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Arthur Alexander Blagorodov

Institute of Service Industry and entrepreneurship (branch) DSTU
Bachelor

Vladimir Timofeevich Prokhorov

Institute of Service Industry and entrepreneurship (branch) DSTU
Doctor of Technical Sciences, Professor
Shakhty, Russia

Tatiana Pavlovna Lopatchenko

Don State Technical University
Ph.D. Associate Professor

Galina Yurievna Volkova

LLC TsPOSN «Ortomoda»
Moscow, Russia

ON THE EFFICIENCY OF DIGITAL PRODUCTION FOR MANUFACTURING QUALITY OF IMPORT-SUBSTITUTED PRODUCTS

Abstract: In the article, the authors analyzed the possibilities of the policy and goals of enterprises in the field of quality within the framework of the QMS in order to fight for defect-free production, for reducing rejects and guaranteeing high quality of manufactured products to consumers. The need to improve the quality management system at domestic enterprises is due to the following important reasons: firstly, it is an increase in the confidence of potential consumers in the products that will be produced by domestic enterprises. secondly, it is an opportunity to significantly strengthen its position in existing markets, as well as significantly expand their spheres of influence by entering new domestic and foreign markets. And thirdly, this is a significant increase in labor productivity of any enterprise where it is planned to introduce QMS using digital production. The authors recommend that the market reconsider the concept of forming it with in-demand and import-substituting goods, taking into account their attractiveness. Such a concept will fully correspond to the desire of the consumer to satisfy his desire and desire to make a purchase, taking into account his social status, providing manufacturers with the sale of their products in full and guaranteeing sustainable TPE from their activities.

Key words: quality, import substitution, consumers, manufacturers, profit, sales, demand, demand, competitiveness, sustainable TPP, economic policy, financial condition.

Language: English

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Introduction

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The choice of light industry enterprises as an object for assessing the effectiveness of the socio-

psychological factor in the implementation of QMS is due to the fact that these enterprises are characterized by the presence of highly qualified workers and specialists. Thus, the Policy of goals and objectives of the QMS will be implemented much more

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professionally and at lower costs due to three main aspects: employee involvement, process approach and systematic approach. In addition, the personnel of light industry enterprises are more efficiently able to implement the goals and objectives of the QMS also because control activities are more professionally provided for the implementation of the following situations: persuasion, execution of delegated powers, creation of conditions for increasing productive work and effective use of the business qualities of employees.

The authors of most of the studies justifiably paid attention to solving the problem of combining state and market mechanisms for managing competitiveness because it becomes a strategic resource for the economy of these regions. Today, and even more so tomorrow, in the world economy, the place of price competitiveness will be taken by the competitiveness of quality levels, which has widely increased its importance in connection with Russia's accession to the WTO and the need to use ISO 9000 series, in this regard, an increase in the quality factor of the results of the domestic light industry in the strategy Competition in global markets is a long-term trend.

The task of increasing competitiveness is especially urgent for those enterprises that, due to external factors (increased competition due to globalization, the global financial crisis) and internal (ineffective management), have lost their competitive positions in the domestic and foreign markets. In response to negative processes in the external environment, the processes of regionalization and the creation of various network structures are intensified, one of which is the union of commodity producers and the state.

Based on the use of innovative technological solutions, the development of an assortment policy, taking into account the characteristics of these regions, reducing the cost of manufacturing products due to effective technological solutions with more frequent changes in the assortment while maintaining minimal costs for re-assembling the technological process and the formation of a pricing policy that creates advantages in the competitive struggle for markets with unstable demand.

Software has been developed that will allow tracking the flow of funds from the result of marketing policy in order to guarantee the enterprise a warning from bankruptcy. The examples of the calculation of the main technical and economic indicators are given, which allow the heads of the enterprise to make the only correct decisions that create economic stability for them.

Another very important factor that guarantees the success of manufacturers is the quality management of the manufacture of import-substituting products. The choice of a strategy for managing human resources in the practice of enterprises depends on this influence.

The cultural peculiarities of Russian entrepreneurs, according to the majority of researchers who used a systematic approach, include dependence on the team and the norms of behavior formed by it, the desire for trusting relationships, and avoiding irresponsibility. Personal qualities of an employee are often given priority over their success in performing their work; personal and business relationships are mixed. Also, our Russian reality has noticed a tendency of entrepreneurs and their employees to bribery, concealment of income from the tax service, forgery of documents, disregard for ethical standards in relation to competitors. There is a gap in communication between the manager and the employee; in another way, we can say that the head of the enterprise is not available to lower-level employees. It was also noticed that Russians have an average level of individuality and often try to get away from uncertainty.

As a result of all of the above, the conclusion suggests itself that in Russia the enterprise and the management of personnel management are formed ineffectively and there are practically no working collective ties. Enterprises devote all their attention to fulfilling the conditions set before them by employees of the state bureaucratic apparatus, and not to fulfilling responsibility to consumers and society. Therefore, there is a difficulty in introducing progressive foreign management methods into Russian practice.

In order to most successfully implement effective personnel management and prepare employees for a change in the approach to working in a team, it is first of all necessary to establish measures to encourage individuality in each employee of the enterprise and to eliminate the established inaccessibility of the leader for the lower level. It is important to create a high-quality and effective system of motivation and continuous professional development, so that personnel become a source of competitiveness of the enterprise, meet modern requirements for human resource management.

The implementation of all research results is possible only if regional and municipal branches of government actively participate in their implementation, so that, creating new jobs in small and medium-sized cities, guarantee their population all the social benefits for a decent life, ensuring their funding, including the work of preschool and school organizations, medical and cultural institutions, distracting young people from the street and other undesirable phenomena, and the appearance on demand markets of popular products with a price niche acceptable for most consumers in these regions will reduce population migration from these regions precisely at the expense of financing of all socially significant programs.

Main part

The attractiveness of the product can become a magnet that initiates the interest of the buyer. It was not for nothing that V.I. Dal interpreted attractiveness

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as attractiveness, magnetism. The economic system is formed by production relations; therefore, there will be no radical transformations of the existing system of the economy, there will be a restructuring, a reboot, which changes not the system, but the order of the system's functioning, the vector evolution of economic policy. The economic system will be optimized by realizing the costs of minimizing the costs of the assortment.

Does the consumer benefit? Apparently, yes, provided that manufacturers and sellers do not skimp on research work on consumer demand. Here, the simplest research is not enough, it will require a deep analysis and integration of different approaches - economic (marketing), sociological, cultural, ergonomic, hygienic, focusing scientific research on regional, national characteristics. The prospect of real participation in the process of real-level students will open, accelerating their qualification formation

The transition from good to better in any field of activity is associated with an increase in implementation costs, including risk financing. In our view, the analyzed transition to a new economic policy should justify the expectations - it should lead to a reduction in costs, losses, environmental burden, but the result will largely be determined by the construction of scientific, technical and educational policy. Good intentions often end up with worse results due to poor management.

