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FEATURES OF THE ASSORTMENT CONCEPT WHEN CHOOSING INNOVATIVE TECHNOLOGICAL PROCESSES FOR THE PRODUCTION OF DEMANDED PRODUCTS

Abstract: *In the article, the authors consider the assortment concept, which is expressed in the form of a system of indicators characterizing the possibilities of innovative technological processes for the production of demanded products in the regions of the Southern Federal District and the North Caucasus Federal District. The authors believe that the production of demanded products can be expedient and promising for manufacturers in order to have a stable financial position, and its steady demand will provide them with profitability and profit, which guarantees for them to obtain stable technical and economic indicators.*

Key words: *assortment and assortment policy, assortment concept, innovative, technological, processes, sales volume, revenue, profitability, profit, price niche, price elasticity, financial position, technical and economic indicators, demand, demand, competitiveness.*

Language: *English*

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Introduction

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Filling technological processes for the production of competitive and popular footwear for consumers in the regions of the Southern Federal District and the North Caucasus Federal District is costly. The use of universal and multifunctional equipment forms the technological process in such a way that it makes it possible to produce the entire assortment of high quality footwear with different price niches, creating priorities for its implementation.

I would like to note one more undoubted advantage of the studies carried out by the authors is the fact that, in addition to proposals for manufacturers to use universal and multifunctional equipment for assembling shoe upper blanks and

molding upper blanks on a shoe, it is proposed to use the technology of direct casting of the bottom on shoes and such equipment that once to ensure the production of the demanded assortment range of footwear, both by type and by type, and create the prerequisites for high efficiency of the production itself and satisfy the demand not only of consumers in the regions of the Southern Federal District and the North Caucasus Federal District, but domestic and foreign buyers.

The authors believe that the advantages of direct casting of the bottom of the shoe will undoubtedly interest manufacturers to produce such an assortment that will not only meet the fashion trends, but most importantly, meet the demand, taking into account their functional requirements for the shoes themselves, namely, for athletes, for recreation, for the elderly, for people with minor pathological deviations of the foot, creating comfortable conditions for them and meeting the demand for it, covering the deficit by varying the price of it.

One of the conditions for the competitiveness of an enterprise is the organization of effective interaction with parties interested in the successful functioning of this enterprise. Each enterprise, even small ones, has several groups of subjects with different interests, with which it can be in temporary or permanent cooperation. The research of the authors is devoted to the issues of studying these interests, ways of solving emerging problems between external and internal participants, establishing relationships between partners, in order to guarantee to all interested parties the implementation of the main principle - the interests of all parties are legitimate and require their satisfaction and respect.

Partnerships can be divided into two groups: external and internal. External partners include: buyers, suppliers, competitors, government agencies and organizations, regional and municipal authorities, financial intermediaries.

Buyers. Strategies and tactics for working with important customers include joint meetings to identify the drivers of business change, mutual efforts to develop products and the market, increase communication, use common space, and joint training and service programs. Strengthening customer relationships often provides significant benefits.

Internal partners include managers, employees, owners, and a board of directors or board that represents managers and owners. One of the most significant internal partners is a senior executive.

Thus, the success of an enterprise is determined by the degree of satisfaction of the interests of interested parties, therefore, to increase the competitiveness and efficiency of activities, the enterprise must take into account not only its own interests, but also the interests of interested parties.

Therefore, taking into account the considered methodological foundations of the competitiveness of an enterprise, a methodology for assessing and analyzing the competitiveness of an enterprise based on the theory of stakeholders is proposed.

Stage 1. The choice of indicators for assessing the factors of competitiveness of the enterprise. For each factor, you can define a system

indicators based on the analysis of scientific literature (table 1).

So, taking into account the analysis of the system of indicators for assessing the competitive potential of the enterprise, the following system of indicators for assessing the internal factors of the competitiveness of the enterprise can be proposed (Table 1).

Table 1 - The system of indicators for assessing the internal factors of the competitive potential of the enterprise.

Competitive potential factors	Assessment indicators
one	2
1. Marketing Effectiveness	The ratio of the quality of the product and the costs of its production and marketing
	Growth rate of marketable products
	Growth in sales and profits
	Profitability
	Market share, image
	The quality of partnerships
2. Quality of management	Return on total assets, return on equity; return on investment
	Net profit for 1 rub. sales volume; profit from product sales per 1 rub. sales volume; profit ex. period for 1 rub. sales volume

3. The financial condition of the enterprise	Equity ratio; current liquidity ratio; coverage ratio,
	autonomy ratio, fixed asset index, total profitability of the enterprise, return on equity, profitability of products
4. The level of organization of production	Production capacity utilization rate; production and sales facilities; volume and directions of investments
	The share of certified products in accordance with international standards of the ISO 9000 series
	Depreciation of OPF, growth of labor productivity
5. Efficiency of MTO	The quality and prices of the supplied materials. Material return, turnover, allowing direct connections; the coefficient of uniformity of the receipt of goods; profitability of transaction costs; profitability of purchasing goods
6. Activity of innovation activity	Annual expenditure on R&D, number of patents for inventions
	The share of innovative products, the share of product exports, the number of advanced technologies created
	The volume of shipped innovative products (services), the number of patented technologies, the number of patented technologies, the cost of innovation, the number of acquired and transferred new technologies, software
7. Competitiveness of personnel	Personnel turnover rate, coefficient of advance of labor productivity in relation to wages, educational level of the labor force, level of professional qualifications of workers

Stage 2. Determination of the importance of indicators in the overall assessment of competitiveness. The significance of the indicators for assessing each factor of competitive potential are presented in Table 2.

Table 2 - Recommended system of indicators for assessing the competitiveness of an enterprise and their significance

Enterprise competitiveness factors	Indicators	Significance,%
1	2	3
1. Competitiveness of goods	Weighted average for the product range of competitiveness of the goods	40
2. Marketing Effectiveness	Exceeding the permissible level of stocks of finished goods	3
	Market share of the enterprise	3
	Sales growth rate	3
	Assessment of the level of partnerships with stakeholders of the enterprise	10
	Total	19
3. Quality management	Return on investment	3
	Return on Total Assets	3
	Total	6
4. Financial condition of the	Coefficient of provision with own circulating assets	3

enterprise		
	Current liquidity ratio	3
	Costs per 1 rub. products sold	3
	Total	9
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 efficiency	3
	Total	6
7. Activity of innovation activity	Share of innovative products	5
	Cost of innovation	5
	Total	11
8. Competitiveness of staff	Coefficient of advancing labor productivity growth in relation to wage growth	3
	Employee turnover rate	3
	Total	6
	Total importance of competitive potential	60
	Total maximum significance score	100

Stage 3. Calculation of dimensionless estimates of the enterprise competitiveness indicators.

To convert the dimensional estimates of indicators into dimensionless, it is proposed to use the index method. Indices of dimensionless indicators are determined by formula (1) for positive indicators with a positive trend - growth (for example, profitability of sold products, labor productivity) and by formula (2) for negative indicators with a positive trend - decrease (for example, depreciation of fixed assets, excess of balances of finished products in the warehouse in comparison with the norm, staff turnover rate), taken mainly from the indicators that form the cost of production:

$$Oi = Xi / X\ max, \qquad (1)$$

$$O = X\ min / X \qquad (2)$$

where O_i - dimensionless (index) assessment of the i-th indicator of the competitiveness of the enterprise,

X_i - the value of the i-th dimensional indicator of the assessmentcompetitiveness of the enterprise,

Xmax- the maximum value of the i-th dimensional indicator for assessing the competitiveness of an enterprise,

Xmin- the minimum value of the i-th dimensional indicator for assessing the competitiveness of the enterprise.

Stage 4. Assessment of the competitiveness of the product. It is carried out for light industry goods according to their demand in the domestic market.

Stage 5. Calculation of the generalized indicator of the competitiveness of the enterprise. It is proposed to determine a quantitative assessment of the competitiveness of an enterprise according to the following formula (3).

$$KPm\ Xi\ Oi \qquad (3)$$

where KP is an assessment of the competitiveness of the enterprise in percent,

Xi- the significance of the i-th indicator of competitiveness in percentage,

Oi - index (dimensionless) appraisal i-th indicator competitiveness,

M - quantity indicators appraisals the competitiveness of the enterprise.

The values of assessing the competitiveness of an enterprise can theoretically vary from 0 to 100 (ratio 4).

$$TO_n = 0 \div 100 \qquad (4)$$

For the qualitative characteristics of the obtained assessments of competitiveness, a scale for assessing the quality level is required. In economic practice, they use the principle of constructing scales with an equal step, progressive and regressive scales. Progressive and regressive scales are most often used for material incentives. We believe that the most appropriate is a scale with an equal step, since it, firstly, corresponds to solving a practical problem (specification of the qualitative level of competitiveness), and secondly, it is easy to build and use. The scale step is defined as

100 (maximum estimate): 4 (number of levels) = 25. A choice of another step value is also possible, which is determined by the goals and objectives that the enterprise itself forms for itself.

Table 3 - The scale for assessing the qualitative level of competitiveness of the enterprise

Percentage score	Quality level
from 0 to 24.9	very low
from 25.0 to 49.9	low
from 50.0 to 74.9	middle
from 75.0 to 100	tall

The economic meaning of the obtained generalized assessment of competitiveness is that, on the one hand, it shows the degree of satisfaction with the product, and on the other hand, the degree of use of the competitive potential of the enterprise itself.

The proposed methodology for assessing and analyzing the competitiveness of an enterprise, in contrast to the existing ones, firstly, takes into account the specifics of the "light industry" industry, secondly, reduces the subjective factor in the assessment, and thirdly, allows for an in-depth analysis, thanks to the proposed directions and indicators of analysis competitiveness of enterprises. To conduct a survey to assess the competitive potential, we developed a questionnaire (Table 4) and offered it to respondents - students, masters, graduate students, teachers and specialists - university graduates working at light industry enterprises in the regions of the Southern Federal District and the North Caucasus Federal District. In addition, the questionnaire was accompanied by an explanation and examples of its filling, which are given below.

Example. No linked ranks

Ряд	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Ранг	2	4	5	19	18	17	14	13	6	11	10	1	3	9	8	7	15	16	12	22	20	21

Example. With related ranks

Ряд	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Ранг	3	3	3	3	2	2	5	5	4	7	6	1	1	9	10	10	11	8	8	13	12	14
Связ. ранг	6,5	6,5	6,5	6,5	3,5	3,5	10,5	10,5	9	13	12	1,5	1,5	16	17,5	17,5	19	14,5	14,5	21	20	22

Since the number of related ranks is 8, then in the arithmetic row from 1 to 22 places there will remain 22-8 = 14, i.e. there will be only 14 places in the new arithmetic series.

Similarly, a survey of respondents was organized and conducted on the criteria for assessing the impact on the quality of assessment of domestic fur products, the list of which and the results of the survey are given in Table 7 and in Tables 8 and 9.

Dear respondent!

What factors would you give preference to when assessing the competitive potential of enterprises in the regions of the Southern Federal District and the North Caucasus Federal District, taking advantage of the privileges - to assign them an appropriate rank from the arithmetic series

– preferable starting with 1, rather than preferable - a higher digit, ensuring that the requirements of the arithmetic series are met, and

namely, avoiding missing digits in the arithmetic series. If you have any difficulties in choosing your preferences, you can use

"Related ranks", assigning two or more factors the same rank, but here, too, it is necessary to comply with the requirements of the arithmetic series.

Table 4 - Criteria for assessing the competitiveness of light industry enterprises located in the regions of the Southern Federal District and the North Caucasus Federal District

No.	List of factors for assessing the competitive potential of enterprises in the regions of the Southern Federal District and the North Caucasus Federal District	Rank
1	The ratio of the quality of the product and the costs of its production and marketing	
2	Sales growth rate	
3	Exceeding the permissible level of stocks of finished goods	
4	Assessment of the level of partnerships with stakeholders of the enterprise	

5	Market share of the enterprise	
6	Return on investment	
7	Return on Total Assets	
8	Cost of innovation	
9	Equity ratio	
10	Capacity utilization rate	
11	Labor productivity	
12	Material efficiency	
13	The share of certified products in accordance with international standards of the ISO series	
14	Reducing the level of material consumption	
15	Share of innovative products	
16	Commodity turnover allowing direct links	
17	The coefficient of advancing labor productivity in relation to the growth of wages	
18	Coefficient of uniform supply of goods to sales markets	
19	Depreciation of fixed assets	
20	Employee turnover rate	
21	Costs per ruble of products sold	
22	Weighted average for the product range of competitiveness of the goods	

Table 5 - The results of the questionnaire survey of bachelors, masters, teachers and specialists - university graduates working at light industry enterprises, on the impact of competitive potential on the performance of light industry enterprises in the Southern Federal District and the North Caucasus Federal District

Факторы / Эксперты	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}	X_{19}	X_{20}	X_{21}	X_{22}
1	5	8	6	2	7	9	10	4	11	15	17	12	14	13	3	18	19	20	16	12	20	1
2	3	2	14	13	8	9	15	5	16	10	12	17	1	18	4	19	6	10	20	21	11	7
3	8	16	21	5	2	10	6	7	11	17	12	14	1	20	3	13	15	17	19	18	4	9
4	10	13	21	14	2	6	11	4	5	7	9	19	1	18	3	15	16	7	17	20	8	12
5	15	2	16	14	17	3	2	5	6	13	7	10	1	8	18	21	9	20	19	11	4	12
6	1	2	10	12	7	13	11	3	14	15	8	16	17	21	4	9	20	22	5	6	19	18
7	12	11	14	16	10	9	2	20	8	19	7	18	1	13	22	15	17	6	21	5	3	4
8	2	19	9	12	8	3	11	20	4	22	7	13	5	17	21	10	14	18	16	1	6	15
9	10	4	18	3	8	19	9	14	21	15	5	17	1	12	11	16	20	22	13	6	2	7
10	6	7	17	18	16	14	5	19	13	8	4	9	10	11	22	3	21	12	20	15	1	2
11	10	5	4	9	3	12	11	8	1	22	2	13	14	16	17	6	20	18	21	7	19	15
12	8	3	9	13	2	22	14	11	15	19	4	17	6	16	20	10	18	21	12	1	5	7
13	4	1	9	6	13	15	3	19	14	8	18	20	17	21	5	16	10	2	22	12	7	11
14	13	14	10	3	1	2	16	15	20	5	21	17	4	11	19	7	18	6	22	9	12	8
15	7	14	3	11	17	19	4	12	9	21	1	18	5	20	22	15	8	16	2	13	6	10
16	2	3	5	6	8	4	10	15	7	11	18	16	1	12	21	19	13	14	17	22	20	9
17	6	15	7	8	11	10	9	1	21	20	16	17	2	12	3	22	19	13	4	18	14	5
18	3	1	22	6	19	13	14	11	17	18	2	21	12	16	4	5	10	15	16	1	6	9
19	2	3	6	7	12	11	17	13	18	16	1	20	5	14	19	8	15	9	10	22	21	4
20	2	12	8	11	14	7	15	10	17	9	16	18	1	20	5	19	4	13	22	6	21	3
21	1	14	21	9	8	15	16	7	5	6	4	18	19	17	10	20	22	11	12	13	2	3
22	10	1	18	11	5	12	20	19	6	15	7	8	2	9	4	13	17	15	16	21	3	14
23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
24	9	1	10	11	3	2	13	12	15	19	8	20	17	18	20	4	17	22	16	21	5	6
25	20	4	11	18	5	6	2	17	15	16	1	8	10	14	13	7	12	22	9	21	3	19
26	3	1	10	14	4	5	12	7	19	17	6	21	13	22	8	16	9	20	18	15	2	11
27	7	2	19	8	1	15	6	20	17	16	3	9	14	13	18	5	22	11	12	21	10	4
28	8	3	16	9	1	17	6	7	19	18	2	10	15	20	14	4	22	12	13	21	11	5

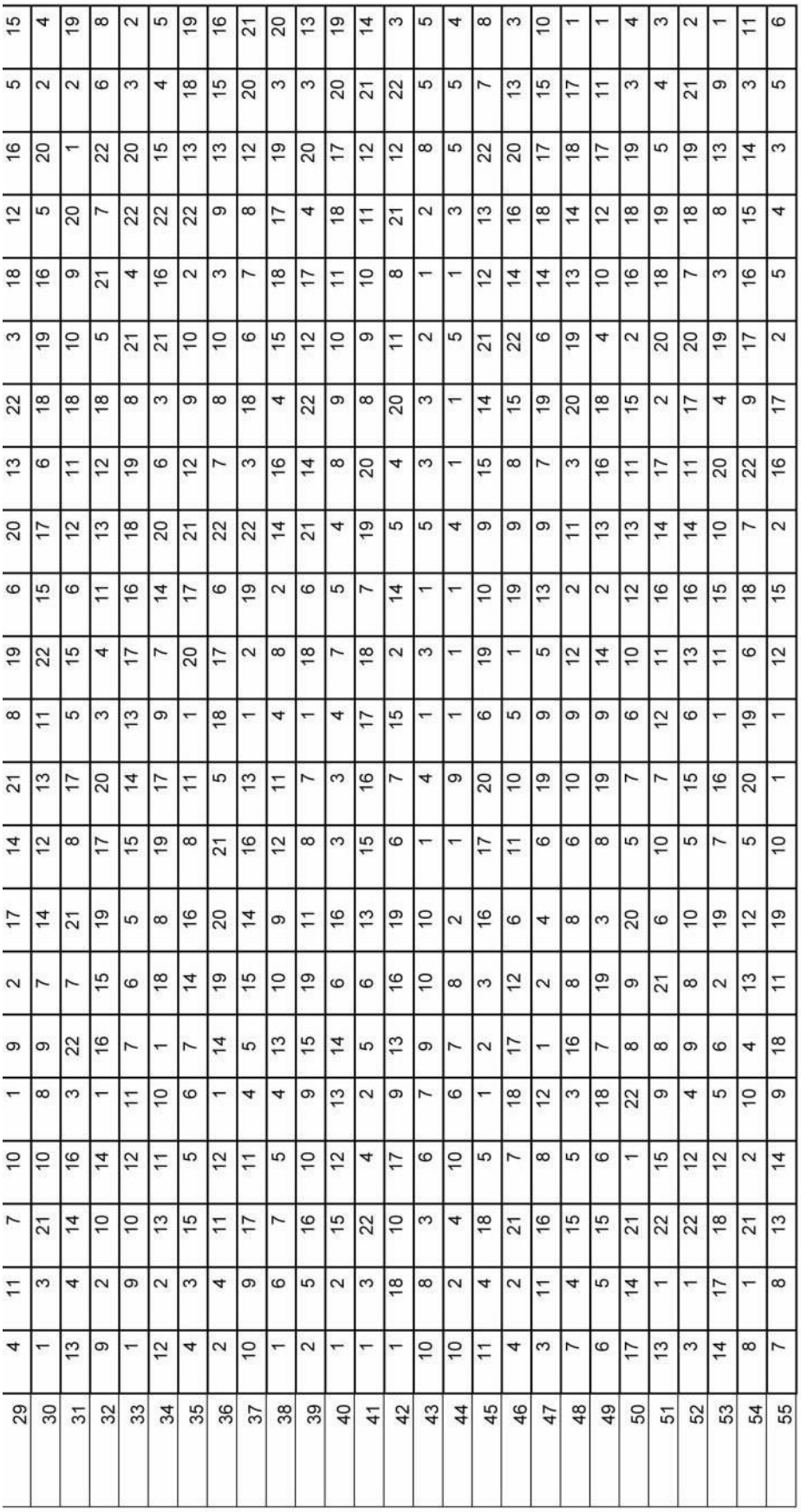

Table 6 - Results of processing the a priori ranking of bachelors, masters, teachers and specialists - university graduates, on the impact of competitive potential on the results of the activities of light industry enterprises of the Southern Federal District and the North Caucasus Federal District

Фактор / Эксперт	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}	X_{19}	X_{20}	X_{21}	X_{22}	КК
1	5	8	6	2	7	9	10	4	11	16	18	12,5	15	14	3	19	20	21,5	17	12,5	21,5	1	0,33
2	3	2	15	14	8	9	16	5	17	10,5	13	18	1	19	4	20	6	10,5	21	22	12	7	0,44
3	8	16	22	5	2	10	6	7	11	17,5	12	14	1	21	3	13	15	17,5	20	19	4	9	0,57
4	11	14	22	15	2	6	12	4	5	7,5	10	20	1	19	3	16	17	7,5	18	21	9	13	0,35
5	16	2,5	17	15	18	4	2,5	6	7	14	8	11	1	9	19	22	10	21	20	12	5	13	0,28
6	1	2	10	12	7	13	11	3	14	15	8	16	17	21	4	9	20	22	5	6	19	18	0,34
7	12	11	14	16	10	9	2	20	8	19	7	18	1	13	22	15	17	6	21	5	3	4	0,29
8	2	19	9	12	8	3	11	20	4	22	7	13	5	17	21	10	14	18	16	1	6	15	0,26
9	10	4	18	3	8	19	9	14	21	15	5	17	1	12	11	16	20	22	13	6	2	7	0,49
10	6	7	17	18	16	14	5	19	13	8	4	9	10	11	22	3	21	12	20	1 5	1	2	0,30
11	10	5	4	9	3	12	11	8	1	22	2	13	14	16	17	6	20	18	21	7	19	15	0,33
12	8	3	9	13	2	22	14	11	15	19	4	17	6	16	20	10	18	21	12	1	5	7	0,37
13	4	1	9	6	13	15	3	19	14	8	18	20	17	21	5	16	10	2	22	12	7	11	0,27
14	13	14	10	3	1	2	16	15	20	5	21	17	4	11	19	7	18	6	22	9	12	8	0,21
15	7	14	3	11	17	19	4	12	9	21	1	18	5	20	22	15	8	16	2	13	6	10	0,24
16	2	3	5	6	8	4	10	15	7	11	18	16	1	12	21	19	13	14	17	22	20	9	0,39
17	6	15	7	8	11	10	9	1	21	20	16	17	2	12	3	22	19	13	4	18	14	5	0,24
18	3	1	22	6	19	13	14	11	17	18	2	21	12	16	4	5	10	15	20	7	8	9	0,37
19	2	3	6	7	12	11	17	13	18	16	1	20	5	14	19	8	15	9	10	22	21	4	0,43
20	2	12	8	11	14	7	15	10	17	9	16	18	1	20	5	19	4	13	22	6	21	3	0,23
21	1	14	21	9	8	15	16	7	5	6	4	18	19	17	10	20	22	11	12	13	2	3	0,35
22	10	1	19	11	5	12	21	20	6	15,5	7	8	2	9	4	13	18	15,5	17	22	3	14	0,54
23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	0,38
24	9	1	10	11	3	2	13	12	15	19	8	7	14	18	20	4	17	22	16	21	5	6	0,69
25	20	4	11	18	5	6	2	17	15	16	1	8	10	14	13	7	12	22	9	21	3	19	0,28
26	3	1	10	14	4	5	12	7	19	17	6	21	13	22	8	16	9	20	18	15	2	11	0,69
27	7	2	19	8	1	15	6	20	17	16	3	9	14	13	18	5	22	11	12	21	10	4	0,69
28	8	3	16	9	1	17	6	7	19	18	2	10	15	20	14	4	22	12	13	21	11	5	0,69
29	4	11	7	10	1	9	2	17	14	21	8	19	6	20	13	22	3	18	12	16	5	15	0,41
30	1	3	21	10	8	9	7	14	12	13	11	22	15	17	6	18	19	16	5	20	2	4	0,63
31	13	4	14	16	3	22	7	21	8	17	5	15	6	12	11	18	10	9	20	1	2	19	0,26
32	9	2	10	14	1	16	15	19	17	20	3	4	11	13	12	18	5	21	7	22	6	8	0,46
33	1	9	10	12	11	7	6	5	15	14	13	17	16	18	19	8	21	4	22	20	3	2	0,42

34	12	2	13	11	10	1	18	8	19	17	9	7	14	20	6	3	21	16	22	15	4	5	0,69
35	4	3	15	5	6	7	14	16	8	11	1	20	17	21	12	9	10	2	22	13	18	19	0,36
36	2	4	11	12	1	14	19	20	21	5	18	17	6	22	7	8	10	3	9	13	15	16	0,23
37	10	9	17	11	4	5	15	14	16	13	1	2	19	22	3	18	6	7	8	12	20	21	0,20
38	1	8	9	7	5	15	12	11	14	13	5	10	2	16	18	5	17	20	19	21	3	22	0,48
39	2	5	16	10	9	15	19	11	8	7	1	18	6	21	14	22	12	17	4	20	3	13	0,45
40	1	2	17	14	15	16	8	18	3,5	3,5	5,5	9	7	5,5	10	11	12	13	20	19	22	21	0,25
41	1	3	22	4	2	5	6	13	15	16	17	18	7	19	20	8	9	10	11	12	21	14	0,40
42	1	18	10	17	9	13	16	19	6	7	15	2	14	5	4	20	11	8	21	12	22	3	0,20
43	21	17,5	8,5	15	16	19	21	21	2,5	11	2,5	8,5	2,5	13	8,5	8,5	5,5	2,5	5,5	17,5	13	13	0,17
44	21,5	8,5	12	21,5	17	18	19	8,5	4	20	4	4	4	12	4	4	15	4	10	15	15	12	0,19
45	11	4	18	5	1	2	3	16	17	20	6	19	10	9	15	14	21	12	13	22	7	8	
46	4	2	21	7	18	17	12	6	11	10	5	1	19	9	8	15	22	14	16	20	13	3	0,32
47	3	13	18	9	14	1	2	4	6,5	21,5	10,5	5	15	10,5	8	21,5	6,5	16	20	19	17	12	0,27
48	8	5	17	6	3,5	18	9,5	9,5	7	12	11	14	2	13	3,5	22	21	15	16	20	19	1	0,51
49	6,5	5	16	6,5	19,5	8	21,5	3	9	21,5	10	15	2	14	17	19,5	4	11	13	18	12	1	0,32
50	17	14	21	1	22	8	9	20	5	7	6	10	12	13	11	15	2	16	18	19	3	4	0,21
51	13	1	22	15	9	8	21	6	10	7	12	11	16	14	17	2	20	18	19	5	4	3	0,30
52	3	1	22	12	4	9	8	10	5	15	6	13	16	14	11	17	20	7	18	19	21	2	0,60
53	15	18	19	13	6	7	3	20,5	8	17	1,5	12	16	11	22	5	20,5	4	9	14	10	1,5	0,22
54	8	1	21	2	10	4	13	12	5	20	19	6	18	7	22	9	17	16	15	14	3	11	0,31
55	10	11	16	17	12	21	14	22	13	1,5	1,5	15	18	3,5	19	20	3,5	7,5	6	5	7,5	9	0,18
Суммы рангов	393	368,5	765,5	559	455	583	600,5	679,5	634,5	772	440,5	732	516,5	815,5	670	715,5	778	723,5	819,5	814	563	516,5	
Сумма рангов без еретиков.	47	12	76	44	16	37	46	63	87	90	28	52	67	80	73	30	103	73	76	100	37	28	
Коэф. конкорд.		0,16		0,69																			
Критерий Пирсона.		183,2		6,55																			

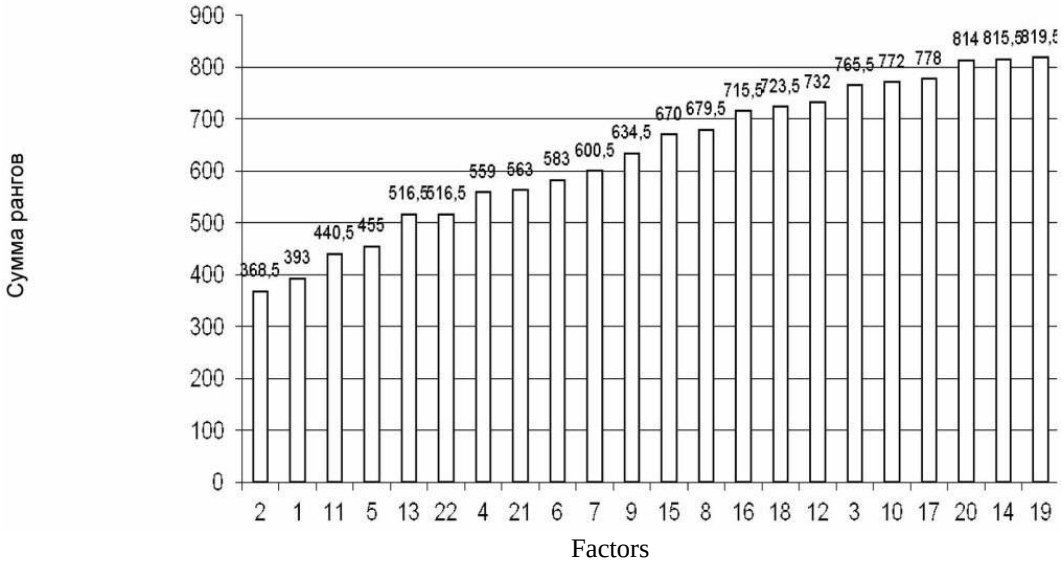

Fig. 1 - The results of the questionnaire survey of bachelors, masters, teachers and specialists - university graduates working at light industry enterprises, on the impact of competitive potential on the performance of light industry enterprises in the regions of the Southern Federal District and the North Caucasus Federal District

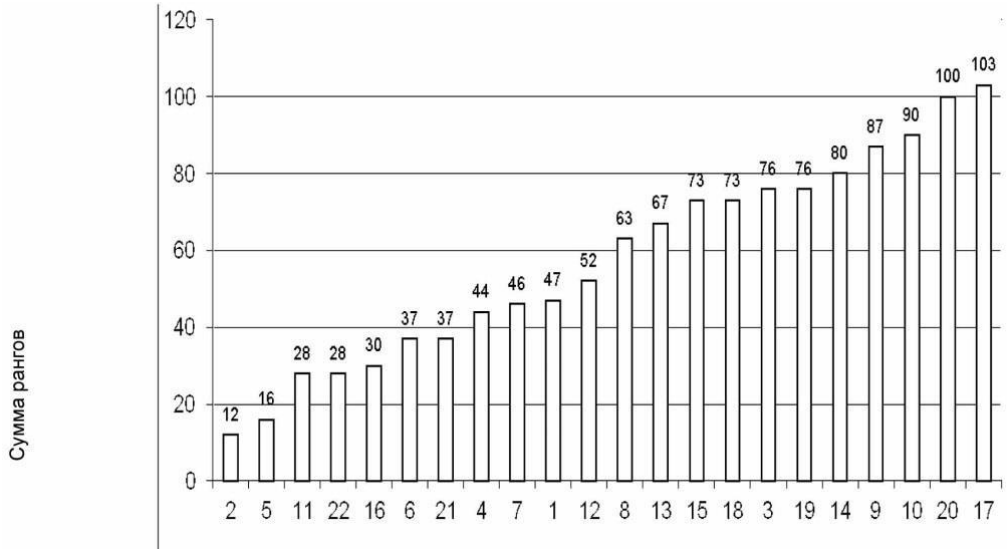

Fig. 2 - The results of a survey of bachelors, masters, teachers and specialists - university graduates working at light industry enterprises, on the impact of competitive potential on the performance of a light industry enterprise in the regions of the Southern Federal District and the North Caucasus Federal District, without heretics, that is, the opinion of those respondents that does not agree with the larger part of the survey participants

Dear respondent!

What priorities would you give preference in assessing the high performance properties and quality of fur products, taking advantage of the privileges - to assign them an appropriate rank from the arithmetic series

– preferable starting with 1, rather than non-preferred - a higher digit, ensuring that the requirements of the arithmetic series are met, namely, not allowing digits to be skipped. If you have difficulties in choosing preferences, you can use the "linked ranks", but even here it is necessary to satisfy the requirements of the arithmetic series.

Table 7 - Criteria for assessing the impact on the quality of domestic fur products, formed according to the results of a survey of leading experts

No.	The list of high performance indicators and quality of fur products	
1	Lightfastness to fur dyeing	
2	Fur resistance to moisture	
3	Dry cleaning resistance	
4	Lack of color variation in the product	
5	Absence of lifetime diseases and injuries, confirmation sanitary and ecological certificates	
6	Fur type	
7	Resistance to low temperatures, heat-shielding properties	
8	Price	
9	Duration of the warranty period	
10	Weight (product weight)	
11	Wrinkle resistance	
12	Shine of the hairline of a fur product	
13	Hairline height (length)	
14	Hair density	
15	Hair softness	
16	Wet and hot elasticity of the hairline (ensuring the product is given a given shape)	
17	The strength of the bond of the hairline with the skin tissue	
18	The size of the dressed skins	
19	Dry friction fastness of the hairline	
20	Skin grade	
21	Compliance of fittings and other accessories during manufacture fur products, the requirements that apply to them	
22	The presence of a "chip"	

If the number of related ranks is 8, then in the arithmetic row from 1 to 22 places will remain 22-8 = 14, i.e. there will be only 14 places in the new arithmetic series.

