case should always be positive ($\Delta Q \geq 0$), since a correctly chosen predetermined high level Q0 is always higher than or equal to the actual Q d, which is extremely rare in practice. In this case, we have a system with a non-zero static error, which is most typical for static systems with their inherent stability and speed, the accuracy of which is determined mainly by the gain and power of the "proportional" controller. In our case, the function of the regulator is performed by the link "Measures to ensure a given level of quality of products and services", which models the quality management system of the enterprise, the quality service in production, whose actions take into account the assessment of product quality and the recommendations of the tender commission.

As can be seen from Figure 2, the quality Q of the products manufactured and supplied to the market

is formed in the process of its production as a result of measures to improve production, improve the quality of products and services carried out by the quality service and quality management units, targeted actions, which in turn are determined by the results of the assessment products in the process of being sold.

Today, the problem of high-quality special-purpose footwear exists alone, where, just, assessment and measurements go side by side, hand in hand. The potential need of the domestic market for such shoes is growing from year to year, and increasing the capacity for its production would be justified. Today, its production in Russia is within 14 million pairs per year, with a total need of 50-60 million. steam.

The technical level of domestic footwear for special purposes basically corresponds to similar foreign products. In terms of price parameters, our shoes are close to foreign ones, with the exception of special shoes from China, which have a lower price level. The analysis shows that in a number of cases, both domestic and foreign special shoes do not meet the requirements of operation, for example, in terms of the strength of the fastening of the bottom of the shoe, the components used, and the necessary protective properties.

The current regulatory- technical documentation for special footwear includes 50 GOSTs, OSTs and a huge number of technical conditions. Most of the regulatory and technical documentation requires revision due to the expiration of the validity period, the emergence of new materials and modern fastening methods, which should be included in the technical documentation.

To increase the specific advantages of domestic products in the Russian Federation, scientific developments should be carried out to create new and improve existing types of footwear for special purposes based on moderninterchangeable materials, designs, technologies: for example, such as antistatic shoes: vibration-proof; for protection against aggressive environments and exposure to low temperatures in extreme conditions, etc.

In this regard, it would be advisable to include in the developed program for the strategic development of light industry until 2025:

– development of the Technical Regulations “On the safety of footwear for special purposes”;

- development, revision, amendments and additions to the regulatory documentation for special footwear with their simultaneous harmonization with international standards;

- development of amendments and additions to the regulatory documentation for testing methods, measurements and evaluation of the domestic range of footwear for special purposes;

– development of national standards for the entire range of footwear for special purposes;

- adjustment of the legal framework in the field of standardization and certification of special footwear in order to bring it into line with the Federal Law "On Technical Regulation" and the adopted amendments to it, as well as international norms and rules;

– creation of an internationally accredited national center for certification and testing of footwear for special purposes;

– conducting R&D to create new and improve existing technologies for the production of special-purpose footwear in order to ensure their competitiveness, both in the domestic and foreign markets;

– to develop a system of control over the compliance of imported special-purpose footwear entering the domestic market with domestic regulatory documents, the properties and quality indicators declared in them.

The need to develop technical regulations for footwear for special purposes is due to the fact that in the domestic market of fundspersonal protection, in particular special footwear, Russia is one of the largest consumers of products. The climatic and operational conditions of footwear in Russia differ significantly from the corresponding conditions in most foreign countries: low temperatures, a high level of potential injury risk in a number of industries with insufficient funding for labor protection and safety measures.

An analysis of operational and protective properties, as well as the results of laboratory, including certification tests, shows that there is practically no state control over the fulfillment of technical requirements, materials used, and technologies for manufacturing special footwear. In addition, an analysis of the “Norms for the free issuance of personal protective equipment” by a number of major enterprises showed that there are no well-formulated requirements for the protective properties of special footwear, which leads to the use of this type of footwear that does not correspond to its intended purpose and does not provide the necessary level of protection. The same can be said about the comfort of special shoes.

Simultaneously with the creation of technical regulations, the development of national standards for all types of footwear for special purposes should be carried out.

An integral part of the implementation of the technical regulation system is the certification tests of both domestic and imported special-purpose footwear, which will make it possible to exclude the supply of low-quality products to consumers, and to increase the overall technical level of manufactured products. For this purpose, it is advisable to create a national "Certification Center for Special Purpose Shoes" accredited according to Russian and international requirements, equipped with modern instruments and equipment. The implementation of the proposed activities will create:

– a new regulatory framework for special footwear;

– increase the competitiveness of products;

- increase the volume of production of footwear for special purposes in the Russian Federation;

– to provide workers with high protective footwear;

– to improve the health and working conditions of workers of various professions and industries;

– to clarify the norms for the free issue of special footwear, adjusting requirements for it in accordance with modern conditions.

In the new economic conditions, only such production is progressive, which actively and dynamically responds to emerging tasks. The principle of "producing only what is needed, when needed, and as much as needed" requires shoe companies to adapt to the conditions of production in small batches with frequent changes in the assortment of shoes, i.e. to the conditions of many assortment small-scale production. The efficiency of the shoe enterprise, and in many respects the ability to survive in the competitive struggle, depends on the ability to quickly and cost-effectively adjust to the production of footwear in accordance with fluctuations in demand. Great opportunities for this are opened by the development and implementation of flexible production systems.

The technological and organizational flexibility of production systems determines the variable potential of enterprises, their ability to quickly and adequately respond to changes in market conditions and acts as a mechanism for optimizing the structure of the technological system in order to reduce the cost of footwear. Thus, the development of flexible technological processes for the production of leather goods will ensure high efficiency with a large assortment of footwear and provoke a sharp increase in demand for the products of shoe enterprises in the Southern Federal District and the North Caucasus Federal District. It is necessary to start the study classically with the formulation and general characteristics of the problem. It is surprising, but nevertheless, the fact that, despite the numerous literature on the proposed topic, and no less clear applications for its comprehensive analysis.

The reason is simple, except for the work of B.S. Alyoshin and co-authors, the promise of a comprehensive study of the problem remains a wish. The content of studies usually does not go beyond one or two aspects of considering quality and the possibility of quality management. The remaining angles are either declared or attached in such a sequestered state that their presence is perceived as a kind of burden for the pleasure of joining the author's reasoning on a topic that is certainly relevant at all times and for any activity. The noted shortcoming is also inherent in our works devoted to the problem of quality. To some extent, we are excused only by the fact that we have so far avoided making an application for a comprehensive study of quality in the context of management. A harsh reaction from our critics is quite possible and even predictable. They apparently overturn our conclusions on us, finding a weak link in our opus. And they will do it right. Others - and we, taking into account criticism, will step further, forward, collectively solving what is beyond the power of individual researchers, even when they combine their various cognitive resources and when, for example, in our case, industry specialist, systems economist and philosopher.

The basis of the theory of quality management is the philosophical development of this concept. “Quality” is a philosophical category, and the extent to which the philosophical component is represented in the theory of quality management depends on the solution of the task put forward. In philosophy, there has never been a single interpretation of quality, and there is no mutual understanding even in our time. An important conclusion follows from this: before building a quality management strategy, you need to decide on which philosophical “shore” you are going to land.

Quality is a general and fairly stable certainty of the subject set. More stable than quality is only the form of being and its substance - the only thing that is invariable by definition. Quality, however, also flows along the river of time and changes. The quality within itself changes, changing its states, and radically, losing its certainty, turning into another quality. Differences in the philosophical understanding of quality are due to the complexity of quality as a subject of study, but to an even greater extent they are a consequence of the philosophical worldview and the methodology on which it is formed.

"Materialism", "idealism", "metaphysics", "dialectics" are philosophical concepts that have been fairly battered by class ideology. Philosophers-conservatives in Soviet times settled down quite well, erecting barricades, because of which they shot arrows of anger at their enemies, absolutizing the political background of philosophical movements. The critics triumphing in the arms of liberal democracy, cracking down on a restless legacy, do not look in the best light either. Encouraged by "noble anger", they have essentially turned to the past and are not so much "trampling" this hateful past as they are marking time, slowing down the movement of the cognitive process. “Materialism”, “idealism”, “metaphysics”, “dialectics” should not be abandoned, but they should be cleared of pseudo-ideological “husk”, thereby revealing the inherent rational meaning in these phenomena.

Boundaries in knowledge are designed not to limit, but to isolate one from the other. Their rationality lies in the fact that they regulate the cognitive process. K. Marx, who wrote that G. Hegel's idealism is "materialism put on its head", is not responsible for his followers who simplified Marxism and, in particular, the philosophy of Marxism -

dialectical materialism. The idealist G. Hegel is equally not to blame for the fact that E. Mach brought the idealistic idea to solipsism, and with his philosophical exercises damaged the rationality inherent in the highest achievements of idealistic philosophy. The history of philosophy warns everyone who has embarked on the path of knowledge: most of all be afraid of one-sidedness. It inevitably leads to absolutization, a state of cognition, in which the natural connection between the ideal and the material is broken in it, closes the movement to the truth. Quality management begins with a philosophical, that is, philosophical and methodological orientation of the theory. There are no alternative options. In the development of management theory, it is pointless to deviate from philosophical foundations. Collaboration with a rationally interpreted philosophy must be actively sought.

The question: where is it, this rational philosophy, has long become a rhetorical one, since the time of the first philosophers. It was not ready-made, no, and will not be like "magic wands", "self-made tablecloths", "philosopher's stone". Rationally interpreted philosophy is an exclusive product of the interaction of professional thinking with the philosophical heritage. Objections like "not everyone can do this" is quite suitable for the situation. True, this is given to everyone, but not everyone takes the responsibility of building a quality management system. Most are waiting for instructions and regulatory materials in a complete set. According to the current fashion: a briefcase with documents.

Our Russian market not only ugly tore the national economy, giving some fatty pieces, leaving others a ghostly hope that someday their Lenten life will change and a holiday will come to their street. The Russian market has deprived us of national unity, devaluing what is widely known as the "mysterious Russian soul", or, simply put, our inherent craving for reflection "for life in general", including personal and national problems. The German is distinguished by law-abidingness, the American from the USA is adventurism, the Italian is spontaneity. Our ancestors were distinguished by responsibility, fading before our eyes.

The philosophy of quality is a collective concept, synthetically built. The understanding of quality in various philosophical theories differs significantly, because it is “tailored” to the system and the method used in its development. In such an ambiguous situation, one must begin with the conclusion: everyone is right and no one is wrong. What kind of abracadabra, - one who is accustomed to thinking according to the formula laid down by nature “either - or”, will say, - We do not need riddles, we want everything to be according to the principle: “to each his own”. The task is precisely to put everything “on the shelves”. It's easier, clearer, you can't go wrong. The formal logic of thinking, formed spontaneously, reflects the world of things in the first approximation, roughly. F. Engels rightly compared it with elementary mathematics, which is not capable of describing the process, therefore it is limited to actions with finite values.

Political ideology also imposes prohibitions on thinking, dividing thoughts into friendly and hostile, right and wrong, forcing the public consciousness to work according to the simplified rules of the formal logic of individual thinking. Logical blinkers are justified, pseudo-ideological justifications have no just as actions are those who stun views that are different from their ideology, not wanting or being unable to critically comprehend them.

The Marxist and Hegelian concepts of quality have more in common than differences. The main thing is that the most essential thing in understanding quality is the same. K. Marx and F. Engels, distancing themselves from Hegelian idealism, in every possible way protected his dialectical understanding of thinking, developed the positions put forward by him, protected them from criticism. They were better than anyone aware of the reserve inherent in the Hegelian dialectic of knowledge. The quality for both Hegel and the founders of dialectical materialism, who worked after Hegel, was:

- firstly, a set of essential properties of phenomena related in a certain way;
- secondly, they understood quality as an objective state, even in the case when it is created by human consciousness, since consciousness creates quality according to the objective order of the world. Quality is invariantly objective;
- thirdly, in their understanding, the quality changes in accordance with the dialectic of the development of the world. It has a concrete-historical way of expression.

All three of the above characteristics of quality form a methodological framework: quality theories and quality management strategies.

The famous predecessor of H. Hegel, the English philosopher J. Locke, also made his contribution to the philosophy of quality. J. Locke divided the quality into two groups: the objective qualities of things that are significantly inherent in them, and the qualities that arise in the process of cognition. The latter are absent in things, but are formed during the interaction of things and human feelings. Things excite certain feelings and they react with the formation of qualities corresponding to the received signal - sensations. Locke's duality theory of quality was not criticized only by the laziest. He got it from the materialists for concessions to idealism: the idealists did not spare him for a group of objective qualities. Does such an active criticism of the English thinker's beliefs mean that he was wrong in everything, getting lost in the wilds of the philosophy of quality? Not at all. The ideas of a smart person cannot be stupid if they are not a joke,

and Locke was not joking. The philosopher tried to find a solution to the contradictions in the development of the doctrine of quality. He was not satisfied with the view of the quality of either simplified materialism or subjective idealists, whose judgments led to a dead end.

Locke was far from connecting the ideas of opponents, and with such a primitive method to overcome the existing conflict. He wanted to emphasize the role of consciousness in the history of the formation of quality, the activity of the subject, but he could not consistently implement his plan. The essence of his initiative - the desire to include the activity of the subject in the theory of quality - deserves special attention. Time passed, the idea matured under the influence of practical factors. Philosophers have returned, but not to Locke's philosophy, to his idea of the activity of the subject and the role of his activity in shaping the quality of things. Not to mention the fact that the problem of the originality of the quality of the activity itself, which creates the quality of things, has also become relevant. Suffice it to recall the modern, international quality control system ISO-9001. It is the idea of the quality of activity that is basic in it. It would be a mistake to equate quality and thing. As a particular combination of properties, a quality is, by definition, not the same as a thing. G. Hegel defined the quality of a phenomenon simply and, within the limits of philosophical understanding, which, in the conditions of market relations, fits in with consumer assessment, the concept: "quality is that, losing something, the object ceases to be itself." “Ceases to be itself,” but does not cease to exist at all.

Not meeting the requirements of quality, the phenomenon turns from one state into another, or into another phenomenon. The examination gave a conclusion about the non-compliance of the goods with technical (and consumer) parameters. The goods were transferred to the category of out of condition, defective product, but the thing remained and along with it some prospect of its disposal was preserved: elimination of non-compliance with the standard, processing. You can’t wear shoes, you can try to bail water out of a leaking boat with it, tamp down tow, work, but you never know what a failed boot can fit in a big household - you can even put it on a samovar.

It is a mistake to tear quality away from the subject not only from a philosophical position, but also from the point of view of non-philosophical comprehension, otherwise the quality will turn into something independent, like the “Nose” from the story of N.V. Gogol, and quality management will lose its objective certainty. F. Engels emphasized: "There are not qualities, but only things that have quality, and, moreover, infinitely many qualities." Experts distinguish the shift in market needs towards quality products. The market is maturing. This confirms the monitoring of demand. In this long-awaited situation, it is important not to lose the philosophical ground, developing a business plan, according to new circumstances. Quality is the highest and permanent goal at the same time, so you need to have one for the future, and give the other a modern image.

The manufacturer and seller must be modern. Their modernity is due to the ability to find the optimal product range and match a specific product with the expected quality level in order to get into the optimal price range dictated by the effective demand of the product consumer, expressing his need for the product.

Quality for the consumer is not an abstraction created by the professional thinking of the manufacturer. The consumer looks at quality through the sight of the wallet. As long as the market exists, the price remains its hallmark. If the buyer first asks to see the product and only then asks how much it costs, then the result does not change from the rearrangement of behavior elements. The client will definitely ask his sacramental question, the answer to which will determine how the act of sale and purchase will be resolved.

Quality is not adapted to independent existence. As a thing is presented, when it is on the market - a commodity. And here the main thing in the theory of quality begins, so let's stop and analyze the problem in more detail.

The quality of things that form nature arose naturally, spontaneously, according to a complex combination of natural laws. It follows that the quality of such naturally created phenomena is unambiguously objective in all respects.

The history of the quality of phenomena created by human activity turns out to be different. In public practice, the spiritual component of a person is realized. A person builds a house, sews shoes, clothes, coordinating his actions with the mechanical, physical, chemical, biological properties of natural things, but we do not make the final product for nature – we will omit special cases. We realize our goals, needs, interests in the created thing, its properties, in its quality: we either materialize or objectify. Differences in the objectivity of the quality of a natural phenomenon and a created person.

As things produced by the practical activity of man, as this activity itself, the objective properties of things and the subjective forms of human being are intertwined, fused. The quality of things made by man is objective, but in their objectivity the reasonableness (or unreasonableness) of a person is expressed. And here is precisely the knot of contradictions between the producer and the consumer. It can be unleashed only by coordinating views on the consumer properties of the manufacturer's goods with a real assessment of consumer needs and opportunities. The quality of goods should be developed solely taking into account careful marketing monitoring, respectively pulling up production reserves. We

continue to observe a divided market mechanism. Hence the problems with the sale of domestic products.

Professional activity, like a sculptor, sculpts the quality of a thing, relying on the natural properties of the material, elevating them through talent and labor to a state that awakens the specific interest of consciousness. Things of natural origin also attract human interest by the ability to evoke aesthetic feelings, have a therapeutic effect, be a material or a condition for the production of everyday life, which is understandable - a person “came out” of nature, remaining a special part of it. However, their quality retains its "natural purity". Professional activity is a systemic factor in ensuring the quality of a value-added product. According to the position, it should also be the initial link in the development of the ideology of quality management.

A quality thing can be produced exclusively by high-quality professional activity - this is the first and basic law of production quality. Natural disasters can do a lot. They are people acquiring precious stones, metols, building materials. Diamond is the brainchild of the natural elements. The mineral has an original unique natural quality, but diamond products build on natural quality so many new qualities that people are interested in that natural quality remains essentially important only for natural stone processors.

The end product of a diamond, be it a piece of jewelry or a technical element, is the result of professional work. In the gemstone market, there is a difference in interest in the source material - what deposits it comes from, but the main thing is different: who will turn diamonds into polished diamonds. The quality of a diamond is due to the combination of raw materials and craftsmanship in the product. And since the master chooses raw materials, the contribution of his professionalism to the quality of the product is of decisive importance. Hence the second law of production quality: to ensure the quality of the product, it is necessary to have high-quality training of specialists capable of maintaining and increasing professional skills. The third law of production quality requires the focus of professional activity on improving the technological process through integration with science and technological progress.

The concept of "quality", reflecting the subject diversity of the world, must thereby reproduce in itself an objective difference. This is done through quality structuring. Structured quality is a particularly significant factor in the theory of quality management. It is advisable to divide the quality into the following seven structural levels according to the level of significance from the contribution of the "human factor":

- the quality of natural objects;
- quality of natural material;
- the quality of the processed natural material;
- quality of technical equipment;
- the quality of the software product;
- the quality of production activities;
- quality of organization and production management.

Organizational and managerial activities aimed at producing a high-quality marketable product itself require quality control. Audit of the quality of the organization and quality management of production involves the structuring of the relevant activities. Our research experience of the problem suggests that the process of organization and management should be decomposed into four components (Figure 1).

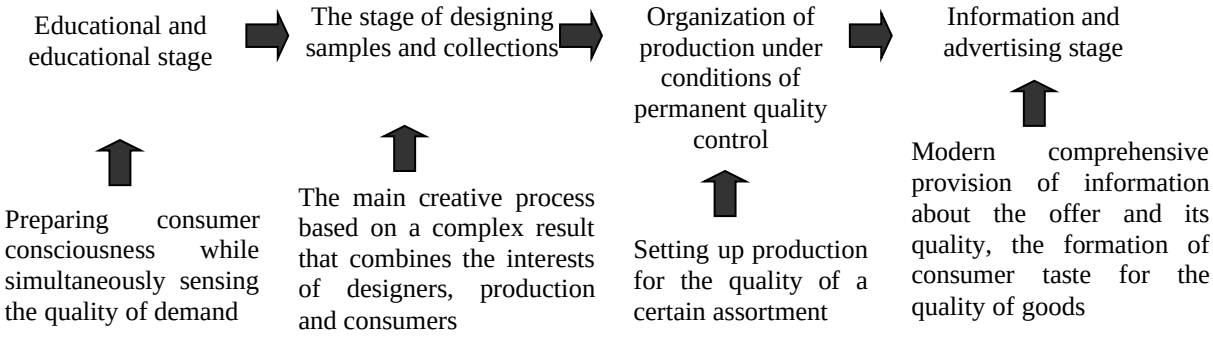

Figure 1. Stages of inclusion of creative professional activity in the process of forming the quality of goods - component organizations and production quality management

The logic of creating the quality of things created by man pushes the quality of activity to the fore, close-up, focuses research attention on the signs of quality activity, the need to build their systemic relationships. Philosophical literature on the selected issues is more "silent". Philosophers are still at war. Supporters of

the objectivity of quality prove the inconsistency of the views of their opponents, instead of looking at quality not only in the context of the objective reality of the world, but also in the context of human, professional activity that transforms the material world. In the spirit of pre-Marxist materialism, it is impossible to develop a scientific and philosophical doctrine of quality, because the old materialism was, in essence, a philosophy of contemplation, and not of transformation of the world. No wonder K. Marx taught: it is necessary not only to reflect the world, but also to change it. Dialectics - a materialistic worldview based on the practical interaction of man and nature. Activity, primarily creative, is the creed of dialectical philosophy and science. The universal model of relations between the system properties of professional activity is explained by the scheme already presented and proposed by us. The signs of professional activity included in the scheme are well known. Professionalism is usually associated with them both in scientific and practical consciousness. The novelty does not lie in the signs themselves, but in their representation by a systemic formation, which gives them a new level of significance. When presenting a system, researchers usually refer to the discovered by Bertollanffy effect of the system connection of properties: the discrepancy between the sum of the system's features and the sum of the features of the elements that form the system. The effect described by Bertollanffy,

Quality management, building on its philosophical interpretation, takes the next step along the path of the systemic organization of the activity program, dealing with the location of systemic signs of activity so that the built system would be vitally stable, relevant and reasonably safe. A systematic approach is currently the most qualitative way of learning and organizing the management of any complex activity. There are probably no more doubts about the greatest effectiveness of a systematic approach. There are those who inadequately perceive and evaluate the indisputable advantages of the systematic approach, absolutizing its importance to the detriment of other methods, in particular, the integrated approach. An integrated approach in theory and practice has not squandered its value in competition with the system approach. They don't go well together, they complement each other. and increasing the efficiency of both organizational and managerial and cognitive activities. It is more convenient to analyze the quality of activity from the standpoint of a systematic approach. The theory of quality management, it seems to us, is more reasonable to build on the foundation of a comprehensive consideration.

The situation that has been put together in special - not philosophical - knowledge (in practice too) forces us to return to the difference that exists between complex and systemic methods, because the substitutions of these methods have become too frequent. The system approach is fundamentally distinguished by the way of building knowledge, in which the relationships that form the phenomena of elements, features, are built depending on the basic relationship, called the system-forming factor. The system is formed like a crystallization process by successive increments of components. It is expedient to systematically build, for example, products made of leather, fur, textiles, when a certain agreed state of the quality of the material is taken as a system-forming factor and the entire series proposed for production is “attached” to it.

An integrated approach is based on a certain qualitative basis and requires a comprehensive analysis of the quality of the phenomenon, and aspects of the research can be equivalent, and act in some rating dependence. A good example of using an integrated approach is the construction of quality management. Schematically, it looks approximately as shown in Figure 2.

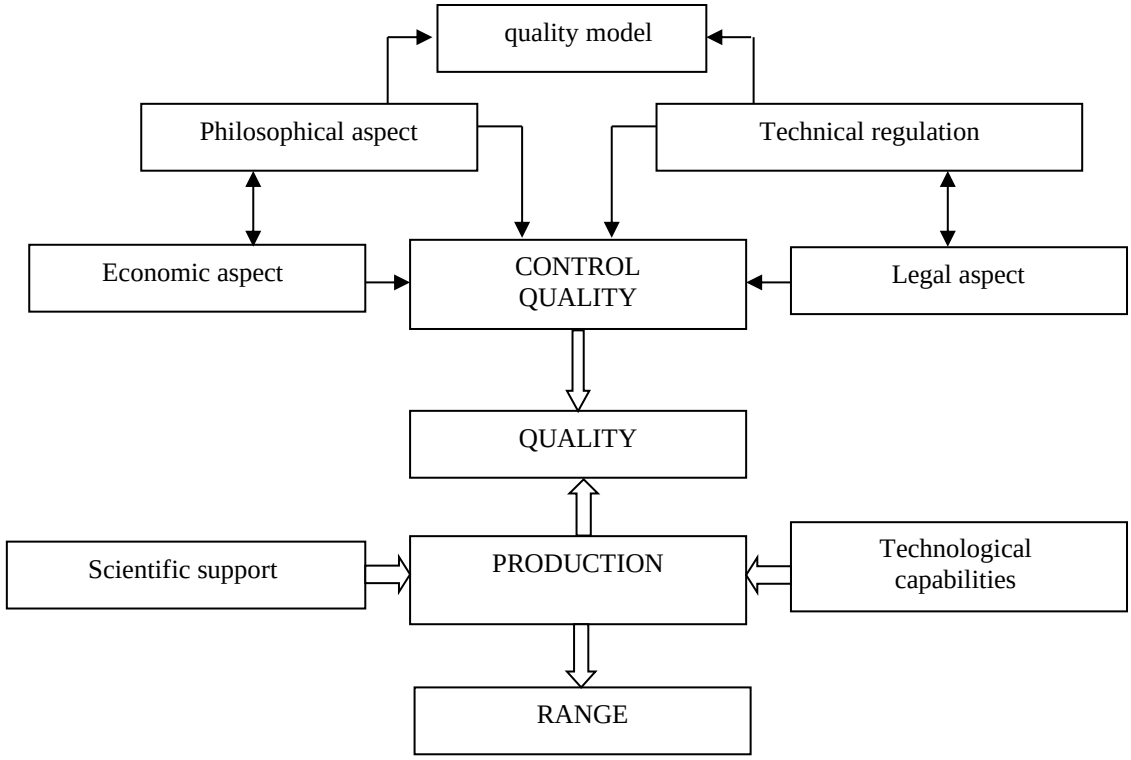

Figure 2. Schematic diagram of integrated production quality management

The above scheme demonstrates the relationship and role responsibility of the main elements of the preparation and implementation of the production quality management process. It quite clearly shows the key relationships: the connection of the philosophical aspect with technical regulation, which makes it possible to concretize methodological and theoretical studies to the level of normative and technical tasks; technical regulation with a right aspect, including in the latter the use of patent and licensed elements: philosophical and economic analysis, giving the first a specific subject orientation in market conditions, and the second a methodological perspective, the dependence of the quality of production on the technological state of production and scientific equipment

To complete the philosophical analysis of quality at the level necessary for the use of this knowledge in the practice of economic management of production quality, a schematic diagram of the relationship between philosophical concepts that describe quality, docked with economic categories, will help. It was developed by us several years ago. Our return to it is forced. The reason is that we didn't have a choice. Philosophers continue to analyze quality abstracted from specific forms of economic practice in the light of their professional interests. Economists represent quality narrowly empirically within the framework of mercantile interest.

Philosophy warns that the objectification of quality has real meaning only in the epistemological aspect of its consideration: when deciding on the nature of quality. Indeed, in terms of the relationship "object - subject", the quality is primary - it is objective in nature. Even constructing quality, we are deprived of absolute freedom in our work. Professional creativity is limited by the objective roots of the quality created by creativity. The quality of both things and theories is objective, with the only difference that the quality of a thing is objective in material terms, while the quality of a scientific theory is objectified by the adequacy of the reflection in it of the objective quality of a thing, the relations of which are reproduced in a scientific theory. The quality control system is shown in Figure 3.

In the theory of quality management, it is important to correctly understand the dialectic as the organization of production; as an activity organized by production, and finally, as an objective and subjective commodity produced. Prominent domestic scientist, public figure L.P. Karsavin, in order to emphasize the active nature of quality associated with the subjective creativity of a professional, coined the term "quality".

The subjective side of product quality is revealed on the market through complex relationships between creators, intermediaries and consumers. The originality of the national mentality intersects with them - in the United States and Western European countries, a pragmatic, utilitarian approach dominates in the interpretation of quality on the market, in Russia the traditional side of the attitude to the quality of goods was contemplation, quality goods and today for

most Russians more than something intended exclusively for use.