The time has come again to temporarily disconnect from the production of goods and, following the example of Karl Marx, focus on the cell of the modern economic organism - the commodity, but, unlike the author of "Capital", place the commodity not in production, but try to fit it into the subsystem of market relations. Capital without circulation is not capital. Capital is a process. The process of reproduction of capital is a characteristic way of its implementation. The market ensures the reproduction of capital, creating conditions for the sale of commodity products. For production, initial capital in financial form is required, for implementation, as conditions for reproduction, demand for goods is required, which the market must provide - conditions that link the producer with the consumer. Everything, as we can see, rests not even on the characteristics of the product, but on the organization of the market. Of course, the properties of the product are also important here. The doctor is able to revive the dying, but he is not able to revive the corpse. The same can be said for the market.

The transition to market-oriented production based on the structure of concretized consumption can be seen as a way to resolve the growing contradiction between growing socio-cultural needs and natural sources. And in this sense there is sufficient reason to speak about the objective completeness of the development of reproduction. The center of concentration of activity is shifting to the territory of

the market, its scientific potential is being updated. Question # 1 lean production - is the market ready to increase allocations for researching the structure of the needs of the mass buyer? It is not difficult to find individual examples. At the end of June 2019, Google conducted a survey of the culinary preferences of Russians in order to make a rating of 20 basic products and the same number of dishes. The taste of Russian consumers has encouraged marketers and terrified nutritionists. Nevertheless, experts are convinced that there will be no changes in two or three years. Manufacturing, providing the grocery market received the necessary information for thinking about the directions of investment in production. Now it is important to avoid a rush of restructuring, to agree on quotas within the corresponding unions, banknotes and other associations of producers.

"Attractiveness" is being transformed from an advertising category into an economic one, more precisely, into a market brand. Theoretically and even methodologically, "Attractiveness" refers to the "cross-cutting" concepts that characterize the activity and its products. There are hardly any opponents of this statement. The essence of considering "attractiveness" in the light of our problematics is not in defining "attractiveness" as such, but in its concrete historical manifestation. Activity is a way of implementing an idea; outside of practical activity, the idea will not go beyond the element of consciousness, it remains knowledge and is likely to lose its meaning after some time. Relevance, meanwhile, is not inherent in the activity itself, but in the way of implementing the plan, while the way of implementing the activity is regulated by space-time coordinates that reveal and limit the relevance of the mode of action. History is made up of actual historical periods - actual stories. A historical phenomenon, regardless of its nature - material or ideal, becomes not when it happens, but only when it is included in the historical chain of events. In dialectics, social development is therefore described by a pair of categories "historical-logical", and historical phenomena can "drop out" from the logic of the historical process, which is natural. Otherwise, development would involuntarily make one think about the Divine creation of social history.

"Attractiveness" in a broader context has always stimulated activity. In recent history, this concept has acquired a new meaning and, accordingly, a new meaning. It found itself at the center of economic contradictions in the market. It is actively exploited in their own interests by all those for whom the market is the main source of speculation, they will go to "all the hard". Those who have retained the honor of a professional manufacturer see it as a salvation for consumers.

The concept of "product attractiveness" is partially revealed in the concept of "product value". In special literature, "product value" is defined as "a set

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of quality parameters expected by the consumer for the product he needs and their values that meet the needs of the consumer." The product value unfolding is called the "customer satisfaction tree".

For the value of the product to cause consumer satisfaction, it is important not only to be concerned about the quality of the product, but also to remember that the consumer's consciousness is not a constant, it moves and matures. The expression "the client has matured" characterizes the process of interaction between the producer and the consumer. The consumer in such an interaction is represented by mental activity, first of all. The sources of mental readiness to accept the manufacturer's proposal as coinciding with their own idea of the attractiveness of the product are not uniform. Usually they include:

- manufacturer's credibility;
- information from trusted sources; consumer communication, informal communication; the presence of the product in the past experience of the buyer; the relevance of this purchase to the buyer.

If the "buyer" is considered outside the socio-economic context, then the answer to the second question looks very clear. The market is waiting for a buyer with high solvency. There are also buyers in Russia, but their share does not exceed 7 percent, and they rarely go to the lucrative market for the masses, rather by chance than by necessity. The mass consumer is extremely economical and it is difficult to "shake" it for purchase. It requires a certain type of product that can charm, and the presentation of the product, "cultural packaging". It is necessary to attract the buyer, to bewitch. Like a reflection

the desire to comprehend the specifics of the status of demand for a product on the market, one should consider the revival of interest in the concept of "product attractiveness". It is much more specific

in its content in comparison with the close and more pseudo-scientific concept of "demand for a product by the market". It contains fewer economic statistics, formal signs that allow to measure pressure, but in full there is a "human factor" that determines market dynamics.

If psychologically the image of the product as attractive has formed, then relations from the phase of abstract possibility pass into real possibility. The next step - the transformation of a real opportunity into the reality of purchasing a product you like will depend on the ratio of producer and consumer costs. For the first, we are talking about the ratio of cost and price, for the second - the price and quality of the product. In all modern quality management systems in the context of regulations on prestigious awards (EFUK, UOK, IAQ, TQM, etc.), such an indicator as the degree of customer satisfaction with products stands above all others, occupying in a weight ratio from 1/5 to 1/3 cumulative points. This indicator has the least points - 180 (out of 1000) in the Regulation on the Prize of the Government of the Russian Federation in the field of quality. We understand that customer satisfaction with a product should not be limited to the consumer appeal of a product. Product attractiveness is superimposed on satisfaction, remaining part of attractiveness. There are products that initially, perhaps, did not belong to the range of attractive ones, for example, gifts or something purchased "on the occasion" by necessity. The attractiveness was discovered later, as it was used for its intended purpose. But the comparison between satisfaction and attractiveness is quite correct and indicative. Moreover, at the junction of these concepts, there is a test zone for characterizing the degree of development of production. Figure 1 shows the consumer expectation architecture.

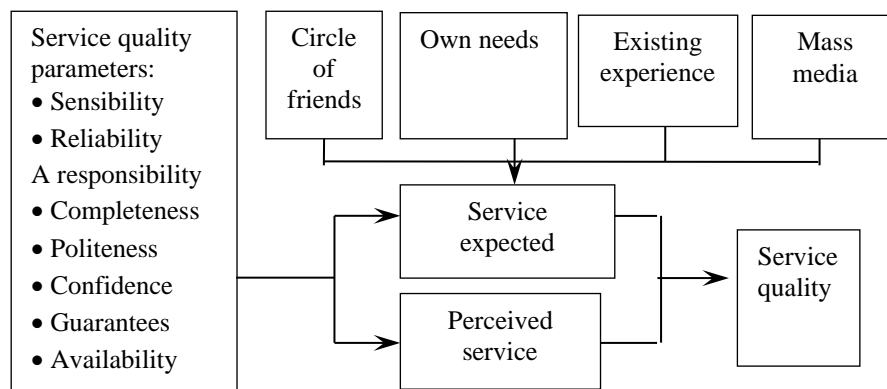


Figure 1. Architecture of consumer expectations

To study the status of the concept of "Product attractiveness", a questionnaire was developed, shown in Table 1.