Table 8 - The results of the questionnaire survey of bachelors, masters, teachers and specialists working at light industry enterprises, on the criteria for assessing the impact on the quality of domestic fur products

Факторы / Эксперты	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}	X_{19}	X_{20}	X_{21}	X_{22}
1	1	3	2	6	7	8	4	10	20	15	18	21	11	14	16	17	12	13	19	5	19	9
2	16	3	2	17	1	18	19	6	4	7	8	20	9	10	11	12	20	13	5	14	15	20
3	8	7	6	9	15	1	16	2	10	3	11	20	17	12	21	18	19	5	14	4	13	22
4	8	9	4	11	13	1	7	3	12	10	20	14	15	6	5	19	16	17	18	2	21	22
5	15	14	16	13	12	1	3	2	5	4	9	6	7	8	17	18	19	10	21	11	20	21
6	7	13	8	4	1	20	18	2	10	6	21	5	3	9	11	14	12	22	19	17	16	15
7	11	13	12	21	14	15	17	1	2	3	4	16	7	5	6	19	21	8	18	9	20	10
8	12	13	14	11	10	1	4	2	9	3	20	8	7	6	5	18	21	22	16	15	17	19
9	3	2	6	7	10	1	12	5	13	11	22	4	8	17	15	14	9	19	18	21	16	20
10	7	13	15	14	2	6	5	1	20	12	19	16	22	17	18	4	8	21	3	11	9	10
11	10	2	9	8	22	11	1	19	13	7	18	6	5	4	3	17	14	15	16	12	20	21
12	10	9	11	12	13	19	8	1	22	6	7	5	4	3	2	14	15	21	18	16	17	20
13	3	7	4	1	17	5	6	16	9	10	11	12	12	13	14	15	19	18	8	2	20	20
14	10	4	14	5	20	1	11	2	9	15	21	12	17	16	6	18	7	19	13	3	8	22
15	12	15	14	13	2	3	16	11	17	4	19	20	22	18	5	6	7	1	9	8	10	21
16	14	16	15	3	21	2	5	17	18	1	19	6	8	7	9	11	10	12	20	4	13	22
17	5	6	17	2	1	7	3	14	18	10	12	15	16	11	20	19	4	13	9	8	21	22
18	3	21	13	14	15	22	4	20	19	5	6	8	18	17	16	7	10	9	12	11	2	1
19	4	11	12	7	2	1	8	3	6	5	15	13	14	9	10	17	16	20	19	18	21	22
20	19	3	18	21	22	16	5	10	15	17	14	13	12	1	2	6	7	8	9	11	20	4
21	15	10	16	9	8	17	14	6	7	13	2	4	3	1	5	12	11	20	18	19	21	22
22	3	5	1	7	2	8	6	21	13	22	15	4	17	19	18	9	12	11	14	20	10	16
23	2	1	3	6	11	14	7	16	4	17	12	20	13	15	5	21	8	22	18	9	19	10
24	15	16	14	13	1	12	2	4	3	18	17	19	20	10	9	8	7	6	11	5	21	22
25	17	15	16	14	4	18	13	2	1	3	19	20	6	7	8	10	9	12	11	21	5	22
26	5	4	15	6	14	7	1	2	2	3	18	9	16	17	8	11	12	10	13	19	20	21
27	3	6	2	11	4	20	1	9	12	10	5	15	13	14	19	16	17	18	7	8	22	21
28	2	4	11	13	1	10	14	3	18	8	15	17	16	9	19	20	6	7	21	5	22	12
29	5	2	3	4	6	22	9	1	8	7	15	10	21	11	12	16	18	20	13	14	17	19
30	5	20	2	11	8	17	3	7	6	9	10	15	13	14	12	18	1	19	22	4	21	16

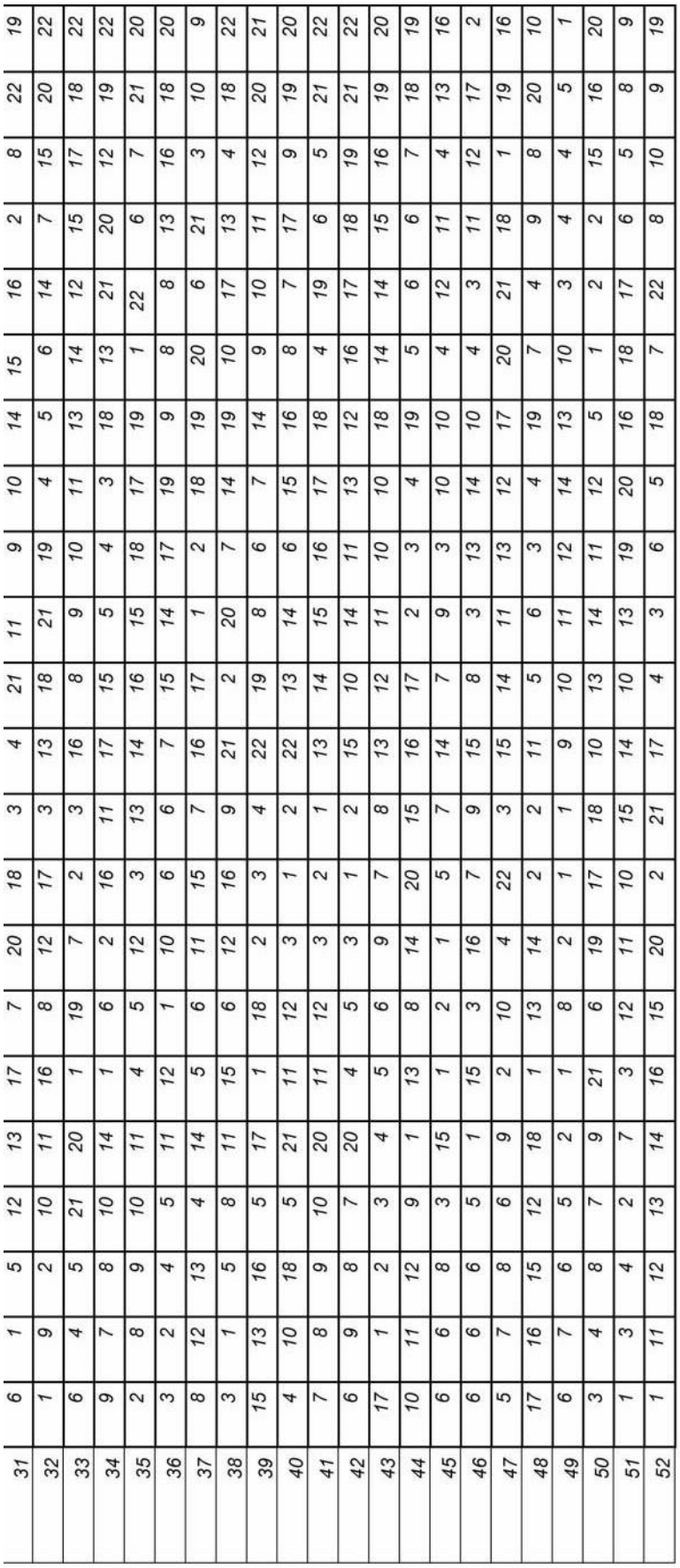

Table 9 - The results of processing the a priori ranking of bachelors, masters, teachers and specialists working at light industry enterprises, on the criteria for assessing the impact on the quality of domestic fur products

Фактор / Эксперт	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20	X21	X22	КК
1	1	3	2	6	7	8	4	10	21	15	18	22	11	14	16	17	12	13	19,5	5	19,5	9	0,45
2	16	3	2	17	1	18	19	6	4	7	8	21	9	10	11	12	21	13	5	14	15	21	0,33
3	8	7	6	9	15	1	16	2	10	3	11	20	17	12	21	18	19	5	14	4	13	22	0,54
4	8	9	4	11	13	1	7	3	12	10	20	14	15	6	5	19	16	17	18	2	21	22	0,76
5	15	14	16	13	12	1	3	2	5	4	9	6	7	8	17	18	19	10	21,5	11	20	21,5	0,74
6	7	13	8	4	1	20	18	2	10	6	21	5	3	9	11	14	12	22	19	17	16	15	0,40
7	11	13	12	21,5	14	15	17	1	2	3	4	16	7	5	6	19	21,5	8	18	9	20	10	0,31
8	12	13	14	11	10	1	4	2	9	3	20	8	7	6	5	18	21	22	16	15	17	19	0,76
9	3	2	6	7	10	1	12	5	13	11	22	4	8	17	15	14	9	19	18	21	16	20	0,62
10	7	13	15	14	2	6	5	1	20	12	19	16	22	17	18	4	8	21	3	11	9	10	0,24
11	10	2	9	8	22	11	1	19	13	7	18	6	5	4	3	17	14	15	16	12	20	21	0,49
12	10	9	11	12	13	19	8	1	22	6	7	5	4	3	2	14	15	21	18	16	17	20	0,39
13	3	7	4	1	18	5	6	17	9	10	11	12,5	12,5	14	15	16	20	19	8	2	21,5	21,5	0,53
14	10	4	14	5	20	1	11	2	9	15	21	12	17	16	6	18	7	19	13	3	8	22	0,57
15	12	15	14	13	2	3	16	11	17	4	19	20	22	18	5	6	7	1	9	8	10	21	0,25
16	14	16	15	3	21	2	5	17	18	1	19	6	8	7	9	11	10	12	20	4	13	22	0,40
17	5	6	17	2	1	7	3	14	18	10	12	15	16	11	20	19	4	13	9	8	21	22	0,47
18	3	21	13	14	15	22	4	20	19	5	6	8	18	17	16	7	10	9	12	11	2	1	0,21
19	4	11	12	7	2	1	8	3	6	5	15	13	14	9	10	17	16	20	19	18	21	22	0,76
20	19	3	18	21	22	16	5	10	15	17	14	13	12	1	2	6	7	8	9	11	20	4	0,22
21	15	10	16	9	8	17	14	6	7	13	2	4	3	1	5	12	11	20	18	19	21	22	0,34
22	3	5	1	7	2	8	6	21	13	22	15	4	17	19	18	9	12	11	14	20	10	16	0,26
23	2	1	3	6	11	14	7	16	4	17	12	20	13	15	5	21	8	22	18	9	19	10	0,44
24	15	16	14	13	1	12	2	4	3	18	17	19	20	10	9	8	7	6	11	5	21	22	0,35
25	17	15	16	14	4	18	13	2	1	3	19	20	6	7	8	10	9	12	11	21	5	22	0,29
26	6	5	16	7	15	8	1	2,5	2,5	4	19	10	17	18	9	12	13	11	14	20	21	22	0,71
27	3	6	2	11	4	20	1	9	12	10	5	15	13	14	19	16	17	18	7	8	22	21	0,46
28	2	4	11	13	1	10	14	3	18	8	15	17	16	9	19	20	6	7	21	5	22	12	0,42
29	5	2	3	4	6	22	9	1	8	7	15	10	21	11	12	16	18	20	13	14	17	19	0,50
30	5	20	2	11	8	17	3	7	6	9	10	15	13	14	12	18	1	19	22	4	21	16	0,43
31	6	1	5	12	13	17	7	20	18	3	4	21	11	9	10	14	15	16	2	8	22	19	0,38
32	1	9	2	10	11	16	8	12	17	3	13	18	21	19	4	5	6	14	7	15	20	22	0,41
33	6	4	5	21	20	1	19	7	2	3	16	8	9	10	11	13	14	12	15	17	18	22	0,60

34	9	7	8	10	14	1	6	2	16	11	17	15	5	4	3	18	13	21	20	12	19	22		0,76
35	2	8	9	10	11	4	5	12	3	13	14	16	15	18	17	19	1	22	6	7	21	20		0,52
36	3	2	4	5	13	14	1	12	6,5	6,5	8	17	16	19	21	11	9,5	9,5	15	18	20	22		0,50
37	9	13	14	4	15	5	6,5	12	16	8	17	18	1	2	19	20	21	6,5	22	3	11	10		0,36
38	3	1	5	8	11	15	6	12	16	9	21	2	20	7	14	19	10	17	13	4	18	22		0,51
39	15	13	16	5	17	1	18	2	3	4	22	19	8	6	7	14	9	10	11	12	20	21		0,68
40	4	10	18	5	21	11	12	3	1	2	22	13	14	6	15	16	8	7	17	9	19	20		0,65
41	7	8	9	10	20	11	12	3	2	1	13	14	15	16	17	18	4	19	6	5	21	22		0,56
42	6	9	8	7	20	4	5	3	1	2	15	10	14	11	13	12	16	17	18	19	21	22		0,76
43	19	1	2	3	4	5	6	9	7	8	14	13	12	10,5	10,5	20	15,5	15,5	17	18	21	22		0,64
44	11	12	13	10	1	14	9	15	22	16	17	18	2	3	4	20,5	5	6,5	6,5	8	19	20,5		0,32
45	9,5	9,5	13	4,5	21	1,5	3	1,5	8	11,5	20	11,5	14	4,5	15,5	15,5	6,5	18	17	6,5	19	22		0,76
46	9	9	9	7	1	19,5	4	21	11	13	19,5	12	4	17	18	14	6	4	15	16	22	2		0,24
47	5	7	8	6	9	2	10	4	22	3	15	14	11	13	12	17	20	21	18	1	19	16		0,59
48	19	18	17	14	20	1	15	16	2,5	2,5	13	7	8	4	5,5	21	9	5,5	11	10	22	12		0,30
49	12,5	14	12,5	10,5	5,5	2,5	15	5,5	2,5	2,5	16	17,5	19	20	22	21	17,5	7	8,5	8,5	10,5	2,5		0,27
50	4	5	9	8	10	22	7	20	18	19	11	14	15	12	13	6	1	2,5	2,5	16	17	21		0,25
51	1	3,5	5	2	8	3,5	14	13	11,5	17	16	11,5	15	21	22	18	20	19	7	6	9	10		0,37
52	1	11	12	13	14	16	15	20	2	21	17	4	3	6	5	18	7	22	8	10	9	19		0,28
Суммы рангов	413	443	499,5	479,5	560,5	492	445,5	444,5	534,5	444	763,5	670	625,5	560	607,5	776	604,5	725	696,5	556	689,5	919		
Суммы рангов без еритиков	39	49	46	46	59	8	30	13	44	31	87	60	55	36	36	84	82	97	91	66	99	107		
Коэф. конкорд.		0,19		0,76																				
Крит. Пирсона		207,9		7,66																				

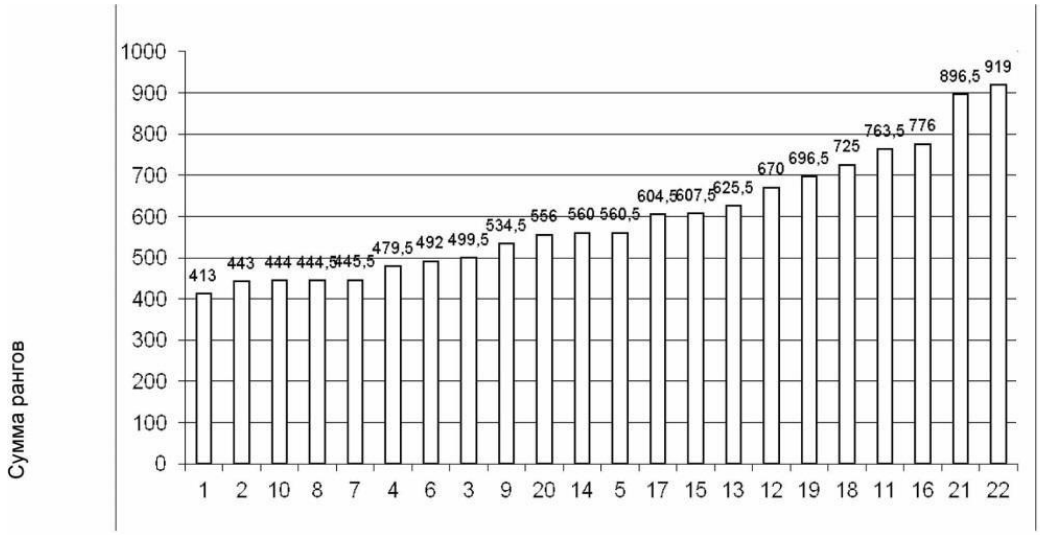

Fig. 3 - The results of the questionnaire survey of bachelors, masters, teachers and specialists - university graduates working at light industry enterprises, on the criteria for assessing the impact on the quality of domestic fur products

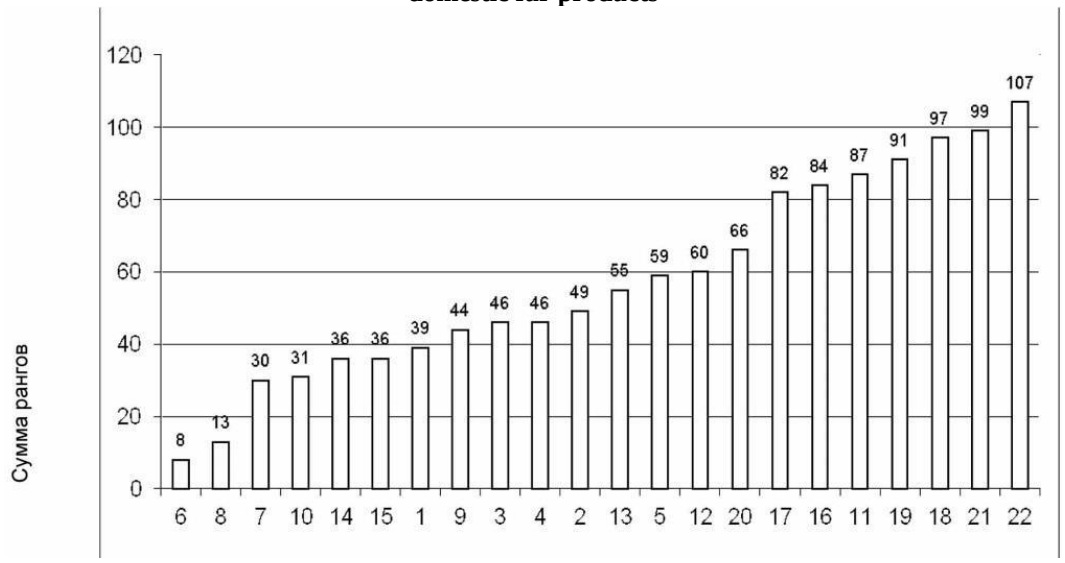

Fig. 4 - The results of the questionnaire survey of bachelors, masters, teachers and specialists - university graduates working at light industry enterprises, on the criteria for assessing the impact on the quality of domestic fur products without heretics, i.e. the opinions of those respondents who do not agree with the majority of the survey participants.

As the main unique aspects of the formation of the competitive advantage of an enterprise based on the theory-oriented stakeholders, one can single out:

– creation and permanent expansion of the stakeholder database;

– formation of the necessary innovation base (computers, peripherals and software);

– organization of the activities of the unit and individual managers for managing relationships with stakeholders;

– development and adjustment of plans for interaction with key stakeholders of stakeholders, taking into account their business and personal characteristics;

– regular audit of the activities of managers for managing relationships with stakeholders in the context of assessing the following indicators: the number of meetings, the number of prepared commercial proposals, the number of contracts concluded, the dynamics of the volume of supplies of products attributable to each participant of the interested parties;

– regular marketing research in the process of implementing the developed activities with the participation of stakeholders in order to identify changes in the structure and nature of the preferences

of the stakeholders of the interested parties.

Thus, the above aspects, with the proper level of their elaboration, can allow light industry enterprises to form a unique competitive advantage - a system of effective relationships between stakeholders.

Analysis of the questionnaire survey on the influence of the competitive potential of enterprises in the regions of the Southern Federal District and the North Caucasus Federal District and on the increase in the competitive advantages of domestic fur products over imported fur products regretfully confirmed the lack of consistency of respondents on the criteria for the quality of light industry products formulated in the questionnaires. So, for example, the basic answer, the first expert (table 5), expressed by competent experts, received, according to the survey results, the value of the concordance coefficient equal to (W) 0.34, i.e. less than 0.5, and the basic answer about the quality of domestic fur products

– the eighteenth expert (table 8), expressed by competent specialists - experts, although he received a higher value of the concordance coefficient, equal to (W) 0.47, but still less than 0.5. That is, in our case, the fact is confirmed that the survey participants are respondents who are not competent in the problems under study. In this regard, the authors are engaged in the development of additional changes to the software product, with the help of which the competence of the survey participants - respondents will be assessed and weeding out those who do not have the same opinion with the reference answers expressed by an authoritative and competent expert commission - creating the basis for a more effective assessments of invited specialists as experts to work in customs commissions and improve their qualifications,

But in this case, it is necessary to find a solution that would allow the manufacturer to have a tool for assessing the effectiveness of the developed innovative technological processes. Such a solution is possible if we use the efficiency coefficient for such an assessment, the value of which is considered as the value of the concordance coefficient for assessing the results of the prior ranking (W), which changes - Keff from 0 to 1. If its value tends to one, then this means that the manufacturer managed to find the most optimal solution to the innovative technological process, but if its value tends to zero, then an analysis of the reasons for such an unsatisfactory result and a search for errors that provoked such a result and ways to eliminate the mistakes are required. The authors managed to develop software,

At the same time, the criteria that have the greatest impact on the cost of the finished product were justifiably chosen as the criteria for a reasonable choice of the optimal power when forming the algorithm, namely:

- percentage of workload of workers,%;
- labor productivity of one worker, a couple;
- losses on wages per unit of production, rubles;
- unit reduced costs per 100 pairs of shoes, rubles;
- shoe production, 1 m2;
- the cost of equipment per unit of flow assignment (C)
- total price (Stotal);
- financial strength margin (Zfp);
- break-even point (TB.y);
- unit profit (Ex);
- product profitability (R);
- costs for 1 rub. marketable products (31p etc.);
- conditionally variable costs (Zusl. per.units);
- conditionally fixed costs (Zusl. settlement units).

From the above criteria, in our opinion, the manufacturer can give preference to those that, from his point of view, would guarantee him the production of competitive and demanded products, namely:

- labor productivity of 1 worker is the most important labor indicator. All the main indicators of production efficiency and all labor indicators, to one degree or another, depend on the level and dynamics of labor productivity: production, the number of employees, wage expenditure, the level of wages, etc., to increase labor productivity, the introduction of a new techniques and technologies, extensive mechanization of labor-intensive work, automation of production processes, advanced training of workers and employees, especially when introducing innovative technological processes based on universal and multifunctional equipment;

– unit reduced costs - an indicator of the comparative economic efficiency of capital investments, used when choosing the best option for solving technological problems .;

– reduced costs - the sum of current costs, taken into account in the cost of production, and one-time capital investments, the comparability of which with current costs is achieved by multiplying them by the standard coefficient of efficiency of capital investments;

– the margin of financial strength (Zfp) shows how many percent the company can reduce the volume of sales without incurring losses;

– the break-even point allows (Tb.y) to determine the minimum required volume of product sales at which the enterprise covers its costs and operates at break-even, giving no profit, but also does not suffer losses, that is, this is the minimum amount of output at which the equality of income from sales and production costs;

– profit (loss) from the sale of products (Pr) is determined as the difference between the proceeds from the sale of products in the current prices of VAT and excise taxes and the costs of its production and sale;

– profitability of production (R) reflects the relationship between the profit from the sale of a unit

of production and its cost;

– conditionally fixed costs (total fixed costs of production of a unit of production) (Zusl.pos.units), which change in proportion or almost proportionally to the change in the volume of production (1st - costs of raw materials and materials; 2st - costs of auxiliary materials; 3st - costs of fuel and energy for technological needs; 4st

– costs of additional and basic wages of production workers with insurance contributions to extra-budgetary funds);

– conditionally variable costs (total variable costs of production of a unit of output) (Zusl.trans.units), which do not depend or almost do not depend on changes in the volume of production (5st - costs of preparation and development of production; 6 st - costs of costs for the maintenance and operation of equipment; 7st - the costs of general production needs; 8st - the costs of general business expenses, they together with the conditionally fixed costs make up the production cost; 9st - the costs of commercial expenses. All these items are forming conditionally variable costs and conditionally fixed costs make up the full cost, that is, conditionally variable costs can be defined as the full cost - conditionally fixed costs, and vice versa,conditionally fixed costs can be defined as the total cost - conditionally variable costs);

– costs for 1 rub. marketable products show the relative amount of profit for each ruble of operating costs, that is, this is the ratio of the unit cost to the wholesale price, which characterizes the efficiency carried outactivities for raising competitiveness and demand for products in demand markets.

Tables 10 and 11 show the calculations of the optimal power for the range from 300 to 900 pairs for men's and women's shoes for the entire range of footwear. Analysis of the obtained characteristics for three variants of a given technological process in the manufacture of the entire assortment of footwear confirmed the effectiveness of the software product for evaluating the proposed innovative technological process using universal and multifunctional equipment. So, with a range of 300 - 900 pairs, the best according to the given criteria is the output volume of 889 pairs (for men) and 847 pairs (for women). If the production areas proposed by the regional and municipal authorities of these districts - the Southern Federal District and the North Caucasus Federal District - according to the normative indicators, will not allow the calculated production volumes to be realized, then, in this case, the option of optimal capacity is chosen that is acceptable, for example, the production volume of 556 pairs, which corresponds to the standard indicators for the proposed production areas and is characterized by the best values of the indicated criteria, which form the cost of the entire assortment of shoes. The generalized volumes of the main costs in the production of men's shoes are shown in Table 10, and in the production of women's shoes - in Table 11.

Table 10 - Calculation of the optimal power with a range of 300-900 pairs in the production of men's shoes

Power	Equipment type	Optimal power, steam per shift	Produce - labor efficiency of 1 worker, couples	Percentage of workload of workers, %	Losses on wages per unit of production, rub	Specific reduced costs per 100 pairs of shoes, rubles
300-500	1	500	28.09	61.39	13.68	6735.36
500-700	1	556	27.73	69.14	9.83	6404.71
700-900	1	889	28.09	77.20	6.42	5236.17
300-500	2	500	28.09	61.39	13.68	6728.68
500-700	2	556	27.91	68.70	9.97	6083.28
700-900	2	889	28.09	77.20	6.42	5240.72
300-500	3	500	28.09	61.39	13.68	7533.95
500-700	3	700	28.12	67.28	10.56	6734.02
700-900	3	889	28.09	77.20	6.42	5876.59

To assess the effectiveness of the production activity of a shoe company, it is necessary to analyze the annual results of the enterprise for the production of men's and women's shoe assortment.

These calculations indicate that with 100% of sales of men's and women's shoes in the specified period of time, not only the costs of production and sales of products are covered, but also a profit of 3697.4 thousand rubles remains. This testifies to the efficient operation of the enterprise, as well as to the correct marketing and assortment policy. The product profitability is 14.9%.

Table 11 - Calculation of the optimal power with a range of 300-900 pairs in the production of women's shoes

Power options	Type of equipment	I am optimal power, couples per shift	Productivity labor 1 worker, steam	Worker load factor, %	Loss on wages per unit products, rub	Specific reduced costs for 100 pairs of shoes, rub
300 - 500	1	500	27.73	62.18	13.40	6980.5
500-700	1	700	27.73	69.14	9.83	6277.43
700-900	1	847	27.73	74.50	7.54	5673.49
300-500	2	500	24.45	63.90	14.11	7630.92
500-700	2	556	27.73	69.14	9.83	6404.71
700-900	2	812	25.64	75.40	7.77	6060.55
300-500	3	500	27.00	61.74	14.02	7827.12
500-700	3	556	29.32	68.21	9.71	6607.65
700-900	3	847	27.00	74.70	7.66	6341.05

By proving their proposals, the authors confirmed the results of calculating technical and economic indicators using the software they developed, which allowed them to choose production volumes that would guarantee the manufacturer an economic effect, in which the integrated efficiency indicator (K) evaluating it will tend to its maximum value, and namely, to one.

For example, the name of the company "Skorokhod" is the production of children's shoes. Saying "Skorokhod", you can provoke an association with fast movement, and children love to run, they need high-quality and sturdy shoes. Another example is the name of the company MEXX. There are no vivid associations, but the name is modern and laconic. It agrees well with the positioning of the company - clothes for young people according to the ideal combination of "style, price and quality".

It is necessary to note the huge number of names that use the Latin alphabet when writing their names. It seems to us that the roots of this phenomenon lie in the statements - the legacy of the Soviet era: “there is no fashion in Russia!”, “Domestic means bad”. Accordingly, domestic enterprises that were the first to enter the post-Soviet market were forced to disguise themselves as foreign manufacturers. Gregory, Gloria Jeans, Climona, Vereteno, Festival, ZARINA are numerous examples of this strategy when choosing a company name.

The fourth way is the company logo. The purpose of a logo in the fashion industry is to instantly recognize the brand. A logo is a symbolism that replaces a name or is its graphic interpretation. Interestingly, in the fashion world, the logo has also become a part of clothing and footwear design.

The logo serves as an identification mark for the uninitiated crowd, who, by these letters, will know how much a particular item cost. This is a cheat sheet for those who cannot define the silhouette of Dolce and Gabanna, Christian Dior or Ferre. With the general trend towards more and more visualization, type graphics are all kinds of pointers. Plates and labels - began to play an increasing role. The logo, as an image replacing the text, becomes an ideal solution if you need to combine decorative and informative content.

In addition to its primary function - a trademark - it plays a decorative role. This is a natural result of the interweaving of the fashion industry and advertising.

Here are the reasons:

the first - industrial - fashion for text as a decorative element.

the second is the fashion for democratic clothing, i.e. a crisis in the recognition of styles, the binding of an object to a specific brand.

the third is pro-advertising. This shift in the "expensive - cheap" framework: it is the design of the product, and not the quality of the materials used or the amount of manual labor that increasingly determines the consumer value.

The oversaturation of advertising information makes it possible for logos to become an element of decor.

The logo is becoming more imaginative and emotional. And you can play with the images, placing it where it was previously unthinkable. Thus, today buyers of fashionable footwear have been made advertising carriers of brands due to the general logo typing.

The main thing is the correspondence of the emotions caused by the advertising of the product, the brand image and the design of the products themselves.

After all, the promotion of the subject should be specific, simple, understandable and vivid, i.e. advertising. At the same time, carry a readable emotionally colored image. This means that you can't do without a logo.

The verbal logo of the enterprise - the name

inscribed in a certain way is its most frequently used attribute, which forms the first emotional attachment to the image of the company in the mind of the consumer. A certain way of depicting a verbal logo becomes a distinctive, original feature of an enterprise.

Another important direction in the company's activities to promote its brand is the design in the trade environment. The following requirements are imposed here:

- Convenient location for a specific target audience (Via Corso - boutique street in Milan; and Plaza il Duomo with La Rinaschente department store - both are conveniently located in the center of Milan, but these retail spaces have different consumers). As mentioned above, a similar community of boutiques selling footwear will be created in Russia on the basis of the Paris Commune factory. The need for such a base exists in the Southern Federal District and the North Caucasus Federal District - this will allow organizing the regional market;
- adherence to the concept of product image presentation, i.e. well-thought-out principles of presenting the properties of a product that correspond to the expected motivation of its choice by the consumer;
- Figuratively, the target solution of the environment should be oriented towards the type of consumer. It should be possible to try on shoes, get advice from the seller;
- the environment should be conducive to stay and provoke interest in the product. Pleasant music can sound in the store; each visitor should be given a booklet with shoe brands;
- according to a figurative decision, the environment should be raised above the ordinary, create a feeling of “event”, “chosenness”, “fullness of possibilities” or “accessibility”. The enterprise can introduce a system of discounts to re-attract consumers;
- to support an additional range of services that fall within the range of time spent and cultural interests of the consumer. The buyer can be offered a cream for a newly purchased shoe or another clothing accessory with the manufacturer's logo as a gift.

Consumers in the marketplace are not a monolithic community. When buying shoes, they are guided, first of all, by the type of shoes and the price.

For example, when choosing women's boots, the buyer takes into account the seasonality of the shoes, their age characteristics and the type of work activity, the appearance of the shoes will be important signs: compliance with the fashion direction, color, materials of the top and bottom, as well as the constructive solution of the model. Buyers will also prefer the brand name. It is this offer of footwear to the consumer in specialized stores or departments that will provoke an increase in sales in conditions of unstable demand. And if the seller, possessing well-thought-out principles of presenting the advantageous properties of each design of women's boots, and guessing the mood and capabilities of the customer by their motivated questions when choosing a model, will be able to realize this very desire, then in any case the buyer will leave satisfied that his interests are fully satisfied ,

Elderly people love comfort and coziness. Both the seller and the buyer - a representative of the fair sex - of course, will turn their attention to the model if it will be pleasant to wear it in a snowy winter, since it should be made of soft nap leather - velor and have a molded sole with a large tread, as it will very comfortable and will provide them with comfort in any period of wearing it .. At the same time, it should be affordable.

Business women, whose age is over 45 and up to 45, and who are constantly in the hustle and bustle, of course, will give preference to models made from natural materials, low heels, discreet accessories, creating comfort for the wearer in their daily life, while emphasizing their image and social status.

The appearance in the salon or in a special brand store of fashionistas or high school girls will immediately attract the attention of the salon seller, who will want to offer them only an original model with extra high heels with patch straps, decorated with hoovers and fixed at the top and bottom of the bootleg. The fashionista will be delighted that she bought what she wanted, and the high school student will be satisfied with the purchase also because she is sure that this purchase will surprise her friends, and for her, this is the most important argument in favor of the purchase.

It is always easy for the seller if a “socialite” appears in the store, as she always prefers only new products or exclusive models. These ambitions of her can be satisfied by the model both at the expense of originality and at the expense of a constructive solution, as well as at the expense of the selected materials and decorations in the manufacture of this very model.

For girls who love severity, but at the same time originality, the seller will certainly offer a model in which materials of two colors and textures are successfully combined, and the details, perforated, draped on the bootleg, give it an uniqueness.

And the price should not "bite" very much, which is also an important argument in favor of the purchase. These fantasies of ours, spied on in life and working very effectively on demand, are justified and have the right to be, since the ability to present our products, work with our consumers, a competent marketing approach form the popularity of this boutique, store or salon among buyers and provide them with sustainable consumer demand ... Ultimately, well-thought-out principles of presenting product properties, choosing your consumer, correct

design of boutiques and their windows - all this will make it possible to have a significant impact on the effective results of their work. This also fully applies to the children's assortment.

Assortment formation - the problem of specific goods, their individual series, determining the relationship between "old" and "new" goods, goods of single and serial production, "science-intensive" and "Ordinary" goods, physical goods, or licenses and "know-how". When forming the assortment, problems of prices, quality, guarantees, service arise, is the manufacturer going to play the role of a leader in creating fundamentally new types of products or is forced to follow other manufacturers

The formation of the assortment is preceded by the development of the assortment concept by the enterprise. It is a directed construction of the optimal assortment structure, product offer, while, on the one hand, the consumer requirements of certain groups (market segments) are taken as a basis, and on the other, the need to ensure the most efficient use of raw materials, technological, financial and other resources by the enterprise. in order to produce products with low costs.

The assortment concept is expressed in the form of a system of indicators characterizing the possibilities of 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 the assortment renewal; 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 of using shoes and peculiarities of purchasing behavior in the relevant market;
- assessment of existing competitors' analogues;
- a critical assessment of the products manufactured by the enterprise in the same range as in paragraphs. 1 and 2, but from the perspective of the buyer;
- deciding which products should be added to the assortment, and which ones 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, which 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 the requirements of buyers;
- exploring the possibilities of producing new or improved models, including questions of prices, costs and profitability;
- testing (testing) footwear, taking into account potential consumers in order to find out their acceptability in terms of key 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. (Figures 1.6)

Fig. 1 - Assortment of toddler shoes

Fig. 2 - Assortment of children's shoes for the younger group

Fig. 3 - Assortment of preschool shoes

Fig. 4 - Assortment of school shoes

Fig. 5 - Assortment of teenage boys' shoes

Fig. 6 - Assortment of teenage girls' shoes

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 on adjusting the assortment.

The stability of marketing indicators is ensured, first of all, through constant monitoring of the market situation and timely response to their 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 assortment optimization still lies in a significant reduction in the assortment range. Too large assortment has a bad effect on economic indicators - there are many positions that cannot even reach the break-even level in terms of sales. As a result, the overall profitability drops dramatically. Only the exclusion of unprofitable and marginal items from the assortment can give the company an increase in overall profitability by 30-50%.

In addition, a large assortment diffuses the strength of the enterprise, makes it difficult to correctly offer the product to customers (even the sales staff are not always able to explain the difference between a particular item or name), and scatters the attention of end consumers.

Here it will 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 selects these same 5-7 options based on the same number of criteria. If the seller offers a larger number of selection criteria, the buyer begins to feel discomfort and independently weeds out criteria that are insignificant from his point of view. The same happens when choosing a product itself. Now imagine what happens if there is a hundred practically indistinguishable (for him) goods in front of a person, and he needs to buy one. People in such a situation behave as follows: either they refuse to buy at all, since 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 the perceivable 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 be optimally comprised of 25 - 50 items. If there are objectively more names, then the only way out is additional classification.