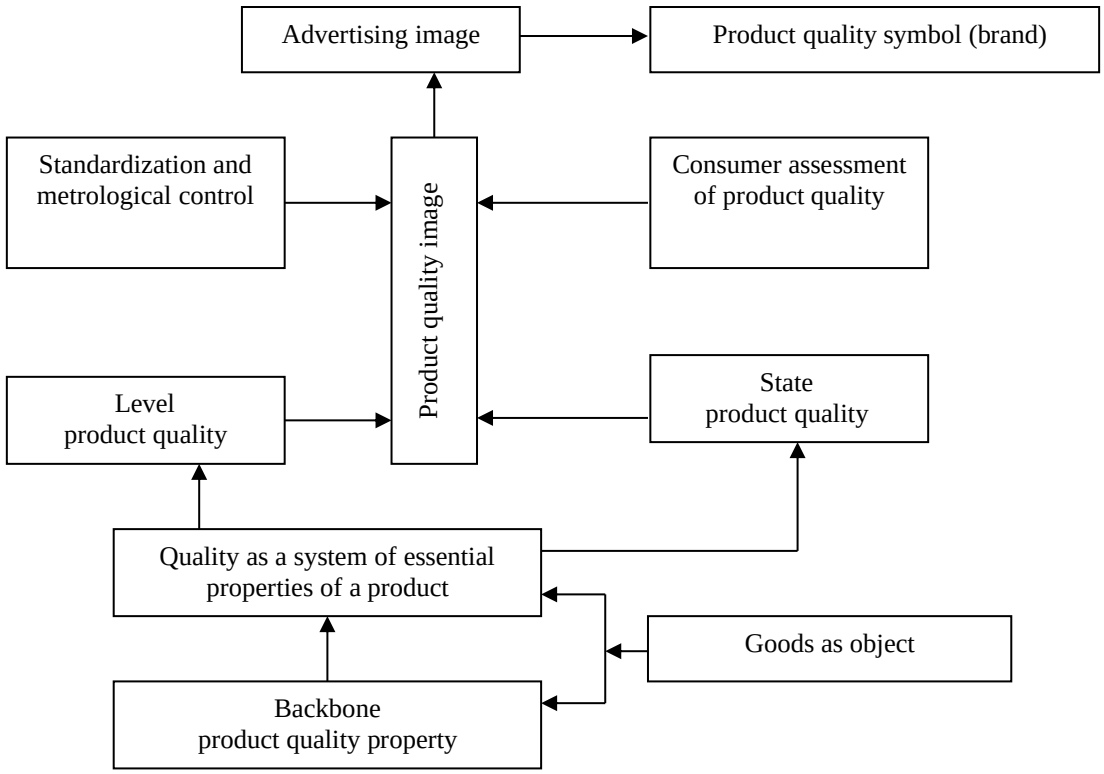

Figure 3. Quality control system

Creators and producers of quality goods need to educate the consciousness of potential consumers of their products, based on the fact that in market conditions the quality of goods is a collective image. The image of the quality of a product, branded production, of course, can be promoted with the help of advertising, but such one-sidedness is uninhibited and dangerous. The stability of the reputation of a quality product is ensured by the entire mechanism of the market, including its extensive infrastructure. An enlightened consumer is actively involved in the process of "struggle" for quality. It is necessary for the market, like a pike in a pond, so that crucian does not doze off. The unwillingness to spend worthy funds for educating the consumer, the desire to “shod” him with false, superficial advertising will inevitably turn into a boomerang. Unfortunately, many Russian manufacturers are not afraid of the boomerang. They know, that they will not stay in this sector of production for a long time. As long as the market puts everything in its place, reacts appropriately to the pseudo quality, they will be different and this "crap" will lose its relevance for them.

Although experts believe that the Russian market has swung towards product quality, objectively the situation on the market has not changed significantly. Those small percentages on which encouraging conclusions are based are far from being qualitative characteristics.

The solvent demand of the vast majority of Russian citizens does not allow them to focus on the quality of the goods. The shift towards interest in the quality of goods must go through a mandatory stage of expanding the range of available goods for the mass buyer, and this stage has not been passed by the Russians, which, in other words, does not mean deactivation of the quality of the goods.

Integrating what has been said, we will give formula (1), which allows us to reveal the terms of the quality of a product, that is, a product produced by a person to meet certain needs. Phenomena of natural origin included in market relations can also be summed up under it: clean air, mineral springs, therapeutic mud, clay, warm sea, etc., as well as those whose production is not designed for sale, considering these cases as a simplified option

This formula also describes the quality of an intellectual product. Why is it necessary to expand the interpretation of the concept of "natural properties" by including in its content the intellectual and psychophysiological prerequisites for creative activity. The economic understanding of quality, on the basis of which all known concepts of production quality management were directly developed. It evolved according to dialectical laws, despite the fact

that economists themselves were far from always aware of the dialectic of the process.

The development of economic awareness of quality was carried out “under the influence of contradictions between the internal and external goals of the manufacturer - ensuring the quality of products and, accordingly, strengthening the position of the manufacturer in the market (external goal), as well as increasing production efficiency, that is, increasing the profits of companies (internal goal). At each stage of production, market and society, this contradiction had its own specifics and was resolved in different ways. B.S. Aleshin and co-authors distinguish four phases in the development of the modern philosophical and economic interpretation of quality: the “rejection phase”, the “quality management phase”, the “continuous quality improvement phase” and the “quality management program”.

The history of economic quality management goes back to the era of workshop production. In medieval cities, guild organizations were necessarily created, one of the most important functions of which was the certification of craftsmen. To become a recognized master, it was necessary to pass a serious test of their products for quality. All products of shop craftsmen had the author's "brand" and were unique in their kind. Quality management was simplified by the production itself, its manufacturing nature, which did not allow production to unfold on a scale. Of course, there were no agreed quality standards at that time due to the difficulty of comparing strictly individual products of masters, and even more so of trying to develop some kind of model to follow. The uniqueness of the work of the master ruled out imitation of anything in principle.

Only much later, at the arms factories of S. Kolt, standardization of the quality of products appeared. Such an unusual decision was prompted by the fact that in the conditions of mass production, the final product began to be assembled not from specially made and fitted parts, but from randomly selected parts from the corresponding batch. For the first time, production was equipped with special gauges, and trained inspectors checked parts on them before assembly. The heyday of the idea of standardization fell on the era of mastering the production of automobiles in the United States. G. Leland, the creator of the Cadillac company, came up with a pair: "through" and "non-pass" caliber. G. Ford, having built an assembly line, went further. He replaced the input control of components with output control, thanks to which calibrated, high-quality parts were delivered to the main production - assembly, which significantly increased labor productivity and significantly improved the quality of the final product. For the first time, a technical control service independent of production was also created at Ford factories.

Like-minded H. Ford F. Taylor, who worked in a creative connection with his patron, did a serious job of scientific understanding of innovations in production. As a result, he managed to formulate the principles of scientific management of quality-oriented production: a systematic approach; personnel management; mandatory division of responsibility between performers and organizers in achieving high-quality and efficient work; the need for science-based labor rationing. FW Taylor, the undisputed founder of scientific management. It was he who first discovered the "exhaustion" of the effectiveness of the main position in management practice: "initiative - encouragement" for the quality of work. “In contrast to this,” Taylor argued, the development of the scientific organization of labor suggests the development of numerous rules, laws, formulas, which will replace the personal judgment of the individual worker and which can only be usefully applied after systematic accounting, measurements, etc., have been made. their actions."

One cannot but agree with the summary of D.M. Gvisani: what in the strict sense of this term is Taylorism comes down to the following: the creation of a scientific foundation that replaces the old, traditional, practically established methods of work, the scientific research of each of its individual elements. Selection of workers on the basis of scientific criteria, their training and education. Cooperation between the administration and workers in the practical implementation of a scientifically developed system of labor organization. Equal distribution of labor and responsibility between management and workers.

Taylor himself imagined the quality assurance of production and its efficiency as follows: “Science instead of traditional skills; harmony instead of contradictions; cooperation instead of individual work; maximum performance instead of performance limitation; development of each individual worker to the maximum available to him productivity and maximum well-being. Try to argue F.Taylor with reason. It is not surprising that his view of the organization and management of machine production hypnotized his contemporaries. There is an opinion according to which the concept of F. Taylor, G. Ford, A. Foyle and M. Weber “Basically has existed to the present day and has become a model for organizing the production of most modern enterprises. It was only in the 1970s that another concept began to replace it - the Toyota Production System.

The ideology of the “rejection phase” was simple and clear: only high-quality products should be at the output of production; a meeting between the consumer and defective products cannot be allowed. The main efforts of managers should be focused on quality control of components and assembly of finished products. In the relative simplicity of the concept of "rejection phase" was its reliability and the relativity

of its reliability, led to the need for innovation in the future. The reliance in the ideology of production quality on the “rejection phase” has had a practical effect. It would be surprising if the result was not positive. Increased attention to quality control is logically presupposed as a condition for the functioning of production. This requirement at the market level of understanding accompanied the development of production activity throughout its existence.

The stability of the economic (and, to a certain extent, social) effect achieved by the pioneers in the development of a scientific solution to the problem of managing the quality of production is surprising. And yet, the side of the "rejection phase" hidden until the time had to emerge. The shift of management to the phase of high-quality production preparation - in fact, towards the special status of control functions, signaled an increase in the corresponding costs of providing high-quality products. The quality of production and the quality of manufactured products are a single whole, but not the same thing. The development of production is undoubtedly due to the quality of manufactured goods. E. Deming rightly placed at the head of the list of the "seven deadly diseases" of modern production "production planning that is not focused on such goods and services,

Production, in the transition from an industrial to a post-industrial society, a mass consumer, is increasingly becoming a function of the market "The buyer is always right" - no matter how the well-known judgment is contrary to the seller, who is forced to adapt to the demand of the buyer, he has no choice. There is no choice for the manufacturer, for which the "seller" is the "buyer". The quality of the product is a special “song” of production. Only a "concert" cannot consist of one song. The quality of production is also characterized by its economic efficiency. The pursuit of product quality cannot be the end in itself of production, otherwise a good deed will turn into a deadly disease. The quality of the goods is not able to compensate for the inefficiency of production as a whole. Improving the quality of the final product always requires the cost of its provision, which becomes a problem for developers of efficient production strategies. The goals of increasing production efficiency and improving the quality of manufactured products were not combined in the concept of "rejection phase", so it was replaced in the 20s of the last century by the "quality management phase". Its developers have made an attempt to overcome the critical value of the cost of product quality, evident in the "rejection phase". They were unable to resolve the conflict that had arisen. Managed to soften it up. Among the innovators of the reconstruction of the “rejection phase”, W. Shewhart, an employee of the technical control department of the American company Western Electric, stood out, who proposed a method for constructing diagrams, better known as “W. Shewhart's chart control”. The goals of increasing production efficiency and improving the quality of manufactured products were not combined in the concept of "rejection phase", so it was replaced in the 20s of the last century by the "quality management phase". Its developers have made an attempt to overcome the critical value of the cost of product quality, evident in the "rejection phase". They were unable to resolve the conflict that had arisen. Managed to soften it up. Among the innovators of the reconstruction of the “rejection phase”, W. Shewhart, an employee of the technical control department of the American company Western Electric, stood out, who proposed a method for constructing diagrams, better known as “W. Shewhart's chart control”. Its developers have made an attempt to overcome the critical value of the cost of product quality, evident in the "rejection phase". They were unable to resolve the conflict that had arisen. Managed to soften it up. Among the innovators of the reconstruction of the “rejection phase”, W. Shewhart, an employee of the technical control department of the American company Western Electric, stood out, who proposed a method for constructing diagrams, better known as “W. Shewhart's chart control”. Its developers have made an attempt to overcome the critical value of the cost of product quality, evident in the "rejection phase". They were unable to resolve the conflict that had arisen. Managed to soften it up. Among the innovators of the reconstruction of the “rejection phase”, W. Shewhart, an employee of the technical control department of the American company Western Electric, stood out, who proposed a method for constructing diagrams, better known as “W. Shewhart's chart control”.

In the first approximation, the initiative of the American specialist looks quite radical. W. Shewhart refuses the key quality control scheme of F. Taylor, G. Ford. In the center of quality control, instead of the pre-production stage, at which it is necessary to reject low-quality products, the production process itself turns out to be.

Three main provisions of the "classical" theory of quality management have not been obsolete so far. They continue to impress, warming the soul of the

patrons, caressing their self-consciousness, reinforcing self-confidence in their chosenness. Everything is so well laid out in its place: the worker-executor, in fact, is a “rational animal” with a clearly defined dominant to maximize economic conclusions; "each individual responds to economic incentives as an isolated individual"; "People, like machines, can be treated in a standardized way." W. Shewhart had many supporters who left their own noticeable and appreciated mark: M. Follet, E. Mayo, C. Barnard, F. Roethlisberger, G. Simon. The thirties of the last century were marked by the "humanistic challenge" of "preaching administrative responsibility". In theory, events unfolded according to a logical scenario. Practice, on the other hand, was not so susceptible to changes in views, so the effectiveness of the new approach to economic quality management left room for reflection on the complexity of the relationship between theory and practice.

The construction of the economy itself hindered the totality of the introduction of progressive ideas. In order for a person to turn around as a subject of production - to mobilize his abilities of knowledge, it is imperative that the economy turns "face" to a person, acquires a "human face". In another way, it is impossible to enter the talents of the individual into the interior of production, to make them interested colleagues. Dialectics warns: truth is concrete. The theory is effective in a concrete historical framework. Her life may be long or short, but always finite. The elements of the theory and the experience of its exploitation, expressed in historical lessons, continue to work, being embodied in other relevant theories and practical actions.

Today's economic component of quality cannot but take into account the acquisitions of W. Shewhart, M. Follet, G. Simon and all those who proved the need to involve the subject's abilities to think and get involved in the struggle for quality. In particular, in our opinion, the power of W. Shewhart's "control charts" remains. They are simple and make it possible to monitor the quality of the process and the activities of the performers. And for performers, they are more understandable than the far from always understandable displeasure of the manager, so we give their example (Figure 10).

Having developed a model of a sustainable process, W. Shewhart significantly expanded the possibilities of scientific analysis of the quality of production, thanks to which those aspects and stages of production that remained in the shadows in the "classical" concept were revealed. He introduced the concept of "correcting the process according to its measurement data" into the characteristics of production quality, which is quite fashionable to consider as a specification in relation to quality management of the concept of "feedback". In the theory of random processes, a quantitative measure of the dependence of a sequence of random variables is the autocorrelation coefficient, which takes values from 0 to 1. With its values close to 0 for neighboring observations (in practice, <0.2-0.3), the process is considered "white noise". If the values of the autocorrelation coefficient are close to 1, then then for this process it is necessary to use various systems of regulation with feedback. It is not difficult to see in Shewhart's concept the desire to theoretically comprehend the specific state of mass production of his time. He tried to look at the conveyor through the eyes of science. And he did a lot. At least, the ideas of W. Shewhart are still viable today, although they have grown old. With a creative approach, they give a good result.

A remarkable contribution to the practice of quality management was the creation of a quality audit service, the function of which differed significantly from the tasks facing the technical control departments of F. Taylor. She was not engaged in sorting, but in checking the performance of the quality assurance system by monitoring small developments from batches of products. Thus, W. Shewhart found a way to reduce the cost of quality, which increased disproportionately when organizing production on the recommendations of F. Taylor. However, W. Shewhart's original thinking and his managerial talent did not resolve the old contradiction between the need to ensure production efficiency and the market's need for a quality product, and the production itself for high-quality raw materials and components. Each production process has a limit to the output of quality products. This limit is not set in the process. It is an attribute of the system practiced at the enterprise, the product of all aggregate activities, features of the organization of labor and production management, including the quality of production. Approaching the limit leads to an increase in the main contradiction.

Quality assurance requires more and more funds, which leads to a decrease in production efficiency. In the fifties, a new concept of quality management was formed. Her inspiration was E. Deming. The name of the next stage in the development of the philosophical and economic understanding of production quality management emphasizes its essence "the phase of continuous quality improvement". The version of production quality assurance proposed by E. Deming turned out to be a long-liver, having existed “in authority” for almost half a century, until the mid-nineties. Such a duration of the practical relevance of the concept of E. Deming is explained, as it seems to us, by the fact that it was skillfully "planted" on the basis prepared by W. Shewhart, and representing in form already a software product.

E. Deming's management program is built on three axioms focused on industrial practice:

– the first practical axiom states that any activity must be defined as a technological process, from which follows the conclusion about the possibility of its improvement;

– the second practical axiom was formed by E. Deming as follows: production has two forms of state - it is in a stable or unstable state. In both cases, it is not enough to solve particular problems, fundamental changes are needed;

– E. Deming's third practical axiom is as follows: the top management of an enterprise in all cases is obliged to take responsibility for the result.

The practical concreteness of E. Deming's axioms is achieved within the framework of a special management program that summarizes the theoretical and real experience of organizing production quality management. The program is represented by several levels of comprehension and practical implementation of ideas: "Fourteen Points", "Seven Deadly Diseases", "Difficulties and False Starts", "Deming's Chain Reaction", "The Principle of Continuous Improvement (Deming's Cycle)". Of particular interest to the practice of improving quality management in enterprises are the penultimate and last sections of the program. The "Deming cycle" is, in fact, a scheme proposed by W. Shewhart, which Deming also recognized. "Chain Reaction" is a product of E. Deming's own creativity. The Deming-Shewhart cycle loops through four stages: observation, development of improvement measures, implementation, and analysis. The task of the quality manager at the first of them is to collect information and identify weak links in production that require restructuring. At the second stage, the leader develops organizational measures aimed at changing the situation. Among them is the connection of all performers due to motivation. The next stage is the implementation and monitoring of the modernization process. The cycle ends with the stage of analyzing the results obtained from the implementation, building up experience to repeat the cycle.

Perhaps graphically, the Deming-Shewhart cycle best demonstrates the spiral of development, each turn of the spiral is a relatively closed cycle of actions. The next round "relies" on it, continuing the general process. If not for the tradition of naming such discoveries by the names of the authors, then the Deming-Shewhart cycle would be called the "cycle of the spiral" of quality management. The Deming-Shurkhat cycle is undeniably relevant even now for improving the organization of production, since it reflects the universal law of building management.

It is impossible not to pay tribute to E. Deming for his development of a "chain reaction" in quality management, shown in Figure 4.

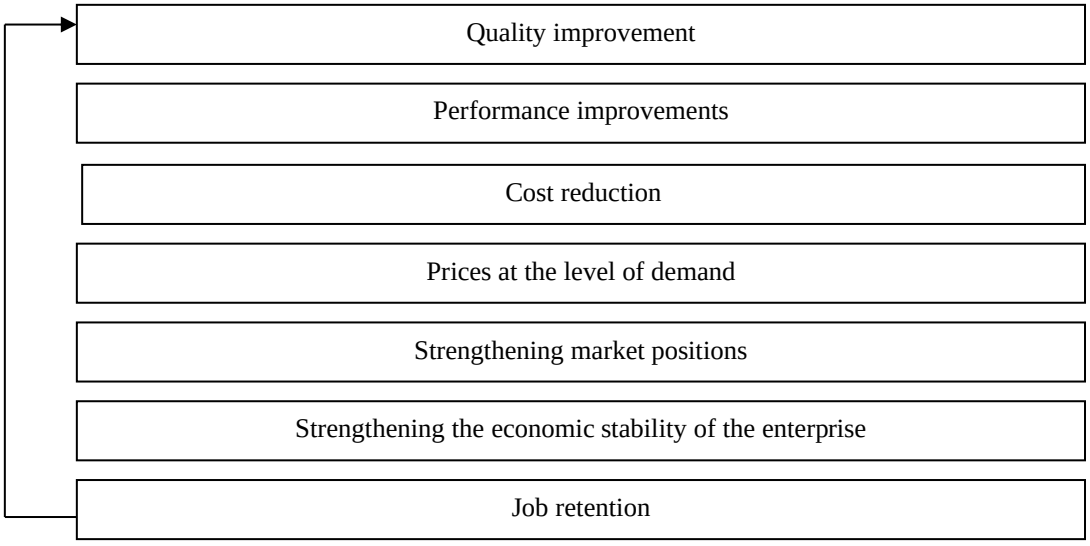

Figure 4. "Chain reaction" according to E. Deming

In it, he linked economic and social actions, emphasizing the nature of historical time. The heyday of E. Deming's creativity is associated with the revival of the Japanese economy. The government and industrialists of the country believed Deming's arguments and he deservedly shared with them the glory of the "Japanese miracle". His contribution is also obvious in the achievement of Japanese specialists in the field of improving the quality of production, which are clearly identified in the studies of B.S. Aleshina with co-authors:

1. Long-term, consistent and purposeful solution of quality problems based on everything advanced that accumulates theory and creates practice in this area.

2. Consistent and persistent establishment of a system for studying consumer needs - (prevention of the main "deadly disease of the economy" according to E. Deming's classification - ed.), the formation of a respectful attitude towards the consumer and his

requirements up to the cult of the consumer - (the consumer is always right - ed.) the consumer (at the same time) is understood in a broad sense, as the next link in the technological chain.

3. The desire for universal participation in the achievement of quality, from top managers to performers of specific work.

4. Understanding that even a well-functioning labor organization system loses its effectiveness without constant checks and improvement.

5. Organization of quality assurance work directly by foremen and foremen. Training, including special programs on national television, national conferences for foremen and foremen.

6. Particular attention - to the mobilization of the physical and intellectual potential of workers. Quality circles - a group analysis of the state of affairs in a particular area and the development of proposals for improving the quality and increasing the efficiency of processes and production.

7. Widespread development of a permanent system of propaganda of the importance of high quality products to ensure high rates of economic growth.

8. State influence on the cardinal improvement of the quality, primarily of export products, including mandatory state certification. An attempt to sell non-certified products for export is considered as smuggling. State support for exports, assistance in promoting goods to the markets of other countries.

We deliberately did not shorten the fragment describing the Japanese practice of creating a quality management system, because in it, like a mirror, Russian miscalculations are visible, namely Russian ones, since, having declared the Russian Federation the successor to the USSR, Russian politicians and economists close to them in 90 years systematically destroyed the socialist experience in building the quality of production instead of rationally modifying it. Quality in the 1990s was not necessary for anyone who should be responsible for it. The economy was reoriented towards raw materials, the quality of which is either determined by natural origin or "compensated" by realized quality. Comparison of the economic policy of Japan in the 50s and subsequent years with the economic policy of the Russian Federation in the 90s, announced by the revival of Russia, leads to a sad conclusion: loud statements rarely match deeds. During the period of Yeltsin's democratic reforms, politicians were the least concerned about the interests of the Fatherland, and they did not care about quality at all, squandering previous national acquisitions. However, a political assessment of this stage of our history was given long ago, and we are interested in that part of the theory that directly works for the country's economy. In this context, it is appropriate to “walk through” a number of Japanese achievements, keeping in mind the opportunity to draw practical political and economic lessons from them. There is no doubt about the total conclusion: the efficiency of the economy is determined not by the quality of the goods produced, but by its assortment and quality. The transition of quantity into quality could be expected only by those who have simplified the dialectic to the point of stupidity. It is not quantity that turns into a new quality - quality and only it. During the period of Yeltsin's democratic reforms, politicians were the least concerned about the interests of the Fatherland, and they did not care about quality at all, squandering previous national acquisitions. However, a political assessment of this stage of our history was given long ago, and we are interested in that part of the theory that directly works for the country's economy. In this context, it is appropriate to “walk through” a number of Japanese achievements, keeping in mind the opportunity to draw practical political and economic lessons from them. There is no doubt about the total conclusion: the efficiency of the economy is determined not by the quality of the goods produced, but by its assortment and quality. The transition of quantity into quality could be expected only by those who have simplified the dialectic to the point of stupidity. It is not quantity that turns into a new quality - quality and only it.

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The Japanese teachers were Americans, but the Japanese learned very seriously from the experience - both positive and negative - of the Soviet Union. We still haven't really made up our minds. The whole world perceives our current declarations and certifications with skepticism. Those who do not know how to appreciate and use their own achievements are not able to adequately master other people's.

In Japan, the attitude to quality has become a national idea, and embodied in the form of a "struggle", in which it was prestigious to participate in everything from the janitor to the general director. A system of mutual interests has developed, supported by finances, organizational (career building) and

spiritually. We continue a protracted search for an idea that would unite the nation. The quality is not visible even next to what they offer. It does not appear in the candidates for nacidia. Enthusiasts deal with quality seriously only, wading through the “thickets” of democracy, apathy, and so on. Our "helmsman" is not up to quality. The "Captains" are still paving the way to the West and investing in a non-native economy. It is a paradox that foreign investments in the Russian economy will soon exceed the contribution of compatriots. Having lost the prospect of becoming an oligarch and feeling pressure from the fiscal services, oligarch candidates seek their fortune in distant countries. The Japanese concentrated capital in their native country. Patriotism meant more to them than personal gain. This is the reason (not the only one) of the "Japanese miracle".

The allies in 1945 destroyed everything that was on the Japanese islands, except for national self-respect. And it became a launching pad for the revival of the country. We emphasize that the Japanese were actively looking for specific mechanisms for turning quality into the total interest of the nation in the practice of organizing a quality service in the USSR: “cards decide everything!”, “Quality is the main attention!”, “Everything is at the service of quality!” These are slogans from Soviet history. And behind them was strict party and state control. The Japanese submitted to the struggle for quality all national and state (municipal) reserves, forcing even television to work for quality. Essentially, the media were not limited to advertising quality. They organized schools, courses, universities to train the quality of key persons involved: foremen and foremen. National finances were directed to education and training in quality work and its organization. What do we have? Quality is at the mercy of all those who make a profit on training and education. What they did was squeeze the problem into an advertising product.

We do not have a national quality assurance program. We also do not have a state priority project (along with well-known national projects). It seems that, having officially announced the support of international quality systems, the top political management of the Russian Federation considered its mission accomplished, deciding that the market will regulate the rest.

The ideas of E. Deming were continued in the concept of another American who worked for the "Japanese miracle", Y. Juran. Y. Juran shifted the emphasis in the development of a quality management system from statistical methods towards the absolute value of the customer, dividing the problems that arise are not random and chronic. Randomly (suddenly) emerging quality problems of a one-time (single) origin. They are not inherent in production. Incidental problems should be dealt with on a routine basis within ongoing management. To this end, it is necessary to clearly allocate the responsibility of managers for the adoption of control measures and the timely introduction of corrective measures.

The problem of a chronic order is another matter. They are present in the process and, as it were, “planned” from the very beginning. Y. Juran understood chronic problems as the result of assumptions made in the previous phase of the process. Up to a certain point, such tolerances do not significantly affect the quality, then, under the influence of the implementation conditions and their own movement, they become significant and become unacceptable. J. Juran “accused” chronic problems of stagnation or loss of quality indicators. The company's management should not be complacent about good performance compared to the previous term. It is necessary to look not backward, but forward, otherwise it is easy to get into a crisis situation. The complacency of management is a "deadly disease" for production.

It is pointless to try to solve chronic problems by orders. We must begin by identifying their main causes, sources. Knowing the reasons, Y. Juran, is usually beyond the capabilities of line managers. This requires a collegial form of analysis of what happened - "brainstorming". The second half of the 20th century was marked by an intensive intrusion into quality management of mathematical methods for studying the process. A new scientific discipline emerged - the theory of managerial decisions, which was the development of operations research. In decision theory, the focus is on decision making. It was interpreted by the process, available for quantitative measurement. The work was carried out in two directions. Supporters of the first of them tried to find mathematical models suitable for use in real production situations (Fogal, Luce).

The one-sidedness of both approaches gave rise to the third school, its founders wanted to "tie" mathematical research to the problems of quantifying economic phenomena as much as possible. As a result, the so-called "econometric" approach to the analysis and management of economic processes, first of all, the efficiency and quality of production, appeared. According to the above concept, the economic-mathematical model should have four components:

1. It should include economic phenomena of qualitative content, expressed in certain units of measurement. Such quantities are the parameters of the model.

2. It should include certain quantitative relationships and dependencies between the parameters. These can be balance ratios or more complex dependencies that link the results of processes with the causes that cause them.

3. The model must define the area of permissible changes in the model parameters in time, space and volume - "limitations imposed on quantitative dependencies."