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Table 1-Analysis and study of the status of the concept "Attractiveness of goods"

No.	Indicators of "Product attractiveness"	Rank
1	Feeling the need to buy a product	7
2	Reliability of goods	2
3	Manufacturer's responsibility for the quality of the goods	1
4	Completeness of goods	3
5	Service courtesy	17
6	Trust in the seller, manufacturer	16
7	Impressive warranty period	4
8	Product availability	8
9	Communication with the seller	25
10	Mutual understanding with the seller, his interest in selling products	26
11	Service culture	27
12	Affordability	9
13	Customer satisfaction	10
14	The level of readiness of the consumer to make a purchase	11
15	The level of interest of the manufacturer in the formation of "Product attractiveness"	19
16	Consumer buying opportunity	12
17	Manufacturer credibility	5
18	Consumer communication	24
19	The consumer's opinion about an earlier purchase of an identical product	13
20	The need for the consumer to purchase "Attractive product"	23
21	The relevance of this purchase for the buyer	14
22	Possibility of subsequent exchange of goods	20
23	Availability of several necessary functions for the product	6
24	Modern design	22
25	Payment method for purchase	15
26	Ease of operation of the product	21
27	Organization and availability of service support for purchased goods	18

An analysis of the results of a survey of respondents on the impact of the criterion "Attractiveness of goods" confirmed the importance of the rehabilitation of this criterion in marketing activities to create sustainable demand not only for light industry products, but also for all consumer goods (Table 2).

What is interesting is the fact that is due to the coincidence of the studies performed on the formation of the architecture of customer satisfaction based on the criterion - Product attractiveness - as one of the main factors on demand and the results of a priori

ranking on its impact on the sale of consumer goods, for participation in which there were students are involved in commodity studies, students are experts in the field of certification and standardization, students are technologists, constructors and designers, teachers of these specialties and graduates of the same specialties, who are currently leading specialists in enterprises engaged in the production of these very products for consumers of the regions of the Southern Federal District and the North Caucasus Federal District.

Table 2 - Results of the survey of respondents to the influence of the criterion "Attractiveness of goods" on the demand for demanded and competitive products

No.	Factors	Expert opinions	All respondents	Teachers and specialists	Students	Agreed
1	Feeling the need to buy a product		2	2	2	2
2	Reliability of goods		12	12	12	12
3	Manufacturer's responsibility for the quality of the goods		1	1	1	1
4	Completeness of goods		3	3	3	3

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5	Service courtesy	21	8	21	21
6	Trust in the seller, manufacturer	8	21	8	8
7	Impressive warranty period	4	4	4	4
8	Product availability	17	6	24	17
9	Communication with the seller	24	16	17	24
10	Mutual understanding with the seller, his interest in selling products	6	17	7	6
11	Service culture	16	19	13	13
12	Affordability	7	26	5	7
13	Customer satisfaction	13	24	20	5
14	The level of readiness of the consumer to make a purchase	20	7	16	16
15	The level of interest of the manufacturer in the formation of "Product attractiveness"	5	23	6	23
16	Consumer buying opportunity	23	13	23	20
17	Manufacturer credibility	26	20	26	26
18	Consumer communication	11	5	27	14
19	The consumer's opinion about an earlier purchase of an identical product	14	11	14	11
20	The need for the consumer to purchase "Attractive product"	15	10	11	27
21	The relevance of this purchase for the buyer	27	14	15	19
22	Possibility of subsequent exchange of goods	19	15	22	15
23	Availability of several necessary functions for the product	10	18	10	10
24	Modern design	25	9	25	18
25	Payment method for purchase	22	27	18	25
26	Ease of operation of the product	18	25	19	22
27	Organization and availability of service support for purchased goods	9	22	9	9

If customer satisfaction is formed at the expense of the manufacturer's level, i.e. its test level is formed by the price availability of the product, which is offered by the assortment range, of course, by quality, and at the expense of the consumer's level, i.e. its test level assumes the presence of a culture of customer service, the attractiveness of the product, customer satisfaction, and, of course, the solvency of the consumers themselves, then the respondents who took part in the survey believe that consumer satisfaction will be ensured with the reliability of the product, its affordability, and the availability of the opportunity for buyers make purchases, i.e. their solvency. Natural quality of products, variety of assortment range, attractiveness by design decision, i.e. correspond to fashion, the products must have a sufficiently long warranty period, and, interestingly, all respondents are unanimous that manufacturers should fight for respectful attitude of buyers towards them, win their trust and desire to make a purchase of the products of these enterprises, i.e. the brand and image are always in demand, which together solves the main problem - provides consumers with domestic products within the framework of import substitution.

The criteria for assessing the competitiveness of a light industry enterprise using the software

developed by the authors made it possible for the first time to formalize the role of experts - respondents on the basis of their competence to the problem under consideration. The need for such an approach is due to the desire to have an objective assessment of competence, taking into account not only the opinion of the invited party of expert respondents to participate in the survey, but also using the assessment criterion - the coefficient of concordance (W) - the value of which varies from 0 to 1. And if $W = 0-0.5$, then this is their lack of agreement with the opinion of those experts whose value of the coefficient of concordance (W) tends to 1, which confirms their high competence and the possibility of their further participation as expert respondents. The results of a survey of experts on assessing the competitive potential of light industry enterprises, although they received the value of the coefficient of concordance (W) in the range of 0.4-0.6, but excluding heretics, that is, those respondents whose opinion does not coincide with the opinion of most other experts, we found a pleasant fact that the opinion of those respondents whose authority is beyond doubt, and those whom the program classified as heretics, have an unambiguous or close opinion that the factors characterizing the influence of competitive potential

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on the competitiveness of an enterprise are identical, and they can be used in further research in assessing this very competitiveness of enterprises, assuming that he is able to manufacture import-substituting products for consumers in the regions of the Southern Federal District and the North Caucasus Federal District. At the same time, manufacturers have all the grounds for these criteria, namely: the ratio of the quality of the product and the costs of its production and marketing; sales growth rates; costs of innovation; labor productivity; the level of partnerships with interested participants in the production of import-substituting products; costs per ruble of products sold, and the main criterion; the competitiveness of the goods weighted average for the assortment of goods should be considered in demand.