It is generally accepted that the customer wants a wide range of products. This widest assortment is often referred to even as a competitive advantage. But in fact, it turns out that for a manufacturer a wide assortment is hundreds of product names, and for a consumer - 7 items is already more than enough.

And thus, the consumer does not need a wide assortment at all, but the variety necessary for him.

If the company adheres to a wide assortment approach, then it is enough to conduct a sales analysis, look at the statistics to make sure that 5-10, at most 15% of the items are the sales leaders, all other positions are sold very little, the demand for them is low, although the costs differ little from costs for sales leaders. It turns out a situation when several items "feed" the entire wide assortment 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 presence of various names 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 reduced by half or even three times. The main thing, in this case, is to correctly classify all the goods and to achieve that so that the assortment includes goods from each possible group of this classification. Moreover, the more grounds a company can identify for classification, the more balanced the decision will be. So, the classification of goods can be according to the satisfied needs of customers, according to the functional purpose of the goods, according to the benefit for the company.

Of particular importance in such a situation is the role played by certain positions in the assortment. For this, products can be classified into the following groups:

A - the main group of goods (which bring the main profit and are in the growth stage).

B - a supporting group of products (products that stabilize sales revenue and are in the stage of maturity).

B - a strategic group of goods (goods designed to ensure the future profit of the enterprise).

D - tactical group of goods (goods designed to stimulate sales of the main product group and are in the stage of growth and maturity).

D - a group of products under development (products that are not present on the market, but ready to enter the market).

E - goods leaving the market (which do not bring profit and must be removed from production, that is, withdrawn from the market) [5].

After that, it is necessary to determine the share of each group in the total volume of production. For a stable position of the enterprise in the assortment structure: the group of goods A and B must be at least 70%.

Thus, this makes it possible to assess the existing assortment set at the enterprise and, correlating it with the profit received, to assess the correctness of the assortment planning, its balance.

In addition, an increase in the volume of goods of groups that bring the main income will not always contribute to an increase in the company's profits. Here it is important to pay attention to the remainder of unsold goods (what increase it will give and the possibility of its further sale). Production planning is one of the important problems of assortment policy. In economics, forecasting of future expenses and incomes based on the calculation of the cost of production at variable costs is widely used. 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, rental of production facilities, as well as the salaries of management personnel, deductions for the 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, supplies, 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, then the total fixed costs also rise.

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

When applying the method of calculating the amount of coverage, it is advisable to use indicators such as the amount of coverage (marginal income) and the coverage ratio.

The amount of coverage (marginal income) is the difference between sales revenue and the total amount of variable costs. The amount of coverage can be calculated in another way - as the sum of fixed costs and profit. Calculation of the amount of coverage allows you to determine the funds of the enterprise, received by it in the sale of manufactured products in order to reimburse fixed costs and make a profit. Thus, the amount of coverage shows the overall level of profitability, both of the entire production and of individual products: the higher the difference between the selling price of a product and the sum of variable costs, the higher the amount of coverage and the level of profitability.

The coverage ratio is the proportion of coverage in sales revenue or the proportion of the average coverage in the price of a product.

It is also important to determine at what volume of sales the gross costs of the enterprise will be recouped. To do this, it is necessary to calculate the break-even point at which the proceeds or the volume of production are accepted, ensuring that all costs are covered and zero profit. Those. the minimum volume of proceeds from the sale of products is revealed, at which the level of profitability will be more than 0.00%. If the company receives more revenue than the break-even point, then it is working profitably. By comparing these two revenue values, you 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).

To estimate how much the actual revenue exceeds the breakeven revenue, it is necessary to calculate the safety factor (the percentage deviation of the actual revenue from the threshold). To determine the effect of a change in revenue on a change in profit, the production leverage ratio is calculated. The higher the effect of production leverage, the more risky from the point of view of reducing profits is the position of the enterprise.

To separate the total costs into fixed and variable costs, we will use the high and low points method, which assumes 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 the volume of production and costs are found;
- the rate of variable costs for one product is determined by referring the difference in cost levels for a period to the difference in levels of production 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 for the corresponding volume of production;
- the total amount of fixed costs is determined as the difference between all costs and the amount of variable costs (example 1).

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

The minimum and maximum costs for the

production of footwear models A and B, respectively, amount to 179,465 rubles. (358.93○ 500) and 428 180 rubles. (428.18○ 1000). The difference in the levels of the volume of production is 1100 pairs (1600-500), and in the levels of costs - 248715 rubles. (428180-179465). The variable cost rate per item is 226.1 (248715/1100). The total amount of variable costs for the minimum production volume is 113,045 rubles. (226.1○ 500), and for the maximum volume - 361,760 rubles. (226.1○ 1600). The total fixed costs 179465-113045 = 66420, 428180-361760 = 66420. Thus, for our example, the value of fixed costs will be 66420 rubles. and they will be distributed among the manufactured types of footwear in proportion to the total cost of each type of product.

The profit from the sale of Model A is negative. However, before deciding to exclude this type of footwear from the assortment, it is necessary to calculate the profit from the sale of all manufactured types of products. At the same time, it is important that the amount of revenue exceeds the amount of variable costs.

We will summarize the solution of the example in table 12.

Table12 - Solution of the example

Indicator	Value, rub.
1. Sales proceeds	951008
2. Variable costs	798132
3. Fixed costs	66420
4. Amount of coverage, 1-2	152876
5. Coverage ratio, 4/1	0.16
6. Threshold revenue, 3/5	415125
7. Safety factor,%, (1-6) / 1 * 100	56.35
8. Profit	86456
9. Production Leverage Effect, 4/8	1.77

Let's see how the profit of the enterprise will change if the production of unprofitable model A is abandoned. In this case, the company's revenue will decrease by the volume of revenue from the sale of this type of product and its size will be 753508 rubles. (951008-197500).

At the same time, the total costs of the enterprise will also be reduced by the amount of variable costs required for the production and sale of brand A footwear. This value will be equal to 164,290 rubles. Since fixed costs do not depend on the amount of revenue, the abandonment of the production of brand A shoes will not affect their total value.

Thus, the total costs of the enterprise without the production of brand A footwear will amount to 633,842 rubles. (798132-164290). And the organization will not receive a loss in the course of its activities (753508-633842 = 119666 rubles). The use of the method for calculating the average size of the coverage allows you to make a decision on the feasibility of further production of footwear brand A.

The average coverage for both shoe brands is positive. If the company reduces the output of brand A footwear by one unit, it will lose 66.6 rubles. from covering fixed costs. The exclusion from production of the entire volume of production of this brand will lead to losses in the amount of 33,300 rubles. (500 · 66.6). From the foregoing, we can conclude that brand A shoes should be kept in stock.

Thus, it is not always advisable to make a decision based only on the value of total costs and profit per unit of production, because in the end result the enterprise may lose profit. Now let's consider the situation (example 2), when the company plans to release new products - model B in the amount of 1,700 pairs at a price of 467.40 rubles. for 1 pair. However, the production facilities of this organization are suitable for the production of only 4,000 pairs of shoes. And if it is going to start producing Model B shoes, it will have to abandon the production of 500 pairs of other models. The question arises: should we introduce new products into the assortment, and if so, what products should be cut back? The average value of variable costs for a new type of product is 375.34 rubles. Then the average coverage is 92.06 rubles. (467.40 - 375.34). The increase in the company's profit due to the production of model B footwear will be 156502 rubles (1700○· 92.06). Among all types of footwear produced by the enterprise, model B has the smallest average coverage (66.6 rubles). If you abandon the production of 500 pairs of shoes, then the organization will lose 33,300 rubles, at the same time, the enterprise will additionally receive 156,502 rubles from the production of brand B footwear. The profit of the enterprise from the change in the assortment will be 123202 rubles. (156502 - 33300). Let us trace how the safety factor, the effect of production leverage and the profit of the enterprise will change if model B is included in the assortment of footwear production (table 13). If you abandon the production of 500 pairs of shoes, then the organization will lose 33,300 rubles, at the same time, the enterprise will additionally receive 156,502 rubles from the production of brand B footwear. The profit of the enterprise from the change in the assortment will amount to 123202 rubles. (156502 - 33300). Let us trace how the safety factor, the effect of production leverage and the profit of the enterprise will change if model B is included in the

assortment of footwear production (table 13). If you abandon the production of 500 pairs of shoes, then the organization will lose 33,300 rubles, at the same time, the enterprise will additionally receive 156,502 rubles from the production of brand B footwear. The profit of the enterprise from the change in the assortment will amount to 123202 rubles. (156502 - 33300). Let us trace how the safety factor, the effect of production leverage and the profit of the enterprise will change if model B is included in the assortment of footwear production (table 13).

Table 13 - Solution of example 2

Indicator	Value, rub.
1) Sales revenue	1745588
2) Variable costs	1520478
3) Fixed costs	66420
4) Amount of coverage, 1-2	225110
5) Coverage ratio, 4/1	0.13
6) Threshold revenue, 3/5	515046
7) Safety factor,%, (1-6) / 1 * 100	70.49
8) Profit	158690
9) Production Leverage Effect, 4/8	1.42

The above data show that as a result of the renewal of the assortment, the position of the enterprise has improved:

– profit increased from 86456 rubles. up to 158 690 rubles;

– safety margin increased by 14.14% (70.49 - 56.35);

– the effect of production leverage decreased by 0.35 points (from 1.77 to 1.42).

Thus, in the costing system for variable costs, profit is reflected as a function of the volume of sales, and in the full distribution system, it depends on both production and sales. Both considered systems have their own advantages and disadvantages.

So, for example, when the volume of production exceeds the volume of sales, a higher profit will be shown in the system of full cost allocation. In the case when the volume of sales exceeds the volume of production, the higher profit will be reflected in the calculation of the cost price at variable costs. However, when calculating the cost of variable costs, information for making a decision can be obtained with significantly fewer calculations. The choice is up to the management of the enterprise in order to provide its enterprise with a stable position in the conditions of unstable demand with timely and effective actions. This is especially important in the manufacture of the entire assortment of children's shoes and when working with customers - with mothers and children, creating all the conditions for them to satisfy their interests.

- an increase in the amount of profit as a result of a company in the volume of sales of products, a decrease in its cost price and an increase in product quality.

In order to get the desired profit in conditions when the prices for shoes and production volumes are dictated by the market, the company always faces the choice of what products and how much to produce in terms of costs for its production and taking into account the solvency of potential buyers.

The availability of high-quality, competitive footwear is a prerequisite for the highly efficient functioning of a footwear enterprise.

An important criterion for the competitiveness of footwear on the market is its cost with its corresponding quality and the purchasing power of the population.

The main criterion for the viability and profitability of an enterprise is profit; in order to increase losses, first of all, it is necessary to reduce the cost of shoes.

The change in the total cost, which includes all the costs of manufacturing and selling footwear, depends on the ratio of changes in costs for each calculation item.

An important factor affecting the level of costs for the production of footwear is the change in the assortment and the technological process.

Choosing a technology that is capable of efficiently realizing unlabeled goals in a highly competitive environment will ensure that the developed range of footwear is chosen by the buyer and will allow the enterprise to maximize profit.

To solve this problem, it is necessary to most widely use the injection method, which ensures the manufacture (production) of the entire assortment of high quality footwear with different profitability of certain types of footwear to meet the demand of various groups of the population.

In the cost of footwear production, the largest share is made up of costs for raw materials and basic materials, and then for wages and depreciation deductions.

The production of footwear by the injection method is possible with the use of artificial and

synthetic leather and textile materials, which will reduce the cost and get a large profit, because the range of these materials is cheaper and much more varied.

Another factor in reducing the cost is the reduction in labor intensity, which is provided by the injection method, on which the costs depend on the item "Basic and additional wages of production workers with insurance contributions to extra-budgetary funds."

At the same time, for the introduction of the injection method, it is necessary to use more expensive equipment (injection molding machine), which will affect the increase in the cost of shoes due to the increase in the cost of depreciation and repair funds (under the item "RSEO").

The share of costs for the manufacture of the proposed many assortment range of in-demand products.

Conclusion

This is possible only if the heads of enterprises implement modern technological solutions formed on the basis of the use of multifunctional and universal equipment and at the same time it is necessary to remember that the innovative technological solution itself should not be costly, that is, on the one hand, providing the enterprise with sustainable technical and economic indicators and guaranteeing their demand not only in the sales markets of the regions of the Southern Federal District and the North Caucasus Federal District, but also in other regions of Russia, to be attractive to foreign consumers. But on the other hand, consumers should have a choice to compare the price niche for the offered products with analogues of foreign firms, and always have priority. This will be possible with the formation of production,

The use of innovative technological processes will allow an enterprise in market conditions to receive such a volume of profit that will allow it not only to firmly maintain its position in the sales market for its shoes, but also to ensure the dynamic development of its production in a competitive environment, this is especially important in the manufacture of the entire assortment of popular products.

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THE IMPORTANCE OF AN INTEGRATED APPROACH TO QUALITY MANAGEMENT OF MATERIALS AND PRODUCTS

Abstract: *In the article, the authors reasonably argue about the advisability of an integrated approach in managing the quality of the technological process of producing demanded and competitive products, which will allow manufacturers to guarantee themselves a stable financial condition, and consumers to ensure preferences for purchasing domestic products.*

Key words: *Preference, demand, quality control, quality assessment, set of properties, products, goods, object, satisfaction of requirements, market, competitiveness, import substitution, defects, their classification.*

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Introduction

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It is surprising, but nevertheless, the fact that the study has to begin classically with the formulation and general that, despite the numerous literature on the proposed topic, and no less clear applications for its comprehensive analysis, the problem of comprehensive research of quality management remains a "hedgehog" in a thick fog.

The reason is simple, except for the work of B.S. Aleshina with coauthors, the promise of a comprehensive study of the problem remains a wish. The content of research usually does not go beyond one or two aspects of considering quality and the possibility of quality management. The rest of the angles are either declared or applied 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 undoubtedly relevant at all times and for any activity.

The noted drawback is inherent in our works devoted to the problem of quality. Our only excuse is that so far we have avoided making an application for a comprehensive study of quality in the context of management. A tough reaction from our critics is

quite possible and even predictable. They, apparently, will overturn our conclusions on us, finding a weak link in our opus. And they will do the right thing. Others - and we with them, taking into account the criticism, will step further, forward, collectively solving what is beyond the power of individual researchers, even in the case when they combine their various cognitive resources and when, for example, in our case, sectoral specialist, systems economist and philosopher.

The theory of quality management is based on the philosophical development of this concept. "Quality" is a philosophical category and the solution of the put forward problem depends on how the philosophical component is presented in the theory of quality management. In philosophy, however, there has never been a single interpretation of quality, there is no mutual understanding in our time. An important conclusion follows from this: it is necessary, before building a quality management strategy, to decide on which philosophical "shore" you are going to land.

Quality is a general and fairly stable definiteness of the subject set. Only the forms of being and its substance are more stable than qualities - 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 research, but to an even greater extent they are a consequence of the philosophical understanding of the world and the methodology on which it is formed.

"Materialism", "idealism", "metaphysics", "dialectics" are philosophical concepts that are pretty shabby by class ideology. Philosophers - conservatives in Soviet times settled well, erecting barricades, because of which they shot arrows of anger at their enemies, absolutizing the political background of philosophical trends. The critics triumphant in the arms of liberal democracy do not look in the best light, cracking down on the restless legacy. Inspired by "noble anger", they essentially turned into the past and not so much "trample" on this hated past, but rather treading water, slowing down the movement of the cognitive process.

“Materialism”, “idealism”, “metaphysics”, “dialectics” must not be abandoned, but they must be cleansed of pseudo ideological “husks”, thereby revealing the inherent rational meaning in these phenomena. These concepts are a kind of "border pillars" of philosophical and scientific knowledge, warning, on the one hand, of the need to adhere to certain guidelines in cognition, on the other, requiring the development of conditions for border interaction.

The boundaries in cognition are intended 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 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 idealist idea to solipsism, and with his philosophical exercises damaged the rationality inherent in the highest achievements of idealist philosophy.

The history of philosophy warns anyone who has embarked on the path of knowledge: above all, be afraid of one-sidedness. It inevitably leads to absolutization, a state of knowledge in which the natural connection between the ideal and the material is broken, and the movement towards truth is closed.

Quality management begins with a philosophical, that is, ideological and methodological orientation of the theory. There are no alternative options. In developing control theory, it makes no sense to deviate from the philosophical foundations. It is necessary to actively seek cooperation with a philosophy that is rationally interpreted.

The question: where is this rational philosophy - has long been rhetorical, since the time of the first philosophers. It was not in finished form, no, and will not be like a "magic wand", "self-assembled tablecloth", "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 appropriate for the situation. True, this is given to everyone, but not everyone takes on the responsibility of building a quality management system. Most are awaiting full instructions and guidelines. In the current fashion: a briefcase with documents.

Our Russian market not only tore apart the national economy in an ugly manner, giving some fat pieces, to others, left the illusory hope that someday their lean life would change and a holiday would come to their streets. The Russian market has deprived us of our national unity, devaluing what is widely known as the “mysterious Russian soul”, or, simply put, our inherent craving for thinking “for life in general,” including personal and national problems. The German is distinguished by law-abiding, the American from the USA - adventurism, the Italian - spontaneity. Our ancestors were distinguished by a responsibility that was fading away 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 "adjusted" to the system and the method used in its development.

In such an ambiguous situation, one must start with the conclusion: everyone is right and no one is wrong. What kind of gibberish, - a person accustomed to thinking according to the formula "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 sort everything out "on the shelves." It's easier, clearer, you can't go wrong.

Main part

The formal logic of thinking develops 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 quantities. “What is good and what is bad” is the lot of formally logical reasoning, for which “there is a silver lining,” or “two different sides of the same coin” - judgments not according to the rules, forbidden.

Prohibitions on thinking are also introduced by political ideology, dividing thoughts into their own and hostile, right and wrong, forcing the public consciousness to work according to the simplified rules of the formal logic of individual thinking. Logical blinders are justified, pseudo ideological justifications have no, as well as the actions of those who stun views different from their ideology, unwilling or 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 Hegel's idealism, in every possible way protected his dialectical understanding of thinking, developed the propositions put forward by him, and defended them from criticism. They understood better than anyone 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, by a set of in a certain way related essential properties of phenomena;
- secondly, they understood quality as an objective state, even in the case when it is created by human consciousness, since consciousness creates quality in accordance with the objective order of the world. Quality is invariant and objective;
- thirdly, in their understanding, quality changes in accordance with the dialectics of the development of the world. It has a concrete historical way of expression.

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

The famous predecessor of G. Hegel, the English philosopher J. Locke, also contributed to the philosophy of quality. J. Locke divided the quality into two groups: the objective qualities of things, inherent in them significantly, and the qualities that arise in the process of cognition. The latter are absent in things, but are formed by the interaction of things and human feelings. Things arouse certain feelings and they react with the formation of qualities corresponding to the received signal - sensations. J. Locke's theory of duality 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 beliefs of the English thinker mean that he was wrong in everything, getting lost in the jungle of the philosophy of quality? Not at all. The ideas of an intelligent person cannot be stupid if they are not a joke, and J. 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.

J. Locke was far from combining the ideas of opponents, and such a primitive technique 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 deserves special attention - the desire to include the activity of the subject in the theory of quality.

As time passed, the idea matured under the influence of practical factors. Philosophers returned, not to J. Locke's philosophy, to his idea of the activity of the subject and the role of his activity in the formation of the quality of things. Not to mention 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 precisely the idea of the quality of activity that is fundamental in it. It would be a mistake to equate quality and thing. As a special combination of properties, quality is, by definition, not the same as a thing. G. Hegel defined the quality of the phenomenon simply and, within the limits of a philosophical understanding, which in the conditions of market relations is combined with consumer assessment, the concept: "quality is that, depriving of which, the object ceases to be itself." “It ceases to be itself,” but it does not cease to exist at all.

Not meeting the quality requirements, the phenomenon turns from one state to another, or into another phenomenon. The expert examination gave a conclusion about the discrepancy between the goods

and the technical (and consumer) parameters. The product was transferred to the category of non-standard, defective product, but the thing remained and with it some kind of prospect of its disposal was preserved: elimination of non-compliance with the standard, processing. You cannot wear shoes, you can try to scoop up water from a leaking boat with it, ram the tow, chat, but you never know what a failed boot can do in a large household - you can even put on a samovar.

It is a mistake to separate the quality 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 novel by N.V. Gogol, and quality management will lose substantive certainty. F. Engels emphasized: "There are not qualities, but only things that have quality, and, moreover, infinitely many qualities."

Specialists distinguish a shift in market needs towards high-quality products. The market is maturing. This is confirmed by the monitoring of demand. In this long-awaited situation, it is important not to lose philosophical ground when developing a business plan in accordance with 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 today's image. Only the correct orientation in a specific time as a life interval, when it is relevant, guarantees the success of the sale of the product.

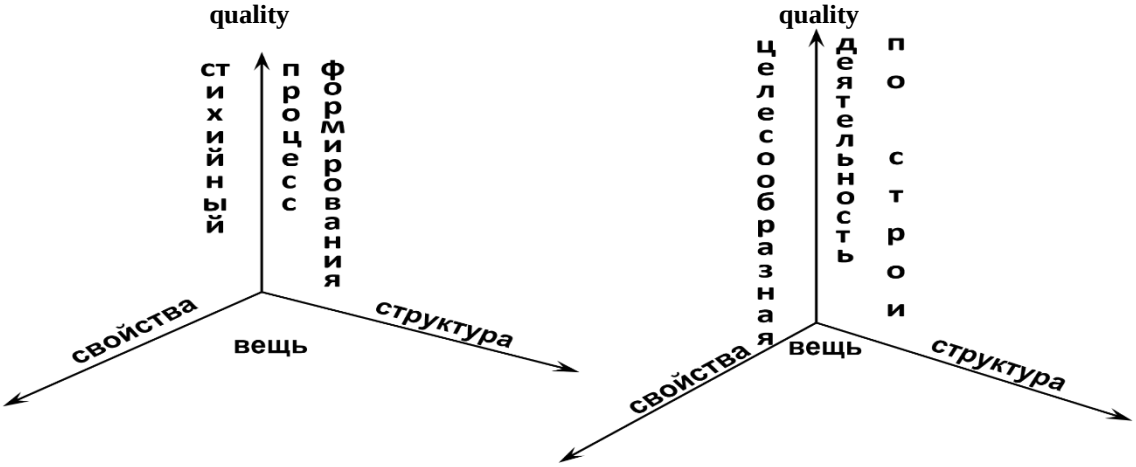
The manufacturer and seller must be up-to-date. Their modernity is due to the ability to find the optimal product range and match a specific product with the expected level of quality in order to get into the optimal price range dictated by the consumer's effective demand for the product, which expresses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

Quality for the consumer is not an abstraction created by the professional mindset 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 show the product and only then asks how much it costs, then the result does not change from the rearrangement of the behavioral elements. The client will ask his sacramental question, the answer to which will depend on how the act of purchase and sale is resolved.

Quality is not adapted to independent existence. A thing is presented in quality when it appears on the market - a commodity. And this is where 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 social 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. In the created thing, in its properties, in its quality, we realize our goals, needs, interests: we either materialize or objectify. The differences in the objectivity of the quality of a natural phenomenon and a created person are shown in (Fig. 1).



Formation of quality Formation of the quality of a thing into a thing in the nature of social practice

Quality is built Quality is built deliberately, aimlessly and unconsciously in order to "humanize" a thing, to impart Objectivity to quality she needs the sensesl develops exclusively according to the objectivity of quality, natural laws is formed on the basis of natural laws, but has an introduced configuration in the interests of man

Fig. 1. Differences in the objectivity of the quality of a natural phenomenon and a created person

As things produced by the practical activity of a person, as this activity itself, the objective properties of things and the subjective forms of human existence are intertwined, fused. The quality of things made by a person is objective, but their objectivity expresses the rationality (or unreasonableness) of a person. And this is where the knot of contradictions between the producer and the consumer lies.

It can only be unleashed by reconciling the views on the consumer properties of the manufacturer's product with a real assessment of consumer needs and opportunities. The quality of goods should be developed solely taking into account careful marketing monitoring, accordingly tightening production reserves. We continue to observe a split 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, raising them through talent and labor to a state that awakens the specific interest of consciousness. Things of natural origin also attract human interest by their ability to evoke aesthetic feelings, provide a healing effect, be a material or a condition for the production of everyday life, which is understandable - a person "left" nature, remaining its special part. However, at the same time, their quality retains its "natural purity". Professional activity is a systemic factor in ensuring the quality of goods with added value. It, according to the position, should also be the initial link in the development of the ideology of quality management.

Only high-quality professional activity can produce a quality thing - this is the first and basic law of production quality. Natural disasters can do a lot. Immigrate people by purchasing precious stones, methods, building materials. Diamond is the brainchild of natural elements. The mineral has an original unique natural quality, however, diamond products build on so many new qualities over natural quality that a person is interested in, that natural quality remains, in fact, important only for natural stone processors.

The final diamond product, be it a piece of jewelry or a technical element, is the result of professional activity. In the gemstone market, there is a difference in interest in the source material - from what deposits it is, 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 the 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 a product, high-quality training of specialists is necessary, 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 technical progress.

The concept of "quality", reflecting the objective diversity of the world, is thereby obliged to reproduce in itself an objective difference. This is feasible through the structuring of quality. The structured quality of 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 recycled natural material;
- quality of technical equipment;
- the quality of the software product;
- quality of production activities;
- quality of organization and production management.

Organizational and managerial activities aimed at the production of a quality marketed product itself requires quality control. An audit of the organization's quality and production quality management 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.

The logic of creating the quality of things created by man pushes the quality of activity into the foreground, close-up, focuses research attention on the signs of quality activity, the need to build their systemic relationships. Philosophical literature on the selected problems 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 human, professional activity transforming the material world. In the spirit of pre-Marxist materialism, it is impossible to develop a scientific and philosophical doctrine of quality, for the old materialism was, in essence, a philosophy of contemplation, and not the transformation of the world. It was not in vain that K. Marx taught: it is necessary not only to reflect the world, but also to change it. Dialectics - a materialistic worldview is based on the practical interaction of man and nature. Activity, primarily creative, is the credo of dialectical philosophy and science.

The universal model of relations between the systemic properties of professional activity is explained by the scheme already cited 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 lies not in the features themselves, but in their representation by systemic education, which gives them a new level of meaning. When presenting a system, researchers usually refer to the effect of the systemic connection of properties discovered by Bertollanffy: the discrepancy between the sum of the features of a system and the sum of features that form the system of elements. The effect described by Bertollanffy makes it possible to judge the systemic organization of properties, actions, phenomena as the most effective form of relations, which is important for the effectiveness of management, on the one hand, and the perfection of the organization, on the other (Fig. 2).

Quality management, building on its philosophical interpretation, makes 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 moderately safe.

A systematic approach at this time is the highest quality way of knowing and organizing the management of any complex activity. Those who doubt the greatest efficiency of the systematic approach, probably, no longer exist. There are those who inadequately perceive and evaluate the indisputable advantages of the systems approach, absolutizing its value at the expense of other methods, in particular, an integrated approach. An integrated approach in theory and in practice has not squandered its value in competition with the systemic one. They are not very badly combined, complementing 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.

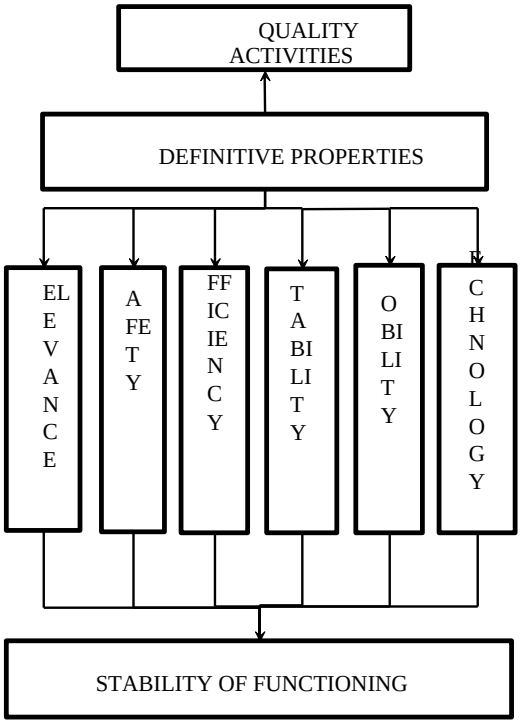


Fig. 2. A universal model of systemic relations of the qualitative properties of professional activity

The situation that has formed in special - not philosophical - cognition (in practice, too) forces us to return to the difference that exists between complex and systemic methods, because substitutions of these methods have become too frequent.

The systems approach is fundamentally distinguished by the way of constructing knowledge, in which the relationships that form the elements, signs, are built depending on the basic relationship, called the backbone factor. The system is formed similarly to the crystallization process by sequential increment of the components.

It is systematically expedient to build, for example, products from leather, fur, textiles, when a certain agreed state of the quality of the material is taken as a system-forming factor and the whole range proposed for production is "tied" to it. The quality

and place on the market in this case will be determined by the quality of the corresponding state of the material used in the manufacture of each specific series of products.

An integrated approach is based on a certain qualitative basis and requires a comprehensive analysis of the quality of the phenomenon, and the aspects of research can be both equivalent and appear in a certain rating dependence. A good example of an integrated approach is the construction of quality management. Schematically, it looks approximately as shown in Figure 3.

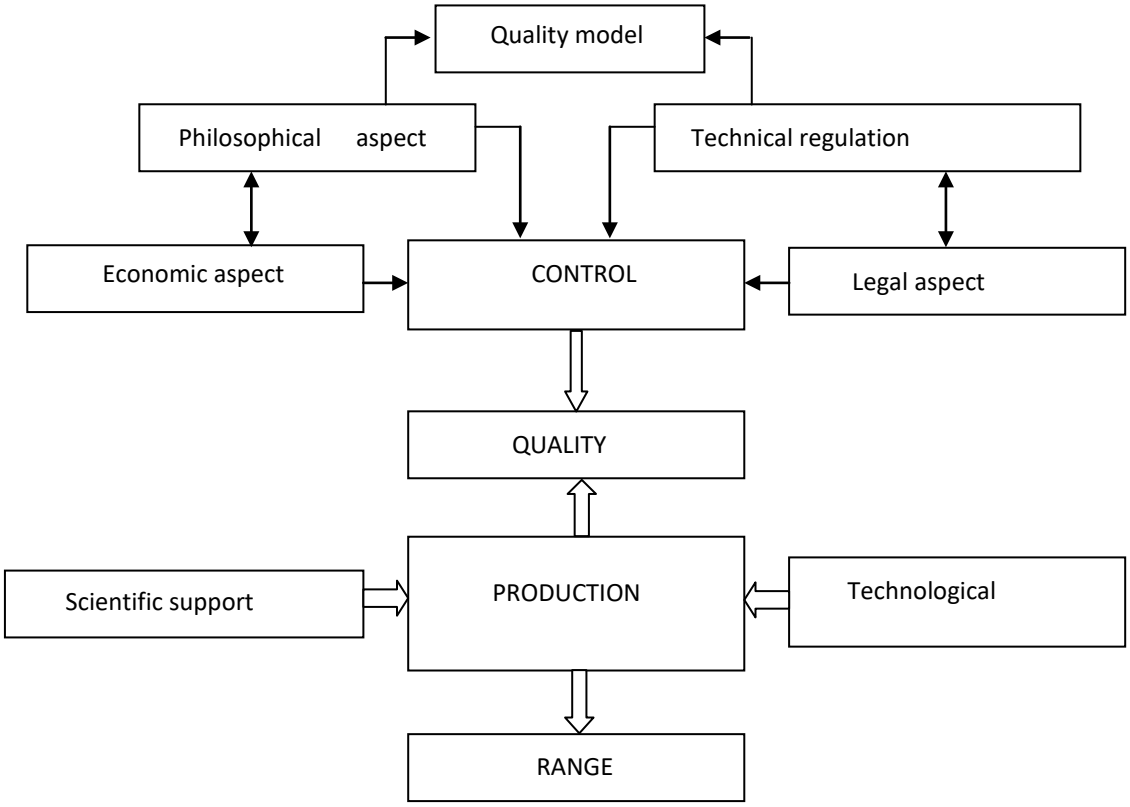


Fig. 3. Schematic diagram of integrated production quality management

The above diagram demonstrates the relationship and role responsibility of the main elements of the preparation and implementation of the production quality management process. The nodal relations are quite clearly visible on it: the connection of the philosophical aspect with technical regulation, which allows concretizing methodological and theoretical studies to the level of normative and technical tasks; technical regulation with a legal aspect, including in the latter the use of patent and licensed elements: philosophical and economic analysis, which gives the former a specific subject orientation in market conditions, and the latter a methodological perspective, the dependence of production quality 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 will be helped by a schematic diagram of the relationship of philosophical concepts describing quality, docked with economic categories. It was developed by us several years ago. Our return to her 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 exclusively in the epistemological aspect of its consideration: when deciding the question of the nature of quality. Indeed, in the perspective of the relationship "object - subject", quality is primary - it is objective in nature. Even while constructing quality, we are deprived of absolute freedom in our creativity. 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 expression, 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 scientific theory. The quality control system is shown in Figure 4.

In the theory of quality management, it is important to correctly understand dialectics as a production organization; as an activity organized by production, finally, as an objective and subjective commodity produced. Prominent Russian scientist, public figure L.P. Krasavin, 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 the quality of a product is revealed in the market through a complex relationship 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 the interpretation of quality on the market, in Russia the traditional side of the attitude to product quality was contemplation, high-quality goods, and nowadays for most Russians there is more than something intended exclusively for use.