4. It should be a system of interrelated parameters, dependencies and restrictions with certain inputs and outputs.

The management of such a system, that is, obtaining certain results at the output, should be carried out by influencing only the input. Without interfering with its internal structure. The most famous economic models are those of L. Klein and A. Goldberg. V.Leontiev, who received the Nobel Prize for his work, also made his contribution to the mathematical modeling of economic activity. The effectiveness of economic and mathematical modeling of relatively large-scale economic phenomena is not high. Without denying the importance of such modeling, the prominent economist T. Haavello wrote: “It is quite possible that as more and more advanced methods develop, we will come closer to realizing one unpleasant fact: economic “laws” are difficult to accurately measure, and, therefore, we actually live in a world of big, but largely superficial, or spurious correlations. You can, of course, refer, as always, to bad statistics. However, I think we can find an explanation for ourselves in something else, namely, in the imperfection of economic theories.

Quality management is somewhat of an exception. In contrast to the low efficiency of using the mathematical apparatus in the study of the economy as a whole or individual industries, the application of mathematics to quality management turned out to be quite an acceptable action. Both Deming and Juran actively used its opportunities. An analysis of the economic strategy in the field of quality management shows that the effectiveness of quality management depends on the agreed macro and microeconomic views. Real Japanese experience also teaches this. The solution of the quality problem itself is supposed to be a step-by-step process from identifying problems, through diagnosing their condition and finding solutions to implementing the decisions made, retaining and developing the results achieved.

At the first stage, Y. Juran called "a problem in which a solution is programmed", problems are singled out, priorities are identified, a rating order is established; performers and their powers are determined. At the diagnostic stage, the optimal symptoms of the condition are determined; hypotheses are built, tested; causes are being sought. The solution search stage involves finding optimal solutions; development of necessary measures; implementation of the adopted decisions. The final stage consists of checking the effectiveness of the implementation results, comparing the achieved results with the planned results in dynamics.

The high efficiency of the concepts of Deming and J. Juran provoked F. Crosby to combine their systems with the experience of quality management accumulated in the USA. The Zero Defects program by F. Crosby did not become something fundamentally new in the theory of quality management, but it contained interesting ideas. For example, a statement about the prevention of defects; the need to develop a "quality policy", the requirement to connect to the quality of the activities of non-production units. F. Crosby believed that each process site should have an engineer responsible for quality. His professional duties include presenting a daily list of issues causing major and frequent defects; systematizing them according to their importance for quality; determination of corrective actions; attraction of personnel employed on the site.

The 'continuous quality improvement phase' helped bridge the tension between spending on quality and achieving production efficiency. The consumer began to receive a quality product at an affordable price, the implementation of the idea of a “consumer society” has come closer. From the manufacturer's point of view, this is an ideal situation. But the assessment of the situation was one-sided, only from the position of the consumer; quality parameters were set not by the one who consumes the goods, for whom the product is made. Quality was standardized in the manufacturer's norms and, of course, reflected primarily his own interests. The consumer was left with a choice: to purchase a product of a certain quality or refuse. This again led to the "overheating" of production, to an increase in its cost, as there were frequent miscalculations in determining the needs of consumers.

It was necessary to eliminate the new form of contradictions taking into account the interests of the consumer. The “continuous quality improvement phase” has given way to the “quality planning phase”. The work of G. Taguchi is considered the beginning of the next phase. It was he who introduced the concept of "loss function" into the theory of quality management and developed a modern methodology for planning industrial experiments. The purpose of G. Taguchi's research was to overcome the contradiction between quality assurance and production efficiency in its existing forms.

The foundation of the concept of quality planning was formed by four new ideas:

1. Conclusion that product defects are mainly due to poor quality actions at the design stage.

2. Conclusion on the need to focus the main products not on full-scale testing of product models, but on mathematical modeling of both products and the process of their production. Due to which they expected to detect and eliminate the reasons for the increase in marriage in a timely manner. It was proposed to take control of the design and technological processes up to the stage of actual production.

3. The idea that the concept of “zero defects” should be replaced by the idea of “satisfied customer”.

4. Emphasize the high quality of the goods by an acceptable price and a constant price reduction, thereby ensuring a stable, market demand for quality goods.

A new round in the development of quality management has overcome the noted form of fundamental contradiction between quality and production efficiency, but not the contradiction itself. At present, its next "ecological" form is being formed. Inclusion in the characteristics of the quality of goods of ecological cleanliness requires significant costs.

The peculiarity of the modern stage of quality management is that all known formulas (phases) are practiced at enterprises. B.S. Aleshin with co-authors, reflecting this unusual way of existence of history and modernity, built the "Tower of Quality". It is of not only theoretical but also practical interest.

In the seventies, A. Feigenbaum summarized the accumulated intellectual and practical experience in developing the problem of economic quality management and laid the foundation for what is known today as TQC-Total Quality Centrol (general quality management).

Essentially, TQC is not a quality management system, but a system of sufficient conditions for a quality process. Development logically led to the development of TQC. All previous steps on the way to quality quality management, despite the progressive movement, were of the same type. They "tied up" the solution of the problem of economic quality management to some fragment (fragments) of the process. Thus, the improvement of quality management "bypassed" the essence of the production process - its unity and the systemic nature of its unity as a certain way built connections and dependencies.

E. Deming, K. Ishikawa, F. Crosby and A. Feyegenbaum came closest to understanding the quality system as a reflection of the production system. The main conditions of TQC can be considered as follows:

1. ensuring total participation in solving the quality problem of all employees;
2. awareness of the total responsibility for the quality of all participants in the process, the understanding that not a single specialized unit (QCD, OUK, etc.) is able to cope with the task;
3. conformity of the quality of activity to all stages of the "life cycle" of the product: from the development of the concept of the product and marketing research to the method of disposal of the product and its packaging. In the context of increasing environmental requirements in a number of countries, for example, Japan, product certification implies the mandatory development of a method for recycling even packaging;
4. the totality of improving the knowledge and skills of performers and managers; the regularity of specially organized forms of advanced training; appropriate cost planning;
5. achieving a total understanding that the quality of work is achieved not so much by technology and technology, as by focusing on the quality of the motivation of employees, and motivation should not be one-sided, closed only to financial returns. Then it will be stable;
6. the totality of activity structuring, its differentiation into operations, interrelated technological processes, transitions, and each link in the process must be understandable by purpose to all performers. Studies of eliminating the causes of defects have shown that up to 90% of the problems submitted for consideration are solved, while 75% of them are able to be solved by the controllers themselves (direct performers and organizers);
7. totality in the understanding of the consumer; the consumer is not someone who is outside the production process, the consumer is each next link of the production itself - the “internal consumer”, therefore, an awareness of responsibility to the consumer throughout the entire production cycle is required;
8. total cultivation of the special status of the consumer and his interest in the quality of the product;
9. continuous quality engineering;
10. understanding the importance of defect prevention, its economic advantage over the elimination of defects;
11. team spirit of all participants in the process; corporate culture;
12. leading position in the activities that ensure quality, top management, understanding quality as the goal of entrepreneurship.

Quality management in the 21st century is based on the reciprocity of total quality management (TQM) and quality system standards (ISO 8402; ISO 9000; ISO 9001). The main difference between the quality system standards is that in many countries, including Russia, they have acquired state registration and are fixed administratively. Therefore, clarity in the definition and content of the concept of "standard" is important. In the USSR and the Russian Federation, it is customary to assign a “quality mark”, officially indicating that the product meets certain agreed parameters. "Standard" in Russia and most other countries is a set of rigidly fixed, often administrative, characteristics of products, services, activities. Analogues of our "quality marks" are found in European countries, in particular, in Sweden (TCO 92; TCO 95; MPR for monitors).

From the perspective of the interests of the consumer, the “standardized” concept of “standard” is not as relevant as for the manufacturer. The latter, taking advantage of the starting advantage, taking into account, first of all, their own interests. Hence the conditionality, the relativity of any standard and the "sign of the standard" as long as the standard does not balance the mutual interests of both parties: the manufacturer of the product and its consumer. The

most widely used quality system standard, ISO 9000, is built on a really special system of organization. The basis of this idea is the thesis about the documentation of all processes related to production: the purchase of raw materials, components; preparation of production of his organization; delivery of products to the consumer; providing warranty support; scientific and technical equipment of production; personnel management. As a result, the concept of "quality" acquires new facets, expands; the traditional understanding of quality is being modified. The content of the concept of "quality" is loaded with knowledge corresponding to the changed situation. A classic example of the dialectic of concept development.

The most obvious illustration of what has been said is the rather frequent reports that reputable firms Ford, Toyota, etc. recall their products due to the discovery of a technical inconsistency in just one node. It would seem that it was easier and cheaper to order service centers to replace low-quality components. In fact, firms are doing the right thing, given the competition in the market and the place of their brand in it.

In a complex system, a structural and technological defect of one node inevitably affects the entire system, so it is not easy to replace the node, block. The product as a whole must be thoroughly tested in order for the manufacturer's warranties to work according to the declared standard. ISO 9000 and its ISO 9000-2000 modifications do not guarantee product quality. They are “tuned” to provide such production conditions that allow them to count on the “most likely” quality reserve of productive activity.

Another “weak” side of these systems is that they explain “what should be done”, but they practically do not explain “how to do it”. The ideologues of ISO 9000 say: "What should be done?" - the question is "standard" and is subject to standardization. The question is: "How should I do it?" - due to the specific conditions of production in each individual case. Therefore, “how to do” should be decided by manufacturers on the spot. With the introduction of ISO 9000-2000, the concept of "QS" (quality system) has become obsolete, giving way to the QMS, defined by the International Organization for Standardization:

1. constant monitoring of consumer interests;
2. system leadership of the head, ensuring the unity of goals and activities of the company, as well as a stable internal environment based on cooperation and comprehensive motivation;
3. maximum involvement of the abilities, knowledge and skills of employees in the production process;
4. use of the process approach in the management of activities and resources;
5. the need for a systematic approach to management;
6. striving for continuous improvement of the company's activities;
7. making decisions only taking into account a comprehensive analysis of the entire possible amount of "information for thought";
8. development of mutually beneficial relationships with suppliers.

From now on, international quality standards require that not goods be presented to the “quality mark”, but the method of their production. "Quality" is the compliance of the organization and management of the enterprise with the quality management system (QMS). The modern history of the economic aspect of quality management reveals a very instructive relationship between specific scientific, special and philosophical approaches to solving socially relevant problems of production activity. Philosophical doctrines of quality, no doubt, have always had an effect on economic knowledge. K. Marx started with G. Gogol, passed the "course" of economic analysis and founded the historical-materialistic view of social development. Then he returned to the analysis of economics and left an impressive mark on social philosophy and economic theory. Something similar can be said about the creative paths of O. Proudhon,

History repeats itself on a new turn. Thinking economists move from practice to philosophy in order to use philosophical knowledge and method to develop a deeper understanding of the subject of their own research. All modern concepts of quality management owe philosophy no less than economic theory.

Philosophical analysis of the social process led to the conclusion about the growing role of the "subjective factor" in it. The "human factor" in philosophical humanism has always been presented as the decisive condition of history. Such was the opinion of the leading thinkers of Antiquity, the Renaissance, and the Enlightenment. But the "human factor" and "Subjective factor", contrary to the common practice of their convergence up to identification, are far from being the same thing.

"Human factor" is a concept that characterizes the whole range of human capabilities. The concept of "human factor" expresses the duality of our nature - a combination of biological and social in it; organization and personality; physics, physiology, psychology, intelligence, behavior and activity. As advertising likes to present: "all in one" or "in a package." "The human factor" is, in fact, the person himself in the context of his ability to realize his own potential. The smart, educated Oblomov lying on the couch, as well as the active Stolz, are examples of contrasts along with the title “The Human Factor”. In the concept of "human factor" is not an expression of preference for either biological or social. Think it's right. To define "a person in action" - no matter in which one: turning over with a newspaper in the hands of Oblomov.

It was proposed to call an abstract person in a state of abstract activity a “human factor”, thus including an abstract person in an abstract historical process. In theory, the main thing is to find a conceptual equivalent to describe the object of study. The object of research in our case is social progress. The task is to understand the factors that set history in motion and give progress to the movement of history.

The logic of reasoning is not complicated. The history of mankind is either objectification outside of human substance (objective idea, World Mind, World Will, God, etc.), or a product of the activity of people themselves: their mind, feelings, will and practical activity. The problem can be simplified, because in both cases human activity is envisaged, with the only difference that in the first case history is made by him according to a program developed outside of human life, and in the second, a person paves the historical path, guided by his own ideas and motives. In history, whatever one may say, one cannot move away from human participation. History is "attached" to man just as he is "attached" to history.

It is then that it becomes relevant to “disassemble” the “human factor” into its components, its quality, to divide what exists in the person himself exclusively in unity. Divide conditionally, depending on the contribution to the historical progress of the two "halves" of man: biological and social. The concept of "subjective factor" appears. And its components are the “individual” form of the subjective factor, and the “collective form of the subjective factor”. Politics emphasizing the historical nature of human activity, the collective essence of this activity. With regard to production and production quality, the “subjective factor” is concretized to the level of “performer”, “manager” and “team”.

To those who object to us, counting that we have narrowed the understanding of a person in the structure of the economic form of his activity to the size of a “subjective factor”, ignoring his biological status, which is also represented in production and affects its quality, we will answer: no, modern production, that is science-intensive, high-tech production, based on the power of knowledge, not muscle; on responsibility and organization, depends precisely on the “subjective factor” of a person. The logic of the development of the process of economic quality management convincingly shows that total quality management, to which, in general, everything went, is possible with the total mobilization of the subjective forces of a person: knowledge, beliefs, desires, will, interests, upbringing, education, concentrated in the professional form of culture.

The classics of the economic theory of quality management from Taylor to Crosby and Freigenbaum were seriously concerned with the mobilization of the motivation of the participants in production, correctly believing that it was the lifeblood of quality work. But they were realists, and realistic experience prompted them: do not absolutize the moral factor, no matter how significant it is. Quality is created by free will, but controlled administratively and legally. The legal aspect of achieving TQC objectives is very significant and requires constant attention. Is it possible to imagine a situation where quality will be achieved only through the self-organization of the manufacturer, thanks to the team spirit, social dedication of each and every one individually, and a high level of professional qualification? The answer is up to the reader, but the hint suggests itself: it is possible.

What happens? Is legal regulation an optional, superfluous matter? No. Trial fantasy does not take into account the purpose of production, which, by the way, is very well spelled out in TQC. The purpose of production is not the quality of the goods (this is a crafty goal, self-deception). The purpose of production is not the quality of production (this is the same craftiness). The goal of production is customer satisfaction with the quality! Production, even in a subsistence economy, in which the producer and consumer are one and the same person, does not exist by itself and for itself. As for the commodity form of production, the consumer is the main figure in it. Therefore, the understanding of quality is not in the competence of the manufacturer alone. It is formed in the mutual interest of the manufacturer and the consumer in the properties of the product (and its price) intended for sale.

The producer in relations with the consumer has one small advantage. Using it is not easy, but the chance is quite real. A manufacturer of technically complex products that require knowledge and skills in operation can try to shape the consumer's taste for it through educational and promotional activities. The mechanism, of course, is expensive, but it is unlikely to win fierce competition in the market in another way. The interests of the producer and the consumer do not always coincide, not immediately and not for a long time, because these are the interests of the subjects of production, separated by the barricade of the market. The market is a ring for them. The manufacturer is interested in profit. The consumer is in saving finances. One seeks to fill the cash register, the other does not empty the wallet. At the same time, both look at quality as a reward for winning a fight.

The state cannot be aloof from the events taking place in the market, because the economy gives rise to politics; the movement of the market causes the movement of large social groups. And if today the class struggle has lost its relevance, then tomorrow the place of the proletariat and the peasants will be taken by dissatisfied consumers - some with quality, some with price - consumers, the number of which will be no less, and the desire to win is even steeper. The fate of each individual citizen cannot be dealt with by the state, and it is hardly advisable, but the fate of social

groups should be in the zone of special attention of any state and always, of course, if the state itself does not want to be in the zone of special attention of that main part of society, which in calm times is called the electorate, and in troubled times - the people. Quality is politics, first and foremost, secondly, it is a product of the intricacies of relations in the market. Advocates of absolute market liberalization are "scholarly" provocateurs of tension in public relations and "subversives" of national security.

All modern social experience confirms that participation in quality management is a function of the state and even interstate cooperation. An example is the Bologna Agreement. It was prepared by a social movement, but, in order to give it real power as a controller of the quality of education, it was legitimized by the collective political will.

“The attention of the state should be focused on:

intensification of the process of import substitution by improving the quality of domestic products;

increasing the production potential of enterprises, creating advanced technologies and new types of high-quality products in order to expand the share of Russian products in the domestic and foreign markets as the domestic market develops and integrates into the world economy.

Updating the legal resources of the state throughout the vertical of political power in the field of quality management will undoubtedly contribute to the achievement of the following important results:

ensuring a quality standard of living for the population, without which it is definitely impossible to get out of the demographic collage. In order to be among the leaders of a non-absolute indication - a reserve fund, a loan paid off ahead of time, a loan, writing off part of it even to those who are not able to pay it in the foreseeable future - it is necessary to improve the quality of products and services in the social sphere;

strengthening security, territorial integrity, preventing military aggression;

strengthening the position in Russia in international relations, greater accommodating in economic partnership;

creating the image of Russia as a truly great, and not just a huge country;

development of environmentally sound policies and economic practices.

Integrating the analysis of the real consequences of the intensification of the behavior of the state in the quality market, we note the most important thing - this is the only effective way to ensure national security, that is, what is in the ranking of the tasks of the state above everything else, since the achievement of everything else is possible only in conditions of national sovereignty. A systematic approach to solving the problem of quality in the USSR began to take shape in the 1950s. The Saratov system of defect-free manufacturing of products, the NORM, KANARSPI, KS UKP systems were a fairly successful experience in the socialist embodiment of the need to control production quality. In the mid-1960s, the Lviv initiative became widespread in the domestic industry, and was recognized as a "system of defect-free labor" - STB.

The highest achievement of the "struggle for quality", apparently, was the creation on the basis of a combination of a serious experiment (VNIIS) and a comprehensive generalization of practical work to improve the quality of work at the leading Lviv enterprises of the Integrated Product Quality Management System (CS CPC).

This system turned out to be the first where the enterprise standards became the organizational and technical basis for product quality management. Unfortunately, the effectiveness of the application of best practices was not high. By the beginning of the 90s, only 10% of civilian technical products corresponded to the best foreign analogues. The state has large and different levels of opportunities to influence the quality of production and product quality. The legal mechanism, which is in the hands of the state, can affect both directly the improvement of the quality of the production process, and indirectly. With the help of tax policy, it is possible to stimulate high-quality production and block low-quality production. By protecting the consumer from a low-quality product, the state actively prevents unscrupulous manufacturers from entering the market.

The Constitution of the Russian Federation forms the basis of legal support for the quality of production in our state. The Constitution of 1993 was developed at the height of the redistribution of property, and therefore its creators did everything to ensure that the provisions (articles) of the supreme Law were extremely abstract, declarative. But in its abstract format, the Constitution of the Russian Federation did not ignore the right of Russian citizens to quality goods. The corresponding articles are formulated to match the time of her birth, however, in this form, some certainty is present. Article 41 of the Constitution of the Russian Federation states: "Everyone has the right to health care." Of course, it would be better to add - "and a healthy lifestyle." And even better: “the right to health care and a healthy lifestyle of Russian citizens is guaranteed by the state.” However, in this scenario, the “legitimate” interests of the future oligarchs would suffer.

This article does not seem to have a direct relationship to legal quality management. There is an indirect, mediated protection of the right of the country's population to health. Goods for direct and long-term consumption must have the necessary level of quality so as not to be harmful to health. Otherwise, there are serious legal and financial sanctions against the manufacturer and the seller. In order to ensure the protection of the right to health care, all possible

tolerances (MACs), sanitary and hygienic requirements, state standards for products, services, industry standards in the company, and their own "standards" of enterprises (TU) were developed. Management structures were created or modernized inherited from the socialist time. On the basis of the rights of citizens proclaimed by the Constitution to quality goods,

The state does not interfere in the technology of production quality management. Its activities are aimed at controlling the method of production in order to exclude the possibility of harm to the health of citizens (and non-citizens) and harm to the natural environment of human life, as well as to prevent the appearance of dangerous low-quality goods on the market, deceiving consumers and legal regulation of relations between the seller (manufacturer) and the buyer in situations that require such action.

The market is intended for ecological activities within the framework of normalized relations. Prices, priorities, demand, supply, advertising - all these are the mechanisms of the market as long as they remain within the limits of economic relations that are moral to the same markets.

The diagram of the right assurance of quality management is shown in Figure 5.

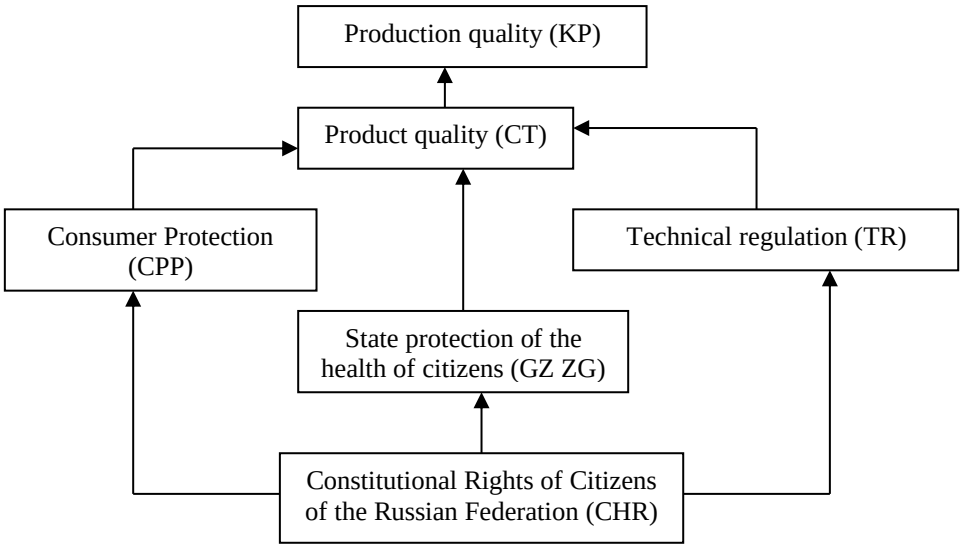

Figure 5. Scheme of the right assurance of quality management

Many violations of economic relations necessarily lead to the intervention of law enforcement agencies designed to protect the affected entity within the framework of the current legislation. Any act of "purchase and sale" is a by-law and the legislator or the performer must be included in the process. Otherwise, the rights of the owner will suffer and the violator of market relations under jurisdiction will not be punished. The situation with legal support of quality management is complex. The market divided the producer and the consumer, squeezing an intermediary (and more than one) between them. In this connection, it is necessary to differentiate the concepts: "quality production"; "the quality of the goods produced"; and "the quality of the product purchased" by the consumer.

An intermediary - a "speculator" - is quite capable of violating the technical conditions when delivering goods to the place of sale, in storing goods, and preparing them for sale. As a result, the quality parameters of the product will change. In the legal protection of the consumer, all possible situations and measures of responsibility of the seller are prescribed. Consumer protection legislation has been around for a long time in European countries and North America and has been polished for centuries. In its current state, it is quite effective, which forces violators to reckon with it in order to avoid serious financial sanctions of death-like anti-advertising. The Russian experience of legal regulation of relations in this area is much poorer, moreover, it was formed in the specific conditions of the socialist market.

The subject whose interests are protected by this law is a consumer who has purchased a product, more precisely, a product that does not meet the entire set of consumer and technical characteristics. And the object of legal relations is the quality of the goods.

Thus, the law has a double effect: it protects the buyer from low-quality products and protects the market from low-quality goods. The manufacturer (and intermediary) received a legal signal about the need to present quality products to the market.

In the peripheral zone of interest of the legislators was also the revitalization of the activities of a number of federal bodies: on standardization, metrology and certification, sanitary and

epidemiological surveillance, environmental protection and natural resources. The categorical apparatus of the Law on the Protection of Consumer Rights was made up of the concepts: “consumer”, “manufacturer”, “seller”, “standard”, “lack of goods”, “significant lack of goods”, “safety of goods”. As you can see, there is no mention of “quality” in the categorical apparatus of the law, despite the fact that it protects the consumer from low-quality goods, and doubles trying to protect the market from marriage and counterfeit products. The developers of the ideology of the Law acted logically. They divided the content of the concept of "quality of goods" into components: "manufacturer of goods", "performer", "seller", "standard", "consumer".

The relationship between the consumer and the producer is regulated in the Law with the help of the concept of "standard", which is subject to change in a certain system of units. "Standards" are understood to exist at two levels: universal, controlled by the state, and sectoral, private, set independently by manufacturers, and having passed the necessary certification procedures. According to the logic of building subordination relationships, the requirements of a higher level of organization are guidelines for the rest of the "pyramid". In the case of a contradiction, the advantage belongs to who (or what) is higher, i.e. more important. It was superfluous to introduce the concept of “quality (of goods)” into the conceptual apparatus of the Law. It has been successfully replaced by the more verifiable concept of "standard". At the same time, reminding all market participants from the manufacturer and contractor to the consumer who is the boss in the house.

From a philosophical and economic point of view, the main drawback of the law is the locality of the destination. The state is still under the hypnosis of the effectiveness of the economic liberalism of the American model, super-delicately in expressing its economic interests, forgetting that these interests are not of state administration, but of the people of Russia. The state, especially the executive power as the top manager, should realize the interests of the people, instead of being afraid of being misunderstood by foreign partners. Foreign partners, when necessary, tighten the screws tightly.

The state should introduce an economic policy regarding quality on a larger scale, then its effect will be more significant and the private judicial practice that has considered private claims against the seller regarding low-quality goods will sharply decrease. A private lawsuit for a manufacturer of low-quality products and a wholesaler who fills it in the market is still early that a mosquito squeak. It is necessary to protect the market from low-quality goods, as H. Ford, Sr., did in his time, when he entrusted the “phase from rejection” to special production, removing quality control from the main production process. As a result, low-quality components stopped coming to the assembly line.

The state does not need to strive to be a subject of the market, it needs to be above the market, stimulating producers of quality goods, and not allowing low-quality goods to enter the market. In the first case, economic incentives are required, in the second, administrative and criminal sanctions. Now the state is facing the problems of quality management, as if, half a turn, modestly distancing itself. It is necessary to turn to face him and take up the quality, “rolling up your sleeves”. Only then will the time come when the ministers will not be able by their power to postpone the deadlines for the implementation of the president's instructions for years.

The modern economy is increasingly called "smart", "prudent", innovative. This is a more understandable definition in comparison with the “post-industrial”, but how adequately it characterizes its state is not an idle question. Character is manifested in development, determines the planning of economic policy. The latest crisis unequivocally testifies:

firstly, that planning is not only compatible with the market way of managing, it is necessary to prevent and mitigate negative phenomena born of undivided economic freedom bordering on arbitrariness;

secondly, the ongoing crisis revealed the limitations of the desire to present the constructed economy as “smart”. There should be a smart economy, but it is impossible to build it with just one mind.

The central figure of commodity production is not finance, as many politicians, including domestic ones, believe. Money is just the equivalent of the goods and will remain forever. The commodity creates labor, which in turn is also a commodity. Consequently, the movement of production is rooted in the cumulative expression of human activity, first of all, the work of consciousness, its potential. Mind is not equivalent to consciousness. The mind is a tool for building consciousness. “Smart consciousness – knowing, cunning, mobile – but no more. The mind, like any force, needs a vector that directs the application of the mind, the construction of consciousness. The role of the vector is played by values: professional, national, universal. Consciousness fuses them into a unique personal expression. There is no "smart" economy, if you do not put it on a value foundation. The main thing in the personality - the decisive factor of social reproduction - is its morality. Not everyone is given the opportunity to be top managers, general designers, VIPs in politics. Someone has to work with their brains, someone with their hands. The trouble comes when the "brains" and "hands" become sticky and something that is not supposed to stick to them. Immorality undermines the foundations of professional culture, and professional activity is

transformed from a creative force into its opposite - it destroys what has been created. A “smart” economy may turn out to be a terrible reality if it continues to be immoral. We are neither utopians nor idealists; we understand well the concrete historical position of morality. Now we are not talking about equality and brotherhood - only about conscience and responsibility. The economy can and should be, first of all.