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

We agree with them on the issue of the role of highly qualified personnel, which of course, although it was reflected in the questionnaire in the form of one criterion - the staff turnover rate - but did not cause the experts, with regret, concern about the liquidation of lyceums, colleges, on the basis of which they trained highly qualified workers and middle managers - foremen, technicians, mechanics, technologists, engaged in servicing not only an innovative technological process, but also innovative equipment. And it is completely sad that the training of engineering and technical personnel has practically ceased, explaining all this by the lack of their demand, although the heads of enterprises themselves are at a loss. There is also a downside to this situation, namely, that managers have moved away from training these highly qualified specialists through targeted training in colleges and universities, not wanting to bear the costs of this very training, forgetting the Russian proverb: "A miser pays twice." It is also disappointing that the majority of enterprise managers believe that everything will be resolved by itself, but if a shoemaker, a seamstress-minder, a furrier can be trained in the workplace, then it is unlikely to train a leading engineer - a manager and a production organizer for filled technological processes with an effective innovative solution ...

Once again I want to recall one more Russian proverb: "That until the thunder breaks out, the man does not cross himself." Is it really necessary to step

on a rake, get a tangible blow on the forehead and shout - "Ugh, I remembered the name of this tool, that this is a rake." the lightest industry, which was confirmed by the experts - respondents, showing unanimity on the main criteria for assessing the competitiveness of light industry enterprises. Summing up the analysis of the concept of "product attractiveness", its relationship with the closest economic concepts, it is methodologically expedient to arrange the relations of these concepts systematically. Table 2 shows the results of a survey of all respondents on the formation of the image of goods and its attractiveness. ensuring competitiveness and demand among consumers.

Unfortunately, the respondents, when filling out the questionnaires offered to them, did not pay due attention to communication with sellers, methods of payment for a purchase, the possibility of exchanging a purchase made if necessary: the level of service and other factors, and only because our consumer is not spoiled by all this list of services service, both the manufacturer and the trade still have a lot of opportunities for improvement in interaction with consumers in order to guarantee themselves a steady demand.

Thus, the criteria "Product attractiveness" has the right to life and are more significant for both the manufacturer and the buyer to ensure sustainable demand for products manufactured in the regions of the Southern Federal District and the North Caucasus Federal District, and this is the most important and dominant wish for meeting needs, which consumers of these regions would like to sell.

The 21st century has sharpened the scientific, philosophical and practical interest in competition by improving the quality of manufactured products. The scale, content, forms and significance of competition put it in a number of global problems of human development with one important clarification: it is not humanity itself that benefits from achievements in the competitive struggle, but individual subjects of human activity, starting with the personality of the performer and the head of the enterprise, and up to those states in whose interests they work. Therefore, the organization of effective participation in competition should be considered as a leading indicator of professional competence, spiritual maturity and political consciousness, bearing in mind, of course, economic policy. We all wish ourselves and our neighbors success in life, and we associate this with happiness. We explain this condition more often - by external factors: luck, luck, support. Less often - internal - personal qualities.

Judging by the interest in different types of testing, expert assessments, the question generally remains open: what determines success in life?

Often, subconsciously, we feel our inefficiency, but, not understanding the origins, we react to it in different ways: some with even greater frenzy pounce

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on disgusting work, others, with no less zeal, begin to conflict with others, blaming them for their failures. Success is usually associated with the fact that the more you produce, the more you do, the higher your efficiency, your success. They are very often confused (and sometimes even deliberately) with performance, forgetting or not knowing that the result will be effective if it is not measured against costs.

Production, thoughts and things with a positive interaction of man with the world obey the general law of Nature: existence is possible only under the condition: the arrival of energy must be greater than its consumption. True efficiency is a function of its two constituent elements: the achieved result (P), as well as the resources and means (PC) that allow it to be obtained: remember the fable about the peasant and the goose laying the golden eggs Efficiency lies in the balance of its components, ie "P / PC = MEASURE". Indeed, if you adopt a behavior that focuses only on the golden eggs and neglects the goose, then you will soon be left without the resources that produce these golden eggs. On the other hand, if you only care about the goose, forgetting about the golden eggs, then soon you will not be able to feed yourself and the goose.

So, the effectiveness of the activity lies in the proportionality of the result with resources and means: "R / PC = MEASURE".

The resource of an enterprising person is the whole world around him, but first of all he himself.

A person's personal resources are in his mind and character, in the skills and abilities of interacting with the world.

There is a Pareto rule: 20/80. If you try to use it in our case, you get the following. In relation to an individual, this is: 20% of actions and thoughts give 80% of a positive result. It is striking the persistence with which a person, having been unsatisfied with the result for decades, repeats monotonous actions, but at the same time he never once has the thought: "I'm doing something wrong !? Or - is there something wrong !? " It is very easy for a person to get used to doing stupid, hard physical or monotonous intellectual work and it is very difficult for him to look at himself through the eyes of a researcher, through the eyes of a Master.

They say: "they change a person - situations", but only the Master in them deeply experiences what is happening, is their active participant. The situation for the Master is filled not only with novelty, but also with meaning, in it he finds differences, changes, points of growth. He sees his goal in her. The problem evokes in him a sense of rivalry, a sense of readiness and mobilizes all his forces, which, with such a mood, only multiply with each positive decision. We learn from mistakes, but he has no mistakes, there is only experience, positive experience.

It is the Masters who make up those 20% of people who account for 80% of success. And

therefore, our eternal problem looks like a dilemma: either you become a Master, or all your life you chase in the "collective" of an eighty percent crowd after the ghost of twenty percent success. And the question is justified, will we become the master of our destiny with the inner resource of the Master?

The strategies and behaviors developed can be assessed as productive or unproductive, depending on their relevance to the situation: recall the tale of a fool, a man and a goose that lays the golden eggs.

The technical term for thinking styles is query modes. Query Modes represent a basic set of targeted worldview techniques. They are built on previously acquired preferences, learned values and views of the world - concepts of the world and the nature of reality, which relate to the map as a system of landmarks used when moving.

To succeed in learning, you just need to start working with the material, try it without any prejudice, and consolidate its assimilation with appropriate exercises.

In any "masterful" skill or action, we can find a certain "strategy". His Master strategy includes a series of thoughts and actions that lead relentlessly to success.

Cherished goals serve as a measure of success. Choosing and achieving goals (these include dreams, hopes, desires and specific goals) can be considered the most important components of human experience. In addition to the satisfaction of success achieved, choosing the right goal can literally change our lives. Usually the desired is achieved through personal qualities. It is personalities that turn clear goals into motivation, self-confidence, perseverance and other human qualities that steadily lead to success. Ambition is undoubtedly considered one of these qualities.

The activity of imagination and the development of will, undoubtedly, is of much greater benefit than overtime work.

Behavior has a purpose, because it must lead to a particular result, and we interpret our actions as aimed at a certain outcome. We ourselves attach importance to them, although sometimes we do it only afterwards, "in hindsight".

Even in cases where we act without realizing, we still have a fundamental motivation - an unspoken goal.