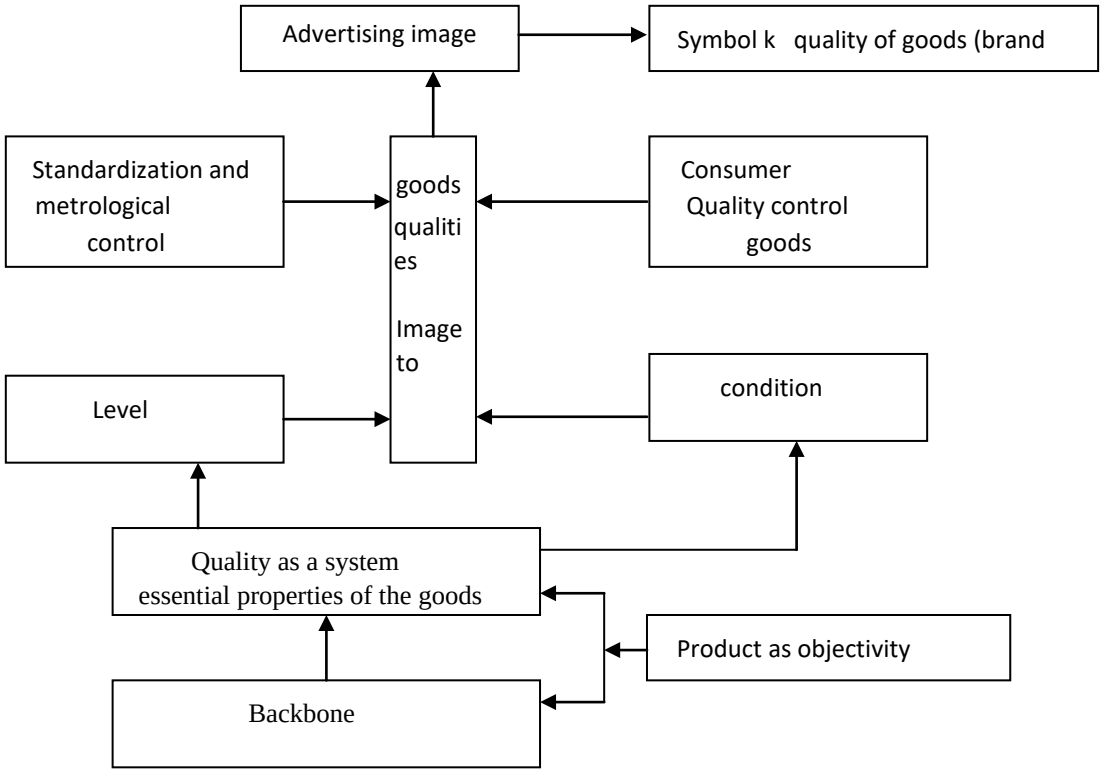


Fig. 4. Quality control system

Creators and manufacturers of quality goods need to educate potential consumers of their products, proceeding from the fact that in a market, product quality is a collective image. The image of the quality of a product, of branded production, of course, can be promoted with the help of advertising, but such one-sidedness is uninhibited and dangerous.

The sustainability of the reputation of a quality product is ensured by the entire mechanism of the market, including its extensive infrastructure. The enlightened consumer is actively involved in the process of "struggle" for quality. The market needs it like a pike in a pond to keep the crucian carp awake. The unwillingness to spend decent funds for educating the consumer, the desire to "shoe" 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 long in this sector of production. As long as the market puts everything in its place, reacts appropriately to pseudo quality, they will be different and this "crap" for them will lose relevance.

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

The effective demand of the overwhelming majority of Russian citizens does not allow them to focus on the quality of goods. The shift towards interest in the quality of the goods must go through the obligatory 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 deactualization of the quality of the goods.

Integrating what has been said, we present a formula that allows us to reveal the terms of the quality of a product, that is, a product produced by a person to meet certain needs. It can also include natural phenomena included in market relations: clean air, mineral springs, therapeutic mud, clays, warm sea, etc., as well as those whose production is not designed for implementation, considering these cases as simplified option.

$$CT \quad scan \quad = \underbrace{\sum eu + D}_{\text{objective compound}} + \overbrace{F_P + R}^{\text{subjective compound}} \qquad (1.1) \quad (24)$$

Where CT - product quality; objective compound

∑es - the sum of the natural properties of the material;

D - activity, natural prerequisites are transformed into a commodity;

Joint venture - the consciousness of the buyer;

R - advertising support.

The graphical equivalent of the formula is shown in Figure 5.

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. An 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, while economists themselves were not always aware of the dialectic of the process.

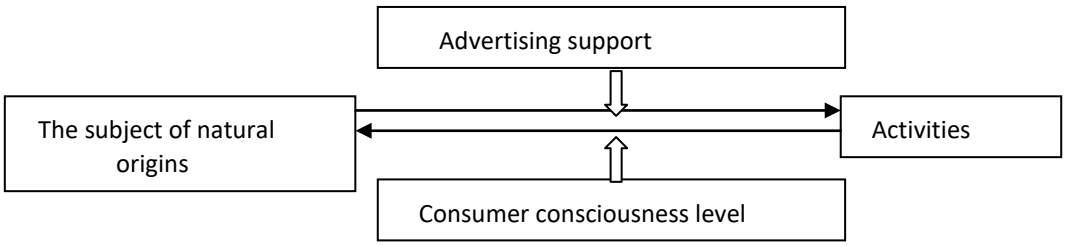


Fig. 5. The graphical equivalent of the above formula.

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 profit 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. Alyoshin et al. Distinguishes four phases in the formation of a modern philosophical and economic interpretation of quality: the “rejection phase”, “quality management phase”, “the phase of continuous quality improvement” and “quality management program”.

The history of economic quality management dates 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 required to pass a serious quality check of their products. All products of the workshop craftsmen had the author's "stamp" and were unique in their own way. Quality management was simplified by production itself, by its manufacturing nature, which did not allow production to expand on a scale. Of course, no agreed quality standards existed at that time due to the difficulty of comparing strictly individual products of masters, and even more so trying to develop a certain model to follow. The uniqueness of the master's work excluded the imitation of anything in principle.

Only a long time later, standardization of product quality appeared at S. Colt's arms factories. Such an unusual decision was prompted by the fact that in 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 the parts on them before assembly.

The heyday of the idea of standardization fell on the era of the development of automobile production in the United States. G. Leland, the creator of the Cadillac company, came up with a pair: "through" and "non-through" 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 was created at Ford factories, independent of production.

G. Ford's associate F. Taylor, who worked in conjunction 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 focused on the quality of production: a systematic approach; personnel management; obligatory division of responsibility between performers and organizers in achieving high-quality and effective work; the need for scientifically grounded labor rationing.

F.U. Taylor, undisputed founder of scientific management. It was he who first discovered the "depletion" of the effectiveness of the main position in management practice: "initiative - reward" for the quality of work. “In contrast, F.W. Taylor, the development of the scientific organization of labor suggests the development of numerous rules, laws, formulas that will replace the personal judgment of the individual worker and which can be usefully applied only after a systematic accounting of measurements, etc. their actions. "

One cannot but agree with the resume of D.M. Gvishani: what Taylorism has in the strict sense of this term boils down to the following:

the creation of a scientific foundation that replaces the old, traditional, practically established methods of work, scientific research of each of its individual elements.

Cooperation between management and workers in the practical implementation of a scientifically developed work organization system.

Equal distribution of labor and responsibility between management and workers.

F. Taylor himself represented the guarantees of the quality of production and its efficiency: “Science instead of traditional skills; harmony instead of contradictions; collaboration instead of individual work; maximum performance instead of limiting performance; development of each individual worker to the maximum productivity available to him and maximum well-being. "

Try, argued to argue F. Taylor. 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 “In its main features, has existed until now and has become a model for organizing production in most modern enterprises. It was only in the 70s that another concept began to come to replace it - the Toyota production system ”.

The ideology of the “rejection phase” was simple and clear: at the output of production there should be only high-quality products, the meeting of the consumer and defective products should not be allowed. The main efforts of managers should be focused on quality control of components and assembly of finished products. The relative simplicity of the concept of the "rejection phase" was its reliability and the relativity of its reliability, led to the need for innovations in the future.

The reliance in the ideology of production quality on the "rejection phase" has a practical effect. It would be surprising if the result were 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 comprehension accompanied the development of production activities throughout its existence.

The stability of the scientific solution to the problem of managing the quality of production of the economic (and, to a certain extent, social) effect, achieved by the pioneers, is surprising.

And yet the latent side of the “rejection phase” had to appear. The displacement of management to the phase of high-quality preparation of production - in essence, towards the special status of control functions - signaled an increase in the corresponding costs of providing quality products.

The quality of production and the quality of manufactured products are one and the same, but not the same. The development of production is undoubtedly due to the quality of the manufactured goods. E. Deming rightly at the head of the list of the "seven deadly diseases" of modern production put "production planning, not focused on such goods and services for which the market is in demand."

Production during the transition from industrial to post-industrial society of the 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 buyer's demand, he has no choice. There is also no choice for the manufacturer, for whom the “seller” is the “buyer”.

The quality of the product is a special "song" of production. Only a "concert" cannot be made up 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

fatal disease. The quality of the product is not able to compensate for the inefficiency of production as a whole.

Improving the quality of the final product always requires costs to ensure it, which becomes a problem for developers of an efficient production strategy. The goals of increasing production efficiency and improving the quality of manufactured products were not combined in the concept of the "rejection phase", so it was replaced in the 1920s by the "quality management phase". Its developers have made an attempt to overcome the critical cost of product quality, evident in the "rejection phase". They were unable to resolve the contradiction that had arisen. We managed to soften it. Among the innovators of the "rejection phase" reconstruction was V. Shewhart, an employee of the technical control department of the American company "Western Electric", who proposed a method for constructing diagrams, better known as "W. Shewhart's map control".

As a first approximation, the American specialist's initiative looks quite radical. W. Schuhart rejects the key scheme of quality control of F. Taylor, G. Ford. In the center of quality management, instead of the stage of preparation for production, at which it is necessary to reject low-quality products, the production process itself appears.

The system of V. Shukhart's methods was aimed at improving the technological process, which was intended to help increase the output of finished high-quality products.

In the concept of W. Shukhart, one senses from the outset a dialectical approach to the matter. His predecessors tried to "sort out production on the shelves" and load the "shelves" so as to get the desired result. As a result, they overloaded one of the flank "shelves" and the whole structure was skewed. The stage of preparation - control became the most costly, while the main stage - the technological one became dependent on it and was pushed to the periphery of the management process, undeservedly suffered.

V. Shukhart called "things" by their proper names and arranged the stages according to the rank, highlighting the technological one. He risked, simplifying the stage of production preparation, reducing the quality of components. In exchange, he hoped to receive a gain in the main production link.

By investing as a priority means in improving technology, the manufacturer strengthens the production process, makes it, in principle, more efficient due to the organization and technical equipment. As for marriage, it is more expedient to track it precisely when organizing relations in production itself, relying on scientific developments and the timely introduction of new products in the technical process, complete with measures for preparing the quality of the readiness of performers.

The main object of quality management of V. Shukhart's concept is the production process. The exit from it represents the flow of measurements of the quality parameters of individual products.

V. Schuhart retires Ford's former goal of "getting admission". G. Ford's idea worked out, awakened new thinking. She is replaced by V. Schuhart forms a tandem of goals: ensuring the sustainability of the process and reducing variations in stability. V. Schuhart considered the presence of variations to be a natural formation. He even deduced a criterion for the quality of the process - the stability of the process should be considered in a statistical sense. Variations in the parameters of products are nothing more than the implementation of a stable random process, the distribution function of which remains constant for a certain time.

V. Schuhart believed that variations in product parameters are the result of two groups of reasons: special and general. Special ones are rooted in the disruption of the production process. They are identified using a control chart and eliminated based on the readings of such a chart.

Common causes are inherent in the process itself. There are many of them, but individually they are not essential. The danger lies in the sum of these causes. Common causes of variation in product parameters are of concern to managers, often of high level and skill. By their investigations and actions, they are able to limit the actions of common causes. At the same time, V. Schuhart made two very valuable conclusions, which should be guided by the production manager.

First, the search for the guilty is necessary, however, having found the guilty, we are rarely able to influence the situation. It is necessary to look for the reasons for the discrepancy and eliminate them, involving all its participants in this process.

Second, process variations become the source of defects and inconsistencies. Reducing variations in V. Shuhart's quality management system is a complex goal. Associating the number of variations with the organization of the production process, W. Schuhart was clearly aware that in order to reduce variations, a new configuration of relations between people employed in production was needed. The essence of such a new configuration should be comradely cooperation. By the very feature of production, people rally into teams.

W. Shewhart's system is a serious step forward in comparison with F. Taylor's system. F. Taylor focused on the mechanism of action, and W. Schuhart - on the mechanism of interaction between people in the entire spectrum of their relations: technical, economic, psychological.

B.S. is absolutely right. Alyoshin et al., Arguing: "Such a concept as" tolerances "(one of the most important inventions of F. Taylor) undoubtedly remains in practice. "Tolerances" are the form,

language of quality requirements, the result of quality planning. Another thing is changing: the opposition of tasks of planning, execution, control and corrective actions. Such tasks are performed by teams ... "

Comparison of the two above-mentioned systems of economic quality management can be presented as follows (Fig. 6).

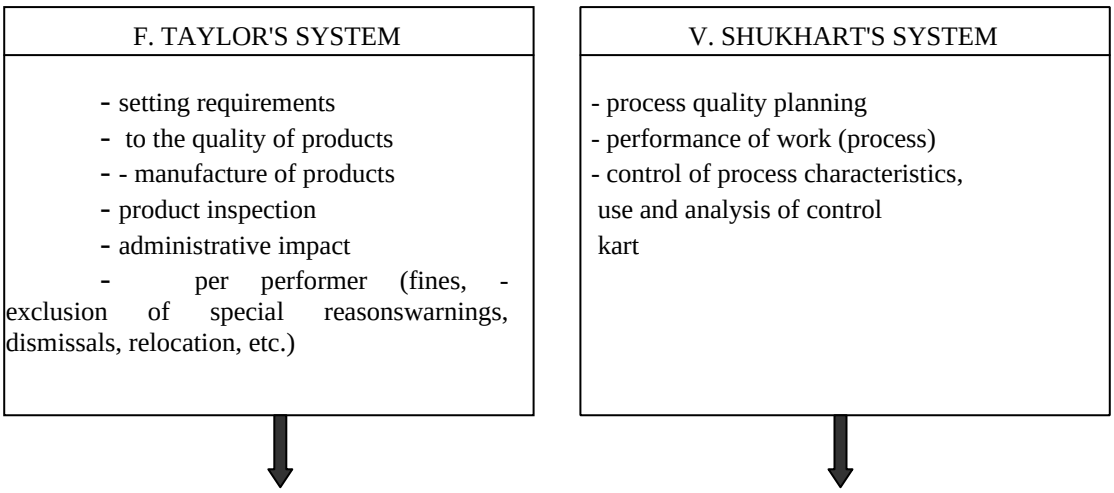


Fig. 6. Comparison of F. Taylor's and W. Shewhart's systems

At the same time, we note that the ideas and methods of V. Shukhart continue F. Taylor's aspiration to put quality management on a scientific basis, to use scientific methods in the organization of production. But even here W. Schuhart is "ahead" of F. Taylor.

For F. Taylor and G. Ford, science (and scientific methods) boiled down to those concepts that allow one to quantitatively measure the mechanical actions of an individual performer, find the optimal route of movements and take it under effective control, having previously loaded it with tasks in full. The "classical" (Taylor's) theory of quality management was based on centrifugal forces and movements and production: division of labor, specialization of actions, individuality of the performer. This one-sidedness was understood by critics.

W. Schuhart considered the mechanistic view of the development of production in general and quality management in particular as an obvious simplification. The production process not only unites the interactions of centrifugal and centripetal forces - individual and collective actions: it does not allow the reduction of what is happening in it to relations of a mechanical type.

A person participates in production as a subject of actions and relationships. Moreover, a person as a subject of labor is a decisive factor in production. The development of production should be based on the development of the subject and the relations of the subject and the relations of the subjects.

Subjective potential in the form of individual knowledge, skills and aspirations is the main reserve of production efficiency, which science helps to activate and organize properly. In this understanding, science includes social and humanitarian components.

- simplification of the representation and nature of human behavior in the organization. V. Schukhart understood this, explained it as best he could, and expected to be understandable and in demand by practical management.

V. Shukhart's new ideas did not pass unnoticed by the business, but, apparently, the inertial forces of business movement are so great that the ideas begin to act on it only over time and totally.

The shortcut to profit out of habit was thought to be the simplest. Any complication comes with additional costs. Will they be justified? In addition, measuring the mechanics of an action is much easier than measuring the motivation for action.

But it is surprising that, almost half a century later, J. March and G. Simon noted: in the United States, there are two widespread views of the position of people in an organization: “the consideration of an employee as an inert instrument carrying out the assignment indicated to him, and the treatment of

personnel as what something given, and not as a variable in the system. " Another authoritative scientist M. Hare agrees with them: “There are implied assumptions about a person on which, as it seems to me, the classical theory of organization and management is based: he is lazy, short-sighted, selfish, prone to mistakes, does not know how to judge sensibly and even can be a little dishonest. " M. Hare's text explains that the classical interpretation of the organization of management is still very popular in practical management.

Three main provisions of the "classical" theory of quality management have not been eliminated until now. They continue to impress, warming the souls of patrons, caressing their self-awareness, reinforcing self-confidence in their chosenness. Everything is so well laid out in its place: the worker is a performer, in fact a "rational animal" with a clearly expressed dominant to maximize economic conclusions; "Each individual responds to economic incentives as an isolated individual"; "People can be treated like machines in a standardized way."

W. Schuhart had many supporters who left their own noticeable and appreciated mark: M. Follett, E. Mayo, C. Barnard, F. Rotlisberger, G. Simon. The thirties of the last century were marked by the "humanistic challenge" of the "preaching of 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 develop 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 inscribe the talents of the individual into the interior of the production, to make them interested colleagues.

Dialectics warns: truth is concrete. The theory is effective within a specific historical framework. Her life can be long or short, but it is 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 fail to take into account the acquisitions of V. Shukhart, M. Follett, G. Simon and all those who argued the need to engage in the struggle for the quality of the subject's ability to think and get involved in business. In particular, in our opinion, the strength of V. Shukhart'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 the performers they are more understandable than the not always understandable displeasure of the manager, so we give a sample of them (Fig. 8).

Having developed a model of a sustainable process, V. Schuhart significantly expanded the possibilities of scientific analysis of production quality, 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 “adjusting the process according to the data of its measurements” into the characteristic of the quality of production, which is quite fashionable to consider as a concretization of the concept of “feedback” in relation to quality management.

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. When its values are 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 various feedback control systems should be used for this process.

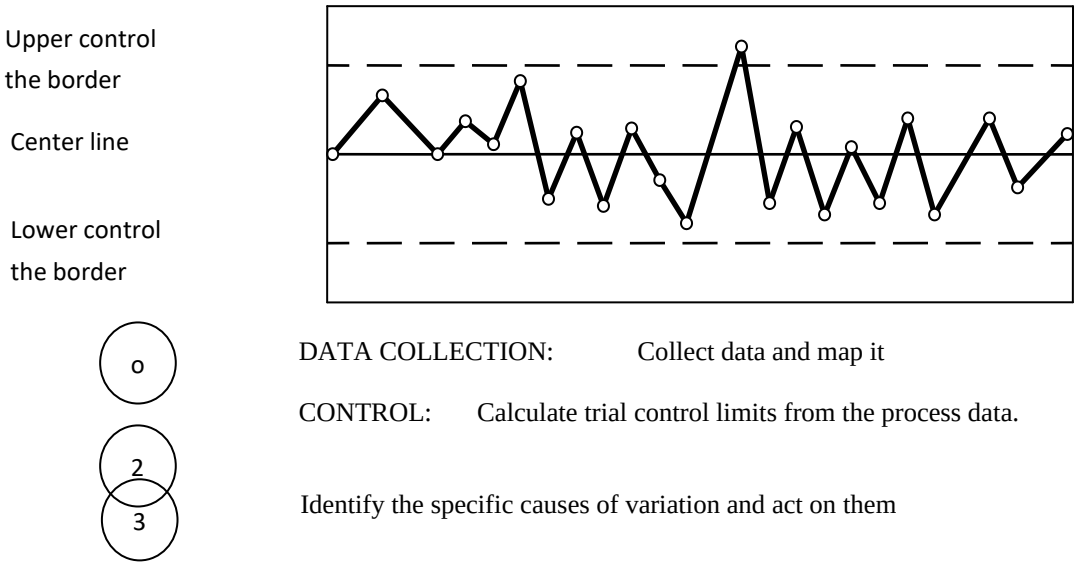
It is not difficult to see in Shewhart's concept a desire to theoretically comprehend the specific state of mass production of its time. He tried to look at the conveyor through the eyes of science. And he managed to do a lot. At least, V. Shukhart's ideas today, although they have aged, are still viable. With a creative approach, they give good results.

A remarkable contribution to the practice of quality management was the creation of a quality audit service, the function of which was significantly different from the tasks faced by F. Taylor's technical control departments. She was not engaged in sorting, but in checking the performance of the quality assurance system by monitoring small workings from batches of products. Thus, W. Schuhart found a way to reduce the cost of quality, which increased disproportionately when organizing production according to the recommendations of F. Taylor. However, the original thinking of V. Shukhart and his organizational talent did not resolve the old contradiction between the need to ensure production efficiency and the market demand for a quality product, and the production itself for quality raw materials and components. Each production process has a limit on the yield of quality products. This limit is not laid down in the process. It is an attribute of the system practiced at the enterprise, the product of all aggregate activities, the characteristics of labor organization 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 resources, 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 a philosophical and economic understanding of production quality management emphasizes its essence “the phase of continuous improvement of quality”.

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 able to become skillfully "planted" on the basis prepared by W. Schuhart, and is already a software product in form.



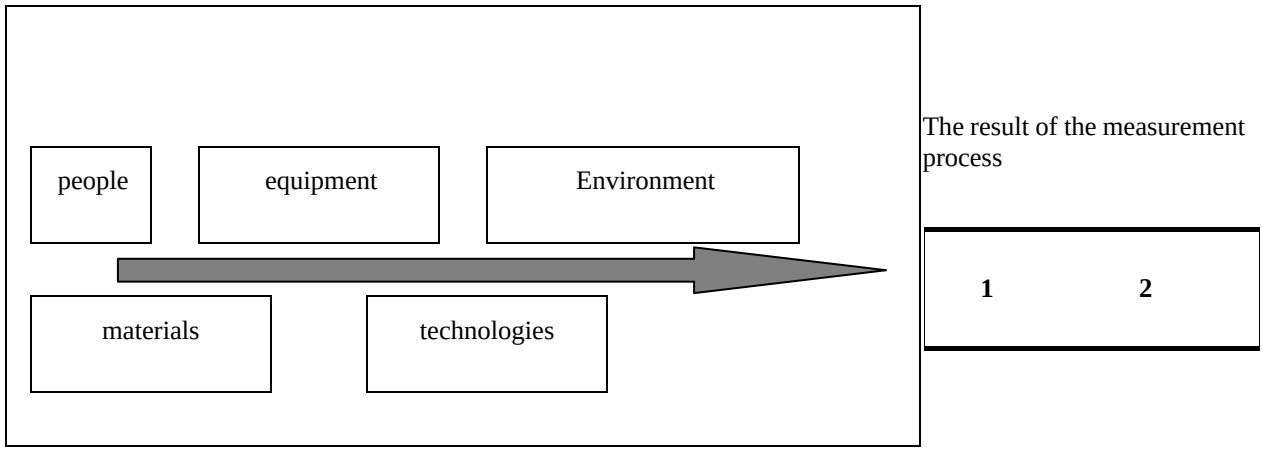


Fig. 8. V. Shewhart's control card

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

- the first practical axiom asserts that any activity must be defined as a technological process, from which the conclusion follows about the possibility of its improvement;
- the second practical axiom was formed by E. Deming as follows: production has two forms of state - 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 echelon of enterprise management in all cases is obliged to take responsibility for the result.

Deming's axioms achieve practical concreteness 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 fatal diseases", "Difficulties and false starts", "Chain reaction according to Deming", "Principle of continuous improvement (Deming cycle)".

Of particular interest for the practice of improving quality management at enterprises are the penultimate and last sections of the program. The Deming Cycle is essentially a scheme proposed by W. Schuhart, which Deming also admitted. "Chain Reaction" is a product of E. Deming's own creativity.

In the Deming-Shewhart cycle, four stages are looped: observation, development of measures to improve the situation, implementation and analysis.

The task of the quality manager at the first stage is to collect information and identify weak links in production that require restructuring.

At the second stage, the manager develops organizational measures aimed at changing the situation. Among them is the connection of all performers through motivation.

The next stage is 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.

Probably, 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 it were not for the tradition to call such discoveries by the names of the authors, the Deming-Shewhart cycle would have been called the “spiral cycle” of quality management. The Deming-Shurkhat cycle is indisputably relevant even now for improving the organization of production, since it reflects the universal law of building management.

We cannot but pay tribute to E. Deming and for his development of a "chain reaction" in quality management, shown in Figure 9.

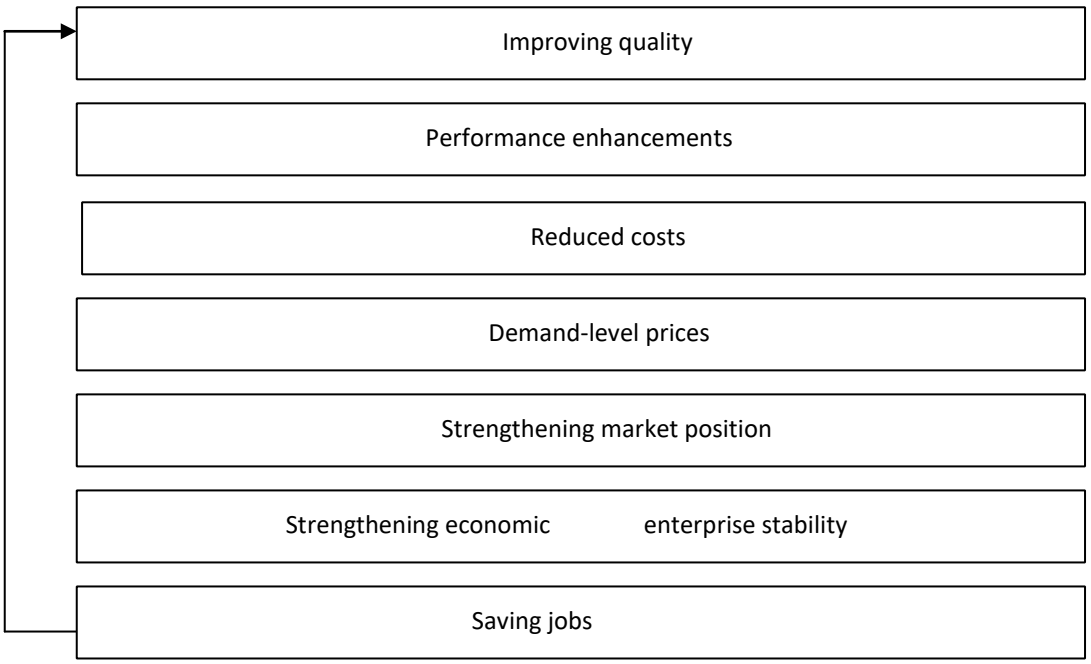


Fig. 9 . "Chain Reaction" by E. Deming

In it, he linked economic and social actions, emphasizing the character 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 the arguments of E. Deming and he deservedly shared with them the glory of the "Japanese miracle". His contribution is obvious in the achievement of Japanese specialists in the field of improving the quality of production, which are clearly highlighted in the study by B.S. Alyoshina with co-authors:

1. Long-term, consistent and purposeful solution of quality problems on the basis of 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 "fatal 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 consumer cult - (the consumer is always right - ed.) Consumer (at the same time) is understood in a broad sense, as the next link in the technological chain.
3. Striving for universal participation in achieving quality, from senior managers to executors of specific work.
4. Understanding that even a perfectly debugged work organization system loses its effectiveness without constant checks and improvement.
5. Organization of work on quality assurance directly by foremen and foremen. Training, including special programs on national television, national conferences for foremen and foremen.
6. Particular attention is paid to mobilizing the physical and intellectual potential of workers. Quality circles - a group analysis of the state of affairs at a specific site and the development of proposals for improving quality and increasing the efficiency of processes, production.
7. Extensive development of a permanent system of promoting the importance of high quality products to ensure high rates of economic growth.
8. State influence on a radical improvement in quality, primarily of export products, including mandatory state certification. An attempt to export uncertified products is considered contraband. 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, one can see Russian miscalculations, namely Russian ones, since, having declared the Russian Federation the successor of the USSR, Russian politicians and economists close to them in 90 -ies systematically destroyed the socialist experience of building the quality of production instead of rationalizing it. In the 90s, quality was not needed by anyone who was supposed to be responsible for it. The economy was reoriented towards raw materials, the quality of which is either determined by natural origin, or "compensated" by the realized quality.

Comparison of the economic policy of Japan in the 1950s 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 correspond to deeds. The interests of the Fatherland during the period of Yeltsin's democratic reforms worried politicians least of all, and 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, bearing in mind the opportunity to draw practical political and economic lessons from them. The total conclusion is beyond doubt: the efficiency of the economy is determined not by the quality of the goods produced, but by their assortment and quality. The transition from quantity to quality could be expected only by those who simplified dialectics to stupidity. It is not quantity that turns into a new quality, but quality and only that.

The Japanese were taught by Americans, but the Japanese studied very seriously from the experience - both positive and negative - of the Soviet Union. We still haven't made up our minds in practice. The whole world is skeptical about our current declarations and certifications. Those who do not know how to appreciate and use their own achievements are not able to adequately master others.

In Japan, the attitude to quality became a national idea, and was embodied in the form of "struggle", in which everyone from the watchman to the general director was prestigious to participate. A system of mutual interests has developed, we are supported by finances, organizationally (building a career) and spiritually.

We are continuing a protracted search for an idea that would unite the nation. The quality is not visible even next to what is offered. It does not appear in the candidates for the national idea. Only enthusiasts are seriously engaged in quality, making their way through the "bushes" of democracy, apathy, etc.

Our "helmsmen" are not up to quality. Captains are still paving the way to the West and investing in non-native economies. Paradox: investments of foreigners in the Russian economy in the near future will exceed the contribution of compatriots.

Having lost the prospect of becoming an oligarch and feeling pressure from the fiscal services, oligarch

candidates are looking for happiness in distant countries.

The Japanese concentrated their capital in their home 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-esteem. And it became a launching pad for the revival of the country. Let us emphasize that the Japanese were actively looking for specific mechanisms for transforming quality into the total interest of the nation in the practice of organizing quality service in the USSR: “cadres decide everything!”, “Quality is the main focus!”, “Everything is at the service of quality!” 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 weren't limited to quality advertising. They organized schools, courses, universities, teaching the quality of key players: foremen and foremen. National finances were used to educate and train quality work and its organization.

What do we have? Quality is at the mercy of everyone who makes a profit on training and education. What they did was cram the problem into the ad 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). One gets the impression that, having officially announced the support of international quality systems, the top political management of the Russian Federation considered their mission fulfilled, deciding that the rest will be regulated by the market.

E. Deming's ideas were continued in the concept of another American who worked for the "Japanese miracle", J. Juran. J. Juran shifted the emphasis in the development of a quality management system from statistical methods towards the absolute value of the customer, dividing the emerging problems into random and chronic ones. Accidentally (suddenly) emerging quality problems of one-time (single) origin. They are not inherent in production. Problem solving should be done routinely as part of ongoing management. To this end, it is necessary to fairly clearly distribute the responsibility of managers for taking control measures and the timely introduction of corrective measures.

The problem of a chronic nature is another matter. They are present in the process and are, as it were, “planned” from the very beginning. J. Juran understood chronic problems as a result assumptions made on the previous phase process. Until a certain point, such tolerances do not significantly affect the quality, then, under the influence of the conditions of sale and their own movement, they acquire a significant meaning and become unacceptable. It is the chronic problems of J.Juran "accused" of stagnation or loss of quality indicators. Have

the management of the company should not be complacent about the good performance in comparison with the past. It is necessary to look not backward, but forward, otherwise it is easy to get into a crisis situation. Calm management is a “deadly disease” for production.

It is pointless to try to solve chronic problems with orders. We need to start by identifying their main causes and sources. Knowledge of the reasons, J. Juran, is usually found behind the capabilities of line managers. This requires a collegial form of analysis of what happened - “brainstorming”.

The second half of the twentieth century was marked by an intensive invasion of quality management by mathematical methods of process research. A new scientific discipline arose - the theory of management decisions, which was the development of operations research. In decision theory, the focus was on decision making. It was interpreted by a process available for quantitative measurement.

The work was carried out in two directions. The supporters of the first of them tried to find mathematical models suitable for use in real production situations (Fogal, Luce). The developers of the second turned to statistics, game theory, widely using methods of statistical testing ("Monte Carlo method").

The one-sidedness of both approaches gave rise to the third school, its founders wanted to "tie" mathematical research to the problems of quantification of economic phenomena as much as possible. As a result, the so-called "econometric" approach to the analysis and management of economic processes, primarily the efficiency and quality of production, appeared.

According to the above concept, the economic and mathematical model should have four components:

1. It should include economic phenomena of qualitative content, expressed in certain units of measurement. Such quantities are 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 linking the results of processes with their causes;

3. The model should determine the area of permissible changes in the parameters of the model in time, space and volume - "restrictions imposed on quantitative dependencies";

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

The control 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 belong to L. Klein and A. Goldberg. V. Leontiev, who received the Nobel Prize for his work, also contributed 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 sophisticated methods develop, we will come closer and closer to realizing one unpleasant fact: economic“ laws ”are difficult to accurately measure, and therefore we live in fact in a world of large but largely superficial or spurious correlations. You can, of course, refer, as always, to bad statistics. However, I think we can find an explanation in another, 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 capabilities.

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 teaches this as well. The solution of the quality problem itself is supposed to be a step-by-step process from identifying problems, through diagnosing their condition and searching for solutions to implementing the decisions made, retaining and developing the results achieved.

At the first stage, J. Juran called “a problem in which a solution is programmed”, problems are singled out, priorities are identified, a rating order is established; the performers and their powers are determined.

At the diagnostic stage, the optimal symptoms of the condition are determined; hypotheses are built, tested; the search for the reasons is in progress.

The stage of finding solutions involves finding optimal solutions; development of the necessary measures; implementation of the adopted decisions.

The final stage consists of checking the effectiveness of the implementation results, comparing the dynamics of the achieved results with the planned ones.

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.

F. Crosby's Zero Defects program 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 at each technological site there should be an engineer responsible for quality. His professional duties include providing a daily list of problems causing significant and frequent defects; systematizing them according to the degree of importance for quality; determination of corrective actions; attraction of personnel employed at the site.

The “Continuous Quality Improvement Phase” helped to overcome the tension between quality costs and production efficiency. The consumer began to receive high-quality goods at an affordable price, the implementation of the idea of a “consumer society” has come nearer.

From the manufacturer's point of view, this is an ideal situation. But the assessment of the situation was one-sided, only from the point of view of the consumer; the quality parameters were not set by the one who consumes the product, for whom the product is made.

Quality was standardized in the manufacturer's norms and, naturally, 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, since there were frequent miscalculations in determining the needs of consumers. A high-quality (according to the manufacturer's assessment) product, available at a price, did not find the necessary demand from consumers.

The new form of contradictions had to be eliminated 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. Taguti 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 aim of G. Taguti's research was to overcome the contradiction between quality assurance and production efficiency in its existing forms.

Four new ideas form the foundation of the quality planning concept:

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 models of goods, but on mathematical modeling of both goods and the process of their production. Due to this, they hoped to

timely detect and eliminate the reasons for the increase in marriage. It was proposed to take the design and technological processes under control until the stage of real production;

3. The idea that the concept of "zero defects" should be replaced with the idea of "satisfied customer";

4. High quality of goods is emphasized by reasonable prices and constant price reductions, thus ensuring a stable market demand for quality goods.