While free competition is subject to calculations of how to more effectively deceive a partner, consumer, competitors and ... the state; is built on corruption and lobbying, manipulation of the work of mass media sources, natural for the development of the market. Cyclical, economic crises will grow unnatural - systemic. The system-forming factor of the latter is the dishonesty and irresponsibility of the largest manufacturers. The classic of the genre: "the greed of the fraer ruined" - looks like a childish prank against the background of what American and multinational companies have done.

And what should the state, called to be a social guarantor in a democratic society and a defender of the rights of citizens, have to do? It was forced to "add fuel to the fire" - to subsidize the business that went bankrupt on scams in order to avoid economic and social collapse. True, the European leaders at the same time sent "firefighters" to the "sources of fire" - they made the further work of the offending firms dependent on moral principles - they introduced moral and financial regulations designed to sober up businessmen who had lost all measure. It is symptomatic: it was France and Germany, the initiators of strict moral and financial monitoring, who were the first to feel the signs of economic recovery. England and the United States, more affected by corruption and less prone to moral diktat, Russia, as expected, missed a real opportunity to use the crisis to revitalize the national industry. First they poured money into the banks, then they took very indistinct actions in order to awaken the conscience and responsibility of the bankers. As if forgetting that a banker without liquidity and with liquidity are "two big differences." There was a chance, at the expense of national funds, to force the banks to be the financial lever for the rise of industrial production, science, and technical creativity in the country. It was necessary not to pray for the banks - to educate the banks with the ruble (currency). He naively hopes that having had enough, the "wolves", instead of continuing to rob, will serve their savior. As a result, the currency earned on the world market flowed back and it is necessary to “start everything from the beginning”.

How many more opportunities do we have to step on the same rake standing in the same corner? There is, of course, a margin of safety. The situation can be changed by uniting the mind, which we do not care about, and conscience, the deficit of which has grown remarkably rapidly over the years of democratic reforms. The reason for this alignment should be sought in the economic lawlessness and disproportionate growth of the administrative apparatus. It turns out strange: the more officials there are, the less effective management is - the dynamics are obvious, but the course remains the same. Our lagging behind someone is a natural thing. Subjects have their own place in the historical “pelton”, they change places – this is how it should be. It is a tragedy for the national development to be behind the times, to lose a place in the “peleton”. In the "eight" we were eighth, but in the "eight".

Time will show what we will be in the G20 in 5-10 years. Economically, we are no longer eighth there, while maintaining a place in the top ten. But even in the memory of most Russians it is time when the USSR was the second line of the world economic rating. History does not return, but this is no reason to forget history. Whatever the continuation of history is, it is its continuation. Abandoning national traditions, you can be at the "broken trough". Not only the Second World War is falsified, the country's scientific, technical and industrial achievements are distorted and hushed up. Faith in national forces is undermined, the people's ability to regain lost ground. The current situation is daunting, yet it is no more critical than those turning points in Russian history that seemed to have no source: the devastation after the civil war.

Then there was no finance available as seed capital today. Therefore, the solution to the problem of creating a modern economy rests technically on the need to develop an effective system of management and control over the implementation of adopted programs.

The program has taken over from the plan. And what came to replace the responsibility for disrupting the plan? The absence of an effective system of control is the most serious defect in the current economic policy, which allows amateurs to lead, feeling themselves in business. The revival of the economy in the current conditions of professional irresponsibility is impossible. Only professionalism and the responsibility associated with it for the cause you serve are capable of making the necessary transition to a new economic quality, building an economical and mobile economy on the basis of the comprehensive development of science, stimulating technical progress and improving the professional training of personnel.

The economy of the 21st century can be called differently. The essence of the definition is not in the name - in the content of the concept. The diversification of names shows the versatility of the modern economy. It is methodologically significant to single out the leading link or links in this set. Undoubtedly, among the obvious contenders is the quality of the economy.

The presence of quality in the description of any phenomenon is invariant, since quality combines the most essential features of it. At the same time, it should be clearly understood that the quality itself changes - it is historically specific. Correspondingly, the idea of quality also changes – should change. From the first attempts of A. Fayol, G. Ford and F. Taylor to put the quality of goods under control, which were crowned with serious success, it became theoretically clear: the future quality of the economy is behind activity. The determining factor for the economy will be not so much the quality of the goods accepted for production, but the quality of organization and management of its high-quality production. For handicraft and small-scale production, the quality of the sample and marketable products are combined with technology, as a rule, unchanged. Here, the quality depends entirely on the mastery of the technique and compliance with the declared technology in a limited production scale. Often the master, technologist, manager and marketer are one and the same person.

G. Ford for the first time put the production of a complex product on stream, dividing operations and responsibilities, and thereby determined a turn in the fate of quality. From now on, the fate of quality was determined by "introduced" factors - the organization of production, management and control. It was not the skill of the direct manufacturer that came to the fore, but the ability to skillfully organize production, including its expanded reproduction, that is, supply, marketing, and personnel management. The diversification of activities revealed its special position in achieving a qualitative result. The Second World War confirmed: cadres and management decide everything! Since the 1950s, the search for quality management programs through the quality of activities has been sharply intensified. If at the beginning of the 20th century the technical regulation of the product and components became relevant, then half a century later there was a qualitative clarification of the meaning of technical regulation. At the epicenter of interests is already the technical regulation of the organization and management of production, which is confirmed by the modern international system of quality regulation.

The shift in the center of gravity in the understanding of economic policy aimed at ensuring the qualitative sustainability of production in the direction of the technical regulation of activities did not pass without costs and dead ends, which, in principle, was expected. The activity united by production is not homogeneous and not autonomous, therefore, the solution of problems "stumbled" into the methodological and theoretical "imperfections" of professional thinking. The concept of "key activities" was first substantiated by A. Feigenbaum. In 1951, his book "Total Quality Control" was published. ISO 9000 and ISO 14000 were already developed on the basis of A. Feigenbaum's proposals. It was assumed that both series of international standards will help to move from "enterprise-conglomerates" to "enterprise-systems".

In the process of development of industrial production, under the influence of scientific and technological progress, a contradiction in the pace of change in the material side and the evolution of managerial thought regarding the organization and harmonization of the production process was rapidly formed and aggravated. The latter clearly did not keep up with the former, hindering progress, increasing risks and costs. The rigidity of central planning only worsened the situation, which explains the stagnation of the 1970s and the decline in the 1980s. The organizational scheme of the "enterprise - conglomerate" did not fit well into the transition to a systemic organization of the work of the enterprise, primarily because it did not activate the initiative, creativity. It is no coincidence that "drummers", "innovators", "innovators" in the USSR were mainly engaged in party, Komsomol, trade union organizations, standing essentially outside the scope of direct production and forming a superstructure on top of it. A simplified organizational chart of such an enterprise is as follows (Figure 14).

The scheme of building management, in which the main production links are functionally autonomous and connected indirectly through a common manager, is anti-systemic. When someone designs something, others have to produce it, others have to control the quality, the fourth have to sell products on the market, it divides the participants in production, blocking the creative alliance. All are nominal accomplices in the process and have little idea who is doing what and why. There is no team spirit, everyone acts on his own, at his own peril and risk, often at the expense of colleagues, substituting the latter.

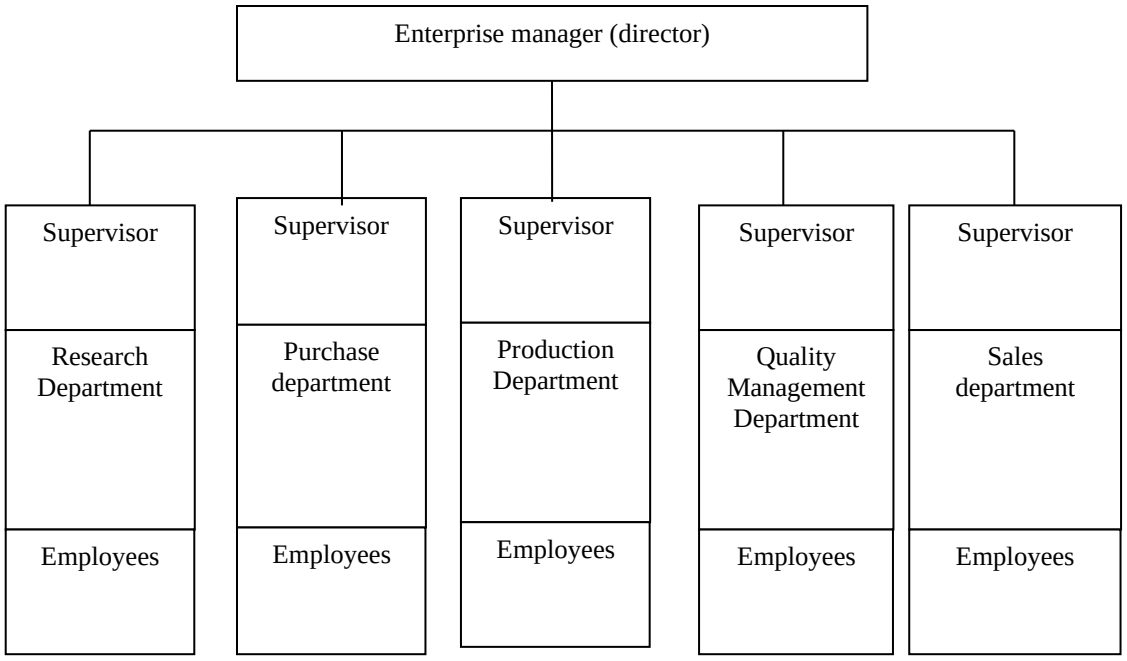

Figure 14. Organizational chart of the enterprise

The fundamental misconception of the managers of "enterprises - conglomerates" lies in the belief that their "brains" should be enough for the timely recognition and correction of force majeure in the production process. The “enterprise-conglomerate” management scheme essentially coincides, despite the presence of a specialized department, with the quality management scheme, because the functions of the quality management department are reduced mainly to control activities. In 1924, W. Shewhart proposed to optimize this method of management using the principles of the theory of statistical variation, providing managers with a statistical control chart. Improvement of work was not slow to affect the results, but the matter was limited to partial changes for the better. The “philosophy of the theory of variation,” instead of being used as a basis for management, was relegated to the level of statistical tools used by technicians with limited and very specialized areas of responsibility ... Ignorance of the theory of the behavior of industrial processes made management unable to correctly recognize situations that require or do not require action. For this reason, management became extremely vulnerable to three kinds of costly management errors:

attitude to all variations of the output parameters of the process as a surprise in behavior and suppression, in fact, of their imaginary causes, which leads to destabilization of the process;

attitude to all variations of the output parameters of the process as natural manifestations and inaction regarding the detection and suppression of their causes, which leads to unstable behavior;

the assumption that process optimization and stabilization are technical solutions for which a particular department is solely responsible, rather than an organizational problem that requires the full support of management and the efforts of several departments.

The restructuring of enterprise management on the principles of system organization provides:

1. interconnection of key activities so that various departments of enterprises are coordinated in coordinating actions, for example, to review product quality taking into account specific comments from consumers, improve staff training, promotions, etc.;
2. embedding other processes in key activities;
3. integration of new key activities into existing ones.

A dangerous misconception in the construction of management "enterprise - system" - is the interpretation of optimality as the sum of optimal rearrangements of individual units. In this case, the enterprise is still considered as a conglomerate, the sum of departments that play their own special role. There is no view of activity as an integration of all its components. In European literature, the new term “quality revolution” is increasingly encountered. We will not discuss how adequately it captures the dynamics of a policy aimed at improving the quality of production, we note only that the involvement of the concept of "revolution" in the study looks quite natural. Comparison of modern quality management practices with the not so distant past clearly indicates a radical restructuring of the understanding of quality technology.

1960s - the stage of self-determination of the quality of goods as the main factor in market competition;

1970s - shift from the dominant quality of goods to the quality of technology and production;

1980s - transition from the quality of technology and production to the quality of a "quality system" or "quality management system";

1990s - ascent to the quality of education, the quality of intellectual resources.

The path of the Europeans to the Bologna agreements was long and difficult. He exposed many shortcomings and contradictions. In particular:

- the obvious gap between the requirements of the society of industrialized countries to the education system and its capabilities;
- the discrepancy between the fact that the most significant discoveries and inventions are made mainly at the intersection of sciences; and education is built on the division of subjects;
- insufficient mobility of the organization of retraining of specialists, its growing lag behind the acceleration of changes in engineering, technology, and science;
- inertia in the development of new educational paradigms, programs, methods, backlog in the development of new educational literature.

Nevertheless, there is also serious progress - three levels of education quality assurance have been identified and balanced: university, national and European.

The intellectualization of the economy, enhanced by the transformation of science into a direct force of production, which experts of the 21st century are so fond of talking about, has exposed the fundamental contradiction of human consciousness between intelligence and decency. Philosophers sought its resolution in the rationality of homo sapiens, emphasizing the basic function of morality. Hypertrophying the activity of consciousness due to the actualization of intellectual abilities, focusing attention on the creative forces of the mind, reducing consciousness to thinking, supporters of the "smart" economy do not see or do not want to see the dependence of the mind on morality, oppose the role of the mind to the value of moral values. We have already noted that the power of knowledge can only have its own vector on a private scale. In system terms, the power of knowledge is directed by indigenous, and not the private and corporate interests of the manufacturer. Morality was formed as the first derivative of labor as a way of first survival, then the development of mankind. The main criterion of social progress cannot be the efficiency of production - this is a purely economic parameter, Man is a social being and the degree of his achievements is determined by how much the movement strengthens human relations - first of all - moral.

Conclusion

Economic activity should be wise, when the mind is closed not on itself, but on the total, personal, national and universal interests. It's time to understand that it's dangerous to hold humanity for the masses of idiots, to build corporate happiness with other people's "hands". Without a strict moral regulation that subjugates all other aspects of human existence, there is no historical perspective. The mind is valid only in the form of an operator clearing the way to the economy of the future. If someone likes to call the economy of the future smart, intellectual, then it is imperative to clarify that smart means a reasonable economy, built not on cunning and private benefits. The current crisis has shown the vulnerability of democratic relations. The freedom to act that led to the crisis was opened up by the amorphousness of democratic postulates, not a clever worship of the regulatory abilities of the market, not an adequate perception of the actions of the “powerful ones”. Innovations in economic construction express the new thinking of mankind, fusing intelligence and morality.

The Chinese and Indians will be the first to build an innovative economy, that is, those peoples who have retained the authority of moral values in their minds, subordinating scientific and technical achievements to national interests. It is they who in the near future will "shod" both Europeans and Americans, and, apparently, the same for us!

Wherever shoes produced by the enterprise are sold: in a company store, at wholesale fairs or federal exhibitions, it is always important to know the niche that is not occupied today and fill it urgently. This is possible only if the buyer has no limited choice for making a decision to purchase it, if the interests and capabilities of all consumer groups are taken into account. These are not beautiful words, but the reality of today's market. Without such marketing research, without a strict accounting of demand, without analyzing the reasons for the return of shoes by customers and analyzing their complaints, it is difficult to expect success, and this is simply impossible.

The more varied footwear offered to trade on the same basic basis, the more it will be sold, the easier it is for the enterprise to ensure the modernization of its production in a timely manner and to replace outdated, out-of-fashion footwear with one that will be in demand again. In general, you need to spin in order to be "afloat".

Men's and women's shoes are characterized by the same requirements for creating conditions for their demand, but already taking into account the market where these shoes will be offered for sale, for sale. Men's shoes are in high demand today, due to the change in the status of the Southern Federal District and the North Caucasus Federal District at the geopole of the Russian Federation. The border district, internal troops, military units of the Ministry of Emergency

Situations, regular military units and formations, a huge flow of refugees, a large number of higher educational institutions - all this provokes the need for a large number of consumer goods, including shoes for various purposes. In this regard, the demand for men's shoes has its own characteristics, consisting in the fact that the autumn-spring assortment of shoes is in greatest demand on the market. And the presence of technical specifications for the production of special. shoes for military personnel using glue and injection methods expands the possibility of shoe enterprises in the development and manufacture of men's shoes, as it were, at the junction - everyday and special with the possibility of a slight change in the technology of making it for the consumer or offering it to military representatives as special. shoes. Such a wide range has already provoked the opening of numerous small enterprises for the production of men's shoes. I just wanted to draw the attention of business leaders and fashion designers to the principles of forming a range of men's shoes in order to ensure stable demand and high competitiveness in the supply market. It is important that the experimental group of the enterprise timely monitors the appearance of new materials and accessories on the supply market, securing the right to know-how, peculiarity, originality, thereby creating an image for your company, a respectful attitude towards the "brand" of the company and the trademark, so that in all cases this prestige is always maintained at a very high level. So, for example, if a molded sole with a side is used, then its fastening will always be carried out using a combined fastening method - thread and glue, as this is of high quality and ensures its durability, then the buyer will already know that the shoes of this company are distinguished from others by high quality, reliability, availability and comfort.

A special place is occupied by the production of women's shoes for the demand market of the Southern Federal District. A large volume of imported shoes, affordable prices make the production of women's shoes a less profitable business compared to children's and men's shoes. Again, the fact that the importance of marketing research is increasing, the definition of its range, which will never be taken into account by "shuttle traders" and foreign firms, is again striking. Therefore, the analysis of anthropometric changes that have occurred in the feet of the female part of the population of the Southern Federal District in recent years, the presence of a large number of customers with pathological deviations, significant differences in overall sizes allow manufacturers to produce women's shoes on the styles of such blocks that are more satisfying to customers in a comfortable and convenient shoes, and traditional high quality and reliability against the background of lower cost make such shoes always in demand and desired. Yes, and shoes for the elderly, socially unprotected, but with even greater pathological changes in the feet, allow manufacturers, together with designers, taking into account these features, to make shoes that will always be in demand and sold. In addition, we need new solutions, unexpected proposals, and then you, the manufacturers, will be successful not only in the domestic market, but also foreign markets will become more accessible.

Thus, even today, despite the lack of a legal framework for technical regulation, each manager needs to choose his own, and only his own rules of the game and behavior in the market for supplying shoes from a domestic manufacturer, not forgetting to use the opportunity to export their products to the world market, especially on the eve of the accession of the Russian Federation in the WTO.

We sincerely wish you, our leaders, justified risk and success, both in the domestic footwear market and in foreign ones.Quality systems "ordering / 5 S" and "three" not "- the basis of stability and production safety. The 20th century that has come is destined to be a century of high quality in all its manifestations - the quality of labor, products and services, the environment, that is, to implement the modern paradigm of civilized development. Ensuring competitiveness in the domestic market and promoting Russia in foreign markets is impossible without the production of high-quality products that meet safety requirements. Given this, enterprises need to implement a quality management system (QMS), which should be systematically developed and supplemented over time. The combination of its various elements contributes to the effective management of production and the production of quality products. One of the components of the integrated QMS is the Japanese system - "Ordering / 5S".

One of its ideologists is Kaoru Ishikawa, a world-famous quality management theorist. In particular, he came up with the idea of creating famous quality circles in the early 60s of the last century. The main objective of this system is to contribute to maximum stability and safety of production processes, maintaining order and discipline at each workplace with the participation of all personnel of the enterprise, especially highly skilled workers.

The first two elements in the "5S" system (Seiri è Seiton) are aimed at freeing the workspace from unwanted or unnecessary items and streamlining the remaining items. The workspace activity directly corresponds to these two steps in 5S (creating "workspaces where everything has its place"), in addition, the concept of assigning spaces to small groups is used. Activities to improve the working environment also contribute to the establishment of links between small groups, which is a condition for the improvement of the work of many enterprises.

Table 1. Concepts of the system "Ordering / 5S"

Japanese term	Term meaning	Activity content
seiri	Organization	Removing unnecessary
Seiton	Accuracy	Arranging the placement of items
seiso	Cleaning	Workplace cleaning
Seiketsu	Standardization	Standardization of rules for cleaning, ordering and cleaning
Shitsuke	Discipline	Developing habits of cleanliness and order
* Each word denotes an element of activity to master the rules of maintaining an organized workplace.		

The third element of the "5S" system - cleaning the workspace - is necessary, because without it, cleaning the production premises turns into a routine removal of garbage, and pollution inside the machines remains a source of defects and breakdowns.

The fourth element of the 5S system, standardization, involves establishing and maintaining the best practices for shaping the work environment to ensure that the requirements of the first three elements of the 5S system are consistently met. Step 3 of learning the system (development of standards for cleaning and inspection) not only establishes standardized procedures for performing the work of steps 1 and 2, but also trains operators on how to maintain the equipment, taking responsibility for lubricating the equipment.

A key condition for ensuring the continuity of activity in the 5S system is the fifth and final element - discipline. Steps 4 and 5 continually educate operators on how the equipment works, along with setting standards for maintenance. As a result, operators are interested in maintaining the good condition of the equipment.

To implement the above five stages, it is necessary to go through twelve steps:

preparation for the introduction of the "Ordering" system;

removal of unnecessary;

rational placement of objects;

development of rules to comply with the principles of "removal of unnecessary" and "rational placement of objects";

consistent cleaning;

trouble-shooting;

development of cleaning rules;

lubricant;

simple check;

development of inspection and lubrication rules;

standardization of the rules developed as a result of the previous steps;

daily activities within the framework of the "Ordering" system - discipline and responsibility.

In Russian practice, there are two fundamentally different approaches to the implementation of the 5S system: Western and Japanese.

The Western approach is focused on getting quick, mostly external results: cleanliness, order, visual control, compliance by staff with strict regulations. In these cases, the 5S system is implemented by a team of managers who make all the decisions, define the requirements, and formulate the rules for maintaining order. All employees must simply follow this order, without introducing anything into it.

The Japanese approach consists primarily in involving the entire staff in the process, including the intellect of each employee in the rational organization of his workspace. Of course, this method of implementation is longer; at first, it requires tremendous efforts to overcome the inertia and disbelief of employees. But in the end, it produces better and more sustainable results, making it easier and more efficient to implement full-scale lean projects.

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Issue Article

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COHERENCE AS A METHOD FOR RELEVANT VERBAL CODIFICATION IN THE NEOCORTEX

Abstract: *This article deals with the problem of a binary genetically and socially determined process of launching a coherent program of verbal codification as a result of the contact of two phenomena: deep biomolecular and sociocultural information. To identify this paradoxical phenomenon on an interdisciplinary basis, questions about the mechanisms of communication are considered from the point of view of the establishment and functioning of cortical-cortical horizontal connections in the speech centers of the neocortex as neoplasms of the brain substance and deep vertical cortical-subcortical connections in the neocortex. When substantiating the question of the formation of speech-thought-linguistic abilities of a person, the role and significance of verbal information is shown, which is formed and functions outside the substance of the brain in the form of the physical matter of the language and, in the process of a speech act, penetrates into the sphere of the neocortex (mental representation) and into the subcortical nuclear structures of the brain. On the line of contact of two phenomena in the cortex, a point of critical bifurcation appears, which activates the launch program of the language as a quasi-semiotic system. sociocultural information in the generation and actualization of speech.*

Key words: *quasi-semiotic system, neocortex, bifurcation point, launch program, genetic cryptogram, mental representation, DNA calculus.*

Language: *English*

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Introduction

In this article, an attempt will be made to scientifically identify the problem of language triggering mechanisms, which in the framework of the natural sciences was considered from the position of biological, and in the humanities, in particular, in psycholinguistics, from the point of view of psycholinguistics, recognizing the superiority of the sociolinguistic factor. For a comprehensive scientific identification, the outlined interdisciplinary issues are investigated on the basis of a biopsychosocial approach based on a combination of the two above approaches. For this, the scientific data of neurophysiology, neurolinguistics and modern concepts of the anthropocentist approach to the study of the phenomenon of language in linguistics and other related disciplines are analyzed.

LITERATURE ANALYSIS AND RESEARCH METHODS.

The question of the need to study the biophysiological factors of language generation was considered within the framework of the naturalistic direction of traditional linguistics, in particular, in the concept of A. Schleicher. According to the scientist, "language is thinking expressed by sounds ... Language has as its task to create a sound image of representations, concepts and the relations existing between them." [1, 240 pp.] In the 20th century, new approaches to the study of the biophysiological foundations of language appeared, including the

concept of Steven Arthur Pinker, consistently presented in the book The Language Instinct. The scientist unambiguously stated that “the language we speak is an “instinct” or a biological adaptation formed by natural selection” [2, 455 p.]. At the same time, the idea follows from the holistic concept of the scientist that both the holistic system of codification and the launching program of the language are based on instincts (from the Latin instinctus "impulse" from the verb instinguere: the basis of the Latin stinguere is "to prick", which gives the basic concept - "- a set of complex hereditarily determined acts of behavior characteristic of individuals of a given species under certain conditions [1-a]. Here it can be noted that in the special literature on natural science the term “language instinct” is not used, in everyday speech the expression “communicative instincts” is used. languages as a secondary signal system function in close relationship with thinking and consciousness, instincts in animals are also associated with a specific form of conscious behavior - with rational thinking (ratsio). To actualize speech behavior, it is necessary to connect the mechanisms of rational thinking (intellekt). Unlike representatives of the biological approach, supporters of the social origin of language triggering mechanisms, emphasizing the unlimited potential of social language, capable of unilaterally establishing language signatures [3, 423 p.]

During the actualization of a behavioral act in animals, the mechanisms of internalization of external information through genetically determined neurons of perception work reliably enough. During the assimilation of speech behavior in the child's cerebral cortex, a systemic transformation of the neural network occurs, incl. neurons of perception, associated with the need for adequate perception and processing of verbal information that is not specific to the genetic substance of the brain. Here we can mention that “when the installation, activation and functioning of cortical neurons as material substrates of the brain, consciousness and thinking, the conscious actions of the individual do not participate, because a person cannot consciously manage these processes.”[4, c.11] (it is impossible to control this process when the child’s thinking and consciousness have not yet been formed, moreover, even an adult with reasonable thinking and consciousness cannot coordinate the process of genetic formation of neuronal structures, since such a function belongs to the prerogative of the nuclear structures of the brain).

RESULTS OF THE RESEARCH AND DISCUSSION.

It should be noted that the above approaches to the problem of the origin of a language have sufficiently well-reasoned conceptual provisions, however, these arguments are not enough for a consistent scientific identification of the mechanisms for launching a language. Based on such considerations, it can be assumed that this issue should be considered taking into account the undoubted achievements of the representatives of these approaches, as well as the fundamental postulates of modern scientific disciplines, including neurophysiology, neurolinguistics, linguistic semiotics, linguistic pragmatics, etc.

From our point of view, in order to radically change the methodological orientation of the study of language within the framework of the intended topic, it is necessary to focus on the anthropocentric biopsychosocial scientific interpretation of the process of generating speech, to explore the transitivity of the three-stage system of horizontal (cortical-cortical) and vertical (cortical-subcortical) connections in the generation and actualization speech act, to characterize the genetic mechanisms of biomorlecular codification and the instinct of communication in the subcortical sphere, mental codification in the neocortex and sociocultural codification outside the human bodily substance (speech discourse).

Formation of a three-stage codification system that ensures the functioning of all language mechanisms in the deep subcortical sphere, in speech centers in the neocortex (Brock's, Wernicke's, optical zone and semantic analysis centers), forming a circle of mental representation, covering the work of all central and peripheral organs of the speech apparatus, the work of mechanisms real communication in the language environment is based on the cryptogram of the genetic substance of the brain.

This cryptosystem, formed as a result of centuries of human evolution, provides coherence (from the Latin cohaerens - "in connection") - in physics, the correlation (consistency) of several oscillatory or wave processes in time, which manifests itself when they are added. A peculiar coherent regulation in the speech act ensures the relevance of the structure and content of logically based speech constructs in the neocortex with the genetically determined biomolecular intention of the subcortical sphere.

Nuclear neuron structures located in the hypothalamus lead to the movement of the most complex system of biomolecular codification of information at the level of DNA calculus and the instinct of communication. As the nascent basis of sign formation, which has truly unique properties, the nuclear substrates of the brain transform the neural structures of the cortex, regardless of the mental structures of language and thinking, after the completion of the life cycle of the organism, they unilaterally (due to the action of the mortido instinct) coagulate these signatures.