Consciously and accurately formulating your own goals, that is, a "well-defined outcome", increases the chances of transforming our desires into appropriate actions on the path to success.

Let us analyze this in the context of the general movement towards perfection, namely:

1. Decide what you want (formulate and set a goal for yourself).
2. Do something.
3. See what happens.

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4. If necessary, change the approach until you achieve what you want.

Setting the right goals means being able to "correctly formulate the result."

The main principles of the formation and selection of their goals are:

1. Selecting goals that deserve to be achieved.
2. Choosing a goal that you can achieve on your own.
3. State your goal in affirmative terms.
4. Express your goal accurately, in sensory categories.
5. Match your goal with the situation.
6. Soberly assess the consequences of achieving your goal.

Perhaps we began to understand that if we want to change something, then we must start the change with ourselves. And in order to change ourselves effectively, we must first of all change our perception.

The need to tighten responsibility for the quality of import-substituted products is confirmed by the results of checking this very quality by Ros quality specialists. In their opinion, the quality of products does not depend on their price, it is only necessary to strictly comply with the requirements of GOSTs and technical regulations during their production, increasing the level of responsibility of enterprise managers for the results of their work and the level of individual responsibility of performers employed in workplaces in the digital production of import-substituting products.

The experience of applying statistical methods of quality control using the Pareto diagram at machine-building enterprises in the regions of the Southern Federal District and the North Caucasus Federal District are presented below in the form of research results

The modern market economy imposes fundamentally new requirements for the quality of products. Quality management is one of the key functions of both corporate and project management, the main means of achieving and maintaining the competitiveness of any enterprise. The key task of the management of companies is the creation, practical implementation and subsequent certification of the quality management system (a modern term that replaced the previously used term - "quality management systems"), and the products supplied for a certain period of time (contract validity, release date for this type of product, etc.) etc.). Quality management is, in essence, a cross-cutting aspect of the enterprise management system - similar to such as time, costs, personnel management.

Quality is formed in the production process, therefore, the main factor in ensuring quality and one of the decisive elements of ensuring the competitiveness of an enterprise is the quality management system operating at the enterprise.

The reason for the development of the QMS is the awareness of the new realities of the market. Now the presence of a certified QMS is practically becoming a necessity: this is a mandatory requirement of some customers when concluding contracts, this is a mandatory requirement for participation in most tenders. Voluntary certification of the QMS is gradually becoming a necessity for manufacturers, in fact becoming mandatory. That is why QMS is one of the stages in the development of every modern enterprise. When developing a QMS, it is necessary to coordinate management activities in relation to quality, thereby strengthening the relationship of all structural divisions.

The quality of products, their technical level is assessed by comparing the technical and economic indicators of products with the best domestic and foreign samples, as well as with products of competing organizations. In this case, the assessment is carried out according to the main indicators characterizing the most important properties of the products.

The manufacture of rejected products leads to a decrease in the amount for manufactured and sold products, to an increase in the cost of production, to a decrease in profits and profitability.

In the process of analysis, the dynamics of marriage is studied in terms of the absolute amount and share in the total output of marketable products; losses from marriage are determined. Then the reasons for the decrease in the quality and admitted defects of products are studied by the places of their occurrence and the centers of responsibility, and measures are developed to eliminate them.

In the production process of any product, it is impossible to obtain all products of the same quality, that is, the parameters of various units of products fluctuate within certain limits. This fluctuation is caused by a complex of random and systematic reasons that operate in the production process and determine the errors of this technological process. If the fluctuation of the parameters is within the permissible limits (within the tolerance), then the product is suitable, but if it goes beyond these limits - the rejects, which are either disposed of or restored and re-sold.

In modern conditions of aggravation of competition, its transformation into a global basis for the survival and success of an enterprise, the basis of a stable position of an enterprise in the market is a timely offer of products that meet the world level of quality. At the same time, the competitiveness of any enterprise, regardless of size, form of ownership and other features, depends primarily on the quality of the product and the commensurability of its price with the offered quality, i.e. on the extent to which the company's products meet the needs of the consumer.

These circumstances lead to a natural growth of the role of the quality management system of the

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enterprise as a universal tool for increasing the competitiveness of the enterprise, allowing to achieve the goal of reducing the cost of manufactured products with absolute satisfaction of consumer requirements.

The most widespread organizational and methodological basis in the world for creating quality management systems for enterprises is the international standards ISO 9000 series. Creation of a quality system based on these standards allows an enterprise to move from product quality management to quality management of the entire enterprise.

Within the framework of the quality system, the economic aspect is also implemented - taking into account the relationship between product quality and the results of the economic activity of an enterprise through taking into account its costs for quality assurance and comparing them with losses associated with the release of low-quality products.

The crisis state of the domestic economy determines the exceptional urgency of the problem of creating quality management systems at Russian enterprises in order to ensure the competitiveness of enterprises. For the majority of enterprises in our country, a situation is typical when the non-competitiveness of products in terms of quality is aggravated by the non-competitiveness in terms of price due to the excessive cost of production. Therefore, one of the prerequisites for bringing the Russian economy out of the crisis is the introduction of effective quality management systems capable of ensuring the competitiveness of the manufactured product in terms of price and quality.

Thus, in order to increase the competitiveness of enterprises, the problem of creating quality systems should be solved both at the level of individual enterprises and at the state level. Among the measures designed to stimulate enterprises to introduce quality management systems, the establishment in 1996 of the annual Prize of the Government of the Russian Federation in the field of quality, as well as the adoption by the Government in 1998 of a resolution "On some measures aimed at improving systems for ensuring the quality of products and services" ...

However, the task of creating an efficiently functioning quality management system should be solved, first of all, at the level of a particular enterprise, taking into account its characteristics determined by the field of activity, the current financial state, the existing level of implementation of consistency in work on quality assurance, etc.

At present, the number of enterprises implementing a quality management system based on the ISO 9000 series standards has sharply increased, which is facilitated by a number of circumstances, the main of which are:

organization of work on the implementation of quality systems is an important element of several federal programs;*

when creating joint ventures, foreign firms and companies often set a prerequisite: preparation and operation of a quality system in accordance with the ISO 9000 series standards;*

* enterprises of various industries seeking to export products are faced with the problem of introducing ISO standards and certification of quality systems for compliance with these standards during contract negotiations, and also in a number of countries it becomes difficult to sell products without confirming the stability of quality during their release;

creation of more favorable conditions for insurance, obtaining a loan, investment, participation in tenders, competitions and other events that may end with a contract; *

the executive discipline at the enterprise is increased, the motivation of employees is improved, the losses that were provoked by defects and inconsistencies are reduced;*

the enterprise becomes more "transparent" for management, in this regard, the quality of management decisions increases;*

A number of problems that the company faces on the way to create a quality management system, namely:

*the specialists of our enterprises have no real experience of work in the conditions of market relations. During the certification of quality systems, the lack of such experience is observed in many forms, namely: in the inability to establish effective feedback with consumers; lack of skills in the assessment and selection of suppliers; in an unclear distribution of responsibility between managers of different levels; in duplication of some processes, etc .;

*Taking managerial decisions on the implementation of quality assurance measures, the heads of enterprises pursue the goal of not creating an efficiently functioning quality system, which will actually guarantee the quality of products in accordance with the needs and expectations of consumers, namely, obtaining a certificate, certificate. The external market for domestic enterprises that do not have a quality system based on the ISO 9000 series is practically closed. Therefore, the administration of enterprises is primarily interested in the timing of obtaining an international certificate of quality. And issues related to the volume of labor, material, technical and financial resources required for the implementation and certification of the quality system and, most importantly, to ensure its cost-effective operation, fade into the background;

* the appointment of specialists for the development and implementation of quality management systems according to the international quality management system by the management of an enterprise is often carried out without proper selection of candidates and understanding of the criteria that these candidates must satisfy.