A new round in the development of quality management, overcame the marked form of the fundamental contradiction between quality and production efficiency, but not the contradiction itself. At present, its next "ecological" form is taking shape.

The inclusion of ecological cleanliness in the quality characteristic of a product requires significant costs.

The peculiarity of the modern stage of quality management lies in the fact that all known formulas (phases) are practiced at enterprises. B.S. Alyoshin and 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 (Fig. 10).

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

(total quality management).

Essentially, TQC is not a quality management system, but a system of sufficient conditions for a quality process. Development logically went to the development of TQC. All previous steps on the path to quality management of quality, despite the progress of the movement, were of the same type. They "tied" 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 connections and dependencies built in a certain way.

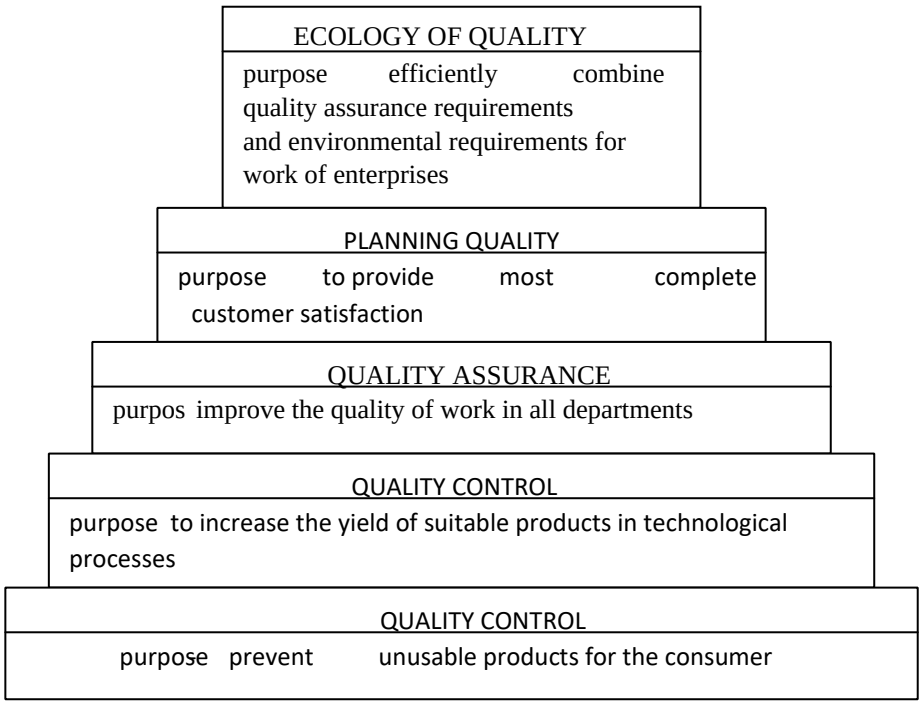


Fig. 10. "Tower of quality" according to B.S. Alyoshin

E. Deming, K. Ishikawa, F. Crosby and A. Feygenbaum came closest to understanding the quality system as a reflection of the production system.

The main conditions of TQC are the following:

1. Ensuring the totality of participation in solving the quality problem of all employees;

2. Awareness of total responsibility for the quality of all participants in the process, understanding that no specialized department (quality control department, OUK, etc.) is able to cope with the task;

3. Compliance with the quality of activities at all stages of the "life cycle" of the product: from the development of the product concept 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, certification of goods involves the mandatory development of a method for recycling even packaging;

4. The totality of improving the knowledge and skills of performers and managers; regularity of specially organized forms of professional development; planning related costs;

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 employee motivation, and motivation should not be one-sided, closed only on financial returns. Then it will be stable;

6. The totality of the structuring of activity, its differentiation into operations, interrelated technological processes, transitions, and each link in the process should be understandable for its intended purpose to all performers. Studies of eliminating the causes of defects have shown that up to 90% of the problems submitted for consideration are resolved, while 75% of them are capable of solving by the controllers themselves (direct executors and organizers);

7. Totality as understood by the consumer; the consumer is not someone who is outside the brackets of the production process, the consumer is every next link of the production itself - "internal consumer", therefore, an awareness of responsibility to the consumer is required throughout the entire production cycle;

8. Total cultivation of the special status the consumer and his

interest in the quality of the product;

9. Continuous quality engineering;

10. Understanding the importance of defect prevention, its economic advantages over the elimination of defects;

11. Team spirit of all participants in the process; corporate culture;

12. A leading position in the activities that ensure quality, of the top management, understanding of quality as the goal of entrepreneurship.

Quality management in the XXI 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 administratively fixed. 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 certifying that the product meets certain agreed parameters. "Standard" in Russia and most other countries is a set of rigidly fixed, often administratively, characteristics of products, services, and activities. Analogs of our "quality marks" are found in European countries, in particular in Sweden (TCO 92; TCO 95; MPR on monitors).

From the perspective of the consumer's interests, 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, his own interests. Hence the conventionality, the relativity of any standard and "standard sign" until the standard balances the mutual interests of both parties: the manufacturer of the product and its consumer.

The most common quality system standard ISO 9000 is built on the Dei 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 by its 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 the development of a concept.

The most obvious illustration of what has been said is the rather frequent reports that reputable firms such as Ford, Toyota and others are recalling their products due to the discovery of a technical discrepancy in just one of the nodes.

It would seem that it was easier and cheaper to instruct service centers to replace low-quality components. In fact, firms are doing the right thing in terms of market competition and their brand position.

In a complex system, a structural and technological defect of one unit inevitably affects the entire system, so it is not easy to replace a unit or block. It is necessary to comprehensively test the product as a whole so that the manufacturer's warranties work according to the declared standard.

ISO 9000 its modifications ISO 9000-2000 do not guarantee product quality. They are “determined” to provide such production conditions that make it possible to count on the “most probable” quality reserve of productive activity.

Another "weakness" of these systems is that they explain "what to do", but they practically do not explain "how to do it".

ISO 9000 ideologues argue: "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 it” must 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 QMS defined by the International Organization for Standardization:

1. Constant monitoring of consumer interests;
2. Systemic leadership of the head, ensuring the unity of the goals and directions of the firm's activities, as well as a stable internal environment based on cooperation and all-round motivation;
3. Maximum involvement of the abilities, knowledge and skills of employees in the production process;
4. Using a process approach in managing activities and resources;
5. The need for a systematic approach to management;
6. Striving for continuous improvement of the firm'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 not goods to be submitted to the "quality mark", but the method of their production. "Quality" is the compliance of the organization and management of the enterprise's activities 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 urgent problems of production activity.

Philosophical teachings about quality, undoubtedly, have always had an effect on economic knowledge. K. Marx began with G. Gogol, went through the "course" of economic analysis and founded the historical-materialist 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 ways of O. Proudhon, J. St. Mill.

History repeats itself on a new round. Thinking economists go 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 are due to philosophy no less than economic theory.

The 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. This was the opinion of the leading thinkers of Antiquity, the Renaissance, the Enlightenment. But the “human factor” and the “subjective factor”, contrary to the widespread practice of bringing them closer to the point of identification, are far from the same thing.

“Human factor” is a concept that characterizes the entire complex of human capabilities. The concept of "human factor" expresses the dualism of our nature - a combination of biological and social in it; organization and personality; physics, physiology, psychology, intelligence, behavior and activity. How 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 opportunities for realizing his own potential. The clever, educated Oblomov lying on the couch, as well as the active Stolz, are examples of contrasts along with the title “Human Factor”.

In the concept of "human factor" is not an expression of preference, either biological or social. I think that's right. To define "a person in action" - no matter in which one: turning over with a newspaper in the hands of Oblomov, or active enterprising Stolz - a synthetic concept is needed.

It was proposed to call an abstract person in a state of abstract activity "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 research.

The object of research in our case is social progress. The task is to understand the factors that set history in motion and give the movement of history progressiveness.

The logic of reasoning is not complicated. The history of mankind is either objectification outside of human substance (objective idea, World reason, World Will, God, etc.), or the product of the activities of people themselves: their reason, feelings, will and practical activity.

The problem can be simplified, because in both versions, 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 way for history, guided by his own ideas and motives. In history, whatever one may say, one cannot deviate from human participation. History is "tied" to a person just as he is "tied" to history.

It is then that it becomes relevant to “disassemble” the “human factor” into its components, its quality, to divide what exists in a person himself exclusively in unity. Divide conventionally, depending on the contribution to historical progress of two "halves" of a person: 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." Politicians who emphasize the

historical nature of human activity note 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”.

For those who object to us, considering 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 presented in production and affecting its quality, we will answer: no, but modern production, then there is a science-intensive, high-tech production based on the power of knowledge, not muscles; 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 testifies that total quality management, to which everything was going, is possible with the total mobilization of human subjective forces: knowledge, beliefs, desires, will of interests, upbringing, education, concentrated in the professional form of culture.

The classics of quality management economics, from Taylor to Crosby to Freygenbaum, were deeply concerned with mobilizing the motivation of production participants, rightly believing that it is the lifeblood of quality work. But they were realists and realistic experience told them: do not absolutize the moral factor, no matter how significant it is. Quality is created by free will, but it is controlled administratively and legislatively. The legal aspect of achieving TQC objectives is highly significant and requires constant attention.

Is it possible to imagine a situation when quality will be achieved only due to 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 qualifications? The answer is at the discretion of the reader, but a hint suggests itself: it is possible.

So what happens? Is legal regulation an unnecessary or unnecessary matter? Not. Trial fantasy does not take into account the purpose of production, which, by the way, is very well spelled out in TQC.

The goal of production is not the quality of the product (this is a crafty goal, self-deception). The purpose of production is not the quality of production (this is also a craftiness) The goal of production is customer satisfaction with the quality!

Production even in a subsistence economy, in which the producer and the consumer are one and the same person, does not exist on its own 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 manufacturer has one small advantage in dealing with the consumer. It is not easy to use it, but the chance is quite real. A manufacturer of technically complex products that require knowledge and skills in operation may try to form a consumer's taste for it through educational and advertising activities. The mechanism, of course, is costly, but it is unlikely to win the fierce competition in the market in any other 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 the ring for them. The manufacturer is interested in profit. The consumer is in preserving finances. One strives to fill the cash register, the other does not empty the wallet. In doing so, both look at quality as a reward for winning a battle. Legal regulation helps to give the fight a civilized character. Prevent deception.

The state cannot be aloof from the events taking place in the market, for the economy gives rise to politics; the movement of the market determines the movement of large social groups. And if today the class struggle has lost its relevance, then tomorrow the place of the proletariat and peasants will be taken by dissatisfied consumers - some with quality, some with a price - consumers, whose number will be no less, and the desire to win will be even steeper.

The state cannot deal with the fate of each citizen individually, and it is hardly advisable, but the fate of social groups should be in the zone of special attention of any state and always, if, of course, the state itself does not want to be in the zone of special attention of that main part of society, which in a quiet time is called the electorate, and in not a quiet time - the people.

Quality is a policy, firstly, and only, and secondly, a product of the intricacies of relationships in the market. Supporters of absolute market liberalization are "scientists" provocateurs of tension in public relations and "disruptors" 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 the social movement, but, in order to give it real power as a controller of the quality of education, legalized by the collective political will.

The attention of the state should be focused on:

- intensification of the import substitution process by improving the quality of domestic products;
- building up the production potential of enterprises, creating advanced technologies and new

types of high-quality products, so that, as the domestic market develops and integrates into the world economy, the share of Russian products in the domestic and foreign markets will be expanded. "

The actualization of the legal resources of the state along the entire vertical of political power in the field of quality management will undoubtedly contribute to the achievement of the following most important results:

- ensuring a high-quality standard of living of the population, without which it is definitely impossible to get out of the demographic collage. In order to be among the leaders in a non-absolute indication - the reserve fund, a loan paid ahead of time, a loan, a part written off even for 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 of the position in Russia in international relations, greater pliability in economic partnership;
- creating an image of Russia as a really great, and not just a huge country;
- developing environmentally sound policies and economic practices.

Integrating the analysis of real to the consequences of the intensification of state behavior 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 state's tasks above everything else, since the achievement of everything else is possible only under conditions of national sovereignty.

A systematic approach to solving the quality problem in the USSR began to take shape in the 50s. The Saratov system of defect-free manufacturing of products, the NORM, KANARSPI, KS UKP systems were quite a successful experience of the socialist embodiment of the need to manage the quality of production.

In the mid-60s, the Lvov initiative was widely adopted in the domestic industry, which was recognized as a "system of defect-free labor" - SBT.

The highest achievement of the "struggle for quality", apparently, was the creation, based on 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 (KS UPK).

This system turned out to be the first, where the organizational and technical basis of product quality management was the enterprise standards. Unfortunately, the effectiveness of the application of best practices was low. By the beginning of the 90s, only 10% of technical products for civilian purposes corresponded to the best foreign analogues.

The state possesses large and multilevel possibilities of influencing the quality of production and the quality of products. The legal mechanism in the hands of the state is capable of influencing both directly and indirectly improving the quality of the production process.

With the help of tax policy, you can stimulate high-quality production and block low-quality ones. Protecting the consumer from a low-quality product, the state actively prevents unscrupulous manufacturers from entering the market.

The basis of legal support for the quality of production in our state is the Constitution of the Russian Federation. The 1993 Constitution was developed at the height of the redistribution of property and therefore its creators did everything to make the provision (articles) of the Supreme Law 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. Relevant articles have been formulated to match the time of her birth; nevertheless, in this form, some certainty is present.

Article 41 of the Constitution of the Russian Federation says: "Everyone has the right to health protection." Of course, it would be better to add - "and a healthy lifestyle." And even better: "the right to health protection 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, so we settled on what we have.

This article does not seem to have a direct relationship to legal quality management. There is an indirect one, mediated by the protection of the country's population's right to health.

Goods for immediate and long-term consumption must be of the required quality level so as not to harm health. Otherwise, there are serious legal and financial penalties for the manufacturer and the seller.

In order to ensure the protection of the right to health protection, all possible tolerances (MPCs), sanitary and hygienic requirements, state standards for products, services, industry standards were developed in the company with which their own "standards" of enterprises (TU) turned out to be. Management structures were created, or modernized ones inherited from the socialist time.

A modern structure of quality management has been built on the basis of the rights of citizens to quality goods, proclaimed by the Constitution.

The state does not interfere in the technology of production quality management. Its activities are aimed at controlling the method of production 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, deception of consumers and legal regulation of relations between the seller (manufacturer) and the buyer in situations that require a similar measure.

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

The scheme of the right provision of quality management is shown in Fig. eleven.

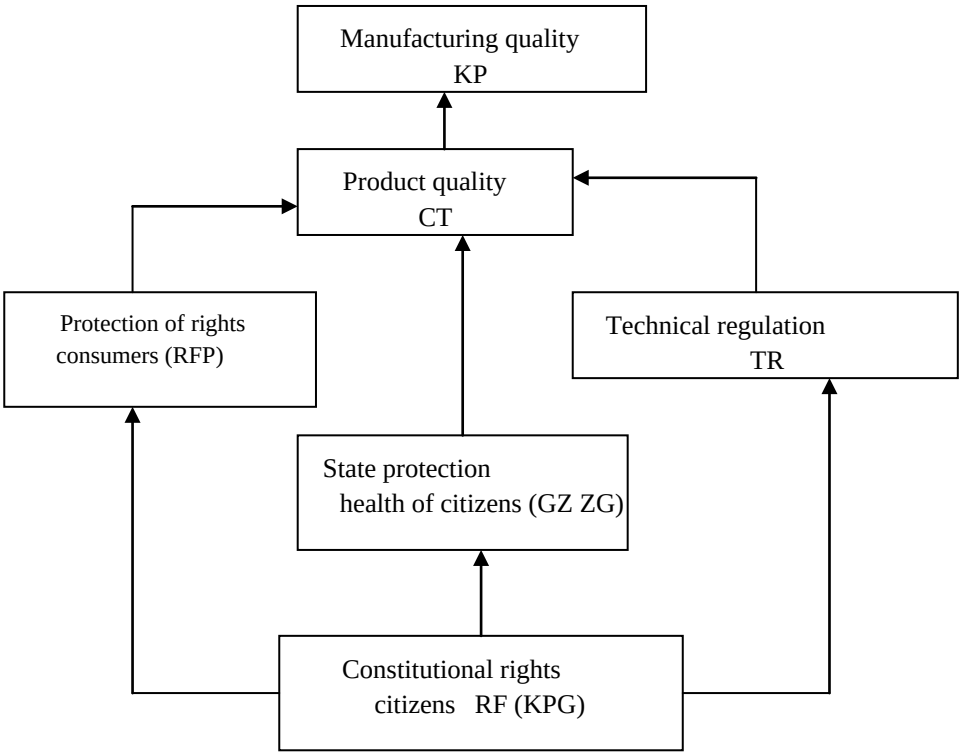


Fig. 11. Scheme of legal support for quality management

Conclusion

Many violations of economic relations inevitably lead to the intervention of law enforcement agencies designed to protect the affected entity within the framework of the current legislation.

Any act of "sale and purchase" is a subordinate act and the legislator or the executor must be included in the process. Otherwise, the rights of the owner will suffer and the violator of market relations under the jurisdiction will not receive punishment.

The situation with the legal support of quality management is complex. The market has 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 of production"; "The quality of the goods produced"; and the "quality of the goods purchased" by the consumer.

An intermediary - a "speculator" - is quite capable of violating technical conditions when delivering goods to the place of sale, in storing goods, preparing them for sale. As a result, the quality parameters of the product will change. The legal protection of the consumer spelled out all possible situations and measures of responsibility of the seller.

Consumer legislation has been around for a long time in European countries and North America and has been refined over the centuries. In its current state, it is quite effective, which forces violators to reckon with it in order to avoid serious financial sanctions of deadly anti-advertising.

Russian experience in the legal regulation of relations in this area is much poorer; moreover, it took shape in the specific conditions of the socialist market.

The Law of the Russian Federation "On Protection of Consumer Rights" was adopted in 1992 and was repeatedly amended (09.01.96; 17.12.99; 30.12.01) in order to make it more adequate to the developing economic situation.

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 the intermediary) received a legal signal about the need to present quality products to the market.

In the peripheral area of interest of the legislators was the intensification of the activities of a number of federal bodies: for 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 composed of the concepts: "consumer", "manufacturer", "seller", "standard", "lack of goods", "significant shortage of goods", "safety of goods". As we see in the categorical apparatus of the law, there is no mention of "quality", despite the fact that it protects the consumer from low-quality goods, and in doublet tries 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", having built a system out of them, the forming factor of which was made "standard".

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 meant to exist at two levels: universal, controlled by the state, and sectoral, private, set by the manufacturers themselves, and have passed the necessary certification procedures.

According to the logic of building subordinate relations, the requirements of a higher level of organization are the benchmarks for the rest of the "pyramid". In case of contradiction, the advantage belongs to the one who (or what) is higher, i.e. more important.

It was superfluous to introduce into the conceptual apparatus of the Law the concept of "quality (goods)". It has been successfully replaced by the more verifiable concept of "standard". At the same time, it reminds all market participants, from the manufacturer and the contractor to the consumer, who is the boss in the house.

From a philosophical and economic point of view, the main defect of the law is the locality of purpose. The state is still hypnotized by the effectiveness of the economic liberalism of the American model, overly delicate in expressing its economic interests, forgetting that these are not the interests of state administration, but of the people of Russia. The state, especially the executive branch as a top manager, must fulfill the interests of the people, instead of fearing to be misunderstood by foreign partners. Foreign partners, when necessary, tighten the nuts tightly.

The state should introduce an economic policy in relation to quality on a larger scale, then its effect will be more significant and the private court practice that has considered private claims against the seller about poor-quality goods will be sharply reduced. A private lawsuit for a manufacturer of low-quality products and a wholesaler of his fueling in the market is all too early that a mosquito squeak.

It is necessary to protect the market from low-quality goods, as G. Ford, senior, did in his time, when he entrusted the "phase from rejection" to special production, taking quality control out of the brackets of the main production process. As a result, substandard components were no longer supplied 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 preventing low-quality goods from entering the market. In the first case, economic incentives are required, in the second, administrative and criminal sanctions.

Now the state is approaching the problems of quality management, as if, in a half-turn, modestly distancing itself. It is necessary to turn to face him and tackle quality, "rolling up your sleeves." Only then will the time come when the ministers will not be able to postpone the execution of the President's instructions for years.

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BIOLOGICAL EFFICIENCY OF APPLICATION OF PROSPECTIVE CHEMICALS AGAINST EASTERN FRUIT MOTH

Abstract: *According to the article, 10 species of pests were observed in orchards in Tashkent region. Among the pests encountered, it was noted that the main pest of orchards is the dominant pest compared to other pests with the damage caused by oriental fruit. To protect peaches from oriental fruiter at least 3 times during the season: after gross flowering and at intervals of 18-22 days Alfamilin, 17% s.c. - 0.15 l / ha, Bagira, 20% s.e.k. - 0.2 l / ha, Tadj, 10% e.k. - Studies have shown that it is highly effective in chemical treatments at the rate of 0.15 l / ha and effectively protects orchards from the main pest of oriental fruit.*

Key words: *Orchards, arthropods, rodent damage, damage, spread, chemical control, biological effectiveness.*

Language: *English*

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Introduction

At a time of global climate change, rapid population growth, acceleration of the production process, a number of problems are growing in the food industry, as in all sectors. These problems can be solved only through the creation of scientifically based new innovative technologies and the resources obtained as a result of their introduction. According to the World Food Organization (FAO), up to an average of 35% of the crop yields on earth alone are lost to pests, diseases and weeds [3,8].

In the world, changes in natural climatic conditions have an impact on the environment, ecology, the impact of the human factor on nature, the decline of local biocenosis and a sharp increase in some non-specific. This poses a serious threat to the cultivation of agricultural crops. The creation and cultivation of orchards requires a lot of scientific research to increase productivity and improve their quality as a result of the influence of various factors in nature.

A number of tasks have been set in the country to further develop the fruit and vegetable and viticulture sector, to create a value chain in the industry, so it is important to develop the fruit and vegetable and viticulture sector, to produce export-oriented products through processing.

Today, a number of pests are encountered and damaged in orchards, leading to reduced yields. In solving the above problems, the species composition, biological and ecological characteristics, distribution, degree of damage and control measures of the main pests of orchards are urgent.

LEVEL OF LEARNING OF THE TOPIC. B.A. Suleymanov, Sh.Khojaev, E.Esanboev, A.Kh.Yusupov, A.Anorbaev, E.Lyan, S.Dusmanov, B on the biological characteristics, development and harmfulness of the main pests of orchards on crop types, control measures S.Boltaev, B.Z.Xamraev,

M.A.Bulyginskaya, A.A.Azizyan, A.S.Akopyan, A.S.Danilevskiy, Yu.I.Budashkin, T.I.Bichina, V.I .Talitsky, studied in the conditions of Tajikistan by A.Ya.Ivanov, N.Ya.Sokolenko, V.G.Baeva. M.Sharipov (1985) studied the biology and ecology of this pest in the conditions of the Republic and conducted research [1,2].

PURPOSE OF THE RESEARCH. In 2018-2020, research was conducted to study the most promising chemicals against oriental fruit, the main pest of orchards of Tashkent region, and the favorable period of their use.

RESEARCH METHODS. The research was performed using methods and techniques widely used in general entomology as well as agricultural entomology. Entomological calculations and observations with the help of G.Ya. Bey-Bienko, L.A. Kopaneva; K.Fasulati's methods in determining the density, occurrence, dominants of pests; performed on the basis of. The degree of insect damage was determined by the method of VI Tansky. Agrotoxicological experiments were carried out in accordance with the method of K.A.Gar, Sh.T.Khojaev. The calculation of biological efficacy in field and laboratory experiments was determined according to the W.S.Abbot formula, which takes into account the control variant. The obtained results were processed mathematically and statistically using the methods of VI Terekhov, SP Afonin and BA Dospekhov [4,7].

RESEARCH RESULTS. In the conditions of the republic there is no scientifically based technology for the use of chemicals against oriental fruit, which is harmful to fruit trees, which meets modern requirements [9].

The cost-effectiveness of chemicals when used in orchards can vary depending on the nature of their exposure, the duration of application of the drugs, climatic conditions and the aggregates used. Not all chemicals used also give the expected effect. Although some drugs have high biological effectiveness, they have a negative impact on the environment and natural entomofauna. Orchards are also rich in aphids, thrips, spiders, thyme and other species of fruit trees. Therefore, it is advisable to use chemicals designed to control complex pests [6,5].

At the same time it is advisable to carry out control measures against oriental fruit using insecticides. For this purpose, in 2018-2020, in our research in the orchards of Kibray district of Tashkent region, we tested drugs with insectoacaricidal properties for complex pests of oriental fruit. Of the drugs in the experiment: Alfamilin, 17% s.k. - 0.15 l / ha, Bagira, 20% em.k - 0.3 l / ha, Tadj, 10% e.k. - 3 times during the season at the rate of 0.15 l / ha yellow: sprayed once after the general flowering and at intervals of 18–22 days. Each variant in the experiment was performed on 3 returns (Table 1).

Table 1. Biological effectiveness of insecticides against oriental peaches
(Qibray district of Tashkent region, 2018-2020).

Preparation	Consumption rate, l / ha	Number of processes	Of fruits damage,%		Biological efficiency,%
			Control (unprocessed)	experience	
Alfamilin, 17% s.k.	0,15	3	52,4	2,3	88,6
Bagira, 20% s.e.k.	0,2	3	64,6	1,6	95,3
Tadj, 10% e.k.	0,15	3	55,1	2,0	89,5
EKF05 2,8					

According to the results obtained after ripening of fruits in the field sprayed with insecticides, it was found that in the variant where Alfamilin was used, the infestation of fruits with oriental worms was 2.3% (control 52.4%), in the variant using Bagira 1.6% (control 64, 6%), Taj was 2.0% (55.1% in the control) in the variant used. The biological efficiency of the drugs in the test was 88.6-95.3%, respectively.

CONCLUSION. Concluding from our scientific research, it can be said that to protect peach fruits from oriental fruit at least 3 times during the season: after gross flowering and at intervals of 18-22 days Alfamilin, 17% s.c. - 0.15 l / ha, Bagira, 20% s.e.k. - 0.2 l / ha, Tadj, 10% e.k. - Chemical treatment at the rate of 0.15 l / ha gives high efficiency and effectively protects orchards from the main pest oriental fruit.

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ON THE IMPORTANCE OF PROVIDING QUALITY INDICATORS IN THE PRODUCTION OF DEMANDED AND COMPETITIVE PRODUCTS

Abstract: *In the article, the authors focus the attention of manufacturers when choosing an assortment policy on the need to ensure quality indicators for their competitive and demanded products.*

Key words: *assortment, assortment policy, quality, profitability, profit, market, demand, demand, competitiveness.*

Language: *English*

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Introduction

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In modern conditions, with the general saturation of the market with consumer goods, the most acute problem is ensuring that the quality of the offered products meets consumer requirements. Among consumer requirements for footwear, the first place in terms of importance is nominated by the majority of the ergonomic group, defined by the concept of "comfort".

Certification tests of footwear are based on the current regulatory documentation, which sets out technical requirements, methods of its testing to determine the main quality indicators. In support of the above, below are the quality indicators and test methods for their determination.

What is the Russian Quality Program? From the advertising materials of the organization it follows that it "identifies high quality products and services on the Russian market and informs consumers about them; gives the company the opportunity to prove to consumers that the quality of its products or services is significantly higher than the standard level; enables government bodies to purchase high quality products and services. The "Russian Quality" mark, the right to use of which the enterprise receives upon successful participation in the Program, becomes the most authoritative evidence of this quality. Based on the results of participation in the Program, an enterprise

can present to interested parties as documents of high quality, not only a diploma, but also an assessment program and a report on its results.

The results of successful participation in the Program can be used in marketing and advertising campaigns, when demonstrating their capabilities to clients and customers at exhibitions and fairs, as well as when participating in competitive bidding and tenders. In order to inform about products with the "Russian Quality" mark and the enterprises-diploma winners of the Program, it is envisaged:

- holding all-Russian, regional and industry presentations
- products awarded the Russian quality mark;
- publication of all-Russian and industry-specific catalogs "Russian Quality";
- release of the Bulletin of the Russian Quality Program;
- placement on preferential terms of information about the enterprise-diploma winner and products on the website of the Program www...roskachestvo...ru and other Internet resources;
- participation on preferential terms of the program diplomas in exhibitions and fairs held with the participation of the All-Russian Organization for Quality;
- publications in industry, regional and all-Russian mass media ".

In accordance with the documents: "Regulations on the program" Russian quality "CEP VOK No. RK-01-02 and" Regulations on quality assessment programs used in the program "Russian quality" CEP VOK No. RK-06-02 developed the Working program No. RK- PR-TsEP-47-02-05, which included items:

- evaluated products;
- the nomenclature of the evaluated indicators of product quality, their permissible and optimal values and points corresponding to them;
- determination of the actual values of quality indicators;
- assessment of the production ability to ensure the stability of product quality;
- conclusion on the conformity of product quality to the highest level.

The quality of the declared models of everyday men's shoes was assessed in four groups: functional indicators (1), characterizing the durability of products; ergonomic indicators (2); aesthetic indicators (3); indicators of the quality of packaging and labeling (4).

In the first group, there are singular indicators such as:

- strength of thread fastenings of shoe upper blanks, N / cm at one line;
- the strength of the thread fasteners of the shoe upper blanks, N / cm with two lines;

sole attachment strength, N / cm;

- residual deformation of the toe cap, mm;
- residual deformation of the backdrop, mm;

in the second group:

- half-pair weight, g; flexibility of footwear, N / cm;
- thermal resistance of the upper of the shoe, m2 0C / W (for winter shoes);
- thermal resistance of the bottom of the shoe, m2 0C / W (for winter shoes);
- in the third: silhouette, points;
- appearance, points;
- interior decoration, points;

in the fourth:

- quality of marking;
- quality of packaging, points.

The main part

The permissible values of indicators, as well as their actual list, are established in accordance with GOST, indicated in table 1.

Table 1. Quality indicators and test methods for their determination

Quality indicator name	Test Method (GOST, norm and etc.)
1	2
1. Shoes. Method for determining the total and permanent deformation of the toe and heel	GOST 9135-73
2. Shoes. Method for determining the attachment strength of soles in shoes by chemical methods of attachment	GOST 9292–82
3. Shoes. Method for determining the strength of the thread seams of the connection of upper parts	GOST 9290–76
4. Shoes. Method for determining flexibility	GOST 9718–88
5. Shoes. Method for determining the strength of fastening parts of the bottom	GOST 9134–78

6. Shoes. Mass determination method	GOST 28735-90
7. Shoes. Method for determining the total thermal resistance of shoes	GOST 12.4.104–81
8. Shoes. Acceptance rules	GOST 9289–78
9. Shoes. Marking, packaging, transportation and storage	GOST 7296–81 GOST 16534–71
10. Shoes. Determination of grade	GOST 28371–89
11. The system of quality indicators. Footwear. Nomenclature of indicators	GOST 4.12–81
12. Shoes. Terms and Definitions	GOST 23251–83
13. Shoes. Methods for determining linear dimensions	GOST 9133–78
14. Shoe pads. Technical conditions	GOST 3927–88
15. Workshop on the technology of leather goods. Ed. V.L. Rayackas. M., 1981.	
16. System of product development and launching into production. Light industry products. Basic Provisions	GOST15.007–88
17. Casual footwear. Technical conditions	GOST 26167–84
18. Shoes. Strength standards	GOST 21463–87
19. Directory of the shoemaker. Technology. M.: Legprombytizdat, 1989.	

Let's turn to the second group of indicators. Obviously, such indicators do not assess the complex characteristics of footwear (comfort), which interests the consumer, most of which are established empirically. Comfort depends on numerous factors, but the most important are the design characteristics of the shoe models and the properties of the materials used. The prospect of shoe quality assessment and the development of shoe quality assessment methods should be linked to the use of CAD. Thus, the physical and mechanical properties of materials determine the forceful interaction of the foot with the shoe, protect the foot from the external environment and determine its microclimate. In this formulation of the question, the method of automated assessment of the comfort of shoes by indicators of the physical and mechanical properties of packages of upper materials, developed at the Russian State University named after A.N. Kosygin.

The technique is implemented within the framework of the complex, the software scheme of which is shown in Figure 1.

Therefore, along with the identified groups of indicators, it seems appropriate to include one more group "Comfort", the criteria of which, in our opinion, are the temperature and relative humidity of the inner space, the pressure of the shoe upper on the foot. Factors affecting the magnitude of shoe pressure on the foot are elongation, relative humidity and stiffness of material packages, for which we have established variation levels and rational values based on the operating conditions and production of products.

The created instrumental system implements the methods of automated assessment of the comfort of shoes and the formation of the most rational upper packages in terms of the physical and mechanical properties of materials and an express method for selecting a shoe design of a certain level of quality and purpose. The practical significance of the system lies in the reduction of the subjective factor in the selection, collection and ordering.