The main advantage of the subcortical information codification system in comparison with the cortical codification system is the ability to process all types of information coming from the

external environment. An immanent property of the cryptosystem of subcortical codification is that the neurons of this sphere have a three-dimensional character (material basis, structural information and energy resources). The first two properties are also characteristic of the neurons of the cortex, and the third energy supply depends entirely on the supply of energy from the deep sphere (the cortex does not have its own sources and mechanisms for controlling the processes of providing bioenergy). The limitation of the unique, self-reproducing genetic system of the Deep Realm is that its genetic cryptosystem does not provide mechanisms for launching a language. Therefore, a child who has healthy genetically determined qualities from birth (for example, children who, by the will of fate, survived among animals) cannot become a full-fledged person and instinctively master the language as a means of human communication. Under the conditions of verbal communication, a paradoxical situation arises in the child's psyche: a genetically determined perfect system of codification in the neocortex is in close contact with non-specific information entering the cortex and cannot provide relevant processing of information entering through the channels of auditory perception. Here it is important to mention the thought of the linguist and neuropathologist Erik Heinz Lenneberg (1921–1975), who was a supporter of the point of view of the concept of innate language and the biological approach to the factors of language acquisition.

Despite his beliefs about the biological origin of language, the famous scientist put forward a reasonable hypothesis that "contact with other people acts as a trigger that causes an innate mechanism." [5, 185 p.] An important postulate in the development of the issue of the launching program of the language is the hypothesis substantiated by E. Lenneberg about the presence of a critical period in the development of the language, which still remains controversial. From our point of view, the famous scientist in his book touched upon a very topical and debatable problem. This aspect of the problem of the launcher of a language can be more reasonably stated on the basis of the term critical bifurcation from systems theory. The concept of a bifurcation point is interpreted as a critical state of the system, in which the system becomes unstable with respect to fluctuations and uncertainty arises: will the state of the system become chaotic or will it move to a new, more differentiated and higher level of order. It can be assumed that the process of contact between genetic and sociocultural information inevitably leads to such a critical state, due to the fact that the cryptosystem of the deep brain, functioning at the level of absolute perfection, cannot ensure the decoding of the perceived non-specific information, as a result of which chaos occurs in the psyche. In overcoming this critical situation, the decisive role is played by the instinct of communication, which embodies the potential for decoding any human intentions and recognizing the essence of information. This instinct, whose neurons are located in the hypothalamus, reflects the ability to self-preservation accumulated in the centuries-old process of human evolution. The communication instinct processes any external information based on dichotomous emotional motives: acceptable/unacceptable for self-preservation, positive/negative new reality, justification/unjustification of acts of behavior in a given situation, etc. (it must be borne in mind that logic and other human qualities are absolutely not manifested in the subcortical sphere).

The child's psyche instinctively determines the content of the incoming information, and at the critical bifurcation point a new fluctuation is outlined, providing a positive attitude and attraction to the perception of the language. All these implicit intentions ultimately contribute to the emergence of new impulses that ensure the installation, activation and functioning of new material substrates in the cortex - linguistic signs.

As studies in the field of neurobiology show, the system of new signs does not lead to the destruction of genetically determined neural formations of the cortex, intended for the perception of information at the level of perception (5 channels of sensation). A fertile ground for the formation of linguistic signs is created by neuroglia (from other Greek νεῦρον - fiber, nerve + γλοιός - glue), a set of auxiliary cells of the nervous tissue, which makes up about 40% of the volume of the central nervous system (the term was introduced in 1846 by Rudolf Virchow).

Glial cells constitute a specific microenvironment for neurons, providing conditions for the generation and transmission of nerve impulses, carrying out part of the metabolic processes of the neuron itself, however, these substrates are not involved in the transmission of information.

As the child learns new words, expressions and phrases in the cerebral cortex, the locations of future speech centers in the dominant hemisphere of the brain are indicated. An important stage in the development of linguistic signs is the establishment of a connection between the optical center with the center of speech perception (Wernicke's center) and the center of oral speech (Broca). Thanks to this, the child initially catches the connection between the sound complexes of words and visual images (subvocalization and nomination). As a link, a ventral pathway is formed that unites all speech zones with synapses.

In speech therapy and neurolinguistics, the following stages of launching and structuring a verbal communication system are defined:

1. Cooing.
2. Babble.
3. Subvocalization and nomination.

4. Children's egocentric speech.
5. Incomplete predication.
6. Completed predication.
7. Social speech at the level of the I-Concept of a linguistic personality.

An important stage in the formation and development of speech abilities is the distinction between the content plan and the language expression plan. The deep sphere of the brain contributes to the establishment of speech centers and the neural network as a material substratum of a two-plane language. The system of neurons that provide the semantic analysis of speech makes up the content plan, and other centers (Brock and Wernicke) provide the language expression plan. The central and peripheral organs of the speech apparatus ensure the coordinated work of the entire system(according to the data of laboratory studies, about 14 thousand neural and neuromuscular movements occur in the speech apparatus in 1 second).

In the functioning of the speech zones of the content plan, the center of semantic analysis, located in the occipital part of the cortex, is of decisive importance. When the cerebellum is damaged, the synchronization of respiration, phonation and articulation is most often disturbed: speech slows down, is divided into syllables that can be pronounced with different strengths (“scanded speech”), and sounds become blurred and fuzzy due to muscle weakness and inactivity. With dysarthria associated with a disorder of the cerebellum, the patient's speech becomes stretched, words are sometimes pronounced as if in shocks (scanned speech).

In the coordination of neuromuscular movements in the speech act, the cerebellum (lat. cerebellum - literally "small brain") is directly involved - the part of the brain of vertebrates that is responsible for the coordination of movements, the regulation of balance and muscle tone. When the cerebellum is damaged, the synchronization of respiration, phonation and articulation is most often disturbed: speech slows down, is divided into syllables that can be pronounced with different strengths (“scanded speech”), and sounds become blurred and fuzzy due to muscle weakness and inactivity. With dysarthria associated with a disorder of the cerebellum, the patient's speech becomes stretched, words are sometimes pronounced as if in shocks (scanned speech).

The development of the child's intelligence and speech depends on the development of motor skills and vestibular function. In modern speech therapy, methods for cerebellar stimulation have been developed, which are carried out by speech therapists. In such classes, a number of pedagogical tasks are solved, including:

automation of delivered sounds;

strengthening the skill of fluent speech in stuttering children;

"starting speech" in non-speaking children;

formation of lexical and grammatical representations in children with general underdevelopment of speech.

The process of forming mechanisms for launching a language program, the launch stages reflect the properties of a language sign: the nature of the sign, the availability of the signature, the degree of involvement of speech zones in the identification of a particular type of sign, the complexity of the signature, the nature of semantization, etc. You can distinguish the degree of gradation of signs and establish the following sequence of assimilation of each type language sign:

1. Assimilation of iconic signs by a child. This type of signs is acquired relatively easily, since the optical center of speech is involved in the formation of this type of sign formation, which is associated with the verbalization of objects available for visual perception. The child visually perceives people, other living beings, objects, the environment, the visual images of which are reflected in the optical center, and at the same time perceives the word by ear due to the functioning of the neurons of the Wernicke's center, and then the mechanisms of the Broca's center are connected. Associative memory is actively involved in this process of sign formation, which helps to remember the sound complex in the form of subvocalization. This type of sign formation contributes to the enrichment of the vocabulary through simple nominations with a direct meaning that does not require the transfer of the nomination to other objects and phenomena. At first, the child remembers words that reflect the realities of the close environment.

2. Assimilation of signs-indexes. This type of sign formation requires an understanding of the relationship between objects and phenomena, so the child learns it at a more advanced stage of language learning. Mechanisms of mastering indexes are based on establishing a connection between the centers of visual perception, Wernicke, Broca with the center of semantic analysis. For example, seeing a plate with a spoon, the child begins to understand that it is time to eat. Spatial adjacency and causal connection, “part-whole” relations are of great importance in the formation of the sign-index.

3. Assimilation of symbolic signs. This type of sign formation is directly related to the level of development of cognitive abilities, the ability to make generalizations and adequately understand the connections between the realities of life and words, to understand the properties of categorization in the language. For example, in order to understand the symbolic meaning of the word "ring" as a closed circle, it is necessary to understand that this metal-lexeme symbolizes integrity and unity. The ring has

neither beginning nor end, therefore it is often associated with eternity and infinity. Its central hole is interpreted as a place of passage of heavenly power, divine breath. The ring symbolizes bond, union or vow. This is why the wedding ring is used to signify eternal union. The word "laurel" means triumph and victory. Being an evergreen plant, it symbolizes constancy, eternity and immortality. Laurus was credited not only with healing power, but also with the power of cleansing from spiritual defilement. Laurel leaves were ritually cleansed of spilled blood, Apollo cleansed himself with them after killing Python... The ability to correctly comprehend and use symbolic linguistic signs is associated with the formation of the self-concept, mental abilities, beliefs and value orientations of a linguistic personality.

CONCLUSION.

In the study of the problem of the launching program of the language, it is advisable to rely on the principles of the biopsychosocial approach, which creates the prerequisites for the scientific identification of a transitive three-stage codification of information. The genetically determined cryptosystem of information processing of the subcortical sphere on the line of contact with sociocultural information is faced with the need to recognize non-specific content of information, as a result of which a critical bifurcation point is indicated. In this critical situation, the genetic quasi-semiotic system mobilizes all internal resources and coordinates the process of setting, activating non-specific speech signatures in the neocortex and ensures coherence in the systemic transformation of bio-impulses into mental language constructs. The process of formation of mechanisms for launching a language program, the launch stages reflect the properties of a language sign. The coherence of the cryptosystem ensures the relevance of linguistic signs to the deep cryptosystem and the norms of the language.

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Issue Article

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STUDY OF THE PROCESS OF PURIFICATION OF ZINC SULFATE SOLUTIONS FROM IMPURITIES

Abstract: *In this article, studies were carried out to study the process of cleaning solutions of zinc sulfate from impurities obtained from the zinc concentrate of the Khandiza deposit. For this, the influence of the ratio of metals and zinc dust on the degree of extraction of copper and cadmium from the obtained solutions of zinc sulfate was studied, and studies were also carried out on the extraction of iron. The conducted studies on the purification of zinc sulfate solutions from accompanying impurities showed the possibility of obtaining an almost pure solution.*

Key words: *zinc sulfate, solution, purification.*

Language: *Russian*

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ИССЛЕДОВАНИЕ ПРОЦЕССА ОЧИСТКИ РАСТВОРОВ СУЛЬФАТА ЦИНКА ОТ ПРИМЕСЕЙ

Аннотация: *В данной статье проведены исследования по исследованию процесса очистки растворов сульфата цинка от примесей полученного из цинкового концентрата месторождения Хандиза. Для этого изучено влияние соотношения металлов и цинковой пыли на степень извлечения меди и кадмия из поученных растворов сульфата цинка, а также проведены исследования по извлечению железо. Проведенные*

исследования по очистке растворов сульфата цинка от сопутствующих примесей показали возможность получения практически чистого раствора.

***Ключевые слова**: сульфат цинка, раствор, очистка.*

Введение

Сульфат цинка (гептагидрат сульфата цинка $ZnSO_4 \cdot 7H_2O$, цинковый купорос) применяется в качестве минерального удобрения, как минеральная добавка к кормам, при производстве минеральных красок; как отбеливатель для бумаги; при производстве различных лекарств, в том числе в стоматологии; в металлургии, гальванотехнике; в производстве дрожжей, пива, кожаных изделий, для пропитки дерева [1].

Цинк сернокислый – это удобрение с высокими показателями эффективности и широчайшей областью применения в аграрном секторе. Применяется в качестве источника таких химических элементов, как сера и цинк, необходимых для повышения урожайности сельскохозяйственных культур, а также для укрепления иммунитета у растений, повышения их устойчивости при негативном климатическом воздействии. Применяются при обработке семенного материала с целью предотвращения его порчи, появления плесени на нём и прочих нежелательных образований. Применяется это удобрение для обработки всего спектра аграрных культур (овощные, корнеплодные, плодовые деревья, кустовые ягодные, декоративные растения). Эффективно на всех разновидностях почв сельскохозяйственного назначения, в особенности на почвах с нейтральными свойствами, а также на слабощелочных и карбонатных грунтах [2].

Практикуется внекорневое внесение водных растворов сульфата цинка, а также обработка им семян растений в комплексе подготовительных мер перед посадкой [3].

Данный химикат также может служить источником цинка для животноводческой отрасли, применяемым в качестве добавки к рациону сельскохозяйственных животных. Цинк в рационе у скота необходим для нормализации всех метаболических явлений, происходящих в их организмах, для стимуляции аппетита, приведения в норму иммунной системы.

Недостаток данного химического элемента в организме животного может приводить к заболеваниям паракератозом, гипогонадизмом, носовым кровотечениям и прочим негативным явлениям, таким как, ухудшение мехового покрова и снижение общей продуктивности у особей.

Применение сульфата цинка позволяет избежать всех перечисленных негативных явлений. Существенное улучшение наблюдается уже в течение суток после начала приёма животными пищи с этой добавкой. Применяют добавку при выращивании крупного рогатого скота, лошадей, свиней, птицы и прочих пород.

Сфалерит является одним из главных источников получения цинка из рудного сырья, которое обычно находится в сульфидном состоянии. Из сфалерита выплавляют металлический цинк, попутно извлекают примеси: Cd, In, Ga и другие ценные компоненты [4]. Сфалерит используют в лакокрасочном производстве для изготовления цинковых белил, применяют для получения латуни. Большое значение имеет получение из природного сфалерита химически чистого люминофорного ZnS, активированного Ag, Cu, который применяют для изготовления люминофоров, различных светосоставов и светящихся красок. Кроме того, природный сфалерит может быть использован в качестве фотокатализатора разложения красителей в воде [5].

В работе исследованы цинковые концентраты, полученные из месторождений Хандиза. В Узбекистане на Алмалыкском ГМК ведется переработка полиметаллических руд месторождения Хандиза [4]. Полиметаллические руды месторождения Хандиза комплексные, т.е. содержат кроме цинка свинец, медь, железо, серебро и другие металлы.

Установлено, что в составе руд месторождения Хандиза присутствуют более 100 минералов. Основной нерудный минерал–кварц (80–90 % нерудная составляющая), в то время как доля алюминосиликатов составляет (2–10 %). По степени насыщенности сульфидами выделяются руды сплошные (сумма сульфидов 50–95 %), прожилково-вкрапленные (10–20 %) и смешанные (менее50 %) [6].

Цинксодержащие шлаки получают в результате плавки металлического цинка. Установлено, что содержание Zn в шлаки в пересчете на элемент составляет 86,73%, причем содержание 47,1% и водорастворимый Zn представлен хлоридом – его содержание равно 1,75%. Кроме этого, в шлаке присутствуют нерастворимые в кислотах примеси – сажистый углерод в количестве 3,1%. Показано, что крупные фракции шлака представлены в основном металлический Zn, а мелкие фракции (<2 мм) состоят более чем на 50% из оксида и водорастворимого Zn. Нерастворимый остаток шлака состаит из сажистого углерода и переменных примесей диоксида кремния. Содержание нерастворимых примесей в образцах шлака невелико: изменяется в пределах 3-5% [7].

Учитывая объем производства цинкового концентрата, в настоящее время необходимо

произвести комплексную переработку сфалеритового концентрата, поскольку на настоящий момент выпускаемый заводом цинковый концентрат помимо цинка может содержать дополнительно такие ценные компоненты как золото, серебро, индий, кадмий, медь и другие металлы, которые не извлекаются [8].

Цель и методы исследования.

Цель данного исследования заключается в очистки растворов сульфата цинка от загрязняющих сопутствующих металлов. Для снижения в растворе сульфата цинка меди и кадмия вводили цинковую пыль на стадии обработки цинкового концентрата серной кислотой. Показано, что с увеличением доли цинковой пыли (ЦП) содержание меди в жидкой фазе снижается с 0,26% при отсутствии добавки ЦП, до 0,0008% при соотношении Me:ЦП=1:(1,05-1,1), кадмия с 0,13% до 0,0004%, SO_3^{-2} с 26,39% до 25,96%. Введение ЦП практически не влияет на содержание железа в растворе сульфата цинка. Поэтому растворы сульфата цинка подвергли очистке от железа с помощью аммиака.

Рентгенофазовый анализ проводили на дифрактометре XRD-6100 Shimadzu, который позволяет проведение рентгенофазового анализа, анализа степени кристалличности, анализа напряжений, остаточного аустенита и решения многих других задач. Возможность использования любых рентгеновских трубок, соответствующих европейскому стандарту, а также широкий выбор дополнительных приставок делает рентгеновский дифрактометр XRD-6100 универсальным и подходящим для решения любых аналитических задач. Прибор обладает программным обеспечением, позволяющим осуществлять сбор, хранение, интерпретацию и обработку данных, текущий контроль состояния дифрактометра, качественный и количественный фазовый анализ и другие исследования, производить конвертацию файлов экспериментальных данных в текстовые форматы, создавать собственные библиотеки данных. Дифрактометр XRD-6100 с вертикальным θ-2θ гониометром предназначен для решения большинства прикладных и исследовательских задач [9-10].

Метод атомно-эмиссионной спектрометрии, использующий в качестве источника возбуждения атомов индуктивно-связанную плазму (ИСП). Которая представляет собой сильно ионизированный инертный газ (аргон) с одинаковым числом электронов и ионов, поддерживаемых РЧ (радиочастотным) полем. Полученная в плазме температура десольватирует, превращает в пар и ионизирует методом масс-спектрометрии (МС) и атомноэмиссионной спектрометрии (АЭС) атомы исследуемого образца. Обычно пределы обнаружения находятся в диапазоне от менее – намограмма (МС-ИСП) до менее - микрограмма (АЭС-ИСП) на литр [11].

Рентгенофлуоресцентный анализ проводили на спектрометре Zetium. Рентгеновская флуоресцентная спектроскопия (XRF) позволяет выполнять элементный анализ разнообразных материалов, включая твердые, жидкие и порошкообразные. Спектрометр Zetium, разработанный для управления технологическими процессами, а также для исследований и разработок, стал лидером благодаря высококачественной конструкции и инновационным функциям анализа от Be до Am в широком диапазоне концентраций [12].

Результаты и их обсуждение.

В связи с высоким содержанием в жидкой фазе меди, кадмия, сульфата ионов проведены исследования по снижению их содержанния в жидкой фазе путем дополнительного введения цинковой пыли на стадии обработки цинкового концентрата серной кислотой [13-14].

В табл. 1 приведены данные влияния соотношения Me:цинковая пыль (ЦП) на изменение химического состава жидкой фазы при обработке цинкового концентрата, прокаленного при температуре 900°C, соотношении Zn:H_2SO_4 от 1:0,8 до 1:1,1 30% серной кислотой.

Таблица 1. **Влияние соотношения Zn:**H_2SO_4 **и Me:ЦП на состав жидкой фазы**

№	Me:ЦП	Химический состав жидкой фазы, масс. %				
		Zn	Cu	Cd	SO_4^{-2}	H_2O
1	1:0,0 1:0,0	14,88	0,26	0,13	26,39	60,61
2	1:0,8 1:0,8	14,88	0,19	0,07	26,24	59,50
3	1:1,0 1:1,0	14,88	0,10	0,001	26,10	58,30
4	1:1,05 1:1,05	14,88	0,0008	0,0004	25,96	57,03

5	1:1,1 1:1,1	14,88	0,0008	0,0004	25,96	57,03

Соотношение Me:ЦП изменяли от 1:0,8 до 1:1,1.

Из таблицы видно, что с увеличением доли цинковой пыли содержание меди в жидкой фазе снижается с 0,26% при отсутствии добавки ЦП, до 0,0008% при соотношении Me:ЦП=1:(1,05-1,1), кадмия с 0,13% до 0,0004%, SO_3^{-2} с 26,39% до 25,96%.

Введение ЦП практически не влияет на содержание железа в растворе сульфата цинка. Поэтому растворы сульфата цинка подвергли очистке от железа с помощью аммиака.

Разработанный метод применяется на осаждении железа амиаком при нагревании в виде гидроксила железа (II) из разбавленных подкисленных растворов за счет смещения протолитического равновесия вправо:

$$NH_3 + H_3O^+ = NH_4^+ + H_2O$$

$$[Fe(H_2O)_6]^{3+} + 2H_2O = [Fe(H_2O)_5OH]^{2+} + H_3O^+$$

$$[Fe(H_2O)_5OH]^{2+} + 2H_2O = [Fe(H_2O)_4(OH)_2]^+ + H_3O^+$$

$$[Fe(H_2O)_4(OH)_2]^+ + 2H_2O = [Fe(H_2O)_3(OH)_3]\downarrow + H_3O^+$$

После этого коллоидному раствору предоставили возможность скоагулироваться. Далее происходит фильтрация. Потом промывают раствором нитрат аммония, сушат и подвергают прокалке при 800°C. Fe_2O_3 является весовой формой. Некорректные условия при обугливании или превышение температуры приводят к уменьшению веса осадка и в итоге - к занижению результатов. Это спровоцировать может восстановление части железа до двухвалентного состояния ($6Fe_2O_3 = 4Fe_3O_4 + O_2$).

Следует отмепшпев что процесс осаждения не предполагает присутствия ионов, образующих с железом (III) плохо растворимые осадки. Это: фосфат-, ванадат-, арсенат и силикат-ионы, а связывающие железо (III) в растворимые комплексы вещества: оксалат, фторид-ион, сахара, винная и лимонная кислота, глецеринм. Более того, обладая развитой поверхностьно этот осадок адсорбирует множество примесей, в том числе сульфат-ионы и йоны кобальта. Нежелательны определению и ионы, которые образуют нерастворимые в аммиаке гидроксиды, такие как Cr^{3+}, $A1^{3+}$ и прочие.

На рис. 1 приведены данные влияния стехиометрического соотношения $Fe:NH_3$ на степень очистки растворов сульфата цинка от железа, полученных из цинкового концентрата, прокаленного при 900 °C, при соотношении $Zn:H_2SO_4$ = 1:1,05, концентрации серной кислоты 30% и продолжительности процесса в 90 минут.

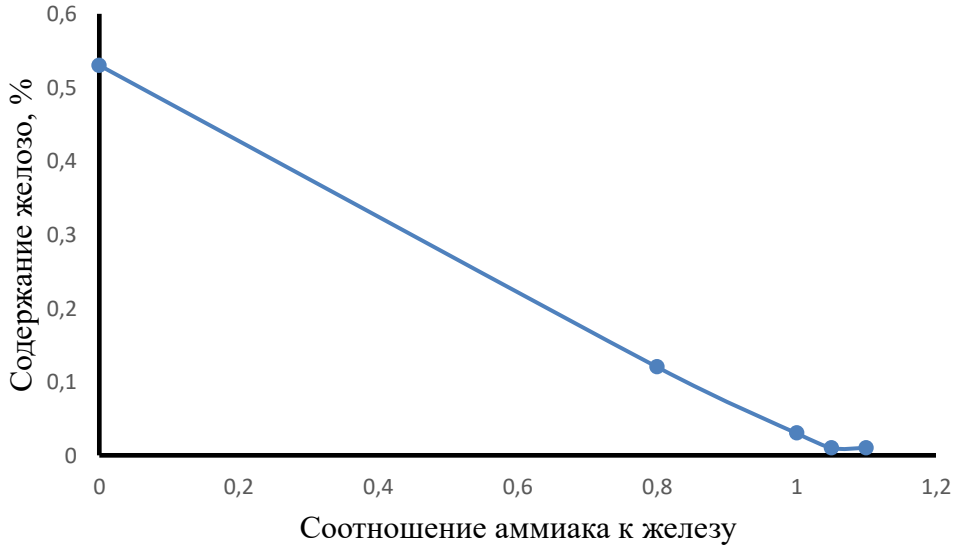

Рисунок. 1. Влияние соотношения $Fe:NH_3$ при удалении железа из раствора сульфата цинка

Повышение соотношения $Fe:NH_3$ с 1:0,0 до 1:1,1 способствует снижению железа в растворе с 0,53% до 0,01%. При этом степень осаждения железа повышается до 98,1%. Содержание остальных компонентов практически не изменяется. Содержание свободной кислоты практически отсутствует при соотношении 1:1 / 1:1.

Оптимальными условиями процесса очистки жидкой фазы от железа является соотношение $Fe:NH_3$ = 1:1,05. При этом степень очистки раствора от железа составляет 98,1%, а его содержание не превышает 0,01%.

Выводы.

Таким образом, проведенные исследования по очистке растворов сульфата цинка от сопутствующих примесей показали возможность получения практически чистого раствора.

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Issue Article

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THE WORD-FORMATION FUNCTION OF THE GRAMMATICAL ELEMENTS OF THE VERB THAT PRECEDE THE WORD-FORMING SUFFIX IN THE COMPOSITION OF THE WORD

Abstract: *The suffixes of the grammatical category belonging to verbs also have an important derivational function in the formation of complex suffixes, the first component of which consists of a modifying element. Since verbs are active as part of speech, there is a particular strengthening of the word-formation tendency of the elements of their grammatical categories. It can be said that most of the elements of the grammatical category belonging to verbs are processed before word correction suffixes and have the ability to acquire word-forming properties. Therefore, it can be considered appropriate and analyze these suffixes in accordance with their grammatical category.*

Key words: *negation, temporary suffixes, homonymy, grammatical function, word formation.*

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Introduction

Handling negative suffix before word-forming suffix

Information relating to a negative suffix, as a rule, mentions the grammatical quality of this suffix, as well as its homonymy. True, in the examples given regarding the homonymy of the negation suffix, there are cases of using this suffix as a correction suffix for a word. However, such an explanation of the transition of this suffix from grammatical to derivative is not given. Just draws attention to the homonymy of the negation element [3; 7; 13].

Of course, language by its very nature is not free from homonymy. Homonymy can occur not only in suffixes, but also in other elements of speech. Because homonymy itself is an integral part of the processes associated with word formation in the language. Homonyms did not arise by chance and cannot be considered elements that have an accidental verbal similarity. Homonyms, as a rule, are formed on the basis of compositions that are homogeneous in origin and perform separate functions. Homonyms were formed at a stage in the development of the language, when new information surpassed the models existing in the language, so the language drove individual meanings and grammatical functions into one model. Therefore, speaking of homonyms, they can be characterized as linguistic elements originating from the same origin and performing different functions. In separate studies and studies conducted on homonyms, those characteristics that are associated with them are summarized and evaluated [11, p.7; 12, p. 10].

Ilkin Asger gives examples of the use of the homonymous suffix -ma (-mə) before the word-forming suffix -ca (-cə), such as tapmaca, bilməcə, atmaca, köpməcə, bulmaca, which translates as puzzle, knowledge, hint, pancake, guess, in these examples show that the suffix cannot be divided by

composition. Therefore, he completes his reasoning with the idea that the suffix is formed as a derivative means in a single composition [9, p.42]. When describing homonymous words, Buludkhan Khalilov draws attention to the fact that they are an ancient linguistic phenomenon [6, p.144].

Use of the present tense suffix before a word-forming suffix Derivative function of verbal grammatical elements used before a word-forming suffix in the structure of a word

The suffixes of the grammatical category belonging to verbs also have an important derivational function in the formation of complex suffixes, the first component of which consists of a modifying element. Since verbs are active as part of speech, there is a particular strengthening of the word-formation tendency of the elements of their grammatical categories. It can be said that most of the elements of the grammatical category belonging to verbs are processed before word correction suffixes and have the ability to acquire word-forming properties. Therefore, it can be considered appropriate and analyze these suffixes in accordance with their grammatical category.

Handling a negative suffix before a derivational suffix.

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In separate studies and studies conducted on homonyms, those characteristics that are associated with them are summarized and evaluated [11, p.7; 12, p. 10].

Ilkin Asghar gives examples of the use of the homonymous suffix –ma (-mə) before the word-forming suffix –ca (-cə), such as tapmaca, bilməcə, atmaca, köpməcə, bulmaca, and decides that these suffixes cannot be divided by composition. You can split the suffix into components in this composition. Therefore, he completes his reasoning with the idea that the suffix is formed as a derivative means in a single composition [9, p.42]. When describing homonymous words, Buludkhan Khalilov draws attention to the fact that they are an ancient linguistic phenomenon [6, p.144].