Despite the many reasons that make the work of introducing an international system based on the

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international standards ISO 9000 series in domestic enterprises by no means easy, many enterprises have quite consciously embarked on this path. In the process of purposeful work to improve their quality management systems, they have made tangible changes for the better, strengthened their position among competitors and now set themselves more challenging goals. Increasing the competitiveness of an enterprise through the implementation and improvement of the quality management system is a problem that requires an integrated approach, covering not only the production process of products, but also its implementation and after-sales service.

In September 2015, the international standard ISO 9001: 2015 came into force. Russian version of GOST R ISO 9001-2015 "Quality management systems. Requirements" entered into force on November 01, 2015.

In the new version of the GOST R ISO 9001-2015 standard, relative to the previous one, significant changes in particular, the structure of the standard has changed. The new version of the standard now contains 10 sections instead of 9.

The updated version of GOST R ISO 9001-2015 includes the following sections:

0. Introduction.

This section of the GOST R ISO 9001-2015 standard provides general provisions on the quality management system, quality management principles and the process approach.

1 area of use.

This section establishes the scope of the GOST R ISO 9001-2015 standard. As in the previous version of the GOST ISO 9001-2011 standard, the section establishes uniform requirements for quality management systems of an enterprise, regardless of size and areas of activity. The GOST R ISO 9001-2015 standard can be applied:

- * when an enterprise wants to demonstrate the ability to manufacture products or provide services that meet customer requirements;

- * for the purpose of increasing customer satisfaction.

2. Normative references.

This section of the GOST R ISO 9001-2015 standard provides links to interrelated standards.

3. Terms and definitions.

The terms and definitions used in GOST R ISO 9001-2015 are given in the new version of GOST R ISO 9000-2015.

4. The environment of the enterprise.

This section of GOST R ISO 9001-2015 establishes requirements for:

- * identification of internal and external conditions of the enterprise, affecting the quality management system and the results of the enterprise;

- * identification of interested parties influencing the QMS and determining the requirements of interested parties, monitoring these requirements;

- * defining the scope of the quality management system, which should be documented;

- * to the definition and management of QMS processes. Opportunities and risks should also be identified for each QMS process.

5. Leadership.

This section of GOST R ISO 9001-2015 establishes requirements for:

- * top management, which should take a leading role in the implementation and management of the QMS;

- * quality policy;

- * top management, which must define responsibility, authority and assign roles at the enterprise for the functioning of the QMS and the implementation of customer requirements.

6. Planning.

This section of GOST R ISO 9001-2015 establishes requirements for:

- * identification of risks and opportunities that can affect the QMS and the achievement of the enterprise's planned results. Requirements are established for developing a response plan for risks and opportunities;

- * defining quality objectives and planning the achievement of quality objectives;

- * planning changes to the QMS.

7. Provision

This section of GOST R ISO 9001-2015 establishes requirements for:

- * management of resources, infrastructure, personnel, knowledge, production environment, as well as tools for monitoring and measuring;

- * requirements for the competence of personnel;

- * awareness of personnel on QMS issues;

- * the definition of external and internal interactions affecting the QMS of the enterprise;

- * documentation (creation, updating, management of documented information).

8. Processes.

This section of GOST R ISO 9001-2015 establishes requirements for:

- * planning and management of QMS processes;

- * defining requirements for products and services;

- * development and design of products and services;

- * management of external support for products and services;

- * preservation of products and services;

- * production of products and services;

- * management of nonconforming products, services, processes.

9. Conducting an assessment.

This section of GOST R ISO 9001-2015 establishes requirements for:

- * monitoring, measurements, analysis and assessment of the QMS and the activities of the

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enterprise. Also specifies requirements for measuring customer satisfaction;

- * to conduct internal audits of the QMS;
- * conducting an analysis of the enterprise's QMS by the top management.

10. Improvements

This section of GOST R ISO 9001-2015 establishes requirements for:

- * making improvements in products, services and processes, as well as the company's QMS.
- * actions upon detection of non-conformities, taking corrective actions;

* continuous improvement of the QMS and the results of the enterprise.

The new structure of the standard is reflected in the schematic representation of the process approach. The process approach diagram reflects the relationship of all clauses of the standard, as shown in Figure 2.

The key changes in the new version of the standard are the requirements for risk assessment, as well as a risk management approach in the design and development of a quality management system.



Figure 2. - Scheme of the process approach

The International Accreditation Forum (IAF) has approved a three-year transition period from mandatory ISO 9001: 2008 (GOST R ISO 9001-2011) to ISO 9001: 2015 (GOST R ISO 9001-2015). During this period, both standards and certificates of conformity issued to the enterprise by certification bodies will be in force. Certificates issued for compliance with ISO 9001: 2008 ceased to be valid only in September 2018.

Among the statistical methods of quality control, the most common both today and tomorrow, the so-called seven quality control tools :

- *Pareto chart;
- *Ishikawa's causal diagram;
- *control card;
- *bar graph;
- *scatter chart;
- *stratification method;
- *checklists.

Taken together, these methods form an effective system of methods for quality control and analysis.

Seven simple methods can be applied in any sequence, in any combination, in various analytical situations, they can be considered both as an integral system and as separate analysis tools. In each specific case, it is proposed to determine the composition and structure of the working set of methods.

The Pareto chart allows you to visualize the amount of loss of defects depending on various objects; it is a kind of a bar chart used to visualize the factors under consideration in decreasing order of their importance.

The construction of a Pareto chart begins with the classification of emerging problems according to individual factors (for example, problems related to marriage; problems related to the operation of equipment or performers, etc.) Then the collection and analysis of statistical material for each factor follows in order to find out which ones. of these factors are prevalent in solving problems.