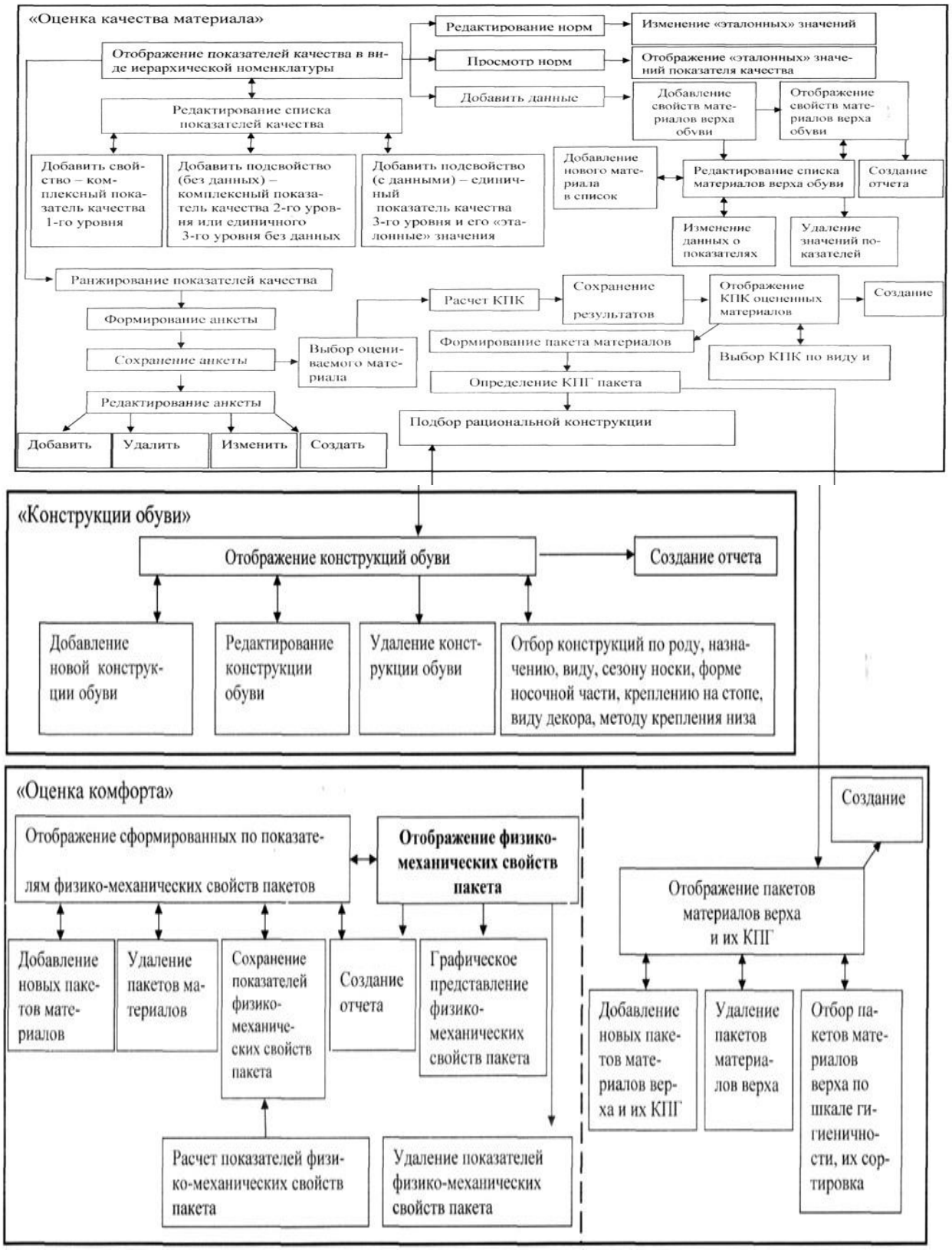

Fig. 1. The scheme of the software empirical indicators for assessing the quality of products

Marketers agree that consumers prioritize product quality as their top priority. Market monitoring confirms a strong tradition of demand for quality goods. But not everything is so simple and obvious.

The crux of the matter is that statistics are a pure operator and statistical data, therefore, are in absolute dependence on the chosen conceptual description of the process. Statistical results are always correct because are obtained by using a proven mathematical apparatus, but correctness and truth are "two big differences."

For “correct” to be “true”, it is necessary to verify the entire chain of logical and mathematical actions for correctness. Certification is required not only for physical and software products. Sending knowledge must also be certified, otherwise defects in initial judgments will migrate into inferential knowledge. And no technology will correct the inherent disadvantage.

In the ideology of production, in particular the production of goods for direct consumption, the concept of "quality" should be a system-forming factor. We foresee the objection: “What is the use of quality if the quality criteria limit the quantity and the assortment of goods will suffer from the priority of quality characteristics, the price will rise?”, And we have an answer to our opponents.

If the quality of the product is not ensured, then no amount will correct the situation. It will be necessary either to agree with the obvious (for professionals) deception of the consumer, or to sacrifice professional competence and deliberately go to lower quality requirements, allowing an essentially low-quality product to enter the market. As for the assortment, its dependence on product quality requirements is relatively arbitrary and mediated. The assortment is "tied" to the technical state of production, technology and professionalism of developers.

The more visible the features of the civilized market, the more urgent is the issue of quality. Moreover, the problem of quality has moved from the sphere of theoretical relevance to the level of practical relevance. Let's try to substantiate this shift in relation to Russian reality.

The positive shift towards an increase in the purchasing power of Russians over the past 5 years is undeniable. Official inflation statistics are clearly crafty, but even having increased it by a factor of 0.5 and obtained a real average annual rate of 15–20%, we will have no choice but to state an increase in the welfare of most of our fellow citizens in the context of a certain growth of the economy as a whole. The intensity of the dynamics is not high, but the fact itself is obvious.

But how fair is it to talk about "welfare"? Money is just an exchange equivalent. Making more money doesn't necessarily make you heal better. The money should be exchanged for the required goods. And here the quality problem grows to its full extent. Having earned money, you can easily spend it "imperceptibly", i.e. to acquire not a product, but a "phantom of the product"

"Product phantom" is a non-specific concept for a special system of knowledge. Nevertheless, it is necessary to get used to it as a theoretical expression of the realities of an undeveloped commodity market.

Profiting from the "white" and "gray" "spots" of the ideology of quality, which is in an extremely neglected state, the "black" manufacturers of substandard consumer goods, together with sympathetic service officials responsible for the quality of products, flooded the market with substandard products.

The international quality control system ISO-9000 is more reminiscent of the newest phenomenon of the famous Potemkin villages. Only what is clearly spelled out can be effectively controlled. Any incomplete description is a hole for semi-legal penetration into the fields of hunting for a consumer.

ISO-9000 should be used not as a management tool, but as a tool for preventing quality violations. Thus, the circle is closed, because violation presupposes quality, and it is quality that we did not define as it should.

In the system of special knowledge, which is the ideology of production, "quality" is replaced by a "state of quality", which in turn is reduced to quantitative parameters.

Discrete expressions give quantitative characteristics - this is how another derived concept appears. Only this time not from the fundamental concept of "quality", but from its derivative - from the concept of "state of quality".

The militant activity of striving to describe quality in terms of quantity is surprising. Since the time of Hegel, who argued that quality is the main thing in the definition of a phenomenon, since quality is that, losing that, it ceases to be itself, almost two hundred years have passed. It would be time to learn a simple truth: quality is determined not through quantity, but through properties. With the help of quantitative measurements, we need to determine the "measure" - "qualitative" and "state of quality" (the level of expression of quality).

Practice rarely corrects errors in theory, on the contrary, it usually hides them up to a certain point in development. Defects of theory appear in a crude form in difficult socio-economic circumstances, in times of political uncertainty.

It is no coincidence that such a peculiar time is "convenient" for the flourishing of theoretical uncertainty. The state, entangled in numerous problems, deviates from control over economic processes, counting on a market designed to put everything in its place. The market has its own laws of functioning. The market adapts the theory to its own interests. It does not obey the rules grounded in theory, but seeks to adjust these rules to the way of relations with the consumer that is beneficial for him.

Promotional claim: “the customer is always right” is a lie! Only the legal order that determines the

nature of relations in the market for goods is always right. Themselves, these relations are built depending on the interpretation of the quality of goods and the correspondence of quality to price. Whatever one may say, everything is one, you will have to revolve around the problem of quality and its two aspects of expression: theoretical and practical.

In theoretical terms, one should strictly adhere to the fundamental postulate: quality is an association of properties that characterize the structural and functional uniqueness not of a single phenomenon, but of a certain set of phenomena united by the general laws of formation and change, therefore, quality can be determined only through the presence of corresponding properties. In view of the fact that of the qualitative properties only aesthetic (design) are available for direct assessment, a comprehensive certification of the product is required, more precisely, the product presented for transfer to the market.

Moreover, the study of the product for quality that meets the interests of the consumer should not be reduced to technical and material science expertise. A social, psychological, medical and regional studies resume is required.

Consider this statement using shoes as an example. Shoes, along with clothing, are goods that depend on national and historical characteristics. Can you recommend shoes for sale on the market that do not take into account the specifics of the geographic, climatic and national mentality? Apparently, it is possible to admit such products to the market, but only in limited quantities, for variety and expansion of consumer choice. And the point here is not "leavened patriotism."

Nature, nutrition, traditions affect the anthropometric characteristics of the population: configuration and proportions of the foot, lower leg, etc. Shoes designed without taking into account national characteristics - anatomical, physiological, will inevitably contribute to the development of leg deformities. Shoes will lose their presentation faster, the consumer is constantly experiencing discomfort, which (taking into account that on average in Russia shoes are worn, regardless of recommendations, until they are physically outdated) may be accompanied by an exacerbation of chronic diseases, or their acquisition.

Already now, China has “thrown” such a number of shoes on the market that the entire population of the Earth (≈ 6.5 billion people) can be “a la Chine”. Chinese manufacturers are guided by their own interests: to create jobs in the country and ensure product sales. They offer shoes that are designed and made without taking into account the national specifics of the consumer countries. Today, Chinese footwear is a serious competitor not only to our domestic manufacturer, but also to such countries - legislators of footwear fashion as Italy, France, USA, Czech Republic, etc.

For the fifth consecutive year, the Italian footwear sector has seen a significant decline in production. The activity of this segment of the domestic market is declining, and the demand for Italian products in the foreign and domestic markets is low. Given the excess of the euro over the dollar, the competition between Chinese goods is becoming even more serious in the national Italian market, especially after the abolition of sales quotas from January 1, 2017. The volume of footwear production in 2020 decreased by 12.9% compared to the same period last year. of the year. In terms of price differentials, the supply of products declined in absolute prices by about 9.3%. In 2017–2020 Italian production fell by almost one and a half times to 281 million pairs, which had a negative impact on the level of employment. The volume of production of leather shoes decreased by 8.9%, slippers - by 23%, rubber shoes - by 32%, canvas shoes - by 40%. On the contrary, Italy consistently imports about 150 million pairs of Chinese shoes annually.

The Italian manufacturer is losing its position in the international markets of the USA, Germany and France. The growth of the euro against the dollar, as well as the redistribution of the market in favor of the Asian manufacturer, have a negative effect on the Italian manufacturer. According to the Italian Chamber of Commerce, more than 600 companies, including footwear manufacturers, closed in the first five months of 2020. The only market segment in which Italian footwear manufacturers hold a leading position is the production of luxury fashion footwear for the international markets.

Thus, over the past 10 years, the number of footwear manufacturing enterprises in the Czech Republic has decreased from 120 to 47. But this number may also decrease due to the lifting of restrictions on the import of footwear from China. If at the end of the twentieth century. Czech shoe factories produced about 70 million pairs of shoes, while last year this number was approximately 5.5 million pairs. In 2020, about 80 million pairs of shoes were imported to the Czech Republic, of which 55 million were from Chinese manufacturers. The average purchase price of one pair of Chinese footwear is only 54 kroons - a cost that is unrealistic for Czech companies. “... Nobody buys our products, because we are not able to compete with Asian products in terms of cost, despite the fact that our shoes are much better in quality. Unfortunately, the Czech buyer prefers cheaper goods, although he knows that they will last much less in time. than our quality footwear, ”says Lubomir Chlumsky, a member of the Czech Shoe Industry Association, whose company has been manufacturing and selling footwear for children, women and men since 1998. As a result, Czech manufacturers are losing positions in their own market. The situation is complicated by the fact that from January 1, 2021, the European Union,

in agreement with China and the World Trade Organization, lifted restrictions on the import of Chinese shoes. They can be returned only if the entire industry is under threat, and on a European scale. The European Union, in agreement with China and the World Trade Organization, lifted restrictions on the import of Chinese shoes. They can be returned only if the entire industry is under threat, and on a European scale. The European Union, in agreement with China and the World Trade Organization, lifted restrictions on the import of Chinese shoes. They can be returned only if the entire industry is under threat, and on a European scale.

US Commerce Secretary Carlos Gutierrez highlights the need to take effective measures to curb job cuts in a number of US industries as one of the most important issues, which is also caused by the growing competition of Chinese goods in the US.

But we still have to go the way traversed by Western countries by shoe manufacturers. Russia's accession to the WTO has opened market boundaries for many others who want to sell low-quality goods as soon as possible. Moreover, today Russia, in contrast to its western neighbors, faces the fatal problem of the expansion of "gray" imports, which has arisen due to imperfect customs legislation and the spontaneous development of "shuttle trade". As Anatoly Kvashnin, the plenipotentiary of the President of the Russian Federation in the Siberian Federal District, said in one of his interviews, the annual volume of "gray imports of Chinese goods" to Russia reaches $ 6 billion. But, even in a civilized market, the admission of footwear to the domestic market is based on positive conclusions about the quality of raw materials, related materials,

The peculiarities of the national attitude towards shoes are quantifiable. Products can be easily measured for compliance with certain requirements, but it must be borne in mind that the property itself is assessed only by the formula "is or not." Having recognized the property as existing, the expert has the right to proceed to the next stage - to measuring the intensity of its existence, in order to know how stable and expressed this property is.

The absence of at least one of the quality properties of the product, or the lack of expression mean only one thing - the product should not be a commodity. In exceptional cases, it is deemed to be conditionally admitted for sale on the national market.

The occupation of the national market by foreign footwear manufacturers undermines the development of the corresponding branch of the domestic economy, historically adapted to the specific conditions of national development and the peculiarities of anthropometric measurements.

The situation is aggravated by the fact that Russia, which has been recognized as a country with a market economy, has no right to disturb the order in the relationship between political and market structures. Unilateral actions of the state in protecting its interests can be qualified as a violation of the achieved status, cause economic and other sanctions on the world market. The ousting of a foreign competitor from the national market should be carried out in accordance with the recommendations and traditions of the world community.

Chinese, Turkish, partly Eastern European, footwear manufacturers flooded our market and occupied a stable position in it, thanks to consumer demand for their products.

A buyer with limited financial resources is attracted by price, design, advertising support, assortment, seller's interest, cultural service. A consumer who is not experienced in professional "secrets" judges quality by its appearance and service packaging. The very same sales service skillfully translates arrows from quality characteristics to outwardly winning properties. Quality, as an association of the most important properties of a product, is “torn apart”. Of all the properties that form a qualitative association by their combination, only the property is displayed that is beneficial to the seller, since it is truly a representation at the appropriate level of consumer interest.

Sequestering quality by replacing it with a simplified understanding is the most common market trick. The unsatisfactory state of mass consumer culture, the elimination of the controlling state structures, their lack of initiative, and somewhere a direct interest in preserving the current disorder allow manipulating public consciousness, controlling the actions of buyers.

The occupation of the Russian market is, of course, a temporary phenomenon, caused by economic stagnation, limited effective demand of the bulk of the population, and the lack of an effective and consistent policy in the development of national production. However, the obvious conditionality of the situation is not particularly comforting. In Russia they like to joke: there is nothing more permanent than something temporary. To prevent a temporary phenomenon from "stagnating", it is necessary to change the conditions that gave rise to it. Opportunities are available. First of all, it is necessary to understand the theory, which is guided in practical actions.

Underestimation of theory naturally leads to miscalculations in practice. In our case, this underestimation seems to be planned. Otherwise, how to explain that with the generally accepted definition of quality through the association of the fundamental properties of an object, only "horns and legs" remain from the quality criterion in regulatory documents, i.e. separate signs.

To some extent, the theory of quality itself is “to blame” for the theoretical uncertainty and one-sidedness. The quality of natural phenomena differs from the quality of artificially created products.

Natural phenomena are of natural origin, and all their properties are spontaneous. The quality of natural phenomena does not include their relationship to human needs. It makes no sense to divide mushrooms into edible and poisonous by quality. The quality of mushrooms is different, and this is another that determines their place in biological taxonomy. Trees are conventionally divided into beautiful and ugly, valuable and weedy. This opposition has nothing to do with quality. Artificial products, on the other hand, are characterized primarily by their conformity to our needs. Consumer properties are included in the quality system of artificial products, as well as natural ones. And they don't just turn on,

The quality of footwear is due to the totality of consumer characteristics. It is not essential, in principle, from what material the shoes are sewn. The main thing is that the properties of this material ensure the functional demand for footwear by the consumer.

The buyer does not care whether the shoes are made of natural or artificial material, given the balance of prices. It is important for him that his requirements for her are guaranteed.

The domestic practice of assessing the quality of footwear (and not only footwear) turns the theory inside out, trying to focus on natural characteristics. Something Russian ideologues of quality will do when they are taken seriously by animal rights activists, as happened in Western Europe, in particular in Great Britain.

The most tragicomic thing is that the nature of raw materials is really not such a fundamental issue if we develop chemical and physical technologies. Analogues of natural raw materials are the realities of today's production and are far from being a fantasy. But the misadventures of quality are by no means limited to the problem of raw materials. Other aspects of production are no less relevant: taking into account national, age, natural and climatic characteristics when determining the quality and conditions for admitting products to the market.

Unfortunately, today the domestic contribution to the development of policies aimed at improving the quality of footwear, and, in fact, at ensuring consumer rights, is extremely incomprehensible. One gets the impression of complete detachment in the aspiration of producers from the interests of the country that gave them citizenship.

According to the theory of marginal utility and consumer choice, approved by international practice, the buyer prefers the product that most closely matches his personal idea of utility within the limits of his financial capabilities. The task of the state is to create the necessary legislative prerequisites for protecting the interests of its citizens and to develop a reliable control mechanism.

At the same time, the state is obliged to understand that the consciousness of consumers, as a rule, is amateurish. The consumer does not have enough professional culture for comprehensive orientation in terms of choosing a behavior option. Therefore, the state or those organizations to which the right of protection has been delegated must provide consumers with a sufficient amount of information about the consumer properties of the product.

Instead, the buyer is offered, at best, a minimum set of material science and technological characteristics, which is a gross violation of consumer rights. The product characteristic should include, along with the static data, the details of the dynamic (behavioral) plan. For example, describe the properties of a product in the same way as reputable pharmaceutical companies do, reporting the main properties, indications, contraindications, age recommendations, functional warnings, methods of use, storage conditions, and the recommended service life.

There is already experience with this approach in other industries. The level of development of information technologies allows today to create entire communication systems for product support, built on the basis of the CALS concept, which is widely used to improve management efficiency and reduce the cost of information interaction in the processes of ordering, production, supply and operation of goods. The basis for using this concept is the natural need for organizing a "single information space" that ensures the rapid exchange of data between manufacturers and consumers throughout the entire "life cycle" of a product: from marketing to disposal.

We do not see anything of the kind in actions aimed at improving the quality of footwear production. There is not even a desire to change the informational situation that developed at a time when the assortment and quantity of goods were limited. To confirm what has been said, let us turn to the conclusions of specialists: “When certifying serially produced products by experts of the OS (certification body - author's note), the state of production is assessed directly at the enterprise or according to the documents submitted (in absentia (!) - author) (technical description of a specific product type, flow diagram, material, components with sanitary and epidemiological conclusions for component materials and footwear, which confirm the safety for consumer health, basic and auxiliary materials used in footwear). In accordance with the program drawn up by an expert during the certification of footwear in the IL (testing laboratory - author's note), such indications are determined as: the strength of the sole attachment; fastening strength of the heel; the strength of the thread seams of the shoe upper blank. When certifying children's shoes, the construction of the shoe upper and the hygienic indicators of the materials used are additionally evaluated for compliance with the norms of San PiN No. 42-125-439087. " “To work in the lower part of the range (prices - author's note), the

company must produce footwear models that are affordable because of the low price and have basically only a basic set in accordance with the national standard." the strength of the heel attachment; the strength of the thread seams of the shoe upper blank. When certifying children's footwear, the construction of the upper part of the footwear and the hygienic indicators of the materials used are additionally evaluated for compliance with the norms of San PiN No. 42-125-439087. " "To work in the lower part of the range (prices - author's note), the company must produce footwear models that are affordable because of the low price and have basically only a basic set in accordance with the national standard." fastening strength of the heel; the strength of the thread seams of the shoe upper blank. When certifying children's footwear, the construction of the upper part of the footwear and the hygienic indicators of the materials used are additionally evaluated for compliance with the norms of San PiN No. 42-125-439087. " "To work in the lower part of the range (prices - author's note), the company must produce footwear models that are affordable because of the low price and have basically only a basic set in accordance with the national standard."

What are the conclusions? First, the industry still relies on an outdated position - the simplest and only necessary: do not harm the health of the consumer. The shoe manufacturers and their supervisors learned the first commandment of Hippocrates firmly, but did not advance further. In this situation, it is unlikely that it will be possible to contain the siege of competitors for a long time. Secondly, basic properties should not be equated with qualities. The properties of the properties can be only in the production cycle due to its differentiation into technological operations. But in this case, it is advisable to put the quality in quotation marks, emphasizing the conventionality of using the term. Otherwise, we will begin to operate with philosophical and scientific concepts, which will necessarily lead to a distortion of practical characteristics. Quality is an association of certain properties, therefore, it is impossible to pull out the properties that form the association as production needs and pass them off as quality. Thirdly, it is high time to define the basic properties conventionally, not being limited to the suggestions of hygienists and epidemiologists. A lot of valuable information can be gleaned from the research of gerontologists, geriatricians, regional experts, valeologists, and pediatricians. Fourthly, how long will there be practically no aesthetic properties in the basic characteristics, even if in a conspiratorial form.

Satisfaction with the actual replacement of Gosstandards with national standards is also not entirely clear. The fact that we have adopted international terminology in this component of the ideology of quality is of little use. Now, if our production and ideological positions were equal to those of Europe, then we could be happy. And so the chaos only intensifies.

In the absence of a corporate culture and traditions, the firms set free will engage in arbitrariness. Government agencies signed their own powerlessness to manage the development of the market in a civilized manner and recalled the American fairy tale that the market will arrange and organize everything on its own.

The inefficiency of the system of state control over quality is not in its status, but in its functioning. The uncleanliness and lack of professionalism of officials do not allow state structures to function fully. According to the official data of the Federal Agency for Technical Regulation and Metrology, on average there are 2% of certification refusals per year. While more than 30% of products are rejected directly in the trade.

In the European Union, ≈ 4% of the product range is subject to mandatory certification, not because European officials are liberals. The reason is hidden in the orders and traditions of production itself, civilized relations in the market, the age of which exceeds the total time of the Romanov dynasty and Soviet power. Haste inevitably comes with costs. To move along with all the general formation, it is not enough to dress, put on shoes, like everyone else, and stand in formation.

As long as the authorities and producers will portray market relations, the mass consumer will have to pay, because the costs will fall on his shoulders. Exclusive buyers are protected from the vicissitudes of the Russian market by a truly free choice. They purchase products directly from reputable manufacturers. Officials are ready to go to great lengths to be among the exclusive buyers. Firms are probably of the same opinion and are willing to pay officials for their freedom of action. The situation cannot be called otherwise than creeping state anarchism. Something early on, the state began to degenerate.

According to Russian official regulations, until recently 70–80% of the product range require state quality certification. Critics reject this practice and suggest borrowing from Western European experience.

They are not embarrassed by the fact that the share of illegal and semi-legal business in Russia is estimated at 40-60%; even now, if necessary, to centrally check for quality 70-80% of the range of goods, less than 40% of certified goods are already on the market. Critics defend the interests of not clear which producers. Who will defend consumer rights? Officials, or maybe judges, are only independent by definition. Only human rights public organizations remain, which exist today and will not exist tomorrow.

The motives for improving quality are directly related to economic factors. This means that quality management has the ultimate goal of achieving

economic benefits, i.e. focused on making a profit for the enterprise.

In modern conditions, the economically successful activity of a commodity producer is ensured by the release of products that meet the following requirements:

- fully meets the needs of consumers;
- meets the requirements of safety and environmental protection;
- meets the current standards and specifications;
- offered to the consumer at competitive prices;
- is economically viable for production.

Management of the competitiveness of footwear at shoe enterprises in the Southern and North Caucasian Federal Districts (Southern Federal District and North Caucasian Federal District) is associated with frequent changes in the assortment and the increased influence of regional socio-economic factors.

Increasing the competitiveness of footwear is possible only through the development of new models based on marketing information and in-depth study of the preferences of specific groups of buyers, accelerating the process of changing the assortment while maintaining or increasing the efficiency of the production system.

Footwear manufacturers on the territory of the Southern Federal District and the North Caucasus Federal District occupy a significant part of the domestic footwear production, namely, more than 30%.

Despite the large share in the production of footwear in the South and North Caucasian Federal Districts, the demand for footwear is satisfied only by 19.6%, the rest is imported from the near and far abroad. These imports are often contraband. It is the import of cheap footwear that is the most serious problem for domestic footwear enterprises.

Another problem for the enterprises of the Southern Federal District and the North Caucasus Federal District is the lack of high-quality raw materials and components for the production of footwear, as a result of which the products of footwear factories in the South of Russia lose the price competition of cheap imported footwear.

In addition, shoe companies in the Southern Federal District and the North Caucasus Federal District specialize mainly only in men's shoes. Moreover, they produce almost the same type of model in the same color scheme. Of course, labor costs for women's and men's shoes are not comparable. Therefore, women's footwear in the Southern Federal District and the North Caucasus Federal District is produced about 3%, children's footwear - 15%, and special footwear - 40%. Such a small volume of women's footwear production is due to the fact that competition on the women's footwear market is much sharper, and in this segment, footwear producers from the Southern Federal District immediately encounter Moscow-Chinese manufacturers, who today “hold” most of the women's footwear market. But, unfortunately, footwear producers do not pay attention to the fact that there is no footwear for elderly consumers in the women's footwear market, which is not dealt with by Chinese footwear manufacturers, i.e. there is a niche for manufacturers.

The situation with the production of children's footwear by the majority of shoe enterprises in the Southern Federal District and the North Caucasus Federal District remains more problematic, which is associated with the abolition of subsidies for its production from the Federal budget; imperfect taxation of children's assortment and the lack of the required volume and style of pads for its production. In the consumer market of the Southern Federal District and the North Caucasus Federal District, domestic manufacturers for children were ousted by foreign suppliers who can afford to transfer shoes for sale on the condition of payment after their actual sale. However, this product, for the most part, does not have conformity and hygiene certificates. Imported shoes are imported in the most "popular", "average" sizes and are not intended for children,

Providing children with correctly selected, physiologically sound footwear is one of the main tasks for domestic manufacturers, including enterprises of the Southern Federal District, etc.

The situation in the Southern Federal District and the North Caucasus Federal District calls for the development of a set of measures of regional significance aimed at improving the socio - economic situation in the Southern Federal District and the North Caucasus Federal District. The growth in purchasing power for high-quality footwear in the mid-price consumer segment determines the economic feasibility of designing shoe industry enterprises. Organization of the production of footwear in a wide range will make it possible to turn the subsidized regions of the Southern Federal District and the North Caucasus Federal District into self-supporting ones, increasing the level of income of the population; stimulates the creation of new jobs; will ensure the development of small business and the maintenance of legal private entrepreneurial activity; will create the basis for getting out of the shadow of a significant part of the turnover of the real sector of the economy in order to form the regional budget, since

The main stage of the restructuring should be an increase in the technical level of production at shoe factories and the competitiveness of products, ensuring the introduction of innovative products, high technologies, replacing certain types of imported footwear with domestic ones; its entry into the Russian and world markets. This requires measures to

modernize and reconstruct existing shoe production and create new ones, strengthen control and introduce modern quality management systems; certification of products and production facilities themselves, development of a dealer and distribution network; pursuing an active marketing policy, expanding the practice of leasing schemes for innovative activities.

To revive the production of children's shoes in the Southern Federal District and the North Caucasus Federal District, first of all, organizational and financial support is needed for shoe enterprises at the level of the government of the Russian Federation, as well as regional and local bodies, namely:

- in the form of VAT reduction;
- granting an indefinite loan;
- term loans at preferential interest with deferred payments for 3 or more years;
- in the form of supporting shoe enterprises in providing high-quality and affordable shoe materials (natural, artificial and textile).

In addition, enterprises should be allowed to direct their balance sheet profit to replenish working capital to provide them with high-quality and affordable shoe materials for the production of children's shoes on the conditions provided for financing construction, i.e. tax-free. A government order for children's footwear is also possible with an advance payment.

Local authorities need to take a differentiated approach to establishing the structure and size of local taxes, i.e. reduce their value in the production of children's shoes. Particular attention should be paid to creating the opportunity to purchase footwear for large and low-income families through targeted compensation, the organization of special departments, sale at discounted prices, on credit and payment in installments.

As the world experience shows, leadership in the competitive struggle is achieved by the one who is most competent in the assortment policy, is fluent in the methods of its implementation and can manage it as efficiently as possible.

The forecast of the trend in the development of the assortment should show such a trajectory of the development of the process, which makes it possible to ensure the achievement of the planned conformity of the product supply by the enterprise to the changing assortment structure of demand in the market in the future. The formation of a product range based on planning is a continuous process that continues throughout the entire life cycle of a product, from the moment the idea of creating it was conceived and ending with the withdrawal from the product program.

To ensure the competitiveness of the products of shoe enterprises in the Southern Federal District and the North Caucasus Federal District from the standpoint of their quality and demand, it is necessary to transform the scattered light industry enterprises in these regions into a dynamic competitive shoe cluster.

An industrial cluster is a group of geographically neighboring and interacting integrally interacting companies and related organizations operating in a specific industry (diversified) sphere and complementing each other.

In the Southern Federal District and the North Caucasus Federal District, there are all the necessary conditions for creating a shoe cluster:

- educational institutions have survived and are functioning, which continue to train highly qualified personnel not only for shoe enterprises, but also for related industries;
- the regions of the Southern Federal District and the North Caucasus Federal District are characterized by the presence of a large number of unemployed people (unemployed), the percentage of unemployed among women is especially high, which requires the creation of new jobs, to reduce social tension in these regions;
- the possibility of producing shoes in a wide range, not only by type, but also by fastening methods, including for children, taking into account the national characteristics of these regions;
- the traditions of footwear producers that have developed in these regions are still alive, where 35% of all footwear made in Russia in 2007 is still produced;
- geographical and transport proximity to Western Europe, where shoe companies are faced with an even tougher choice: moving production to China, India, Taiwan or to Eastern Europe. As a result, there are significant chances for investment and technology partnerships within the cluster with

Western European footwear manufacturers;

- positive experience in the development of Gloria Jeans: 12 factories producing 20 million jeans annually under the Gloria Jeans and Gee Jay brands. Leadership of a Russian company in the CIS market in a non-traditional niche for the Russian light industry - the denim segment;
- the potential for the development of the raw material base due to the implementation of the program for the development of the livestock of cattle and pigs;
- availability of local manufacturers of certain types of components (sole, heel), incl. corresponding to European standards.

The creation of a shoe cluster in the Southern Federal District will provide:

- increasing the efficiency and productivity of enterprises, more precise coordination in work;
- increased attention to achieving business goals and meeting customer expectations;

- achieving and maintaining the conformity of the quality of products and services of the enterprise to the established requirements of consumers;
- achieving customer satisfaction that the required quality is provided and maintained;
- maintaining the confidence of existing and potential customers in the capabilities of the enterprise;
- opening up new market opportunities and maintaining the conquered sales markets;
- certification and registration of quality systems;
- the ability to compete in this field with larger enterprises (i.e. the ability to offer or maintain reasonable prices).

Operating and newly created enterprises and firms in the South of Russia, using the proposed measures, will be able to produce competitive footwear in the required volume to meet the demand of various groups of the population with a certain level of income and social security.

There are two periods in the history of the quality problem. During the first, serious interest in what is quality was mainly limited to professional theory. Philosophers tried to define quality and its systemic position, however, and in numerous philosophical disputes the concept of "quality" was not among the main problems.

The actualization of the theory of quality turned out to depend on the degree of elaboration of the system-forming philosophical concept “being” in the context of the basic concepts derived from it, ie. those concepts that help to achieve the ascent from the extremely abstract statement of existence with the only distinguishing property of being, to exist, to a concrete understanding with an established content, thanks to answers to derived questions such as "What is everything from?", "How does everything exist? ? "," Is there non-being? "," In what system forms does being acquire its definiteness? "

Apparently, it was the last of the listed questions that brought philosophy to the “path” of that interpretation of quality, which “hooked” not only those who “equipped” a type of worldview that was fundamentally new in human history.

It is logical to assume that the problem of the substance of being, as the first step towards the theory of quality, hardly worried anyone outside the limited community of philosophers. Everything indicates that it was interesting to those whose gaze was turned to the Cosmos, to the depths of its construction, and the overwhelming majority of the philosophers' fellow countrymen were at the mercy of earthly problems.

For the masses, the variety and choice of goods were essentially not available. The plebeians demanded: "Bread and circuses!" The celebration of life in all its diversity was enjoyed by a small aristocracy. The problem of the quality of life was solved in accordance with the socio-cultural architecture of society. This problem undoubtedly took place, but could not mature into an actual one for society. The reason is simple - the lack of a sufficient level of mass demand for a quality product.

The problem of quality has acquired a scale of social relevance in the context of the transition to an economy of mass production, the democratization of social relations, the development of education, the availability of education and other cultural values. For the issue of quality to become one of the most important for society, it was necessary that it became relevant for the majority of those who form this society. Without the right to freedom and purchasing power to make choices, “quality” cannot be among the priorities of mass consciousness. Elite quality requests are developed in exclusive, unconventional theories, the main goal of which is not the achievement of the truth, but the satisfaction of the customers' needs.

Of course, they knew about the qualitative and quantitative characteristics of phenomena of natural and artificial origin long before these signs were actualized in social being and the consciousness reflecting its development, but, in the light of our research, the existence of knowledge of quality is de facto not so significant. The subject of the research is not awareness of quality, but the development of understanding of quality at different horizons of social history.

Development is a universal state of everything that exists, from the simplest material substrates to the highest forms of thinking. Both the quality and its quantitative expression improved, the dependence of the qualitatively quantitative changes became clear. The emphasis shifted from quantity to quality. Having proved its evolutionary strength, humanity switched to the principle: "take not by number, but by skill." The struggle for survival was replaced by the desire for a quality standard of living in a wide range of interpretations. The struggle for a decent quality life has begun.

As history shows, moving away from savagery and barbarism, laying the foundations of civilization, people have noticeably changed in the external forms of their manifestation, but civilization penetrates into the depths of human nature slowly and hard. Biological history has laid an active principle in human nature, combined with a developed ability of thinking, which is noticeably superior to all other types of reflection. But this whole superstructure was formed over a rather rigid animal frame, subordinated to the systemic goal of surviving in the struggle. The conditions of the struggle were transformed, making adjustments to the means and forms, but the natural base itself turned out to be very inertial.

The transition from natural egoism of the biological level to reasonably active egoism, despite the well-known civilizational means of cultivation, did not meet the forecasts of either romantics or realist

optimists. Civilization was marked by non-civilizational forms of relations in the movement towards a quality life, which further actualized the interest in quality. To be in line with the most important problems, quality had to appear in several functions: as a goal, as a means, as a condition for the development of all social subjects at all levels of life.

History for historians is events and participants, lined up in time sequence, a kind of chronology of significant facts of social and, in part, personal life. The philosopher and the non-historian specialist see their own interests in history. Philosophical and special interest in history is dictated by the need to understand the dialectics of the process in relation to human activity. The specialist seeks to discover in the past tendencies of ways to solve his problem, sometimes far from private.

Intuitively, even at the dawn of civilization, the term history (historia) was interpreted in the sense of the study of the sought process as opposed to the chronological description. The Ionians called the story, the story of the past, the logos (logos). Only after a while, already in the works of the founders of philosophy, the logos acquired its modern meaning - a thought, an idea. Both Herodotus and Thucydides understood history as a comprehension of the course of events of the past, necessary for "instruction in the way of life" to those who live in the present. Having passed the test of time, historicism has strengthened its position, has become the ideological base of cultural memory. ON THE. Berdyaev asserted: “From the first days of Creation ... man is in the historical, and the historical is in man. Immersion into the depths of time is immersion within oneself. "

The past dissolves in time, leaving us, along with the memory of the past, thoughts about the present and responsibility for the future. New is always relative. Goethe was right in saying that everything clever is already known, you just need to think it over again.