As a result of all that has been said, it can be concluded that homonymous variants were formed on the basis of the same model, united separate concepts in a syncretic quality, and over time these concepts underwent a process of motivation as a product of the same or different parts of speech. In this sense, it can be considered that the suffix ma (-mə) was not an unusual grammatical indicator, but, having undergone an evolutionary process from negation to word formation, it became important and was used both independently and before the word formation suffix. . Using this suffix -ca (-cə) before the word-forming suffix in the Azerbaijani language of such words as tapmaca, bilməcə, gülməcə, atmaca; with the addition of the suffix -cı (-çi, -çu, -çü) qazmaçı, tökməçi, süzməsi, çəkməçi; by adding the suffix -lıq (-lik, -luq, -lük), verbal nouns such as qazmalıq and sarmaşıq were formed with the addition of the non-derivative suffix –şıq.

The present suffix -ır (-ir, -ur, -ür; -yir, -yir, -yur, -yur) is grammatically quite active. This suffix creates a grammatical paradigm by working together with personal suffixes and includes all persons: al-ır-am, al-ır-san, al-ır; al-ır-ıq, al-ır-sı-nız, al-ır- lar. At the same time, the indicative mood of the present tense is also used before word-forming suffixes, showing the transition from grammar to word formation along with this suffix. In addition to using the present tense as a homonymous variant in independent words such as gəlir, kəsir, əsir, one can also observe that it is used with suffixes that correct the word after it. Words related to parts of speech are formed from verbs when the suffix of the present tense passes into word formation. You can determine the tendency for the formation of the present tense suffix in the following examples:

a) in the structure of the word, the suffix -lı (-li, -lu, -lü) is used after the present tense suffix, and thus an adjective is formed from the verb: gəlir-gəlirli, kəsir-kəsirli.

b) the suffix –sız (-siz, -suz, -süz) is used after the present tense suffix, and the adjective is formed from the verb: gəlir-gəlirsiz, kəsir-kəsirsiz.

c) the suffix of the present tense is followed by the suffix -ıcı (-ici, -ucu, -ıcü), the noun is followed by attributive nouns: doyur-doyurucu, keçir-keçirici, ötür-ötürücü, batır-batırıcı, bişir-bişirici; qovur-qovurucu and others.

d) after the present tense suffix, the suffixes -ım (-im, -um, -üm), -am (-əm) give examples such as

birth, doğum, ölüm, geyim, doğram, tutam, itim, atım, aşırım, biçim, bölüş [10, p. 12-13].

The purpose of citing these examples is to comment on the functional nature of the suffix, not on its variant. It can be seen from the functional character that here there is a scene associated with the process of verb formation. At the same time, the suffix –ım (-im, -um, -üm) is similar in structure to the attributive suffix of the first person. In this sense, the homonymy of the suffix is clearly manifested. The explanation of this suffix by Buludkhan Khalilov is as follows: "-Im (-im, -um, -üm) the suffix forms a name from verbs as a word-forming suffix: içim, atım, udum, etc. Such words have a numerical character: bir atım barıt, bir içim su etc. This suffix hardened in the words qurtum, salxım" [6, p.123].

Thus, after the suffix -ır (-ir, -ur, -ür), denoting the present tense, the suffix -ım (-im, -um, -üm), formed as an independent means of word formation, can occur in the word structure. . Thus, from the words of Azerbaijani origin as aşmaq - to roll over, aşırım - pass, bişmək - to cook, bir bişirim - for one-time cooking, uçmaq - to fly, uçurum - cliff, yatmaq - to sleep yatırım - attachment were formed.

The present tense suffix, of course, does not express the concept of time in this composition, it creates a new derivative with a complex composition in the form -ırım (-irim, -urum, -ürüm) together with a word-forming suffix.

The present suffix is used before the suffix -ma (-mə), which also has a word-forming function and takes part in the formation of adjectives from nouns and verbs. The suffix -ma (-mə) is an element of the negation category of the verb, as it indicates a grammatical function. At the same time, as a means of correcting words, this suffix is derived from the modifier in its origin. Therefore, we can say that the modifying suffix -ma (-мə) comes from the element of inflectional negation, firstly, as mentioned above, inflectional suffixes are considered the product of the period before the inflectional period. Due to the stage of their formation and functionality, and secondly, due to the fact that this suffix is derived from a word-changing variant, it has the characteristics of a homonym. The modifier suffix –ma (-мə) is motivated by its derivational quality and in some words forms a full noun. For example, alma (fruit), süzmə (dairy product), yarma (cereal), qazma (underground shelter), qırma (bullet accessory), çıxma (wound), dürtmə (twitch), sızma (misfire), ilmə (thin thread) , çalma (headdress), etc. The suffix -ma (-mə) develops after the suffix of the present tense as a means of correcting a word and affects the replacement of its grammatical functionality with the transition to word formation. So, the suffix of the present tense is formed by a combination of the suffix –ma (-mə), which has passed from grammatical negation into word formation based on the presence of a complex suffix –ırma (-irmə, -urma, –ürmə) from the word köç-moved-köçürmə-census, keç - pass keçirmə-belt, öt-pass ötürmə- transfer, qaç- run qaçırma- steal, aş-pilaf, biş-vari bişirmə-cooking, etc. You can find corrections of many words.

Processing the suffix of the definite future tense before the derivational suffix A certain suffix of the future tense independently acquires a derivative quality and participates in the formation of new words and in the creation of a complex composition even before a certain part of the suffixes was formed as a word-forming means. The suffix of the definite future tense is used before the suffixes -li (-li, -lu, -lü) and -siz (-siz, -suz, -suz), which express a greater quality and form the composition -açaqlı (-əcəkli), -acaqsız (-əcəksiz) is involved in the formation of complex suffixes consisting of parts. Information regarding the main function of the -acaq (-aqak) suffix states that when a personal suffix is used after this suffix, the grammatical tense of the verb is (alacağ-am, alacaq-san, alacaq-sınız, alacaq-lar). If no personal suffix is used after this suffix, the verb becomes a participle. If the suffix –acaq (-əcək) is preceded by a suffix of unknown type (-ıl, -il, -ul, -ül): the letter [4] is written.

In the article devoted to word-forming suffixes, the functional characteristics of the suffix –acaq (-əcək), especially its transition from grammar to word formation, examples of correcting words denoting nouns from verbs such as oturacaq, daldalanacaq [8, p. 14] are given.

Regarding the functional nature of the suffix -acaq (-əcək), it should be said that the transition of this suffix from grammar to derivation occurred due to the need of the language for word formation. When used as the last element of a word, this suffix turns into an independent derivative variant, and also serves as the basis for creating a complex derivational tool, if after it a word-forming suffix is included in the word structure. In this sense, it is processed in the first row and performs the task of the main organizing element of the composition. In this case, of course, the suffix -acaq (-əcək) is completely removed from the grammatical function within the compound suffix. In the Azerbaijani language, the formation of the corresponding adjectives formed from the verb with the participation of compound suffixes, formed due to the formation of the unity of the suffix of a certain future tense with the word-forming suffix following it, is observed. As a rule, in the composition of suffixes formed on the basis of the suffix -aqak (-ıkək), the presence of suffixes forming an adjective with suffixes –lı (-li, -lu, -lü) və –sız (-siz, -suz, -süz) is observed.

Thus, when adding these suffixes, new complex word-forming suffixes of the type –acaqlı (-əcəkli), -acaqsız (-əcəksiz) are formed. In the Azerbaijani language, in the presence of compound suffixes -acaqlı (-əcəkli), words such as qanacaqlı are formed from the word qanacaq, gələcəkli from the word

gələcək, görəcəkli from the word görəcək. These words are used in the language in accordance with such compounds as qanacaqlı adam, gələcəkli günlər, görəcəkli işlər. In some cases, one can even find the use of the expression bilikli adam "smart person" as a more emotional version of the expression biləcəkli adam "noble person". - At the same time, in the presence of a complex suffix acaqsız (-əcəksiz), expressions such as qanacaqsız adam oturacaqsız yer, dayanacaqsız yol - a person without blood, a place without a seat, a road without stopping can also occur. It should be noted that there is no limit to the expansion of the derivative environment of compound suffixes like -acaq (-əcək). It is quite possible to make an optimistic forecast that the possibilities of word formation of these suffixes will expand due to the emergence of new concepts.

The use of a non-permanent future tense suffix before a derivational suffix. After the non-permanent suffix of the future tense, one can observe the formation of new compound suffixes, which serve to intensify the process of word formation, during the processing of word-forming suffixes. In the sources one can find facts that the suffix –ar (-ər) is explained as a suffix from nouns and verbs. For example, it has been observed that words such as bozar from boz, ağar from ağ, göyər from göy, yaşar from yaş, and göyər from göy are actually attached to words that are parts of speech of nouns. At the same time, the suffix -ar (-ər) is attached to the verb aç-açar-to open, is attached to the verb kəs- kəsər-to cut, is attached to the verb dəy-dəyər-, is attached to the verb tut-tutar (sututar) to catch, attached to the verbs döy -, söy, döyər, söyər, etc. joins words and participates in the formation of the corresponding nouns and adjectives.

Explanations and relevant examples are given in separate sources, as well as in textbooks and other studies on the grammatical and derivational features of the suffix -ar (-ər). However, it can be said that no information about its origin, including participation in the creation of a complex derivative instrument, which seems to be more important for modern linguistics, has been found. Speaking about the suffix -ar (-ər), Ilin Asger gives examples (Yaşar, Sevər, Gülər, Anar, Yetər) of its participation in the formation of nouns from verbs as homonymous suffixes. At the same time, this indicates that the suffix comes from a grammatical (word-changing) source. However, there is no specific opinion about the word-forming source [9, p.31]. In other sources, one can find examples of the formation of the suffix -ar (-ər) [1, p.50]. In another source, examples such as otar, ağar, bozar, göyər are given simply with the suffix -ar (-ər) [2]. The other source does not provide any additional information, except for a similar explanation and similar examples (otar, ağar, qızar, bozar) [5]. -Ar (-ər) is followed by an indefinite future tense suffix such as –lı (-li, -lu, -lü), -ı (-i, -u, -ü), -tı (-ti, -tu, - tü), -aq (-ək). This means that in accordance with the requirements of enriching the vocabulary potential of the Azerbaijani language, new types of derivative variants are formed in the Azerbaijani language, such as -arlı (-ərli), -arı (-əri), -artı (-ərti).

Processing elements of the imperative form before the word-forming suffix Compound suffixes, formed from the combination of imperative form elements with word-correcting suffixes, have a more intense quality in terms of word formation than other categories of verbs. In particular, suffixes denoting the singular of the first person and the plural of the second person of the imperative form are processed before verbal suffixes and participate in the formation of a new compound suffix composition.

The suffix -ım (-im, -um, -üm), used in the first person singular, reflects such concepts as order, incitement, coercion, as well as in the grammatical form of order, even if it is freely used in word structure. For example, the concept of the first person is prominent in nouns derived from verbs such as (ölüm, itim, udum, içim - die, disappear, sip, drink) as well as in first person expressions such as (mən alım, mən aparım , mən yazım, mən oxuyum - I buy, I take, I write, I read.

The suffix -Im (-im, -um, -üm) is a grammatical tool belonging to the first person of the imperative form, and at the same time has a derivative function as a suffix that forms a noun from a verb, and it participates in the formation of a complex composition together with corresponding derivational suffixes that follow it in the word structure. This suffix combines word correcting suffixes such as -lı (-li, -lu, -lü), -sız (-siz, -suz, -süz), -cıl (-cil, -cul, -cül), forming - imli (-imli, -umlu, -umlu), -imsiz (-imsiz, -umsuz, -umsuz), -imcil (-imcil, -umcul, -umcul) are involved in the formation of complex derivatives. Within these compound suffixes, the suffix -ım (-im, -um, -üm) is deprived of its grammatical function; becomes a word-forming element, but traces of the command tone are preserved in the lexico-semantic environment of newly formed words. This feature can be observed in the following words formed with the help of these suffixes:

-Adjectives with an attributive meaning are formed by adding the suffix Imlı (-imli, -umlu, -umlü) to verbs; for example, adjectives such as döz-endure-dözümlü-patient, from the verb get-go gedimli-mortal, from the verb dur-stay-durumlu-steady, from the verb gəl-come -gəlimli-coming, from the verb duy- feel-duyumlu-sensitive, from the verb ye-eat-yeyimli-edible, from the verb gey-dress-geyimli-dressed, etc. In these words, there is a conditional understanding of the imperative tone, for example, in words like dözümlü-hardy [mən- i] dözümlü [yəm] - I am hardy, gedimli - [mən] gedimli [yəm] - I am mortal, durumlu-patient [mən] durumlu [yam] - I am patient, gəlimli- coming [mən] gəlimli [yəm] - I am coming , duyumlu - sensitive [mən] duyumlu [yam] - I am hardy, geyimli - dressed [mən] geyimli [yəm] - I

am dressed, sorumlu - responsible [mən] sorumlu [yam] - I am responsible, as well as in many other words.

Suffix -Imsız (-imsiz, -umsuz, -ümsüz) This suffix is involved in the formation of examples that contradict the meaning of words formed with the presence of the suffix -ımlı (-imli, -umlu, -ümlü). For example, in the presence of this suffix, such verbal adjectives are formed as döz- endure f dözümsüz- impatient, dur- stop-durumsuz- unstable, biç-cut-biçimsiz - indiscreet, öl-die- ölümsüz- immortal, bax-look baxımsız- unkempt, gey-put on-geyimsiz - undressed, duy-feel-duyumsuz-unfeeling, etc.

Those suffixes that are attached to words whose roots are verbs can, together with the root, form a whole composition. Examples include related suffixes –ımsaq (-imsək, -umsaq, -ümsək), -ımçaq (-imçək, -umçaq, -ümçək). With the participation of these suffixes, words such as sarımsaq- garlic, hör- tie-hörümçək-spider and many others were formed in the Azerbaijani language.

The components of the suffix -Imcıl (-imcil, -umcul, -ümcül) consist of the combination -im (-im, -um, -üm), which tends to move from grammatical to derivational, and from suffixes that form the adjective -cıl (-cil, -cul, -cul). - In the presence of the suffix –cıl (-(-cil, -cul, -cül) in the Azerbaijani language, corresponding adjectives are formed from nouns, such as: kef-joy-kefcil-joyful, qonaq-guest-qonaqcıl-hospitable, qabaq-before- qabaqcıl-advanced, yuxu-sleep-yuxucul-sleepy, ard-succession-ardıcıl-sequential, etc.

Since the first component of a complex suffix consists of a suffix characterized by the transition of the element of the imperative form of the verb into the function of the subjunctive mood, the suffix containing itself -ımcıl (-imcil, -umcul, -ümcül) is also subject to the subjunctive mood, in particular, –cıl (-cil, -cul, -cül) according to the functional purpose of the suffix serves to modify the verb from the adjective. So, in the presence of the suffix -ımcıl (-imcil, -umcul, -ümcül) in the Azerbaijani language, such words are formed from the verb as doy - get enough - from the verb doyumcul - full, ye - eat from the verb the participle is formed yeyimcil - appetizing, yan - burn - yanımcıl-zealous, öl-die ölümcül-mortal.

Due to the intensification of the lexico-semantic word-building potential of the language, the probability of repeated intensification of such words is not limited.

The suffix –ın (-in, -un, -ün), denoting the command form of the second person, is combined to form a complex compound, more often çox –caq (-cək) and –tı (-ti, -tu, -tü) as in the second In the suffix component, the use of word-forming suffixes is observed. Even in words formed by combining the suffix –In (-in, -un, -ün) with the suffix –caq (-cək) with the presence of the compound suffix –ıncaq (-incək, -uncaq, -üncək) və –ncaq (-ncək) there is a semantic nuance associated with the concept of the second person singular of the command form. The second component of the form-forming element -caq (-cək) is used in some words without being separated into the root-forming part. In such words, the element –caq (-cək) is used as an adjective. You can give examples of words such as əmcək-chest, sancaq-brooch, ocaq-hearth, bucaq-corner, qucaq-hug, böcək-bug.

In words formed by the suffix -ıntı (-inti, -untu, -üntü), formed from the combination of the suffix -in (-in, -un, -ün) with the suffix -tı (-tu, -tu, -tü), in unlike them, in the imperative form, the meaning characteristic of the second person plural is observed. Along with this, it should also be noted that the suffix -tı (-ti, -tu, -tü) cannot independently participate in monosyllabic words as a word-forming means. This suffix occurs in words such as -tı (-ti, -tu, -tü), which formed a root-forming stem. -ıntı (-inti, -utu, -untü) formed from the combination of the suffix -ti (-ti, -tu, -tü) with the suffix -ın (-in, -un, -ın) was formed from the verb tök-lei- töküntü-withdrawal, qır-break qırıntı-fragment, yığ-collect- yığıntı-collection, gör-look görüntü-view, poz- erase-pozuntu-violation, sür-lead sürüntü-driving, gəz-walk gəzinti-walk, çök- bend over çöküntü-sediment, döy-bey döyüntü-beat, ov-crumbs ovuntu-crumbs. In words of this type, the concept of the second person plural of the imperative form is conditionally represented as follows: [siz] tökün-pour, [siz] sürün-drive, [siz] qırın-break, [siz] yığın-gather, [siz] pozun-erase, [siz] çökün-bend over, [siz] döyün-beat, [siz] ovun- crush, etc.

As can be seen from studies, analyzes and research, verbal categories differ from nominal parts of speech in terms of intensity, dynamism, and flexibility. As a result of this, a peculiar activity is observed during the transition of the elements of the grammatical category belonging to the verb into word formation.

The derivative function of the grammatical elements of the verb that precede the word-forming suffix in the structure of the word

Since the word-formation possibilities of the Azerbaijani language are wide and intense, word-forming suffixes belonging to the verb as part of grammatical suffixes can acquire a derivative quality. Therefore, grammatical elements that have acquired a word-formation quality are used before the modifying suffix in the structure of the word. It's completely legal. Because according to the requirements of the agglutinative mechanism in the structure of a word, word-forming suffixes usually come first in the word structure, and inflectional suffixes come second. This situation is, of course, not unique to the Azerbaijani language, but is universal for all languages with suffixes. Since the Azerbaijani language has an agglutinative structure, the transition of inflectional suffixes into inflectional ones in this language, as in other agglutinative languages, is more intense. The

grammatical elements of verbs include the negative suffix (-ma, -mə), the past demonstrative suffix (-dı, -di, -du, -dü), the transitive past suffix (-mış, -miş, -muş, -müş). Suffixes of definite future tense (-acaq, -əcək, -yacaq, -yəcək), suffixes of indefinite tense (-ar, -ər, -yar, -yər) can be used before a word-forming suffix in the structure of a word, acquiring a derivative quality. At the same time, suffixes used in the imperative form of a verb can acquire the right to be used before a word-forming suffix in the structure of a word, acquiring a derivative quality in accordance with the richness of the word-forming potential.

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Issue Article

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PHILOSOPHICAL ANALYSIS OF ABDURAUF FITRAT'S VIEWS ON ENLIGHTENMENT

Abstract: *This article is about the spiritual heritage of Abdurauf Fitrat reflected in the social philosophical essence. Abdurauf Fitrat is recognized as a scholar who made a unique contribution to Uzbek linguistics. In the works of Fitrat, the themes of national freedom, the joy of independence and liberty are put forward. Fitrat also made a significant contribution to the development of Uzbek drama with his dramas. Fitrat is also recognized as a scholar who laid the foundation stone of the new science of Uzbek literature and made a unique contribution to Uzbek linguistics.*

Key words: *"Sarf" and "Nahv", "Munozara", "Bayonoti sayyohi Hindiy", "Oila", dramaturgy, enlightenment.*

Language: *English*

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Introduction

Abdurauf Fitrat, as a mature representative of the literature of independence, is a thinker who wrote in all existing forms of literature and art. Fitrat established his syllabic rhythm (it is called "barmoq" (finger) rhythm) with his beautiful poems in Uzbek and Persian-Tajik languages.

Born in Bukhara in 1886, Abdurauf's nickname was Fitrat, which literally means "to create" c Although Abdurauf Fitrat used the nickname "Mijmar" (A pot of smoked, fragrant things) in some of his works in his youth, he later remained faithful to the permanent nickname "Fitrat". It should also be noted that even when Fitrat's contemporaries were forced to use several nicknames in their works or to change their nicknames, the writer did not give up this nickname. Even the name Fitrat was used in official documents, in his service in government offices, and in documents at the time of his arrest.

Abdurauf Fitrat received his primary education in a religious school and later studied at the famous "Mirarab" madrasah in Bukhara. Abdurauf Fitrat, who was fluent in Persian and Uzbek, as well as fluent in Arabic, became interested in the activities of the Jadid movement and became one of its most ardent propagandists.

Abdurauf Fitrat admitted in his works that he was initially opposed to the activities of the Jadids and later developed an interest in new methodological schools and Jadidism. Often, Fitrat's life and work are covered differently in different sources, much to the confusion of his life path up to 1909.

Research Methodology

Researchers who were familiar with Fitrat's work admitted that despite his young age, Fitrat was quite popular in the literary direction of Bukhara at that time. The first reliable information about Abdurauf Fitrat, in addition to the works of the thinker himself, is recorded in the memoirs and scientific works of his contemporaries Nematullah Mukhtaram, Sadriddin Ayni and the scientist and statesman Zaki Validi Togan, who lived in Turkestan in the early twentieth century [2. 7]. In particular, Nematullah Mukhtaram mentioned Fitrat in his works as Haji Mulla Abdurauf. As a young man, Abdurauf Fitrat traveled to India, Turkey and Arabia, as well as Russian cities such as Moscow and St. Petersburg, to perform the Hajj.

Fitrat, who studied in Turkey as a young Bukhara resident, returned to Turkestan as a famous person. Fitrat's first prose works, such as “Munozara” and “Bayonoti Sayyohi Hindiy”, published in Istanbul in 1911-1912, and his collection of poems, “Sayha”, inspired not only Bukhara, but all Turkestan Jadids. Sadriddin Ayni noted that Fitrat's only work, “Munozara”, had a very strong and effective influence on the development of his time.

Abdurauf Fitrat, who studied in Istanbul, Turkey in 1909-1913 as an active representative of the Jadid movement, also tried to change the lives of the people of Turkestan. Fitrat published his first book, “A Debate between a Frenchman and a Bukhara teacher in India on a number of issues”, in Istanbul in 1909 after the Emir of Bukhara refused to publish it in Bukhara. Despite the fact that this work was published in Istanbul, it was written in Persian and translated into Uzbek by Haji Muin, a well-known scholar. In 1911-1913, this work was published in the "Newspaper of the Turkestan region."

Abdurauf Fitrat, a representative of Uzbek literature, a great representative of science and culture, a poet and encyclopedic scholar, teacher, linguist and playwright, journalist and enlightener, created the textbook "Experiment on the rules of the Uzbek language" in the old Uzbek alphabet in 1925. Abdurauf Fitrat’s scientific heritage is rich and varied, and his works have been reprinted several times until the 1930s. Fitrat's contribution to the further enrichment of Uzbek grammar was invaluable, and his works served as the basis for the perfect study of the Uzbek language.

In addition, Abdurauf Fitrat, as a musicologist, has created such studies as "Shashmaqom", "Uzbek classical music and its history", "Oriental music".

Abdurauf Fitrat, who studied in Istanbul in 1913, held a number of senior positions from 1921-1922. Abdurauf Fitrat, who lived in Moscow and Leningrad in 1923-1924 and worked at the Institute of Oriental Languages, studied Turkish, Arabic, Persian languages and literature. When Abdurauf Fitrat was first elected professor of Leningrad university among Uzbek linguists, as a linguist he created his works "Sarf" and "Nahv" on the rules of the Uzbek language. Fitrat's works are attractive, profound, and comprehensive, and he has authored several articles and pamphlets in Persian in the fields of history and oriental studies. Abdurauf Fitrat's contribution to Uzbek linguistics is that he used Arabic, Persian, and Turkish to illustrate the problems of identifying auxiliary words of nouns, adjectives, and verbs in Uzbek linguistics. Abdurauf Fitrat's work has been recognized as "a unique example of Uzbek linguistics of the 1920 s, an immortal source of the past and a strong bridge between modern linguistics."

Abdurauf Fitrat, known for his poems in the early twentieth century, made a pilgrimage to the East. Abdurauf Fitrat, who continued his basic education and work in Turkey, also published his first work, “Munozara”, in Istanbul and brought it to Bukhara in various ways [3].

Analysis and results

Hisao Komatsu, a Japanese scholar, admits that “Munozara” was first published in Persian in Istanbul in 1911 and then republished in Uzbek and Russian in Tashkent [4]. “Munozara” focused on the activities of the first Persian-language Usul-Jadid school, which was mainly composed of young Bukharans, and the controversy surrounding it.

Abdurauf Fitrat's work “Munozara” is dedicated to new methodological schools, which laid the foundation for the reopening of new methodological schools in Bukhara. The essence of the work “Munozara” covers the activities of the first "Usul Jadid" schools, formed by young Bukharans, and the events surrounding them. Abdurauf Fitrat wrote about these work 20 years later in an article:

“In one of my works in 1908, I wrote about the religious prejudices that prevailed in the Bukhara khanate and the customs of the day, arrests, killings, and stoning. In those days, writing a book was "blasphemy." I wrote my first work at this time. I have criticized Bukhara's style of governing, its method of education, and many official bodies” [5. 132].

“Munozara” was published in Istanbul, and various clandestine routes were brought to Bukhara. “Munozara” was so popular that even the original Persian text was banned from entering the Russian Empire in 1914.

Haji Muin ibn Shukrullah, a close follower of Mahmudhoja Behbudi, translated the book "Munozara" into Uzbek and published it in Tashkent in 1913 in book form. Abdurauf Fitrat himself quoted this in an article. "Munozara" was translated into Uzbek by Haji Muin (1883–1942) and first published in a Turkestan regional newspaper in 1912 and in a booklet in Tashkent in 1913," he said. This article was written twenty years after the publication of "Munozara"[6]. It should also be noted that in this translation of Fitrat's work, the author's main Islamic views, criticisms of the Russian and Bukhara governments and scholars were almost excluded, and Haji Muin included ideas that were largely in line with Tsarist Russia's policy. For this reason, General N. Ostroumov allowed the publication of this translation in his newspaper.

Abdurauf Fitrat's work is extremely diverse. He is one of the most exemplary Uzbek writers who lived with the pain of the people, dreamed of independence and was a victim of repression in the name of national independence. The diversity of Fitrat's work once again demonstrates that his breadth of thinking is multifaceted and that he is truly knowledgeable. Abdurauf Fitrat's works in Uzbek and Persian-Tajik languages are written in a unique style, and it is no

exaggeration to say that his stories opened new directions in twentieth-century literature.

Abdurauf Fitrat, who returned from Turkey to study, published a number of current works on education in 1915-1916, including “The Family”, “The Leader of Salvation”, and “A Brief History of Islam”. Abdurauf Fitrat's dramas “True Love” and “Abo Muslim” in the 1920s were also staged. Fitrat's literary works, in particular, his work as a playwright, were highly recognized by his contemporaries. Especially Fitrat's dramas "Oguzkhan", "Chin sevish", "Abulfayzkhan" became famous. In his dramas, the thinker confessed his grief in the language of the protagonists: “It is necessary to study European affairs. "Studying in Europe is not to praise the Europeans as honest and fair, but to protect ourselves from them".

Abdurauf Fitrat is also recognized as the first thinker to establish the genre of historical drama. Through his dramas such as "Abulfayzkhan" and "Abo Muslim", Fitrat seeks to revive the essence of past events through the image of historical figures, as well as through the example of their tragic fates. They will be able to draw the necessary conclusions for the time. The fact that Fitrat's life and creative activity served the nation and the Motherland in the most difficult moments of history and led the people to freedom is a vivid example of the thinker's enlightenment. In any case, being with the people, putting their interests above all else, and knowing that everything is sacred is one of the characteristics of Fitrat's personality.