With regard to the construction and use of a Pareto chart, the following can be recommended: it is

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desirable to use different classifications and make many Pareto charts. The essence of the problem can be grasped by observing the phenomenon from different points of view, so it is important to try different ways of classifying data until a few essential factors are identified, which, in fact, is the purpose of Pareto analysis; the group of factors "other" should not constitute a large percentage. A large percentage of this group indicates that the objects of observation are classified incorrectly and too many objects fall into one group, which means that a different classification principle should be used; if the data can be represented in monetary terms, it is best to show this on the vertical axes of the Pareto chart. If the existing problem cannot be estimated in monetary terms, the research itself may be ineffective, since costs are an important measurement criterion in management;

if an undesirable factor can be eliminated with a simple solution, this must be done immediately, no matter how insignificant it may be... Since the Pareto chart is regarded as an effective means of solving problems, only a few, essential reasons should be considered. However, the elimination of a relatively

unimportant cause in a simple way can serve as an example of an effective solution to the problem, and the gained experience, information and moral satisfaction can have a beneficial effect on the further procedure for solving problems; Opportunities to draw up a Pareto chart should not be missed for reasons.

In a rectangular coordinate system, equal segments corresponding to the factors under consideration are laid along the abscissa axis, and the value of their contribution to the problem being solved along the ordinate axis. In this case, the order of the factors is such that the influence of each subsequent factor located on the abscissa decreases in comparison with the previous factor (or a group of factors). The result is a chart with bars that correspond to the individual factors that are causing the problem, and the height of the bars decreases from left to right. Then a cumulative curve is constructed based on this diagram.

Building a Pareto chart in Excel consists of the following steps.

Suppose we have product sales data shown in the table (Figure 3):

	A	B
1	Товар	Прибыль, млн. руб.
2	Хлеб	962
3	Крупа	115
4	Овощи	190
5	Фрукты	226
6	Сахар	132
7	Мясо	537
8	Рыба	764
9	Молоко	157
10	Яйца	278
11	Масло	96

Figure 3. - Product sales data

The data in the table (Figure 3) is not ordered, therefore, first of all, let's sort the data in descending order of profit To do this, select the table (Figure 4) and select Data -> Sort and Filter -> Sort in the tab bar:

Additionally, we added several columns to the table (Figure 4) (Figure 5):

Increasing percentage of profit,% - each product is summed up with the previous one and the total share in the profit is shown; Efficiency ratio - in this case 80% (according to the Pareto rule);

Backlight criterion - in the final diagram, the main sources of profit will be highlighted, we indicate a value obviously greater than 1.

To build a Pareto chart, the initial data are presented in the form of a table, in the first column of

which the analyzed factors are indicated, in the second - absolute data characterizing the number of cases of detection of the analyzed factors in the period under consideration, in the third - the total number of factors by type, in the fourth - their percentage , in the fifth - the cumulative (accumulated) percentage of cases of detection of factors.

"Other factors" are always placed last on the ordinate; if the share of these factors is relatively large, then it is necessary to decipher them, highlighting the most significant ones. Based on these, the initial data, a bar chart is built (Figure 1.5), and then, using the data in column 5 and an additional ordinate denoting the cumulative percentage, a Lorentz curve is drawn. It is possible to build a Pareto diagram when the data of columns 4 are laid on the

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main ordinate; in this case, to plot the Lorentz curve, there is no need to include an additional ordinate in the diagram.

	A	B	C	D	E
1	Товар	Прибыль, млн. руб.	Нарастающий процент прибыли, %	Коэффициент	Подсветка
2	Хлеб	962	27,8%	80%	200%
3	Рыба	764	49,9%	80%	200%
4	Мясо	537	65,5%	80%	200%
5	Яйца	278	73,5%	80%	200%
6	Фрукты	226	80,0%	80%	0%
7	Овощи	190	85,5%	80%	0%
8	Молоко	157	90,1%	80%	0%
9	Сахар	132	93,9%	80%	0%
10	Крупа	115	97,2%	80%	0%
11	Масло	96	100,0%	80%	0%

Figure 4. - Data on sales of products with the addition of columns

	A	B	C	D	E
1	Товар	Прибыль, млн. руб.	Нарастающий процент прибыли, %	Коэффициент	Подсветка
2	Хлеб	962	=СУММ(\$B\$2:B2)/СУММ(\$B\$2:\$B\$11)	0,8	=ЕСЛИ(C2<D2;2;0)
3	Рыба	764	=СУММ(\$B\$2:B3)/СУММ(\$B\$2:\$B\$11)	=D2	=ЕСЛИ(C3<D3;2;0)
4	Мясо	537	=СУММ(\$B\$2:B4)/СУММ(\$B\$2:\$B\$11)	=D3	=ЕСЛИ(C4<D4;2;0)
5	Яйца	278	=СУММ(\$B\$2:B5)/СУММ(\$B\$2:\$B\$11)	=D4	=ЕСЛИ(C5<D5;2;0)
6	Фрукты	226	=СУММ(\$B\$2:B6)/СУММ(\$B\$2:\$B\$11)	=D5	=ЕСЛИ(C6<D6;2;0)
7	Овощи	190	=СУММ(\$B\$2:B7)/СУММ(\$B\$2:\$B\$11)	=D6	=ЕСЛИ(C7<D7;2;0)
8	Молоко	157	=СУММ(\$B\$2:B8)/СУММ(\$B\$2:\$B\$11)	=D7	=ЕСЛИ(C8<D8;2;0)
9	Сахар	132	=СУММ(\$B\$2:B9)/СУММ(\$B\$2:\$B\$11)	=D8	=ЕСЛИ(C9<D9;2;0)
10	Крупа	115	=СУММ(\$B\$2:B10)/СУММ(\$B\$2:\$B\$11)	=D9	=ЕСЛИ(C10<D10;2;0)
11	Масло	96	=СУММ(\$B\$2:B11)/СУММ(\$B\$2:\$B\$11)	=D10	=ЕСЛИ(C11<D11;2;0)

Figure 5. Deciphering the formulas of the auxiliary table (Figure 4)

To build a Pareto chart, the initial data are presented in the form of a table, in the first column of which the analyzed factors are indicated, in the second - absolute data characterizing the number of cases of detection of the analyzed factors in the period under consideration, in the third - the total number of factors by type, in the fourth - their percentage, in the fifth - the cumulative (accumulated) percentage of cases of detection of factors.

"Other factors" are always placed last on the ordinate; if the share of these factors is relatively

large, then it is necessary to decipher them, highlighting the most significant ones. Based on these, the initial data, a bar graph is built (Figure 6), and then, using the data in column 5 and an additional ordinate denoting the cumulative percentage, a Lorentz curve is drawn. It is possible to build a Pareto diagram when the data of columns 4 are laid on the main ordinate; in this case, to plot the Lorentz curve, there is no need to include an additional ordinate in the diagram.



Figure 6. Pareto chart

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To solve all kinds of problems associated with the appearance of defects, equipment malfunctions, an increase in the time from the release of a batch of

products to its sale, the presence of unsold products in the warehouse, the receipt of complaints, the Pareto chart is used (Figures 7 and 8).