History is a treasure of ideas, a goldmine for a thinking person, no matter what he does. A different attitude to history is the cumulative result of the action of two causes: the first is the interpretation of time, the second is oneself in time. In the pre-Christian period stories time interpreted cyclically, introducing his as the sum of repeating cycles closed on themselves. With Christianity, the view of time has changed. Time appeared as an ascent toinfinite, dividing into finite terrestrial and infinite extraterrestrial. The opposition of cyclical and non-cyclical consideration of time is characteristic of theological theory. We are not interested in it, however, as well as the properties of time in their abstract form.

After Hegel and Karl Marx, it is not the idea of something in general that is actual, but immersion in a concrete-objective or concrete-historical state of what is the object of research. In the case of time, it is important to analyze not so much its universal properties, to determine where and how it moves. The important thing is that everything that exists in time can only take place if it conforms to these objective characteristics of time. To exist in time means to have the properties of time. This provision is universal both for the infinite variety of individual phenomena, and for the sign of being inherent in them, to which "quality" and "quantity" belong.

The standard understanding of the law of transition of quantitative changes into qualitative ones simplifies the look at their connection. Both G. Hegel and F. Engels were far from the meaning that was spread under the cover of the dialectical theory of development. Quantity does not go directly into quality. A new quality, a qualitative state, arises as a transition from the previous quality. In the changed quantitative conditions, the measure exhausts the stability reserve of functioning.

Measure - "qualitative quantity", it indicates the limits of the quantity change without significant consequences for the given quality of the phenomenon. The exit of the quantitative indicators necessary for the achieved quality beyond the limits of the measure inevitably entails qualitative transformations. Simultaneously with the loss of the previous quality, there is a process of birth from it, on its basis, a new quality commensurate with the changed quantity. Measure occupies a key position in the relationship between quality and quantity. On the other hand, quality experts prefer not to think seriously about measure, reducing the measure to quantitative standards. As if a measure is some kind of passing state of the "quality-quantity" system. It is necessary to clearly understand the objective and functional role of the measure in the management of both quality and quantity.

"Measure" does not belong to either quality or quantity. It expresses the systemic way of relations between quality and quantity, connects them. So, first: quantity and quality interact through measure, measure mediates their connection. What “benefit” will the practitioner gain from this opinion? Mass production, including its "zealous" variety, requires a measured characterization, otherwise a fairy tale story about a pot of porridge or a "seven-colored flower" has a chance of real continuation. Chinese consumer goods are a classic example of the destruction of dialectical unity in the "quantity-quality" system.

The market, in essence, is not able to be the controller of the measure that regulates relations in the "quantity - quality" system. With the acquisition of wholesale forms of development, the dominant position of financial capital and its natural generation - large-scale speculation and intermediation, the modern market opposed itself to production and lost interest in the state of production. The market, using the specifics of mass production, is satiated to the extent of its perversity and can afford to set the quality characteristics of goods.

The state behaves in the market like a kindergarten teacher. It puts the interests of the market above the interests of producers and the mass consumer. Under the "roof" of the general idea - the market pulls production, the market and the state are growing together. Quality - quantitative assessments are imprinted in the zone of subjective arbitrariness.

As long as the theory of quality is not systematically built, the theory of quality management will be based on empirical principles that are not able to cover the subject of management as a whole, and are relatively significant in the limited specifics of production. In the absence of anything better, they are used, extrapolating local experience to other conditions, and the effect is obtained due to the added adaptation measures, unfortunately, again, temporary and partial.

In the kaleidoscope of the history of changing quality management methods, a certain logic can be discerned. Life, on the other hand, requires not a “definite” logic, but logical certainty in the form of an integral, systemically grounded theory of quality as a methodological basis for constructing universal principles of the theory of quality management. The starting point here should be the idea of a systematic quality-quantity relationship within the framework of the measure of their coexistence.

Quantity helps the quality to fully unfold. A quality item can be created in one copy, but in order to reveal the quality potential of a manufacturer, a single copy (or work) is clearly not enough. The Faberge firm gained fame with the first branded product, but it became a brand due to subsequent successes in creating a collection.

An example of a systemic understanding of quality within the framework of a measure - dimensional certainty is small series, the release of collectible coins, medals. Quality is fixed within the limits of a quantitative value that serves as a measure of its expression. The point here is not only to provide preferential conditions for the vip consumer of products. The dependence of objective signs of quality on quantity is also significant. Production data n copies. Massive production is objectively associated with a decrease in product quality. Measure is a border service of quality, the transition to a measured quantity is a crime against quality.

A mass domestic manufacturer is hardly interested in the theory of quality. It is not relevant to him. If, nevertheless, by chance someone stumbles upon our reasoning, then, most likely, their naivety will smile. Trying with the help of theory to rebuild the Russian market, to give it a civilized look is classic quixoticism. First, it is necessary to organize the market space through political will, legislative initiatives and effective, and not fake control over the legalized order, to return the manufacturer of the goods to the market, removing an unmeasured number of intermediaries - speculators.

The real manufacturer is not interested in speculative operations. For sustainable development, he needs his own consumer, who, by the way, in turn, is not at all opposed to having his own definite and affordable producer within the framework of moral and legal relations.

A sense of national dignity is nurtured by history and existing reality. You can study at school according to the best history textbooks, but besides school history lessons, there is a current life that is more impressive than historical excursions. In the East they say: "How many times do not repeat halva, it will not be sweet in your mouth." Theory has always been considered the best practical guide, albeit in normalized conditions of activity. Going into an illegal and semi-legal position, the manufacturer is alienated from quality and, naturally, from the theory of quality. Further, quality is substituted by pseudo-quality, and the cost of advertising props grows.

Quality does involve serious costs, but it guarantees a stable market position. Working for quality, the manufacturer creates confidence in his own and national future. Correctly built understanding of quality guarantees the future even in the conditions of the domestic semi-market.

We will try, in the order of introduction to the theory of quality, to formulate practically significant fundamental provisions:

- Quality is not limited to the sum of properties important for the existence of a product; it is a peculiar combination of them, built on the basis of usually two features - more general and more specific. For instance. Shoes - "clothes for the feet", hat - "clothes for the head", mufflers - "clothes for the nose and neck", etc. Therefore, the focus should be on them.
- Quality allows for changes that do not lead to a loss of quality, but reduce or raising its consumer value; quality -a set of qualitative states that satisfy, to varying degrees, system-forming characteristics. "Backlash" of quality allows you to maneuver in the process of creating a product with a given quality, depending on the specific capabilities of the manufacturer and the consumer.
- Quality not exists outside quantity, they are - dialectical opposites, their opposition is valid only within the limits of unity, from which it follows that, creating quality, it is necessary to put quantitative expression both in relation to individual properties of the goods and the number of commercial products. A.K. Savrasov, finding himself in a difficult life situation, made several copies of his famous painting "The Rooks Have Arrived". As a rule, copyright copies have a high level of craftsmanship and are well paid for. The artist was also paid. When they asked P. Tretyakov: would he buy a copy of Savrasov if something happened to the original? Tretyakov's answer turned out to be categorically predictable - no! Quality requires not only skill but also inspiration.

Inspiration with repetitions fizzles out. Quality is always quantitative and quantity is always qualitative.

- Quality and quantity are linked by the most often forgotten measure. Meanwhile, when defining quality, one must simultaneously think about its dimension, both from the position of the market conjuncture, and from the point of view of the very signs of quality. “Quality” is concretized in the concept of “quality”. “Quality” is a concept that reflects the model image of a product, “quality” - defines the quantitative limits of reality and reasonableness of quality (physical and moral status of the product).

- Quality and the concept of quality are stable phenomena, but time changes them too. Originally, quality was equated with value. The quality criteria were the utility and the size of the object, the relationship. With the development of consciousness and practical possibilities, the foundations of comparison and choice were formed. Quality is relatively separate from quantity. Utility differentiation takes place, participation is rethought as quantitative features. The evolution of the understanding of quality is directly conditioned by the embodiment of creative potential in activity. The discrepancy in the intensity of advancement of individual skill, the interests of those who are called upon to clear the path of talent and mass consciousness complicates the understanding of quality and the process of quality management. Of particular importance is the concreteness of the interpretation of quality, in particular, such a basic feature of it as objectivity. The social theory of being is built on a natural-historical basis - its outline was laid by nature, and the historical drawing was created by man. In the natural environment, all signs, including such synthetic ones as quality, are products of a spontaneous movement. In society, every phenomenon passes through activity, and includes in its quality the mental and physical labor of a person. Determining the quality of phenomena created by human activity is impossible without sociocultural concretization. In this connection, two questions are being actualized: as quality - products of spontaneous movement. In society, every phenomenon passes through activity, and includes in its quality the mental and physical labor of a person. Determination of the quality of phenomena created by human activity is impossible without socio-cultural concretization. In this connection, two questions are being actualized: as quality - products of spontaneous movement. In society, every phenomenon passes through activity, and includes in its quality the mental and physical labor of a person. Determining the quality of phenomena created by human activity is impossible without sociocultural concretization. In this connection, two questions are being actualized:

- in what status and to what extent is consciousness included in what is traditionally called the quality of things (with more clarity services)?

The answers to both questions must be sought in the philosophical theory of alienation. The theory of alienation is not directly related to the theory of quality. It contains the keys to the methodology of constructing the theory of quality.

From the above considerations, it is clear that the authors are not idealists, but rather balancing on the verge of pessimism and optimism. They are critical of the modern, pragmatized approach of market liberals to scientific and philosophically sound theory. A light version of the theory, when a fragment torn from the general theory is turned into a theory itself and adjusted to the construction of a market perverted to please speculators, theoretical economists and suppliers of a high-quality surrogate for domestic counters suits. How long the Russian economy will maintain such a configuration is not given to us (and not only to us) to know, however, the world experience of economic development at various stages of economic relations indicates that transition periods are passing and over time, economic life comes to a normal state.

The trajectory of the process of alienation of human creativity into what exists outside of it must necessarily preserve and activate the ability to create. Unlike the being of nature, the being of a person is not substantial. It is not self-sufficient and can take place exclusively due to interchange, initially with nature, and subsequently with society, through which human relations to each other and interaction with nature are built. The tool that ensures the existence of a person is labor, the highest quality of labor is manifested in activity.

The quality of activity, on the one hand, is an indicator of the quality of a person's life (it should be so!), On the other hand, quality activity is built into the quality of what he transforms. The quality of the "first" (natural) nature is formed by itself as a set of objectively related natural features, spontaneously. The quality of the “second” nature (reconstructed, adapted by man to suit his interests) is synthetic. It appears to be a double helix formed by natural features of natural material (possibly in relations between people, knowledge expressed indirectly) and qualitative characteristics of human activity - knowledge, emotions, will, value orientation, and skill. As a result, the quality of the product, in contrast to the product itself, embodies the quality of the person.

Personality is alienated in quality and therefore, in principle, alienation is natural and does not oppress personality. The negative consequence of alienation is caused by the disproportionate replacement of the lost energy of activity. Having discovered the poor quality of the goods, the hidden production defects, the deceitful actions of the seller, the normal buyer gets

upset, first of all, because of his own poor-quality decision. Other transaction losses are most often reimbursed. There is a feeling of imperfection of one's own taste and knowledge.

The quality of everything that is created by activity includes the properties of activity, both practical and spiritual in objectified (objective or functional) expression. Hence, it follows that it is necessary to form and direct the development of the ability of mass consciousness to qualitatively evaluate goods: a certain experience in Soviet times was and showed its effectiveness: "circles", "schools", "universities", including those initiated by television and radio. The place of systemic enlightenment of the mass consumer, professional assistance in the development of a culture of high-quality selectivity, is today flooded with aggressive advertising on the air, the quality of which is not controlled or the control is not commensurate with the size of deception. Who should be the main educator? The manufacturer and only he, because only he fully, according to the logic of the formation of understanding, should know what is quality. Taking on the production of a product without comprehending the specificity of the quality of this product means a professional failure in the market. The release of a product with a fake quality is prosecuted by law, however, formally and ex post facto. Suppliers of pseudo-quality goods hope for the latter.

For the sake of objectivity, let's say: true creators of high-quality products will be outcasts in our market as long as the guardians of order are confident in their own impunity for corruption. Nevertheless, it is necessary to go forward. History is ugly, but still moving towards order.

Accession to the WTO did not add quality products to us and did not lower prices for quality products. The real perspective is associated with the organization of a single economic space within the Customs Union. Cross-quality control appears, the influence of the national corrupt forces on the market is weakening. As for the possibility of an increase in interethnic criminal opposition, there is a danger, but different conditions for organizing crime and intercriminal competition should delay the degradation of the market - the main reason for high-quality national goods, and the market itself, whatever it may be, will expand, and access procedures will be simplified. to him.

Let's honestly admit that the quality problem remains theoretically worked out one-sidedly, which is not very noticeable, because there is no normal organization of production and marketing of high-quality commercial products. The current practice is satisfied with this degree of certainty in the theory of quality. The theory of quality management has been simplified to the concept of control over the conditions of quality production. While there is no systematic understanding of what is the quality of a product? The production is run by the market. The market is ruled by speculators - intermediaries. The state strives to minimize its economic function before collecting taxes. There is no real activity aimed at giving the market a civilized form of "purchase and sale" based on the principles of real freedom of competition. Behind the traits that are essential for quality, supervision is limited to the level of practical uselessness. The market dictates order to local and regional governments. The store manager ran the defense department. The culture of the producer and the consumer is of little interest to anyone, not to them. But the external order begins with the internal order, with the awareness of the "political moment" due to the economic situation.

Historically, the understanding of quality and the concreteness of its reality, presented in a product, reflect the economic and cultural development of society. Quality in the days of workshop production was determined by the conservatism of manufacturing techniques, but even at that time, the municipal authorities strictly checked the quality of products, as well as the ability of the candidate for manufacturers, there was an official regulation approved by the authorities of the city or country. Agricultural products were controlled by the consumers themselves.

The Industrial Revolution simplified the production process and created conditions for mass production. Adequate quality control measures were required. With the leveling of social architectonics and greater accessibility to the assortment of goods, ideas about quality changed in the direction of its quality - qualitative components. At the same time, the possibility of falsifying quality was formed. Further, both de facto and de jure, there was only a step to the substitution of brand qualities. Going over the border of the measure opens the way for legal violations and moral crisis, up to lawlessness.

Were the trends in the interpretation of quality and attitudes towards quality in the economy of mass production inevitable? No, they were generated by a new nature of production, reflected this character and to a certain extent were an objective reflection, but, in addition to the object reflected by consciousness, there is a perspective of reflection, conditioned by the position of the consciousness of the reflecting subject, his interests as a participant in the processes taking place in objective reality.

Objective reality itself, by definition, is located outside and independent of consciousness. Its reflection is subjectified, which, in general, looks in accordance with the theory of reflection. However, it admits, in private, both subjective distortion - involuntary - due to misunderstanding, and deliberate in order to obtain a temporary gain. Competition is always a struggle; unfortunately, the struggle is not always conducted according to the rules.

Quality has been and remains a subject of manipulation in the interests of those who run the market. Consensus about the quality of the creator, producer, seller and consumer is the sweetest fairy tale. Agreement is achievable between creator, consumer and producer. This "trinity" embodies the subjective mechanism for resolving the problem of alienation. Creator - the creator of a product finds satisfaction in production and consumption. He realizes his human strength in them. The producer is interested in a sustainable relationship with the creator and the consumer. The consumer is satisfied with the quality and value for money. “Shares” and “sale” do not confuse him or deceive him.

On the way to consensus stands the seller, the subject of relations who, in essence, has nothing to do with the quality of the goods, but it is he who is the key figure in the market economy. We get everything we need from him. He is a monopolist and as such dictates the terms of the relationship through price interest and profit margins. For twenty years, not a single branded light industry enterprise has appeared in Novosibirsk, on the contrary, a lot of trade brands have appeared. Shopping rows are multiplying, and the consumer is assured that the production of goods is unprofitable. The culture of the organization of trade is replaced by the concept of "quality of sale". The culture of trade is measured by assortment, price and physical availability of goods, high-quality consultative support, lack of queues, compliance with sanitary and hygienic standards, appearance and behavior of personnel, service maintenance. The "quality of trade" is determined by the proportionality of the price and quality of the goods, the conformity of the goods being sold to its certificate, and the demonstration of the goods. The seller's profit should not exceed the manufacturer's profit. Both need not wait for an increase in purchasing activity only by increasing consumer salaries, but create a most favored nation treatment for the buyer (without colluding with another predator of the market - banks).

Only in Russia and only the liberals - the market people at every opportunity remember how bad it was for the people before the advent of true democracy - they starved, went ragged, lived who knows where and how. Monitoring the quality of life - through quality consumption opportunities - is advisable within the current time frame. There is only one criterion - the consumer basket is growing and how is it increasing?

The rate of inflation is a necessary, but not sufficient indicator of the state of the quality of life. The government took inflation reduction as its main reference point. The indicator is actually socially and economically significant, testifies to the culture of the market and, indirectly, to the state of production. The disadvantage of this indicator is the lack of quality in it. The quality of life is determined through the amount of products consumed in monetary terms. The qualitative composition remains constant and one can only speculate about quality, since quality erodes quality. The quality of footwear, clothing, cereals, fish, vegetables, fruits within the general name varies greatly. The reserve for quality manipulation is significant. The main thing is still in understanding quality, not the name, but the system characteristic of the product, reflecting the assortment,

Quality represents a system of properties that are essential for a product - this is commonplace and well-known, which is actively used. By replacing properties or their consistency in a quality product. Essential properties are those that are not simply inherent in the product, they determine its functionality. Such properties, as a rule, are revealed in the process of "work" of the product for its intended purpose, they are hidden from the unprofessional glance of the consumer. In its "pure" form, the market is an intermediary and should not be interested in the quality of products. The task of the market in the theory of the organization of commodity production is the organization of exchange between the producer and the consumer. Market development stimulates the growth of production in the interests of the consumer within the framework of the infrastructural status of the market.

The monopolization of production led to the accumulation of financial capital, the autonomy of the latter and control over the market. As a result, the market has turned from an intermediary into a key subject, the indicator function - to show the demand for goods - is trying to replace the role of the organizer of economic activity as a whole, which distorts the economic system.

The economy of commodity production was created by the production of a product and the need for a mass product. The system-forming factor here is the production of goods as a product necessary for consumption by others, that is, the process of alienating consumption. In natural production, product quality was hardly a pressing issue. The quality was “dissolved” in the conservatism of technique and technology, the traditional character of the assortment. The question of quality was raised by the consumer when he got the opportunity to compare at the fair. The market, which grew out of fair gatherings, gradually enriched the representative status with the advertising business, taking control of the relationship between the manufacturer and the consumer. Levers of management - financial policy, directions - the main - two: the impact on the quantity and quality.

Product quality has gained relevance in commercial production. It became clear that in the understanding of quality there are sensory and rational thinking (the latter in the form of calculation). The subjective factor is objectified and fetishized. The market is not able to directly influence the objective properties of a product (with the help of its own

mechanisms), but it can very well influence the objectification of subjective ideas. Thus, the manipulation of quality was first included in the functions of the market, then it became an element of economic policy.

A sound and healthy economic policy is designed to work on improving quality in two interrelated directions: technical and technological, completed by a rigid legal block of support, and socio-cultural - to provide comprehensive support for the formation of conditions for subjective perception of quality, to block the negative effect of advertising influence, which has long and thoroughly become an attribute of market speculation on the importance of quality to the buyer. The availability of choice and ability to pay do not serve as the basis for the indisputability of a quality purchase.

In the existing market, price and quality are divorced, even at auctions that are famous for their careful organizational culture. The buyer is turned into an expert and this grimace of the market is not as bad as it is illogical. The market forces the consumer to develop as a person. From a layman with a wallet, in order not to be suckers, we involuntarily try to learn more about the subject of interest, improve our "purchasing skills". The term is not new, it is used by journalists, but for them it is a passing, verbal number, and for us it is no longer a new combination of common words, but the most important concept, without which the modern theory of quality does not have a systemic integral form.

"Purchasing qualifications" include, along with certain knowledge that helps to determine the location of the store, the range of prices for the goods, requires basic information about the manufacturer, the quality characteristics of the goods, the market reputation of the manufacturer, the tradition of the company, the scale of activity. Today, in the consumer market, the naive buyer runs the risk, beyond all reasonable measures, of becoming a victim not only of deception, but also of his own carelessness, therefore, without any rights to compensation.

A buyer in Russia is formally protected. In real life, one has to be guided by the famous rule "rescuing drowning people (" buyers ") is the work of the drowning people themselves, read" buyers ". Increasing the “purchasing qualifications”, if desired, is a mutually beneficial business for the state, activating the cultural national heritage and the patriotic mood of the mass consumer. Although there is another way, tested under Mao in China - "the worse, the better."

Imported consumer goods - not Chinese - in the 1980s and 90s. was with us with a bang!

The assortment, packaging, external features of the product were impressive. And what is the bottom line? After 10 years, the manufacturer returns the Soviet brands, naturally in the absence of effective control, not Soviet quality.

We know how to make quality products and are quite capable of regaining "our" market. The issue is not even the price, the problem is the loss of control over the consumer (and not only the consumer, judging by the failures in rocketry, the operation of aircraft, etc.) market. They explain to us: we need economic measures. Correct, however, this is half-truth. If necessary, then accept. The power should have power that is not nominal. It's time to understand that economics has always been politics, economic theory has always been political economy.

Economic movement is self-movement, but it does not take place in a vacuum. Economy is the basis of social movement. Society provides the conditions for economic movement, and the state has the right to energetically join the mechanisms of economic self-movement, directing the development of the economy in the interests of society.

An amazing thing. When it comes to the future of technical progress, futurists of all stripes groan that the autonomization of the movement of technology will lead to the dominance of robots over humans, and it is better not to interfere with the development of the economy. For whom is it better? One conclusion suggests itself: not to disrupt the self-movement of the economy in the interests of those who have privatized the economy and whose service is the "border guards" who prohibit the control of economic processes through politics.

None of the convertible currencies is backed by a quality commodity equivalent and the “free” movement of currency continues under the guise of politics. Financial self-movement creates opportunities for chaos in the consumer market. The state sluggishly protects the legitimate interests of the national producer, even when the product is a product of interethnic integration. There is no political aggressiveness, politics is dragged along the wagon train of the economy instead of outstripping its development on the basis of objective socio-economic trends. I would like to believe the explanations of politicians regarding the duration of accession to the WTO. It is good that they were bargaining, creating a legal "safety cushion" for the domestic producer of consumer goods. The problem: how will they use the concessions from the WTO?

The time for political action - not decisions - is the most favorable. The dope of the nineties and zero seemed to be on the decline. Awareness of the qualitative advantages of many Soviet products of the light and food industries is returning. There is a revival in such an operation, which can stimulate the production of agricultural products in the countryside. Mistrust in consumer imports is growing, including due to its massive Chinese production. Migration flows are stabilizing.

A harsh assessment of the socio-economic situation and a direct indication of the government's responsibility for the failure to fulfill the presidential

instructions of 2016. in the Message of V.V. Putin, are associated with the determination to "tighten the screws" so that the movement goes on the intended course. A clear activation in interethnic economic relations within the Customs Union, a reboot of strategic relations with an emphasis on China, India, Iran, Latin America. The real possibility of full-scale cooperation with Egypt, Syria and the same Iran - the key states of the Middle East and the African North - all this is a unique international sphere for restoring the balance in the domestic consumer goods market.

Domestic producers need a "coherent" economic policy. By "intelligibility" they mean: clarity, consistency, guarantee support, allowing to cut off the many-sided arbitrariness of administrative bodies and "guardians" of order. Everyone is responsible for quality. Both those who produce and those who are called to ensure the rights of producers. The Customs Union has lit the green light on the path of national goods in the markets of the Treaty countries. Thus, an equilibrium real market competition has been created, which makes it possible to evaluate the natural rather than advertising quality. By the way, a wonderful research topic is “real and“ advertising quality ”, that is. generated by advertising.

It is no less urgent to analyze the problem of quality in the coordinate system of national mentality and interethnic integration. Integration is deliberately replaced by globalization, despite the obviousness of the difference between these phenomena. Both trends are objective and characteristic of recent history.

Integration - interethnic interpenetration of various types of activities of a socio - economic, cultural and humanitarian scale. It can have an interethnic size, for example - “Union State (RF and RB); local - the Customs Union; regional (Shanghai Organization, EEC). Globalization indicates a worldwide scale of the phenomenon. Among the global problems are those that have arisen as a result of general, but not necessarily integration, processes, and require a consolidated solution.

Global problems, in contrast to the problems associated with integration, are potentially relevant and have a strategic meaning. For example, how to protect life on Earth from large meteorites. When the time of the onset of the event is postponed, but it itself is overly relevant in importance, then speculators, including financial oligarchs, actively rush into the gap, trying to extract profit from uncertainty.

Quality is directly related to integration.

Let's consider the problem of “quality of consumer goods” in the “national” and “international” coordinate system. First of all, it is necessary to find an answer to the question: is integration capable of displacing the national component of quality?

Integration processes under construction on the standardization and uniform metrological characteristics of production, which corresponds to the objective reality. Technological progress is based on science, scientific knowledge is imperative in terms of normativity. However, the being of the common is not self-sufficient. General requirements are realized through special development, due to the specificity of the circumstances of the action. In other words, no matter how standardized the production of a product is, the originality of production conditions will still manifest in it.

The specificity of conditions - regional, national, is immanently present in raw materials, climate, traditions, culture of performers' consciousness. And in all this is the power of production, which determines the nuances of the quality of the product, which create a special consumer interest in it. Tea is grown in our time all over the world, but the uniqueness of tea plantations in Sri Lanka, the national attitude to tea, ensured the leading position in the quality of the Ceylon product. The same can be said for Kenyan coffee, Bulgarian and Chilean peppers, French cognacs and champagne, Ukrainian lard, Bavarian and Dutch beer, Scotch whiskey, Russian flax, Egyptian cotton, Chinese silk, Argentinean leather, Greek olive oil and much more. The specificity of the environment should be cherished and preferences for its reproduction should be ensured. In fundamental treaties,

The Customs Union consolidates the interethnic division of labor, built in the XX century, contributes to the expression of the objective and subjective aspects of the development of production, mutually enriches the market, facilitating access to it for producers. But this is all theory. Theory develops into a rational practice, not only because it is correct. Activity makes theory a practice; moreover, in order to obtain the desired result, activity must be systemic and consistent.

Interest in the quality of a product, in theory, should not start in production. Its initial position in the normalized market, more precisely at the meeting of the manufacturer and the buyer. A normal market is an indicator of the quality of a product. Demand pulls along the production chain. But not the spontaneous demand of abandoned buyers. Demand is a state of consciousness conditioned by purchasing power, however, it cannot be reduced only to the amount of money, especially when lending is stimulated in every possible way by banks. The demand left at the mercy of intermediaries, lobbyists, speculators is a deadly disease for the national producer of Russia. Demand should be taken under control and generated, the buyer should be educated. Consumer education costs a lot. But it's worth it if you look to the future.

Market liberalism corresponded to the flourishing of the first type of mass production economy, focused on ensuring free access and choice of goods. Such production perceives the consumer as an abstract subject of the relationship in the "producer - seller - buyer" system. The seller is assigned the role of an active intermediary, but nothing more. It

culturally provides a meeting point for producer and consumer. The system must be functionally active, which presupposes not the presence of its constituent components, but their complicity. The perfection of a system is not determined by aesthetics, but by a design feature. It manifests itself in the maximum activation of the possibilities of what it acts as a system of relations. The perfection of the system design lies in the maximum realization of the potential of relations that create consistency.

The buyer is perfect as a subject of systemic interaction with his purchasing preparation. It is not perfect for the size of its payment capacity. His complicity is determined by the knowledge of the commodity-economic situation. The consumer is not an object of application of the actions of the seller and the producer. The consumer is a subject of the market and it is in his (and other subjects') interests to be informed not by the advertising community, but by professional sources. Then counterfeit and "lochism" will cease to populate the market. The quality of the product begins in the mind of the consumer.

To impose an idea of quality is bad for all legitimate subjects of economic relations. It needs to be educated again by everyone: the manufacturer, the seller, the buyer himself and the institutions of civil society, if the state is passive.

The transition to mass production of the second type - “smart”, “lean” economy, activates systemic relations. The function of the market appears in a new light. Together with the manufacturer, the seller focuses on the knowledge of consumer tastes. There is only one, but not an easy, step to make to the system's perfection - the whole world to take up the formation of consumer culture.

The accusation of the current generation in the consumer attitude towards life is not entirely fair. Consumption is the ultimate goal of production. The trouble is in the absence of the consumer culture of the mass consumer, the trouble is of a truly sociocultural dimension. Another consequence of funding cultural progress. Why is one power replacing another, while culture is still in power last in line for political relevance? It's time to understand that not only science has turned into an immediate productive force. Culture is also a factor in the development of production, and a multifaceted factor and very effective.

The reforms of Yeltsin-Gaidar were to inevitably destroy, first of all, mechanical engineering and light industry. Yeltsin did not differ in theoretical training. Gaidar, on the other hand, was obliged to clearly realize that most of our achievements in these branches of production - the military-industrial complex and space technology we do not take into account - were "domestic" successes. Here we clearly lagged behind the competitors, with whom the Democrats set their sights on the common market.

We didn't have what the Poles or the Chinese had. Polish interests were actively lobbied in Europe, the USA and Canada, and the scale of the Polish transformations is not comparable with the Russian ones. In China, after the Cultural Revolution, it was possible to minimize the cost of wages for the bulk of the working population. In addition, the Chinese leaders turned out to be clearly smarter, more honest and more patriotic. They were guided by Deng Xiaoping's ideas about the parallel development of socialist conquests and economic reconstruction, in fact they modernized Lenin's plan for the NEP. The experience of the growth of the industrial and financial power of the PRC in the following decades has proved that it is not socialism that is economically weak, but the directors of socialist construction.

Reforms are rarely fruitful, but they are important nonetheless. Real, that is, scientifically grounded reforms, cannot be long-term. They are effective precisely because of the time limit. Time judges reforms and reformers. Pseudo-reforms, as a rule, take on permanent expression, become overgrown with references to the world conjuncture, climatic anomalies, etc. This is exactly what happened in our country. However, one misfortune does not come. The reformers had to explain to the people why they were testing their patience. They chose the same archival technique - to shift from a sore head to a healthy one.

In the 2000s, myths about fools, roads, drunkenness, poor education, stagnation in science, engineering and technical creativity, managerial weakness, lack of ideas were actively multiplying. The meaning of the myth-making was simple: how hard it is to rule such a people. Peter I, having inherited backward Russia, did not suffer. He acted and divided history into pre-Petrine Russia and Peter's Russia, forcing the whole world to reckon with its interests.

Domestic myths are proliferating and spreading. They are also gaining positions in light industry, which is politically dangerous, because they threaten to intensify measures to integrate economies, cultures, and the strategic interests of Russia and neighboring states. Such tales discredit Russians in the eyes of those who seriously intend to cooperate with us now and in the future.

Let us dwell on some myths, one way or another connected with the present and future of the domestic light industry. It is important to analyze this in the professional and educational process.

Let's start with what is being said everywhere, with the thesis that we are on the oil and gas needle, trade in coal, timber and mineral raw materials. Indeed, our revenues from the sale of raw materials are almost 50 percent. This indicator is frankly undesirable. Nevertheless, it would be possible to build a perfect economy, as Norway, the Emirates, Kuwait did. The crux of the problem is not that Russia

is dependent on its natural resources, but how the income is used. China is developing manufacturing, especially transport, construction, and light industry. In our country, only recently have they paid attention to those who put shoes on, put on, and make textiles for Russians. It turned out that the "hopeless" industry is responsive. The total market for clothing, footwear, accessories in 2020 amounted to 2.8 trillion. rubles, and in the past passed the milestone of 3 trillion.

Another common myth about the inability to compete with similar production in the PRC. There is no dispute - low wages give the Chinese a head start in the struggle for cost. But, the Chinese will have to raise wages, their other organizational expenses have already been optimized, the pursuit of quantity is accompanied by a loss of quality of Chinese goods, the hope for European brand orders should diminish due to the crisis volatility and a reduction in foreign investment.

Europe and the US need China, but they need China to work for them. The Chinese probably think differently. Contradictions will grow as China grows stronger. Nobody wants to develop China into a world leader, except for the Chinese. The growth rates of the PRC economy have slowed down.

There is one more circumstance holding back the development of the production of consumer goods in China - remoteness from the consumer. "Overseas, a heifer in half, but the transportation is expensive." Now transport services are growing at an outstripping pace, because high prices for energy resources are not going to decrease in the foreseeable future. When the Americans artificially devalued oil in order to undermine the economy of the USSR, they hardly thought that their policy would raise production in China so much. The Chinese skillfully took advantage of the struggle of the superpowers. And the 1980s, 1990s, 2000s are over. Together with them, the political and economic situation in the world has changed.

For a while, cheap labor will be found in the neighboring countries of Southeast Asia - Cambodia, the Philippines, Malaysia, Thailand, Laos, Vietnam, Indonesia, but they lack the Chinese political stability that guarantees the safety of capital investments. In addition, they are maritime countries, rail and road communication with them is hampered by the underdevelopment of railways, their regional scale. The sea routes are unsafe. Pirates of the XXI century around Africa behave like a boss. They understand the futility of trying to escort all the "merchants", the bandits have nothing to lose, life is not dear to them. The risk ignites them.

Let's add to the reasoning the thesis that does not often come into view:

- low qualification of the labor force in the region.

It is possible to maintain the quality of goods of complex production by limiting mechanization and automation. The circle is closed, as highly qualified engineers and technicians are needed. They are accustomed to a certain way of life and worthy remuneration for their urgently demanded work.

Costs went up and started to disappoint investors. First of all, they are upset by the logic of the futility of continuing to move along the road. It is always difficult to fold, but it is necessary. Changes in real conditions imply changes in business planning.

Returning from distant countries to their homeland and Russian businessmen, focused on the production of consumer goods: textiles, shoes, clothing. There are not as many examples as we would like, but they are weighty and contagious. Famous designers Kira Plastinina and Alena Akhmadulina reached out to production closer to their fellow countrymen. Plastinina built a clothing production in the Moscow region, Akhmadulina opened a factory in the Northern capital. V. Melnikov, the owner of 48 sewing factories and the Gloria Jeans brand, closed factories in China and settled in Russia and Ukraine. He has been working for five years and is mostly satisfied with his decision.

Experts agree on the reality that Russian manufacturers will integrate between European firms and Chinese consumer goods, the demand for which is forced. Statistics confirm that in the second half of 2020, Russians have cut spending on purchases in this sector of the market. We are able to compete with the Turks and Eastern Europeans, who have noticeably sagged in United Europe.