Abdurauf Fitrat reveals his genuinely disgusting policy in his articles, highlighting his attitude towards the West. In particular, he said, "Once upon a time, the invaders who came to the East under the pretext of opening schools of culture, madrasas of humanity, covered Turkestan in blood and trampled on its face, brought nothing but disgusting and disgraceful deeds." In his articles, Fitrat writes that the main goals of the colonialists are not to "give culture", "education", "development" to the oppressed peoples, but to teach immorality and, ultimately, to "dismiss us and put us in their own hands"[7]. Writing such thoughts without compromising anything during the period of political repression in which the enlightened scholars are unconditionally executed reveals Fitrat as a free-thinking hero.

In all of Fitrat's works, the themes of one goal, that is, the freedom of the nation, the joy of independence, freedom, liberty, are put forward. Fitrat, who soon became famous for his educational work, was the editor-in-chief of “The Hurriya” newspaper, published in Samarkand in 1916. Fitrat dreamed of more equality and freedom, but it remained a dream.

According to many twentieth-century documents and archives, after returning from a trip to Turkey in 1914, Abdurauf Fitrat established a new method of Jadid schools and madrasas, where he began teaching history of Turkish and Persian literature, Islamic studies, and Oriental languages. However, he also managed to create several new works by engaging in several new studies. One such work is Abdurauf Fitrat's “A Brief History of Islam”.

This work is written in the form of a manual for students of madrassas, the simplicity of the style of the work is reflected in the fact that the text is a harmonious coverage of historical and religious processes, the work is perfectly written. The incompleteness of the events described in the play leads us to the conclusion that the full text of this work has not reached us. This is because the work is written in a way that is both logically and historically chronologically unfinished.

Some studies have acknowledged that this was a complete copy of the work, and that a translation of the work was published by publishing house “The Gazarov” in 1915 and is housed in the Imperial Historical Moscow Museum (Moscow Imperial History Museum) under the number XY 28411.

Abdurauf Fitrat's "A Brief History of Islam" differs from other works on Islamic history written by other writers of his time in that it depicts events in a clear, vivid way, embodies the spirit of nationalism, and does not use divine or artificial compliments in its coverage of religious events. It is these aspects that clearly demonstrate the perfection in Fitrat’s work [8. 11].

“History is a science that teaches the past, the development and the causes of the decline of nations. History consists of two parts: general history and private history. The field that describes the state of all nations and societies is called general history. Private history illuminates the history of one nation and one society. The history of Islam is also a private history, so the history of Islam explains the development of the Islamic world by discussing the birth of the Prophet and the spread of Islam throughout the world. It is obligatory for all Muslims to know the history of Islam,” Fitrat admits in the introduction to his “A Brief History of Islam”.

In this work, Abdurauf Fitrat gives a brief account of the history of Islam, its origins and the lives of the prophets and caliphs, as well as the origins of Christianity in Iran and Rome, their state structures, political conflicts and wars. According to Fitrat, “In the five hundred years of the history of Christianity, there were two great states in the world, one of which was called Rome and the other Iran. One of the kings of these two states would always draw troops on top of the other, and there would be long battles in the middle. As a result, both sides were exhausted, and both sides retreated to the other side, again collecting troops, collecting money at the expense of the people, and preparing for battle again. The peoples of these oppressed lands would revolt and try to overthrow their kings under the pretext of various religious

conflicts. As a result, these countries were deteriorating day by day and their population was declining. To the south of these two countries was another continent, called the Arabian Peninsula (Jaziratul-Arab). The people of this place are mainly Arabs. The Arabian Peninsula was not as prosperous as the Roman and Iranian lands, but much of its land was sandy, and only some continents had prosperous settlements. The most famous and blessed of these continents is the Hijaz, as Mecca and Medina are located on this continent. If you look at the map, you will see that one side of the Hijaz continent is the Red Sea and the other side is the desert. These places were not occupied by the Roman and Iranian states. The peoples living here did not have their own governments, such as Rome and Iran, but lived in tribes, that is, in groups. Each tribe had its own leader".

In recent years, scientific research on the life and work of Abdurauf Fitrat has given rise to various controversies over his pamphlet. The controversial aspect of the pamphlet is that the pamphlet ends with the history of the caliphs in Andalusia, in fact, according to researchers, there is a continuation of the pamphlet. It is also more likely that the continuation of the work was lost when calamities befell the writer during the period of repression. If this assumption is true, it is also true that throughout this pamphlet it has been filled with descriptions of many valuable events in the history of Central Asia [9. 36].

If Abdurauf Fitrat continued his pamphlet "A Brief History of Islam", of course, these issues would have been written with high thinking and intellect in the scientific-philosophical and historical-artistic genre. It should also be noted that the history of Islam is a great ocean. It is true that not only one author but many scholars have worked for centuries to cover and illuminate it in one book. Nevertheless, Fitrat is a writer who dared to undertake such a great work.

Arriving in Tashkent in 1918, Fitrat gathered young people around him and formed the society "Chigatay Gurungi". Despite the fact that this society has been operating for three years, it has laid the foundation for a new direction in the development of the Uzbek language and literature. In modern research, the society is recognized as the first scientific research society in the history of Uzbekistan, founded by local intellectuals, and today is the cornerstone of the Writers' Union of Uzbekistan, the Institute of Uzbek Language, Literature and Folklore of the Academy of Sciences of Uzbekistan.

Abdurauf Fitrat, who held various senior positions in the newly formed Bukhara government from 1920 to 1923, was dismissed on various political charges. After that, the thinker was engaged only in scientific activities until the end of his life.

After returning from Moscow, Abdurauf Fitrat studied at the universities of Bukhara, Samarkand and Tashkent, where he worked at the Uzbek State Research Institute, the Institute of Language and Literature and the Committee of Sciences of Uzbekistan. Over the years, Fitrat has written many poems, plays and a number of in-depth scientific works. Nevertheless, Fitrat's nationalism was disliked by the Bolsheviks and the leaders of the Soviet government, who, like other enlighteners, began to accuse him of nationalism. From the second half of the 1920s onwards, free thought in the policy of the Soviet government and the growing hatred of the Jadids and the condemnation of the intelligentsia did not bypass Fitrat. The class-party approach to each case has intensified, and after a long period of torture, Fitrat has also been charged with fabricated charges such as "nationalist," "enemy of the people," and "traitor".

"When I was an Uzbek nationalist, I was always sympathetic to the communist party of the Soviet government," Fitrat said. However, Abdurauf Fitrat, who was arrested in April 1937, was brutally shot on October 4, 1938, along with other enlighteners. Sadly, the verdict to shoot these enlighteners came a day later, on October 5, 1938, and in 1957, the military board of the Supreme Court of the former Soviet Union overturned the verdict of October 5, 1938, and found Fitrat not guilty.

By 1985, the opportunity to approach Fitrat's works objectively began to emerge. In the press, Fitrat's name began to be justified. Fitrat's work reflects the commonalities of the Uzbek-Tajik cultural heritage, which has coexisted for thousands of years, and developed the historical development of Uzbek literature. Abdurauf Fitrat, who became famous in his time as an enthusiastic scientist and enterprising artist, later plunged into the world of non-existence and rediscovered the scientific heritage of many poets who had been forgotten in the layers of history.

In particular, he briefly covered the history of scholars in the history of Afrosiyab, from Alp Er Tonga to Yassavi, from Yusuf Khas Hajib to Turdi Faragi, Babarahim Mashrab and Cholpon. Fitrat also laid the foundation stone of the new science of Uzbek literature. More precisely, through his works "Rules of Literature" and "About Aruz" Uzbek literature took the aesthetic thinking to a new level and became famous as a leading specialist of his time.

Fitrat is an excellent literary critic, a strong theorist, and a sharp linguist. Fitrat's books and articles about Umar Khayyam, Firdavsi, Yassavi, Navoi, Muhammad Salih, Bedil, Mashrab, Turdi, Furkat, Muqimi, Nodira have become an indelible event in Uzbek literature. In particular, he is a thinker who proved in his article "Our Language" that it is possible to make ninety-eight words from a single "bil" stem, and that the vocabulary of the Turkic language is greater than that of the Persian and Arabic languages. At the same time, it regrets that our language does not have its own status at the moment [10. 17].

Many of Fitrat's works have not reached us. In particular, it was reported that the collection "Uchqun" was published in 1923, but this collection was not found. Although Fitrat was fluent in Persian and Arabic, he tried to write his poems mainly in simple Uzbek. In addition, several of Fitrat's poems and writings have been lost in print.

In the works of Abdurauf Fitrat, the love for the motherland, to be ready for anything for its will, “We will save our country. Long live independence!” slogans are put forward. Rebellious ideas against the activities of the dictatorial regime are prominent. Fitrat's poems glorify the idea of fighting for the freedom of the country and not giving up the idea of achieving freedom for even a minute.

Fitrat also made a significant contribution to the development of Uzbek drama with his dramas. In particular, his dramas "True Love" and "Indian Rebels" express the aspirations of their peoples for freedom and independence, their uncompromising struggle against the colonialists. By depicting the heroic struggle against the colonialists, the motherland expressed the endless sufferings of Turkestan. Fitrat is also known for his works, which had a significant impact on the development of Uzbek prose and contributed to the national awakening of Turkestan. Fitrat has written dozens of stories, his thoughts on the freedom of the homeland and the nation, independence are a valuable source of information about the turbulent years that passed to achieve independence.

Conclusion/Recommendations

In conclusion, it should be noted that the life and work of Abdurauf Fitrat are aimed at serving the nation and the Motherland in the most difficult moments. In any case, being with the people, putting their interests above all else, was one of the most important features of Fitrat's personality. Abdurauf Fitrat was one of the first artists to sing Uzbek literature to the world. He was a thinker who enriched it with new life-giving ideas and with his talent was able to realize the rich potential of the Uzbek language. Abdurauf Fitrat raised Uzbek drama to a high level and went down in history as the founder of modern literary science.

Also, just as Fitrat's philosophical-critical views are relevant to his time in every issue, they can serve as a model for many aspects of today's highly developed philosophical thinking. The artistic and scientific heritage of the thinker makes a significant contribution to the development of Uzbek literature and statehood.

After the independence of Uzbekistan, on September 25, 1991, Abdurauf Fitrat was awarded the Alisher Navoi State Prize of the Republic of Uzbekistan. A Fitrat garden and house-museum were established in Bukhara, and a statue of Abdurauf Fitrat was erected in Bukhara. Several schools and streets in the country have been named after Abdurauf Fitrat.

Abdurauf Fitrat's activity in the further development and enrichment of the Uzbek language has not lost its significance today and serves to enrich the knowledge of modern youth.

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Issue Article

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THEORETICAL INVESTIGATION OF A P-DOPED(Al_8C_9) MONOLAYER FOR DETECTING TOXIC GAS MOLECULES SELECTIVELY

Abstract: *The B3LYP functional and 6-31G (d, p) basis set calculations were used to explore the sensitive features of microscopic toxic gas molecules (CO, NO, SO, HCN) on a P-doped(Al_8C_9) monolayer. These gases are a key cause of environmental degradation. Adsorption energy, adsorption distance, and charge transfer parameters were used to find the best adsorption point among tow adsorption sites: C, and Bridge. These (CO, NO, SO, and HCN) gas molecules are adsorbed on a P-doped(Al_8C_9) monolayer, according to the adsorption energy and electron localization function data. Our findings further show that there is a significant amount of charge transfer between SO and NO molecules and the P-doped(Al_8C_9) monolayer after adsorption. This means that a P-doped(Al_8C_9) monolayer is more vulnerable to NO and SO adsorption than virgin or doped graphene. Furthermore, small gas molecule adsorption will alter the bandgap and work function of the P-doped(Al_8C_9) monolayer to varying degrees. Our research will provide theoretical and practical applications.*

Key words: *DFT. B3LYP, aluminum carbon, gas adsorption, HOMO, LUMO.*

Language: *English*

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Introduction

Because of their fascinating optoelectronic features and excellent thermal and mechanical stability, semiconductors have drawn a lot of attention in the last decade[1], [2]. They are currently widely utilized in efficient short wavelength light-emitting diodes (LEDs) (blue and ultraviolet), room-temperature laser diodes, and field-effect transistors[3], [4]. Aluminum nitride (AlN) has a higher thermal conductivity at low temperatures, higher thermal stability, low thermal expansion coefficient, high dielectric breakdown strength, good mechanical strength, excellent chemical stability, and nontoxicity than the other semiconductors nitride and carbide[5], [6]. The electrical characteristics of AlN materials are affected by chemical species adsorption, which is of fundamental interest and importance in the creation of prospective electronic sensors[7][8]. The charge transfers between the AlN and AlC sheet and the adsorbate can change the carrier density in semiconducting sheets,[9] which has a big impact on the material's electrical conductance. Several groups have proposed the use of AlN and AlC sheets as promising gas sensors based on these findings[10]. In the presence of NH3, we recently shown that an AlN sheet can detect low concentrations of NO2[7]. Nine out of ten people live in areas where air pollution levels exceed WHO guidelines, and this is due to air pollution, toxic gases like [NO, SO, HCN, CO] [8][11], found in many chemical and industrial plants, including natural gas processing and utilization, wastewater treatment, and semiconductor manufacturing, not to mention pollution-induced ozone layer depletion. Some poisonous gases aren't

visible, can't be smelled, or don't have a noticeable effect right away[12][13]. As a result, without the use of tools or machines, It is impossible to identify them only through the use of human senses. As a result, gas sensors were required to detect harmful chemicals and monitor air pollution. To address these difficulties, scientists must explore for materials that consume little energy, respond quickly, and are sensitive to gases[11]. As a result, we discovered that two-dimensional monolayers have a large surface area and are part of a new class of sensors. Monolayer graphene has extraordinary features.[14][15] As well as constructing ultra-sensitive sensors based on theoretical and practical research

II. Computational details

To forecast electronic characteristics, Eads, and equilibrium geometries, all calculations were performed using density functional theory (DFT) and dispersion corrected B3LYP functional[16] with 6-31G(d) basis set as implemented in Gaussian 09 package suite of programs[17][18]. On a single-layer of AlC sheet (consisting of 9 Al, 8 C and 1P atoms arranged in hexagonal rings), geometry optimization was accomplished. Figure 1 shows a partial structure of an optimized sheet. Hydrogen atoms saturated the dangling bonds near the sheet's border, decreasing boundary effects. Eq. 1 was used to identify the Eads of the molecules on the sheet's surface. To do complete geometric optimizations of the absorption impact of single-layer AlC molecules on CO, SO, NO, and HCN gas. The chemical potential or Fermi energy (E_F) of the complexes was obtained, as shown below[19][20]:

$$E_F = (EHOMO + ELUMO)/2 \quad (1)$$

Where:

-EHOMO: the energy of the higher occupied molecular orbital.

-ELUMO: the energy of the lower unoccupied molecular orbital.

In addition, the energy gap in the energy levels (for example) of the system is recognized as follows[21]:

$$E_g = E_{LUMO} - E_{HOMO} \quad (2)$$

The adsorption energy (E_{ads}) was calculated using the following pretty close expression[22][23]:

$$E_{ads} = E_{(COMPLEX)} - (E_{(MOLECULE)} + E_{(GAS)}) \quad (3)$$

Where:

- $E_{(COMPLEX)}$: The actual molecule energy with gas adsorption.
- $E_{(MOLECULE)}$: The total energy without absorption of the studied molecule.
- $E_{(GAS)}$: Gas molecule's total energy[24][19]. The charge transfers between the sheet and the adsorbed molecules was calculated using natural bond orbital (NBO) analysis.

III. RESULTS AND DISCUSSIONS

1. Adsorption configurations

As shown in Fig. 1, the P- doped(Al_8C_9) cone contains a single layer. Eight aluminum atoms and nine carbon atoms, one aluminum atom replaced with one phosphorus atom, in the P- doped(Al8C9) cone, there are two types of adsorption sites. The distance between the P- doped(Al_8C_9) substrate and the gas molecules are initially set to 2.5 Å. Furthermore, the original orientation of the gas molecule is perpendicular to the substrate. Because gas molecules absorb in a variety of configurations, a variety of insertion geometries must be considered, (CO, SO, NO, and HCN) gas molecule at a distance from 2.5 Å over P atom and bridge. One of the triatomic original orientations (HCN) is on the other hand taken into account. The carbon atom in the HCN molecular is on the top of the P-C in the parallel direction, in the second direction while the C atoms of HCN point towards the bridge in P-C layer in the same direction. The entire system can then relax completely. The compounds' absorption energies will be used to determine how they interact with the P- doped(Al_8C_9) layer. Based on the equation. The lower the E_{ad} value, the greater the adsorption of gas molecules onto P-doped(Al_8C_9). The most energy-appropriate adsorption designs are chosen for further research.

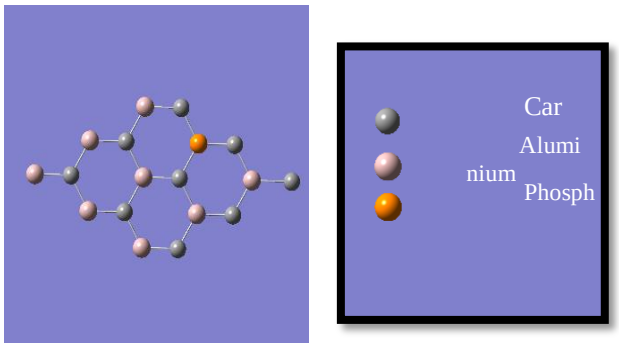


Fig. 1. Geometric structures of P-doped(Al_8C_9) cone.

The adsorption energy (E_{ads}), electronic properties of the investigated molecules such as HOMO, LUMO, total energy (E_{tot}), energy gap (E_g), and Fermi Energy (E_F) were determined after improving the geometry, as shown in Table 1.

Table1: Structural and electronic properties of P- doped(Al_8C_9) cone.

Model	Site	LOMO	HOMO	E_g eV	E_F e.v
CO	Bridge	-0.12443	-0.19435	1.902616	-4.33721
	$P_{(atom)}$	-0.12409	-0.19444	1.914317	-4.33381
SO	Bridge	-0.13119	-0.19565	1.754042	-4.44687
	$P_{(atom)}$	-0.12885	-0.19399	1.772546	-4.39245
NO	Bridge	-0.17722	-0.19573	0.503682	-5.07423
	$P_{(atom)}$	-0.17444	-0.19146	0.463137	-4.97831
HCN	Bridge	-0.11132	-0.19029	2.148878	-4.1036
	$P_{(atom)}$	-0.14954	-0.20739	1.574175	-4.85627

Table 1 summarizes the adsorption energies of different gas molecules thought about in this work on P- doped(Al_8C_9). We ignore the different orientations of adsorbed gas molecules since we are only interested in the influence of gas adsorption on the electrical structure of the P- doped(Al_8C_9) cone. On the other hand, electronic structure is analyzed irrespective of direction and adsorption sites.

Table 2: Adsorption energies, adsorption height, and transfer charges for adsorption configurations.

Model	Site	D °A	r °A	E_{ad} eV	Q |e|
CO	Bridge	2.13989	1.86	-0.4518	+0.01
	$P_{(atom)}$	2.14152	1.86	-0.4543	-0.28
SO	Bridge	1.82936	1.85	-0.696	+0.039
	$P_{(atom)}$	1.1446	1.85	-0.690	-0.003
NO	Bridge	1.34717	1.83	-0.645	-0.048
	$P_{(atom)}$	1.2929	1.83	-1.855	-0.026
HCN	Bridge	2.11191	1.86	-0.1	-0.002
	$P_{(atom)}$	2.14643	1.86	-0.3	-0.008

3.2.1. (CO) Adsorption on P- doped(Al_8C_9) cone.

CO gas molecule adsorption on the P-doped(Al_8C_9) Nano-cone is examined. Figure 8 shows the P- doped(Al8C9)-CO complex's most stable adsorption configuration. The CO molecule is positioned perpendicular to the P-doped(Al_8C_9) plane at different positions, first on the P atom, and the P-C bridge, (-0.4518) and (-0.4543) are the adsorption energies, respectively. CO and P- doped(Al8C9) have a mean atom-atom distance (C-P bond length) of 2.14152, which is greater than the C-P dimer bond length (1.86), and the atom-atom distance between CO and the P-C bridge is 2.13989, which is greater than the length of the P-C dimer bond (1.86). CO physically adsorbs on the P-doped(Al_8C_9) layer, according to these findings.

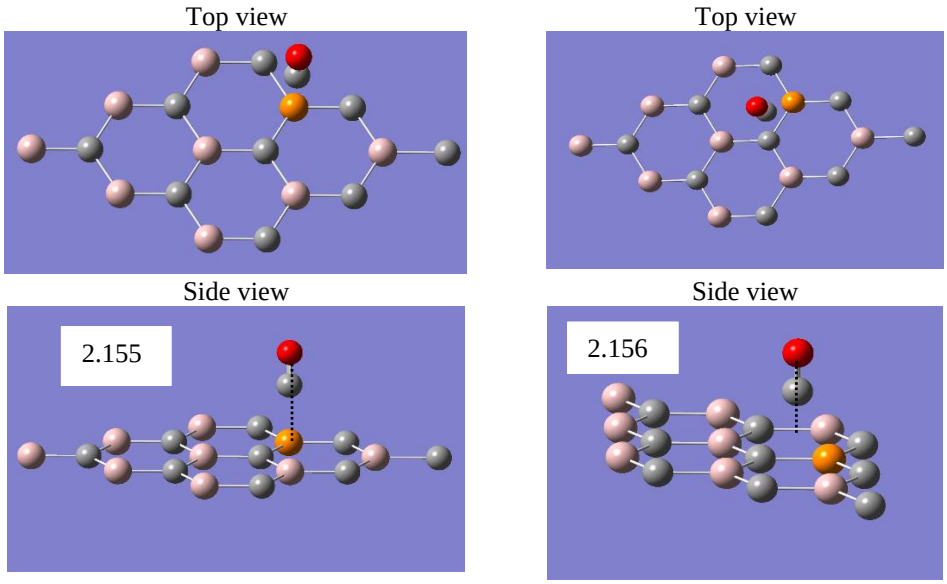


Fig.2: Top and side views of the most stable combinations (a) P-atom (b) the bridge, CO adsorbed on the top site of P-doped(Al_8C_9)

3.2.2. (SO) Adsorption on P-doped(Al_8C_9) Nano-cone.

The adsorption of SO gas molecules on a Nano-cone of P-doped(Al8C9) is investigated. Figure (9) shows the SO-P-doped(Al8C9) complex's most stable adsorption structure. At certain points, the SO molecule is perpendicular to the P-doped(Al8C9) plane, namely the atom, and the P-C bridge. Adsorption energies are -0.696, -0.690, respectively for P-doped(Al8C9). The mean atom-atom distance (S-P bond length) between SO and P-doped(Al8C9) is 1.1446, which is less than the sum of covalent atomic radii of S-P (1.85 Å), and the atom-atom distance between SO and the S-P bridge is 1.82936, which is less than the length of the P-C dimer bond (1.85). These findings indicate that SO is chemically adsorbent.

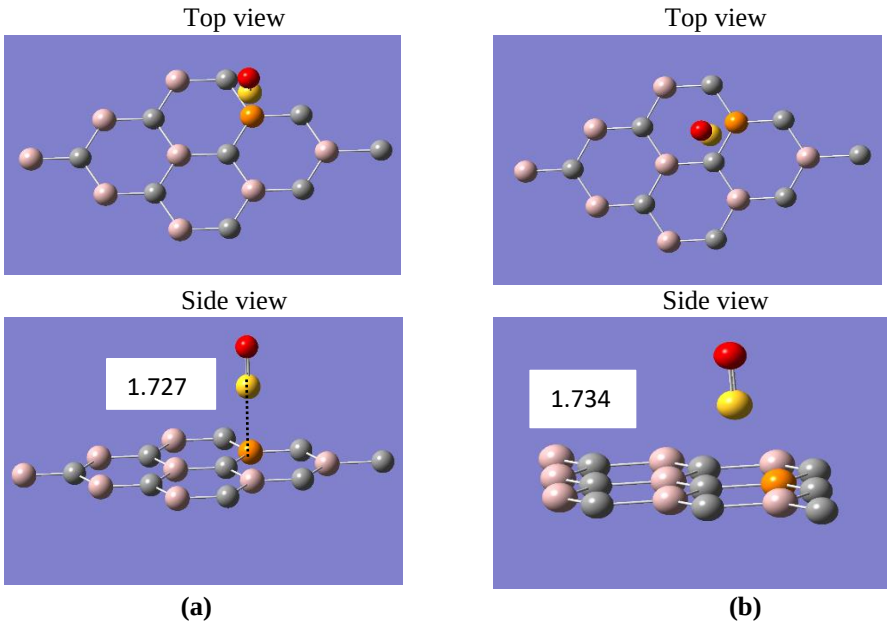


Fig.3: Top views and side views of most stable configurations of (a) P-atoms, (b)bridge, SO adsorbed on the top site of P-doped(Al_8C_9)

3.2.1. (NO) Adsorption on P-doped(Al_8C_9) Nano-cone

When NO is exposed to the P-doped(Al_8C_9) layer, it takes an oblique direction in relation to the P-doped(Al_8C_9) level, as shown in Fig. 10. The N atom

of the NO atom indicates the C atom in the P-doped(Al_8C_9). the atom's and P-C bridge's adsorption energies are -0.645 and -1.855, respectively, for P-doped(Al_8C_9). The mean atom-atom distance (N-P bond length) between NO and P-doped(Al_8C_9) is 1.32613, which is less than the N-P dimer bond length (1.51), and the minimum distance of atom-atom from NO to the bridge Al-C is 1.37221, which is less than the length of the N-P dimer bond (1.51). These findings indicate that the NO is chemically adsorbing on the P-doped(Al_8C_9) layer.

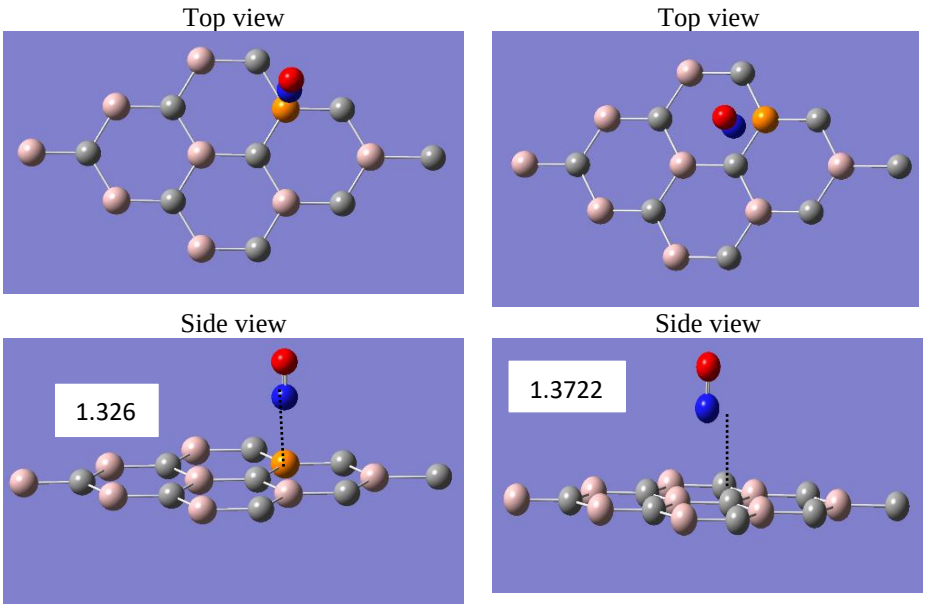


Fig.4: Top views and side views of most stable configurations of (a) P-atoms, (b)bridge, NO adsorbed on the top site of P-doped(Al_8C_9)

3.2.2. (HCN) Adsorption on P-doped(Al_8C_9) Nano-cone

The adsorption of HCN on BN Nano-cones is more difficult than the adsorption of the other molecules discussed previously. Parallel to P-doped(Al_8C_9) the gas lies above the P-doped(Al_8C_9) Nano-cone, the carbon atom in HCN molecule placed above the C in the P-doped(Al_8C_9), and on the bridge between P-C as shown in fig.11. the adsorption energies are -0.114, -0.264 eV, respectively, the mean atom-atom distance (C-P) between HCN and P-doped(Al_8C_9) is 2.146, which is larger than the C-P dimer bond (1.54), and the distance atom-bridge between HCN and P-doped(Al_8C_9) is 2.111, which is larger than the C-C dimer bond (1.54). These results show that the HCN is physically adsorbed on P-doped(Al_8C_9) Nano-cone.

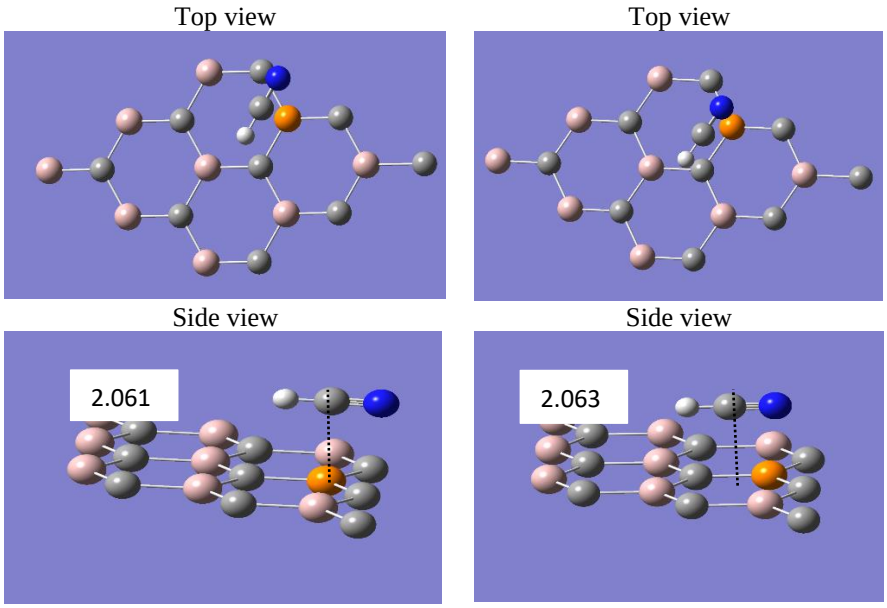
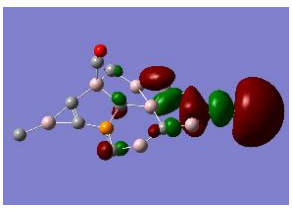
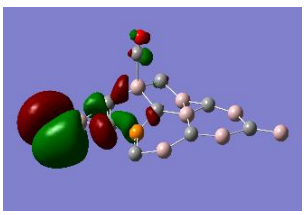
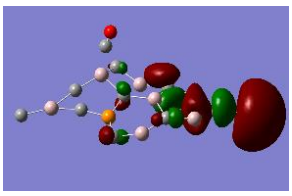
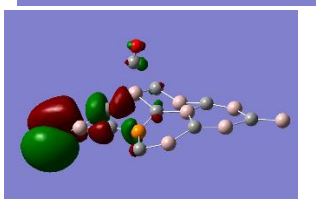
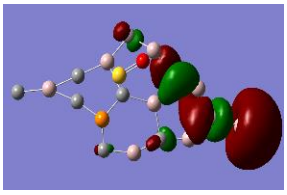
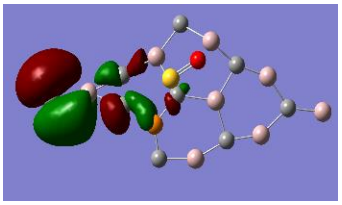
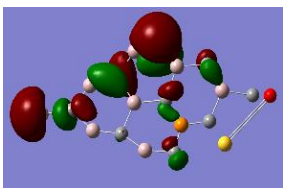
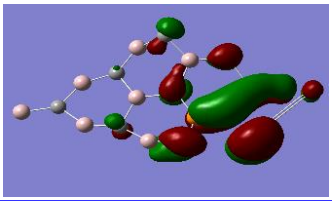


Fig.5: Top views and side views of most stable configurations of (a) P-atom, (b) bridge, HCN adsorbed on the top site of P-doped(Al_8C_9)

3.2.3. The electronic structure of the P-doped(Al_8C_9) Nano-cone

We can learn about electron states at the Fermi surface as well as transported electrons since the HOMO and LUMO orbits are near to the Fermi plane. Figure 12 shows the distribution of the HOMO and LUMO orbitals. The electron cloud distribution in these two orbits is concentrated at the edge of P-doped(Al_8C_9) Nano-cone, as we discovered,

Model	Site	HOMO		LOMO
CO	Bridge		E_g eV 1.34968	
	$P_{(atom)}$		E_g eV 1.62043	
SO	Bridge		E_g eV 1.33907	
	$P_{(atom)}$		E_g eV 1.62724	

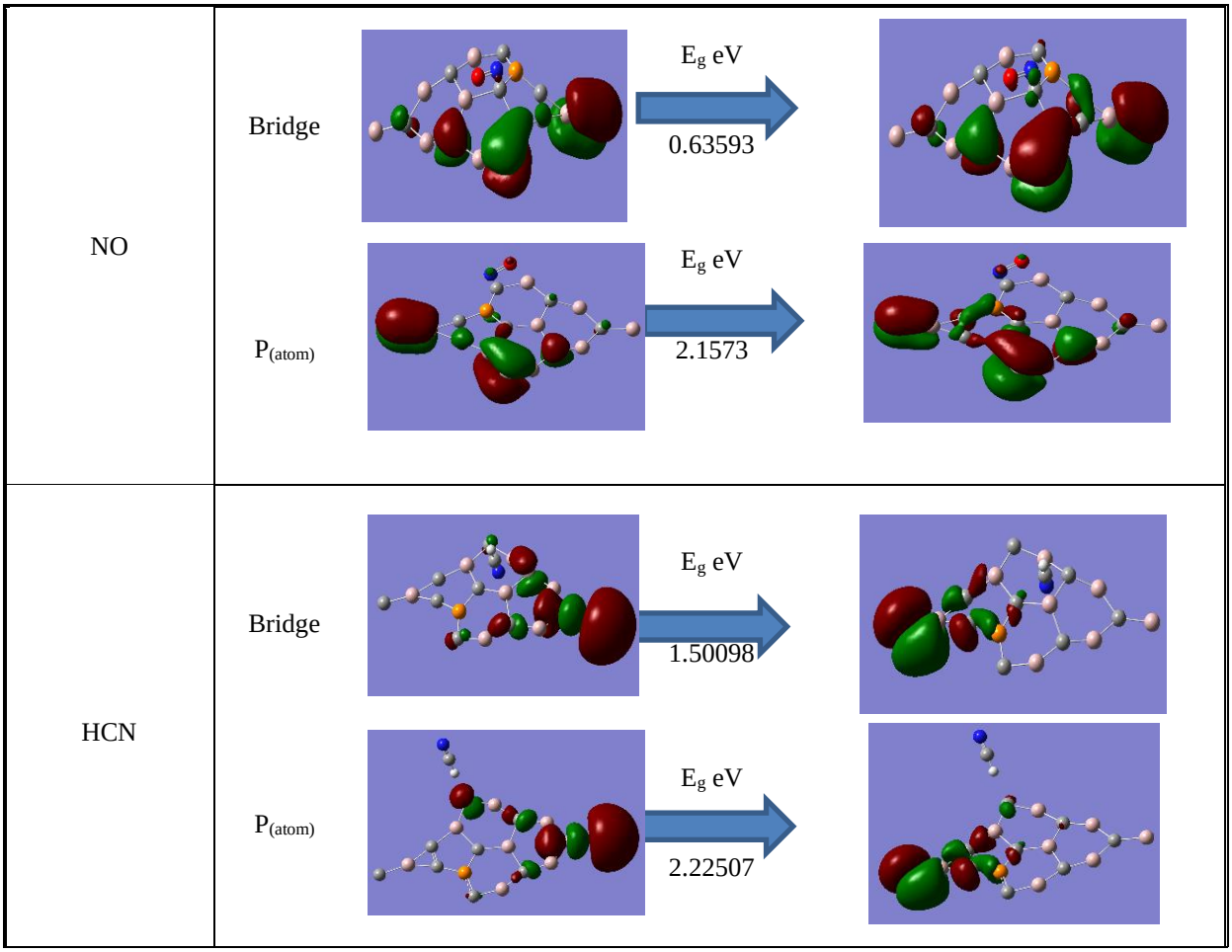


Fig.6. The electronic structure of the P-doped(Al_8C_9) Nano-cone

1.6 CONCLUSION

Finally, the DFT theoretical findings demonstrate that P-doped(Al_8C_9) monolayers exhibit a wide range of behaviors when exposed to normal and contaminated gas molecules. The P-doped(Al_8C_9) monolayer has a higher affinity for CO, SO, NO, and HCN molecules. The chemical adsorption character of SO, NO, adsorptions can be readily recognized with broad Ead, charge transfer. For HCN and CO, there is also physical adsorption. As a result, the P-doped(Al_8C_9) monolayers sheet is a likely candidate for gas sensors for SO, CO, NO, and HCN.

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Issue Article

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THEORETICAL BASICS OF THE SIGNIFICANCE OF FOLKLORE SONGS IN KARAKALPAK ETHNO-CULTURE

Abstract: *This article describes the originality of Karakalpak ethnoculture, the historical sources of Karakalpak folk songs, their role and importance in the people's way of life.*

The peculiarities of Karakalpak ethnoculture, historical sources of Karakalpak folk songs, their role and importance in the national way of life are described in the scientific-theoretical study.

Key words: *culture, folklore, ethno, song, jirav, bakshi, art, music.*

Language: *English*

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Scopus ASCC: *3300.*

Introduction

Academician of Karakalpak J. Bazarbaev describes Karakalpak folklore works in terms of their role in the ethno-culture of the people as follows: "...the first stone inscriptions and writings created by the mind and wisdom of our ancestors, from folk oral samples, are preserved in the treasures of our libraries today. thousands and thousands of manuscripts are our great spiritual wealth. A nation with such a great heritage is rare in the world. "

Ethnoculture includes the processes of studying the origin of a nation, its culture, lifestyle, spiritual and educational characteristics, which have flourished in historical processes (periods) and are developing to this day.The term ethnoculture is composed of two words: ethno and culture. Ethno is Greek for people, people, and at the same time, it refers to a certain people or nation.

Culture is said to originate from the Arabic word Medina (city, town). The interpretation of the word culture, which comes in the meaning of the city, has been used to refer to two types of people's life, i.e. peoples living in nomadic steppes and deserts and peoples living in the city and living a lifestyle typical of the city. In the article, from the point of view of cultural studies, the role of folklore songs in the culture of the Karakalpak people is theoretically studied and the importance is shown:

Ethnoculture reflects the elucidation of the following principles and qualities: ethnoculture as a historical process has been formed and manifested certain achievements and shortcomings over time. that he was able to create a foundation for his future;

- conscious study of the past culture, without learning it, there is no basis for using the cultural heritage for the welfare of the new society;
- deep study of religious and Islamic heritage, its high quality of national spirituality and culture;
- that the territory of Central Asia is the center of formation and development of material and spiritual culture;
- the correct understanding of the historical development of the spirituality of the peoples of Central Asia and its essence;

- Pays attention to such things as studying the fundamentals of the spiritual culture of the Eastern peoples in full (on the basis of research).

In order to comprehensively study the qualities and principles of ethnoculture and apply them to daily activities:

First, the achievements of our ancestors during the historical evolution;

Secondly - the cultural and educational heritage of our people, national values, traditions, paintings;

Thirdly, it is the perfect assimilation of examples from the moral lessons of our people.

Ethnoculture has a great role in the further development of our national culture, and only when the spiritual foundation of every independent state is strong, it can be strong and develop on a large scale. For this, it is necessary to restore and develop the priceless heritage of the ancestors created for thousands of years: the traditions of the national culture and use it intelligently.

Karakalpak folk art, which has been formed over thousands of centuries and has reached today, is distinguished by its uniqueness. Folk art is literally the language of the people. Because the works of folklore were created by the people, embodying the people's lifestyle, hopes, and desires, and have been handed down from generation to generation until today.

"A 100-volume collection containing the folklore of Karakalpak has been published. In this collection, the art of bakhshiki, Karakalpak epics and their singing forms are described, and it is literally a folk art in poems that reflect the history, events, and lifestyle of the Karakalpak people, - says the "Nuroni" Foundation Karakalpak Khusniddin Sharaf, head of the Istan department.

The first copies of the book of folk art were published in the 30s of the last century, and it is a complicated process to collect all the epics one by one and bring them to the people.

Since Karakalpak folklore works have a variety of themes, they are developing closely with the complexity of the genre of music. Folk songs are so important in the way of life and culture of the people that we cannot separate them from each other. Doctor of philological sciences N. Dawqaraev said about this "... the people of Karakalpak cannot live without songs, music, oral poetry in their sad days and in their happy days. "- he emphasizes.

A song accompanies a person from birth. Russian researcher A. Belyaev started collecting and researching folklore from the Karakalpak villages since his student days at St. Petersburg University in 1903. After hearing the folklore works of the people, he did not for nothing describe them as "Korakalpak desert nightingales".

The uniqueness of the Karakalpak people is embedded in the folk songs, national traditions, ritual and performing arts, which reflect the ethno-culture, and the daily life of the people. For example: Just as salt-da'stur jirlary occupies an important place in folk poetry, music folklore also has such a valuable place. Because each song matches its own voice, and the more rhythms it has, the closer it is to the hearts of the people.

Therefore, the fact that the songs of the program have been preserved in the memory of the people since ancient times depends on the permanence of musical folklore.

The Karakalpak program songs include the traditions, entertainment and national symbols of the Khal, and were created in close connection with the process of its historical development. These songs are performed in all ethnographic programs of the people, from the time when the human being was born, when he was lying in the hut, to marriage, handover of a girl, wedding and similar programs.When a mother took her child in her arms and said "Alla", boys and girls praised each other and sang jokingly at parties. When the women who were in trouble said goodbye, the young people went from house to house at night and said Ramadan spoons. Not all of this is said without music, and the people dedicated the best music to them. One of the most popular types of Dástúr jírının is "alla". Alla is called "hayyiw" and "besik jiri" in Karakalpaks.

"Besik jırı" is one of the delicate types that have been spoken in the oral poetics of the people for a long time. In order to comfort her child, the mother expresses her best wishes for the child's future through music. In "Besik Jırı", the child is trained to listen to music by singing songs from infancy. he did not sing a song without thinking, he sang it with the best moral characteristics of his time.

A well-known scientist of the East, Abu Ali Ibn Sina, in his book "The Laws of Medicine", paying special attention to child education, says the following: "In order to strengthen a child's client, it is necessary to apply two things to him. One is rocking the baby slowly, and the other is music and lullabies, which are customary to tell him to sleep. Depending on the amount of intake of these two, it is shown that the child develops a talent for physical education with his body and music with his soul.Depending on the amount of acceptance of these two, the child develops the ability to physical education with the body and music with the soul.

Also, "hayyiw" is performed by men, mostly grandfathers, in the Karakalpak people, and it is called "ǵań-ǵań" or "hannay". "Hayyiw" in the grandfather's repertoire is called "termishlar" among the people. Its example is as follows:

Don't worry,
Alań kewlim jay bolja,
Child of six percent,
I can't tell you,
Hánnay, hánnay, hánna.nay....

"Ha'wjar" is the song of the program, which is sung singly as a chorus. wjar" and "yor-yor" are the

same word. Turkic peoples who speak "J" called "Ha'wjar" and "Y" speakers called "yor-yor". "Ha'wjar" used to mean "die". also called

It is often broadcasted by the girl saying goodbye to her parents, relatives, and people from whom she was born.

The door of our house,
Jupar esik háwjar,
If I sing, I'm in a hurry,
Siypar esik háwjar.
My father-in-law's door,
Sheńgel esik hawjar,
If I sing, I'm in a hurry,
The door is closed.

The music of the song is very simple, its range does not exceed a fifth.

In Karakalpak folk legends, we often hear the saying "He started a wedding and died." Indeed, the initiator of the wedding begins by saying the terme, or in the form of an olan song. In the Karakalpak language, the word olan is not actively used in recent times, it has been preserved only in Kazakh and Uzbek languages.

There were also some sorcerers who were engaged in starting weddings. The wedding officiant praises the bridegroom by singing the wedding song he has learned and adding his poetry to it. Háwjar can also be seen in folk epics. For example, Gulshin's maidservant and Kultay's singing of háwjar in the Alpomish saga is the embodiment of folk dances. Here are some examples of Háwjar songs:

Polish it, polish it,
The wedding is yours.
It's over there,
It's yours in half.
In the garden, the bedew blooms,
Saying that I was able to ride,
The long girl cried,
I am happy to say that I am Jat.

The master of words, who started a wedding, sang hawjar, chirped, and entertained many people, put the words he spoke according to his poetic mastery to the tune of his song. , directs the gathered crowd to his mouth.

Beth Ashar. Betashar is started by a poet and singers who are good at words. Bet ashar is of two types. The first is "say", the second is "bet shar". Betashar's saying is that the bride came to a foreign country, and when she was walking, it was said in order to announce the wedding to the people. An example of this saying is as follows:

The bride has arrived.
Please let me know.
Don't say anything
Don't say your name.

After the end of "Bet Ashar" the headscarf on the face of the bride is opened. It will be continued with Bakhchi-jirov music, wrestling, and other games.

In addition to this, in Karakalpak oral art, the songs of Yoglov have been preserved and are living as an example of folk oral art.

"Omir bar jerde ólim bar", "Shaykalmaytuğın teñiz, terbelmaytuğın taw bolmaydı" are folk wisdom sayings. He sent the person to the last destination by saying 'qlov'. In the Karakalpak literature, such songs are called "muń-sher" songs."Yoqlov" are said to cheer up and comfort a person who has lost a close relative, who is suffering from separation. The difference between "Yoklov" and other songs is that it is performed only by women. When disaster strikes, the most lively person in the house, or else, calls the professional women to tell the story. On the contrary, women who faced a light loss cried for this person or their relatives who died before.

Saying "Yokhlov" has existed in the Karakalpak people for a long time. Examples of "Yokhlov" can be seen in the "Gorugli" epic. How can you cry remembering me when I die without dying? when he said:

Agha Yunis Fairy:
There is a trace of a horse neighing from Shamli's waist,
The forty-year-old boy did not like the salt he gave like that.
Góruğlinin's uli tuwe daughter liked,
My sultan, who has passed two percent of the world. - also indicates that the song is one of the old programs of the Karakalpak people. (Folklore of Karakalpak)

"Bádik". In ancient times, people tried to heal the "bádik" (vegrenyaya ospa) wound on the body of a child with the power of song. Before sunset, they laid the sick child in the middle and sang together:

Take care
Bádikti kóshire kór, "Alla tala",
Izińnen jiberermen horse carriage,
Where does it stand?
Heals when I shoot,
When frying, sizzle and absorb the oil.

In the folk folklore and musical heritage of Karakalpak, songs with a historical theme occupy a large place. Songs with such a content are based on the historical events of the nation, and they have been sung and performed by folk singers since ancient times. That is why such music is called "historical songs" or "historical songs". We often find that music belonging to this category is called "jilar" in the Karakalpak language.

Historical records of the Karakalpak people are briefly as follows:

To sum up, there are many methods and tools for educating today's youth to become perfect human beings and raising their spirituality. It is known that each type of art has its own history and theory of development. There are also fields of science related to certain types of art, such as literature studies, theater studies, music studies, cultural studies, visual arts

studies. The question arises as to what is their relationship with folklore. There is a scientific relationship between folklore and theories of art. The roots of theories of art are based on the theoretical methodology of folk art.

Summing up from the above, it can be said that in our developing New Uzbekistan, the rich folklore art that embodies the national identity is being enriched and developing with modern opportunities. Because the country has a great past and a great future. Therefore, we, researchers, can achieve a good result if we take the great heritage of our nation and instill it into the minds of young people, and if we conduct a lot of research and give scientific theoretical conclusions.

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Issue Article

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SHARTS OF VIRTUAL REALITY IN MODERN SOCIO-CULTURAL LIFE

Abstract: *In this article, the relevance of the study of virtuality and forms of manifestation of virtual reality in modern socio-cultural life, scientifically and philosophically studied the views on the development of modern society, all aspects of social life: social, economic, political, spiritual.*

Virtuality as a complex social phenomenon is a scientific theoretical study of the views of the processes of change in society associated with the objective tendencies of the formation of a historically new form or style of society.

Key words: *social, economic, political, spiritual, virtual, computer, virtual business, virtual money, virtual workplace, virtual studio, virtual partner, virtual tourism.*

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Introduction

The relevance of the study of forms of expression of virtuality and virtual reality in modern socio-cultural life is characterized by the development of modern society, the radical complication of all aspects of social life: social, economic, political, spiritual. This is clearly expressed in the emergence of flexible forms of organization of processes in every sphere of society of virtualization.

Analysis of the literature on the subject.

Forming the logic of social network users in the current era; increased competition; The rapid development of computer technology and technology has led to the active penetration of the latest information technologies and the global Internet into society, including the formation of a special environment with cyberspace, cyber security, electronic communications, media culture and other similar attributes. For example, Microsoft has introduced its new product. Among them is the holographic point HoloLens, which has the ability to create realistic holographic images [1]. It is known that in the process of testing this product, the company cooperated with NASA, which in turn developed a special software that allows scientists to clearly see the surface of Mars [2]. The Holo Lens point case is equipped with various sensors that send information to the processor at a rate of terabytes per second. The viewing radius is provided by 120-degree cameras, which are designed to determine the depth of space [3].

Research methodology.

The process of computerization of all spheres of human social activity and daily life has led to the creation of unique new technical and psychological phenomena. This process has been called “virtual reality” in popular and scientific literature. The term has become firmly ingrained in popular culture, and is widely used in the public mind in a situation typically related to the computer industry. Recently, however, the term “virtual” has also been widely used in a context that is often outside the realm of information technology. For example, "virtual business", "virtual money", "virtual workplace", "virtual studio", "virtual partner", "virtual tourism" and others. Such facts show that the problem of virtuality goes beyond the scope of special disciplines and acquires an interdisciplinary character.

Microsoft has launched Holo Studio for 3D modeling, as well as the Holographic API, which is expected to be available in Windows 10.

On the other hand, in a deeper sense, the relevance of the virtual problem is interpreted in relation to the turning point in the existence of society, which is expressed in the processes of changing the way of life of man and society. The development of modern science is characterized by the strengthening of the role of fundamental science and the increase in the capacity of modern computer equipment and technology, resulting in increasing diversity of social, economic, political, cultural processes. Every minute now, a whole "set" of many options for the future appears in front of man. The emergence of computer labor as a new historical form of labor is interpreted by most philosophers as a profound expression of the increasing complexity of future variability in modern times.

Analysis and results.

The process of computerization of labor, as in all spheres of human social activity and daily life in general, leads to the formation of new techniques related to the practice of design and modeling in the future and the strengthening of already established spiritual phenomena. These phenomena in the modern scientific and popular literature are being studied in connection with the concepts of "virtuality", "virtual reality" and "virtualization". This demonstrates the existence of virtual features in many spheres of society, the complexity of the content of the existence of society in the period from the potential to the realized state, the emergence of new features and forms that are possible and relevant. Virtuality as a complex social phenomenon represents the processes of change in society associated with objective trends in the formation of a historically new form or style of society.

Virtual reality, on the other hand, provides ample opportunity for an in-depth interpretation of aspects that develop in this context along with the idea of an integral world process that remain "in the shadows" or distorted in the study of society. This is primarily related to answering questions about the development trends of society, the reality of its economy, politics, changes in the nature of labor and property at the present stage. Thus, the elucidation of the social nature of the phenomenon of virtual reality is of particular interest in connection with the development of new aspects of the scientific concept of society in terms of the uncertainty of its future and the achievement of opportunities.

As we can see, virtual interactivity is undoubtedly the "voice" of hardware and technology, the sound of "hard ware" (key components of computer electronics), as well as the voice of the majority in communication networks. It involves a discursive mode of independent technology and a "physical" digital-virtual layer of the "environment" of the technique and the circulation and transmission of digital information (clearly distinguishable, often heard as noise and redundant sounds). . Eco "transmission codes", "initial states of perception are necessary for the perception of subsequent images" [5].

In this sense, we must recognize that there is a new kind of communication between man and computer. In this case, the computer is trying to become an equal participant and partner, not as a tool. In this discourse, operators are, in a sense, paradigmatics, and programs and their functions are presented as unique works. J. Baudrillard calls such efficiency "total positivity" aimed at ensuring "complete transparency" [6].

The last quarter of the twentieth century has brought to humanity serious social problems associated with the creation of computer technology based on modern technologies. In recent years, this field has developed so intensively that it has had such an impact on society that there is an urgent need for a worldview, a philosophical understanding of these processes. Due to the development of computer hardware and software by the end of the twentieth century. a new, virtual reality has been formed, its impact on the processes taking place in society is growing like an avalanche and is affecting almost all spheres of society.

This situation is very important in the face of philosophy and develops problems related to the most pressing issues of the status of reality, which are still insufficiently developed, and socio-philosophical problems related to the development trends of society. Identifying these trends, analyzing them is a very topical socio-philosophical problem, because, in our opinion, the future existence of society depends to some extent on it.

The virtual reality event brings together three meaningful moments. First, virtual reality is a special form of objectivity. Second, man is the carrier of the virtual, his consciousness being the subjective, ideal form of a possible being. Third, virtual reality manifests itself as objects created by man in his material and spiritual activities.

However, all three points are reflected in a complex relationship. The phenomenon of virtual reality in society, thus, reflects important trends in its development. This is due to the complexity of society, the crisis of existing civilization and the change in the old mode of production, the deepening of human nature. The phenomenon of virtual reality ensures the universality of human nature, increasing the importance of human existence. That is, in virtual reality, man appears as a product of universal possibilities.

The task of philosophical science should be to determine the qualitative characteristics of the virtual type of modern reality, the specific laws of the

operation of the virtual, to study the interaction of this phenomenon with the objective laws of the world and human existence. The solution to these problems is possible only in the close interdependence of the philosophical and private sciences left to determine their virtual properties in different fields.

Based on a scientific and philosophical understanding of these conclusions, it will be possible to develop a single theory of virtuality. Today, science is only able to define its own scope. This is primarily due to the fact that the content and manifestation of the phenomenon of virtual reality have fully and clearly revealed themselves, as it is still increasingly important to comprehensively understand and address the problem of building a strategy for the development of society. Because philosophy, like modern social sciences, today seeks to emerge at a level that determines the main trends in the development of human society.

Thus, many young philosophers are trying to reflect the changes in modern socio-economic life in different versions at different theoretical levels. They link the current situation in society with the formation of a new form of labor, the emergence of a new information product, the formation of an intellectual form of property, the need for a relationship of new values.

Thus, we must strive to know the socio-cultural nature of virtual reality, which has manifested itself at the present stage and is manifested in its ability to reflect objective laws and trends in society and human development. Virtuality, in our view, manifests itself as a “mirror” in the field of “development opportunities”. This provides maximum opportunities for simulating the constructive activities of communicative practices, as well as their positive (including negative) effects (virtual models of social reality and its moments). Such a complex virtual environment can serve as a special tool for organizing team activities on a new basis.

Virtual reality at the present stage serves as a catalyst and activator of human potential. It is not a mechanical reflection of objective reality, but a way to create new moments of real reality based on a systematic modeling of human activity. Therefore, the implementation of this principle of virtuality has led to the emergence of "digital economy", "e-government", "e-exchange", "Internet-shop", "virtual office", "distance learning" and many other phenomena.

Integrated virtual modeling of the Internet as a powerful source of information, methods of modeling linguistic and cognitive activities of people, neural networks and genetic algorithms are widely used in research activities today. Artificial neural network models replicate the “organizational” principles inherent in the human brain. If in most cases people in daily life for two or three reasons or in making current decisions and have strong motivation and high intellectual potential, it can combine up to six or seven parameters, then with proper and complete preparation, without any serious problems neural network dozens or even allows you to take into account hundreds of cases. Even today, neural networks are widely used as expert systems in financial markets, medicine, property and real estate appraisal systems, and education.

Conclusions and suggestions.

The socio-economic meaning of such achievements is that within a new type of planned market economy it is possible to create a special technical base that will largely replace real market competition with its costs. Virtual economic choice opens up really real opportunities for optimal development for society.

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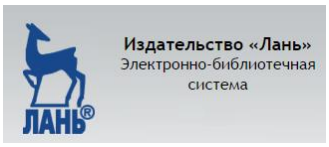

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