Deputy Head of the Ministry of Industry and Trade of the Russian Federation V. Evtukhov stated that our companies compete on equal terms on the mass market in the sectors of men's suits, home textiles, bed linen, footwear, knitwear, finished leather and nonwovens .. One cannot but agree with the opinion of the official about the presence in the country excellent designers, achievements of high Russian fashion.

Accession to the WTO complicated the state's attitude to production. Essentially, it is separate from the production process. The participation of the authorities and the budget is limited by indirect influence through the creation of favorable and stimulating conditions for the development of production, such as government orders, customs duties, tax incentives, and improvement of the resource base. And yet, the problems of the relationship between the authorities responsible for the welfare of the people and the production in which the people are employed and which feeds them, puts on shoes, dresses, equips them, are not contained in the restrictions imposed by membership in the WTO. The essence of the new situation is in organizing the activities of the authorities themselves.

Accession to the WTO exposed the socio-economic scale of the vices of Russian managers - the corruption component, low values of professional

culture. The very ideological attitude towards the separation of the managerial profession from the specifics of the object of management is also vicious. "Pure" managerial brings us back to the attitude of the medieval scholastics - realists.

There is a scientific theory of management, which has concentrated in itself the products of reflection over managerial experience. Like any theory, it is not a manager's working tool. In it, the manager looks for directions and possible methods of activity. Likewise, in the demonstration of haute couture, a businessman who is versed in fashion, economics and public mood - the barometer of the market - tries to grab meaningful ideas.

The theory works only as an adapted application to the specificity of the control object. Those who do not know such specificity will be saved exclusively by the command method of management, which subordinates the management theory to production reality.

A “pure” manager is a hostage of finances. For him, production is a combination of cash flows, and not the organization of human reproduction within the framework of national development. He is cut off from the case and a stranger, as a rule, in the team - the appointed commander from the "parallel" case.

The history of the 21st century with top managers clearly shows how important they are. All top companies are the first to show signs of crises and the last to get out of the crisis, despite state support. It's just that these companies are "nationally forming", the face of the state. The state is interested in the fact that the face does not frown ahead of time. Most of the "VIP" managers speculate on this.

Yudashkin, who carried out the state order for the development and sewing of uniforms for the Armed Forces, was rightly indignant at the fact that a company of "clean" managers, led by Serdyukov, created with his models and instructions, placing the manufacture of things in China and changing the technical conditions.

The "clean" manager everywhere is drawn not to production, but to finance. He needs quick feedback. The market drives quick returns. Real production cannot jump, it moves smoothly.

The normal development of production requires, along with smart decisions, strict control over the strict observance of regulations. Everyone knows at what point and how political initiatives are being slowed down. It is also clear that the management of the management mechanism - by officials of all levels - is the prerogative of the government. It is in the way it manages the managers, apparently, that we need to look for a criterion for the quality of government activity. And this mission is called very simply - political will. Without a proper - justified - measure of will, there will be no order.

Finance ministries like to hide behind numbers, presenting them in a way that suits them. Figures, especially large ones, impress the unenlightened. It is convenient and profitable to hide the alignment behind them - you can appear as a winner in the eyes of the public.

The government has developed and adopted the "Strategy for the development of light industry in Russia for the period up to 2020". In the seven-year period, the aggregate share of domestic light industry goods on the domestic market should be equal to aggregate imports. It is planned to achieve a strategic turning point in the interests of the domestic manufacturer.

The market has its own war, different from the usual one, similar to the "cold" one. Here it is impossible to bring matters to the point of complete destruction of the enemy. The pike in the lake does not allow the rest of the inhabitants to stagnate, makes them move in real time - space. In the early 1990s, tens of millions of Russians looked eagerly at the richness of the assortment of foreign production. Twenty years later, disaffected Russians are looking for something of their own making, realizing that true quality cannot be immensely colorful.

The pursuit of assortment richness has little to do with the normal interests of the mass consumer. There is never too much good, because it cannot be. Beyond the boundaries of the measure of the present, an objectively given quality gives way to an advertising one. "Similar" is a mathematical concept that formalizes the quality of objects. “Like” in reality, as a rule, replaces the true quality. Why? Because this negates the quality of the product.

Quality is identical to originality, to oneself. Wine from the same manufacturer, made according to a centuries-old recipe, differs in price depending on the year of the grape harvest. An assortment is justified when a variety of original quality and quality conditions are realized in it.

Pushing imports out of the market, you need to be ready to expand the variance of the qualities of your own products. But here our socialist experience is not great and it must be built up by all available measures. In particular, an increase in the total volume of up to 46 percent of the share of innovative products is proposed.

To move forward makes progress, but it hardly makes sense to rush. There are laws in the mass consciousness. It is conservative. It is not managers who make a smart economy; it will become smart, acquiring compliance with the stable interests of public demand. It is not necessary to chase after innovations, but to study common sense in the people's minds.

The Chinese do not like changes in politics. Russians are afraid of changes in the range. By comparing the advertised benefits of the newest products with the real materials and properties of enough forgotten things, they understand the trajectory of quality: it will be worse and more

expensive. The 1990s taught us something, at least the euphoria of the assortment has passed. The consumer is inherent in the desire for the new, but the experienced consumer is selective about renewal, matching the display variety with the taste developed by the experience of consumption, he is a "shot sparrow", you cannot cheat him on the chaff.

Increasing exports over the planned time by 3 times and bringing them up to 3-5 billion dollars is a very optimistic commitment. Therefore, such a spread of values, unusual for statistics. As for the task to reduce shadow production and illegal import by 10 percent, everything here looks real, reflects the demands of lobbyists. The logic is interesting: the external market for us is a solvable problem, the same that we have inside, we cannot change significantly.

Reluctantly, officials are fighting illegal immigrants. A lot of money is spinning in the shadow business, you can't earn so much on exports. By the way, our "strong point" in light industry, in the mid-2020s, is not the development of someone else's space, but the construction of our own market, otherwise the transitional period of the economy from socialism to capitalism will drag on for a long time, and our capitalism will be the model of the European beginning of the 19th century.

Among experts on the world economy, there is an opinion that a massive outflow of capital from China has begun. More restraint should be exercised in evaluating statistics. World financial flows like “capricious” rivers flow unpredictably, investments flow in different directions and in waves. Even a long observation time does not serve as a sufficient basis for an unambiguous conclusion. In any case, China will continue to increase its production. The outflow of finance and the curtailment of production will not scare them. China has been tempered in the recent past, developing according to Mao's formula - "rely on one's own strength." We can settle in the Chinese market by creating joint ventures. The Chinese will support this initiative. It is easier to promote exports to neighboring countries by offering cheaper quality goods at lower prices. In young countries

Three hundred years ago, Peter I paved the trade route to Europe, providing domestic merchants with movement to the West. Until the Soviet period, Russia remained a supplier of agricultural and natural raw materials to European partners. The European light industry worked on our raw materials, of course, not only on it, but the domestic product was known in the West as high-quality, and was in steady demand. The history of economic relations with Russia is preserved in the memory of Europeans at the genetic level. It is necessary to activate the memory. V.V. Putin is right when he instructed to comprehensively improve the country's image among foreigners.

Often, China's successes in science, technology, and attracting investors are associated with the gigantic diaspora in all parts of the world. There are naturally fewer former Russians. Nevertheless, there are many of them and they are also scattered by fate all over the World. Most of the emigrants value their historical homeland and are certainly not opposed to helping, to the best of their ability, to create trust and interest in Russian manufacturers.

Humanity, fortunately, has not ceased to be amazed. Curiosity is drawn to the new, the unusual, you want something good, necessary, beautiful and inexpensive. Simple availability of goods has remained a criterion for the acquisition in very poor corners of the Earth, among the population below the poverty line. All the rest are taught by the "variety" of cheap, no one knows where and how manufactured goods.

Advertising catchy appearance and annoying advertisements, assuring how beautiful they are, lead the buyer into the recent past, which turned into a complete disappointment and loss of paid money. Back in the 1980s, the Chinese authorities punished up to execution for counterfeit goods, rightly believing that speculation on national authority undermines the status of the state. It is not our business to look for the true motives for the liberalization of state attitudes towards the production of consumer goods, but it is absolutely clear that by the beginning of the third millennium, China's reputation as a country that once produced high-quality consumer goods had reached critical levels.

History is the best teacher. Much can be achieved by learning from historical experience and adjusting activities in real time. In no case should you lose control over the quality of goods, nothing can be an excuse for such a policy. Mass and variety can be combined with quality. We need a novelty of impressions - from the type, material, capabilities of the product.

One should not delude oneself with favorable preconditions for the prospect of developing new markets and strengthening positions in existing ones. Prerequisites are just real possibilities. Opportunities "await" the activity that transforms them into actual reality. Unfortunately, activity not only transforms one level of reality into another. It crosses in itself various interests. It is the multidirectionality of interests that is the regulating factor in the movement towards an economic goal.

Competition for the external market is not limited to external confrontation between subjects and economic interests. In economic policy, there are “fifth columns” that represent and vigorously defend the goals of the adversaries. They process the finances spent on their actions. This is the world practice, therefore, it is so important to combine good intentions with will and practical energy. The strongest survives. The strongest in the struggle for the market is the one who skillfully uses the prevailing market conditions and does not save on the promotion of goods, remembering how much the avaricious pays.

Much, as foreign practice shows, is determined by political will. The state acts within the framework of international relations, but it always has legal levers for managing economic processes. The state defense order made it possible to increase the share of products of domestic light industry enterprises to 70 percent, leaving in the ignorance those who logically ask: why not 100? This is not a rhetorical question.

Bulk order contributes to technological progress, reduces unemployment in difficult regions, and includes reserves of vocational education. If there was not enough production capacity, there was no need to rush to the transition.

Prepare production first. It's not a war time. And so a third of the production was placed with competitors, complicating the conditions for the development of the industry. The jump from the old 30 percent to the new 70 is undoubtedly a step in the right direction, but there is no consistency in the movement, because it is not logical to “feed” a competitor and hope for an accelerated conquest of the foreign market.

The market is a complex and heterogeneous system. The system-forming factor of the market is the opposition of the interests of the seller and the buyer. One wants to sell the product and make a profit, the other wants to buy and save. Resolving conflicts of interest is based on price and quality.

On the way of the buyer, as in a fairy tale, there are obstacles. It is necessary to throw off the spell of advertising PR, to understand the signs of quality, since the market allows for almost unlimited technology of deception, for example, imitation of quality, to be aware of the real prices (taking into account that the product is cheaper on the market than in boutiques and supermarkets - lower costs , illegal delivery, etc.). The buyer is saved by the art of choosing and thinking within the boundaries of “common sense”. Common sense is a reliable “pilot” in the movement along market thresholds and shoals, but it is also tempting when it comes to suggesting something unusual that evokes meaningful associations.

Flax is a traditional Russian export commodity. Products made from flax or flax added are popular. They are hygienic, environmentally friendly, pleasant in sensory perception, linen fabric is technological, aesthetic, requires a delicate attitude, and is all-season.

The production of flax and linen fabric fell sharply due to the depression of agriculture during the years of "fateful" reforms. The peasants must be stimulated. Flax is laborious to grow and make. You cannot do without special equipment. With the creation of technical conditions and economic incentives for the manufacturer, business can be set up quickly. Russian craftsmen have guessed to use flax in combination with nettles. Nettle needs no advertising. By its properties, it is quite competitive with flax. In addition, it has the authority of a strong and persistent antibacterial agent, a circulatory stimulator, a neurostimulator. Products from blended fabric at Siberian fairs went off with a bang! They brought a novelty from the non-black earth Russian west. There is no doubt that Western consumers will be interested in new products. And in the East they will be in demand.

Our state plans to organize textile clusters in several districts. It will probably take into account the agricultural characteristics of the places where the promised clusters will grow. Material-intensive production, organized on a large scale, should be as close as possible to the raw material base. All the more so in the conditions of growth of the rates for transportation at a faster pace. Separating the producer of the final product from the production of the required raw materials doubles the burden on the producer and on the seller. As a result, the consumer suffers in retail, which will boomerang back into production if the economy is unstable. Why is it easier in the West to get out of crisis and depression? Look for the answer in the market. A normally organized market over the three centuries of capitalism's existence automatically reacts to a decline in purchasing power. In difficult times for the economy, businessmen try to get the buyer's money by reducing the price burden on his "wallet". The practice of destroying excess mass of goods to maintain prices is a thing of the past. The market stimulates mass access of buyers to products with various promotions. Manufacturers figure out how to make the old cheap new. The look at quality at such a time is simplified and loses its relevance until the next economic recovery.

We have nothing like this on the market. The question involuntarily arises: do we also need to tune in to three hundred years of waiting, or is there another way? For those who engage in movement along the way, history gives a chance to noticeably accelerate. It is necessary to mobilize to the target setting. Again, political will is required. Self-movement of the economy becomes the main mechanism at the stage of a developed economy and a properly tuned national consciousness.

Public consciousness needs a clear, attractive goal and confidence that this goal is common and the fruits will be fairly shared. We have already built one social system, the democratic reforms have ruined us. The question is: who is to blame? stopped asking. The question remains: what to do? This question is eternal and a normal person is always looking for an answer to it, turning to social institutions and politicians that govern social development.

Without a vigorous agricultural policy, the Russian light industry will not be able to solve its strategic objectives. In turn, it is unthinkable to raise agricultural production without scientific support in the 21st century. The process complicates the reform of Russian science. It is also a necessary phenomenon.

Therefore, it remains to be hoped that the costs will not be exorbitant and the time will not be endless. And it is also important not to lose positive experience in the inevitable bustle and financial deficit.

The collapse of the USSR deprived Russia of its cotton base and made Russia dependent on capricious suppliers with national ambitions. But it turned out that the country has not lost the ability to "produce its own Newtons." Scientists - breeders opposed politicians with their cutting edge developments. An early ripening variety of cotton was created, which differs from the world standards in its greater resistance to drought - "AS-1". In 2012, they harvested the first cotton crop in the Astrakhan region, processed and produced high-quality cotton linen.

Logic shows that the task of creating in the country its own raw material base for the development of the light industry should be a priority. Technical and technological equipment, personnel training must be carried out in the context of it. Of course, all presented actions are interrelated. The base will have toto build and improve for specialists, it will not be possible to provide production with raw materials without modern equipment and technologies. Clusters will remain good dreams without a balanced system of building that direction in the economy, which someone mockingly called "light" industry. Hard years await light industry, but in Russia "hard" and "successful" have always been in the same team. And we harnessed for a long time, as N.V. emphasized. Gogol, which, among other things, did not prevent Europe from being saved from fascism in half a century, and helping Asia and Africa throw off the colonial rulers, and build the second economy in the world.

The historical development of the main types of footwear took place in direct connection with the natural socio-economic conditions of their era, the aesthetic and moral requirements of social life and the dominant artistic style in art.

Style in art is a historically established, relatively stable commonality of the figurative system of means and methods of artistic expression, due to the unity of the ideological content.

In the costume, the general style direction is expressed in basic shapes and proportions, way wearing, applyingenii certain materials and their color combinations, the nature of the use of auxiliary materials, accessories and jewelry.

Changes in the general artistic style of the era are always associated with great ideological and social shifts. They take place over a long historical period. But within the limits of each style there is a more mobile and short-term phenomenon - a fashion that affects all areas of human activity.

The word "fashion" comes from the French mode, which in turn goes back to the Latin modus, which means measure, image, method.

According to V. Dahl, fashion is a temporary changeable whim in everyday life, in society, in the cut of clothes and outfits. Another definition is often found: fashion is a short-term domination of certain forms associated with a person's constant need for variety and novelty of the surrounding activity. Fashion is especially noticeable and actively manifested in a suit, which is subject to the most frequent change of volume, planar and linear forms.

Some experts, trendsetters, believe that the birth of fashion is difficult to associate with any particular period or event. Perhaps this is as vague as its end. But on the other hand, the most important feature of fashion is its obligatory changeability. With the advent of new fashion, shoes, like other costume items characteristic of the previous fashion, partially or significantly lose their aesthetic value, and at the same time, their monetary value. This fact is of great aesthetic and economic importance for manufacturers and buyers. Some do not want to buy, while others untimely felt a sharp drop in demand for these types of footwear, they could not offer the market new fashionable types of footwear in time in order to maintain high demand and the image of their enterprise as a trendsetter with a marketing service. keeping track of demand issues and making effective decisions in a timely manner. Unfortunately, manufacturers will not understand in any way that this fact - the loss of the aesthetic value of the types of shoes offered to the buyer - comes from the natural desire of people to update their wardrobe, which is associated with constantly changing needs (including aesthetic ones) and the general development of human society.

The work of an enterprise without taking into account the current situation on the demand market today, or better tomorrow, will surely lead to collapse, because fashion is both novelty, and imitation is not always new, but necessarily unusual with the manifestation of the individuality of each consumer. One cannot but agree with the statement of the famous French fashion designer P. Cardin about fashion: “Fashion is ... renewal! The principle that nature has always followed! A tree sheds old foliage, a man sheds bored clothes and shoes. When things become familiar, people get tired of them quickly. Fashion saves you from tiresome uniformity. People want to like each other: to be beautifully dressed, to look good is a natural need. "

A modern leader needs to have that flair, the ability to foresee this emerging new thing that is already in the air, but has not yet acquired flesh. You need to learn this skill, take risks, surround yourself with talented fashion designers, trust them, implement their proposals and developments in small batches, test them on the demand market, advertise the merits of the offered range of shoes, form good taste in the buyer and his desire to be beautifully dressed, look good. It doesn't happen by itself. This state of mind is

formed under the influence of the environment where a person communicates, lives, creates and wants to be recognizable.

The taste must be developed, but at the same time, every customer, every member of society who considers himself a cultured person, the taste must be endowed with individual qualities, only in this case the fashion will be able to fulfill its mission - to make every person an individual. This is possible if people develop the presence of different personal tastes, if a society of people is created that is capable of respecting other people's tastes, without imposing their own tastes on them, peacefully coexisting, forming a society of intellectual, cultured people.

Conclusion

Already today, if not yesterday, each manager needs to reconsider his attitude to what is happening at his enterprise in order to ensure the competitiveness and demand for products manufactured at his enterprise.

This problem statement is especially topical for shoe enterprises, because the Russian markets have been and will be oversaturated with types of footwear for the same purpose. Therefore, you need to know exactly what will be in demand on the market and how it should be implemented, so that your range of shoes is chosen by the buyer, withstanding the fiercest competition that generates new offers.

For all this, it is important to build an assortment policy in such a way that, if footwear of the same type arrives on the market, it should differ significantly in price, but meet the requirements of the standard.

In addition, both the head of the enterprise and the fashion designer must, when choosing an assortment policy, proceed from the fact that each fashion corresponds to a certain time, but a certain repetition is guessed in it with appropriate adjustments, taking into account a different, modern era.

So, for example, the same types of shoes can be:

- immoral - 10 years before their time;
- defiant - 3 years before their time;
- brave - 1 year before their time;
- beautiful - when these types of shoes are in fashion;
- tasteless - a year after their time;
- ugly - 10 years after their time;
- funny - after 20 years; - funny - after 30 years;
- peculiar - after 50 years;
- pleasant - in 70 years;
- romantic - 150 years after their time.

Jean Cocteau owns a catch phrase: “Take fashion seriously, because it is dying so young ...” Fashion is more in vogue than in any other field, one must be able to say goodbye to a find, even a successful one, for the sake of a novelty. Moreover, what is interesting: it is possible to bring to the market in the second round, and sometimes throughout human life and in the third, great-grandmother's shoes, they "look", they are able to live, but this is impossible in relation to yesterday's fashionable and this is confirmed by the entire history of shoe production, as in the field of fashion - yesterday is the unbearable day before yesterday, the day before yesterday is possible. Here the mechanism inherent in our cultural consciousness comes into force: memory revives the old, it becomes cute and enters modern shoes with a special note, creating a kind of support in the stream of changing impressions. It's like breathing.

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EVALUATION OF DOUBLE ELECTRICAL LAYER IN PORES OF MACROPOROUS GLASSES IN EXCLUSION CHROMATOGRAPHY

Abstract: *The article deals with the determination of the thickness of the electric double layer in the pores of macroporous glasses, which are used as a sorbent in size exclusion chromatography of polymers. Inorganic sorbents such as silica gels and macroporous glasses are widely used for the analysis of macromolecules in size exclusion chromatography due to the rigidity of their matrix and large pore volume. The thickness of the electrical layer or the Debye screening radius on the surface of silica sorbents and in the chains of macroions can be determined using the theories of Debye-Hückel, Flory-Fox, and Mark-Kuhn-Hauwink, as well as the principle of universal calibration in size exclusion chromatography at different ionic strengths in water salt solvent.*

Key words: *electric double layer, macroporous glass, polyacrylic acid, ionic strength, Debye screening radius, universal calibration, electrostatic forces.*

Language: *Russian*

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ОЦЕНКА ТОЛЩИНЫ ДВОЙНОГО ЭЛЕКТРИЧЕСКОГО СЛОЯ В ПОРАХ МАКРОПОРИСТИХ СТЕКОЛ В ЭКССЛЮЗИОННОЙ ХРОМАТОГРАФИИ

Аннотация: *В статье рассматривается определение толщины двойного электрического слоя в порах макропористых стекол, которые используются в качестве сорбента в эксклюзионной хроматографии полимеров. Неорганические сорбенты, такие как силикагели и макропористые стекла из-за жесткости их матрицы и большого объема пор широко используются для анализа макромолекул в эксклюзионной хроматографии. Толщина электрического слоя или радиус экранирования Дебая на поверхности кремнеземных сорбентов и в цепях макроионов может быть определена с использованием теорий Дебая-Хюккеля, Флори-Фокса и Марка-Куна –Хаувинка, а также принципа универсальной калибровки в эксклюзионной хроматографии при разных ионных силах в водно-солевого растворителя.*

Ключевые слова: *двойной электрический слой, макропористое стекло, полиакриловая кислота, ионная сила, радиус экранирования Дебая, универсальная калибровка, электростатические силы.*

Введение

Эксклюзионная жидкостная хроматография (ЭЖХ) является быстрым и высокоэффективным методом определения молекулярно-массового распределения полимеров [1,2]. Анализ молекулярно-массовых характеристик гидрофильных полимеров, особенно полиэлектролитов осложнен присутствием электростатических эффектов нарушающих молекулярно ситовой механизм ЭЖХ. Кремнеземные сорбенты, силикагели и макропористые стекла (МПС) в водной среде проявляют слабокислые свойства за счет диссоциации гидроксильных групп на их поверхности. При анализе полиакриловых кислот (ПАК) как слабого анионного полиэлектролита в ЭЖХ в воде происходит эффекты ионной эксклюзии и полиэлектролитного набухания. Задачей данного исследования является определить на каком расстоянии действуют электростаические силы между макроионами ПАК и анионнных групп поверхности МПС в разных ионных силах элюента (водно-солевого растворителя). Для решение данной задачи мы проанализировали элюционные свойства ПАК с использованием в качестве сорбента МПС с разной пористостью. Были построены калибровочные кривые при разных ионных силах элюента и определены расчётным способом радиусы экранирования макроионов ПАК.

Результаты и обсуждение.

Значения характеристических вязкостей, полученных методом изоионного разбавления при разных ионных силах образца ПАК, приведены ниже в таблице. Здесь же приведены значения радиусов вращения R_g макроионов, константа «а» в уравнении Марка – Куна – Хаувинка и радиус экранирования Дебая r_D. В первом столбике представлены концентрации полимера в растворе (С), во втором – соответствующие им ионные силы, определенные по формуле: $J = \alpha_i mC$ где $\alpha_i = 1$, m = 0,4. В пятом столбике приведены значения константы «а» для полиакрилата натрия [3] и соответствующие ионным силам, приведенным во втором столбике.

Таблица 1. Значения [η] ПАК с $M_w = 3\ 10^4$ ($\alpha_i = 1$), получение методом изоионного разбавления и рассчитанные средние размеры макроионов ПАК по значениям [η] по формулам (1), (2), а также значения r_D, по формуле (3)

C, мг/мл	J,моль/л	[η], дл/г	R_g, Å	a	r_D, Å	$R=R_g+ r_D$, Å
0,5	0,0028	-	-	-	57,7	-
1,2	0,0066	4,8	243	-	37,6	280
3,0	0,016	4,0	222	0,9	24,1	246
5,2	0,029	3,1	195	0,85	18,0	213
7,6	0,042	2,5	175	-	16	191
10	0,055	2,0	157	0,8	13	170
-	0,1	0,95	124	0,755	9,6	133
-	1,0	0,70	96	-	3,0	99
-	-	0,35*	71	-	0	71
-	-	0,2**	59	0,5	0	59

**Измерены в H_2O при pH 2,8 ($\eta_i = 0$)*

***Измерены в диоксане (Θ - растворитель)*

Видно, что при концентрации ПАК в пробе 10 мг/мл ионная сила J = 0,055 и это соответствует a ≈ 0,8, т.е. макромолекулы ПАК находятся в состоянии перехода от непротекаемого к протекаемому статистическому клубку. Уменьшение С приводит к уменьшению ионной силы J, а также к увеличению размеров R макроионов. При этом, надо указать, что макромолекулы находятся в конформации протекаемого статистического клубка. Это вполне правомочно, так как константа a > 0,8.

Для определения R_g клубков при больших ионных силах использовали уравнение Флори – Фокса, где удовлетворяются условия непротекаемости клубков α = 0,5 + 0,8. При определении R_g макроионов при низких ионных силах (a > 0,8; при низках концентрациях ПАК в пробе) использовали формулу Куна – Дебая для протекаемых статистических клубков

$$[\eta] = \zeta (R^2)/ 6 \eta_o m_s \qquad (1)$$

где [η]-характеристическая вязкость полимера, m_s – молекулярных масс сегмента, ζ – коэффициент

трения сегмента, R^2 – среднеквадратичный радиус инерции макромолекулы.

Определение R_g макроионов при низких ионных силах раствора с помощью формулы (1) проводили следующим образом. Вначале по значению [η], соответствующей α = 0,8 ([η] = 2 дл/г) R_g ПАК рассчитали с помощью уравнения Флори – Фокса. Дальше при малых J, где клубки ПАК становятся протекаемыми (α > 0,8, см. таблицу) для определения R_g использовали следующее выражение:

$$R_g = ([\eta] / [\eta]_o)^{1/2} (R_g^2)_o^{1/2} \qquad (2)$$

где $[\eta]_o$ = 2 дл/г, $(R^2)_o^{1/2}$ = 157Å, [η] – значения характеристических вязкостей, соответствующие каждой ионной силе при J < 0,042 моль/л в таблице. Отметим, что в таблице также приведены значения [η], измеренные в H_2O при pH 2,8 (неионизованное состояние) и диоксане (θ – растворитель). Видно, что значения [η] в неионизованном состоянии в воде существенно меньше, чем при ионных силах 0,1 и 1 моль/л. Это связано с тем, что при высоких ионных силах (J>1 моль/л) электростатические силы между заряженными сегментами полностью не исчезают, сохраняя при этом существенную жесткость цепи. Значение **[η]** в диоксане еще ниже – 0,2 дл/г и по ее значению были определены невозмущенные размеры $(R^2_g)_o^{1/2}$ = 59 Å цепей ПАК. Из таблицы следует также заметить, что при переходе от неионизованного состояния к ионизованному размеры цепей ПАК увеличиваются более чем в 2 раза, а, именно, от 59 Å (в диоксане) до 124 Å (в H_2O при 0,1 моль/л $NaNO_3$). При этом сохраняется клубкообразная конформация цепей ПАК, что согласуется с известными литературными данными [4].

Кроме того, в данной таблице также приведены радиусы R_g и по ее значению определены невозмущенные размеры $(R^2_g)_o^{1/2}$ =59Å цепей ПАК. Обнаружено, что при этом сохраняется клубкообразная конформация цепей ПАК, что согласуется с данными работы [5].

Радиусы экранирования Дебая r_D [3,4] при разных ионных силах раствора были рассчитаны по формуле:

$$r_D = (8\pi F N_A J)^{-1/2}, \qquad (3)$$

где F = 7,1 Å (для воды). Было установлено, что величина r_D при уменьшении ионной силы раствора увеличивается [8,9] и при низких ионных силах играет существенную роль в ионной эксклюзии ПАК, т.к. дополнительно увеличиваются при этом средние размеры макроионов [10,11].

Из данных потенциометрического титрования известно, что водные растворы МПС проявляют кислотные свойства из-за диссоциации силанольных гидроксильных групп на поверхности сорбента. Электростатические силы между диссоциированными группами, в конечном итоге, на поверхности МПС способствует образования двойного электрического слоя толщиной d. Наличие такого слоя и приводит к ионной эксклюзии полианионов, а также адсорбции поликатионов на поверхности МПС.

Нами для определения величины d была использована универсальная калибровочная зависимость, найденная для смеси МПС с диаметрами пор 1150 и 250 А. На рис. 1 представлены совмещенные калибровочные зависимости K_d от $\lg(M [\eta])^{1/3}$ для ПАК и полистиролов, полученные при разных ионных силах элюента. Видно, что при высоких ионных силах элюента (0,1 моль/л), когда ионная эксклюзия и полиэлектролитное набухание ПАК подавлены, калибровочные точки для ПАК и полистиролов ложатся на одну зависимость (кривая 1). Уменьшение ионной силы от 0,1 до 0,05 моль/л приводит к смещению калибровочной зависимости для ПАК и нарушении принципа УКЗ.

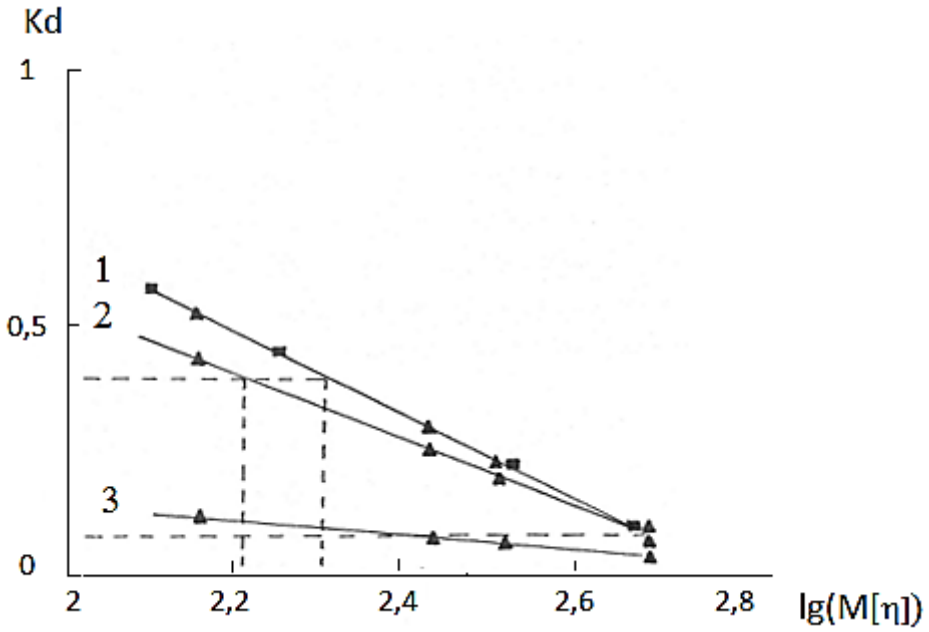

Рис.1. К определению толщины электрического двойного слоя у внутренней поверхности в поровом пространстве МПС с помощью универсальной калибровки. 1 – универсальная калибровка для полистиролов (■) и ПАК при 0,1 моль/л (▲); 2 – калибровка для ПАК при 0,05 моль/л; 3 – калибровка для ПАК при 0,001 мол/л.

Замечено также, что при низких ионных силах элюента (0,001 моль/л, кривая 3) калибровочная зависимость для ПАК характеризует еще более низкую селективность разделения. Указанные эффекты происходят из-за наличия двойного электрического слоя, который при ионной эксклюзии уменьшает доступный для макромолекул объема пор МПС.

Толщину двойного слоя в порах МПС при разных ионных силах с помощью калибровочных зависимостей, представленных на рис.1, можно определить следующим образом. Из общей УКЗ, (рис. 2) , т.е. зависимости K_d от отношения гидродинамического радиуса $R \equiv (M[\eta])^{1/3}$ макромолекул к радиусу пор r сорбента, можно будет находить значение R/r, соответствующее выбранному значению K_d. Затем из калибровки 1 на рис.1 можно определить значения K'_d, размер макромолекул R′ при отсутствии ионной эксклюзии, т.е. при минимальном значение d в порах сорбента.

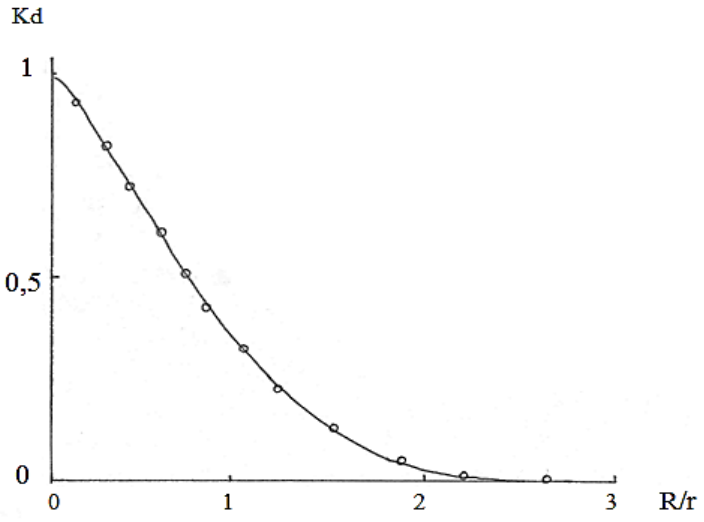

Рис.2. Общая универсальная калибровочная зависимость K_d от соотношения гидродинамического радиуса $R \equiv (M[\eta])^{1/3}$ макромолекул и радиуса пор сорбента.

Далее сравнивая значения R′ с отношением R/r, можно получить эффективный радиус пор r′ для данной хроматографической системы. Аналогич-ным образом, используя калибровку 2, можно найти r″ (рис.1), соответствующий ионной силе (0,05 моль/л) раствора. Разность значения d = r′ – r″ дает приближенное значение для толщины двойного электрического слоя на поверхности МПС. Таким же способом была определена d при низкой ионной силе (0,001 моль/л) элюента из кривой 3 рис.1.

Отметим, что при построении калибровочных зависимостей ПАК (кривые 2 и 3, рис.1) следует учитывать двойной электрический слой и самого макроиона. Известно,что двойной электрический слой макроиона образуется и при ионизованном состоянии цепи макромолекулы и рассчитывается с помощью формулы (2). Рассчитанные значения d с помощью УКЗ при ионных силах 0,001 и 0,05 моль/л составляют, соответственно 193 и 42 Å**.** Это хорошо согласуется с теоретическими значениями, ранее полученными рядом авторов [3,4] для сферических коллоидных частиц.

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