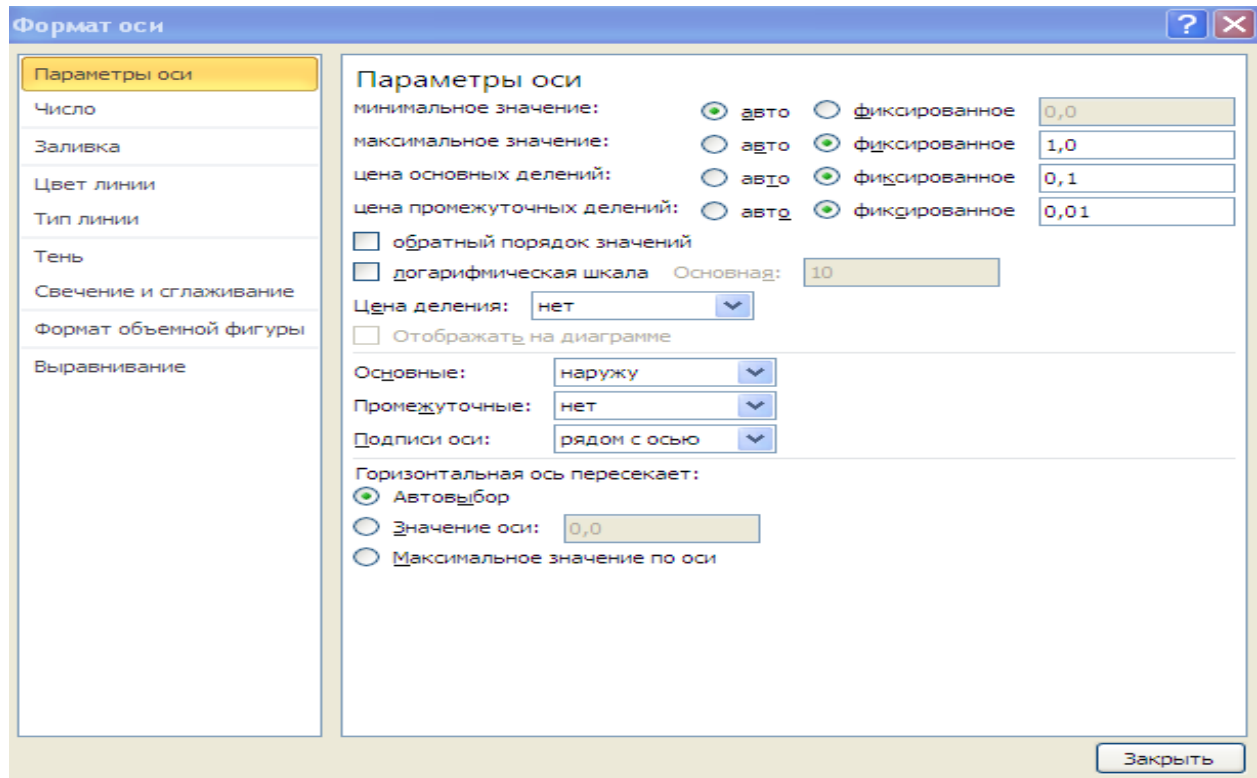


Figure 7. Window for building a Pareto chart in Excel

Defect	Number of defects	Accumulated share of defects	Cumulative percentage
knotting	96	12	12%
span	94	13	25%
hood	85	eleven	36%
white	84	eleven	47%
massive cliff	72	nine	56%
"Sliding" warp threads	69	nine	65%
"Prickly" surface	58	7	72%
oil stains	56	eight	80%
knots	53	6	86%
overshoot	41	6	92%
edge flaking	39	5	97%
others	25	3	100%
total	772		

Figure 8. Initial data for building a Pareto chart in Excel

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JIF = 1.500	SJIF (Morocco) = 7.184	OAJI (USA) = 0.350

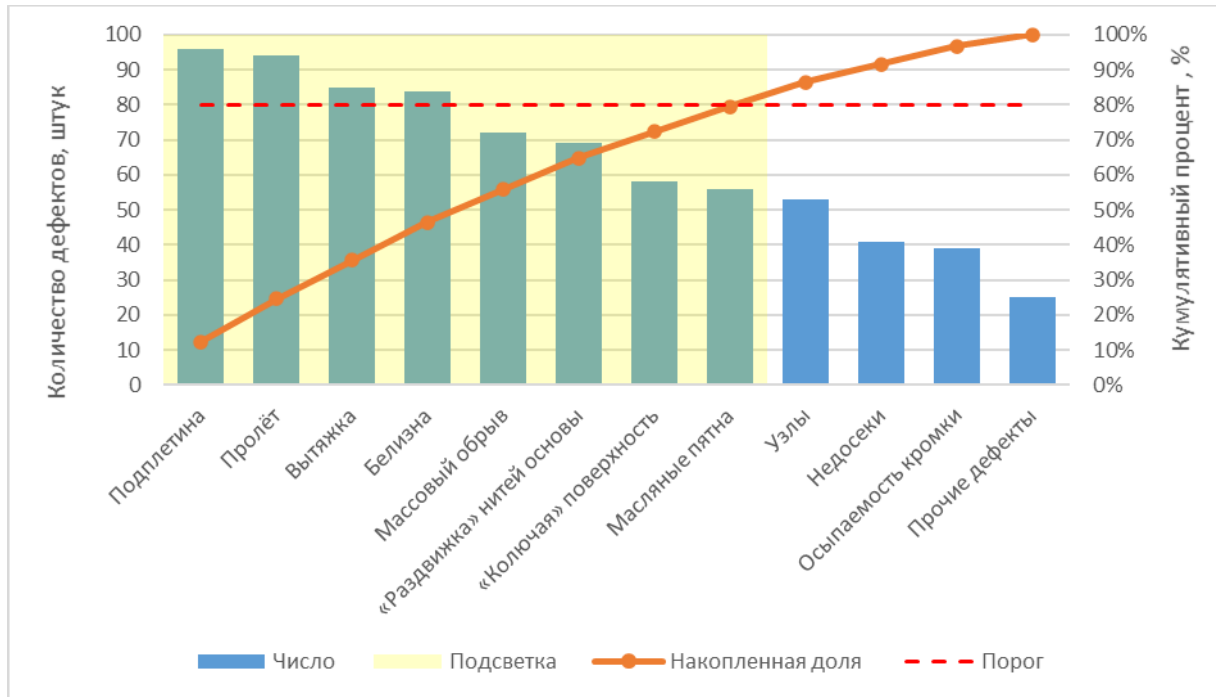


Figure 9. - An example of building a Pareto chart for identified defects Select all the data (Figure 3) and insert it into the histogram. To do this, go to the tab bar on Insert -> Chart -> Histogram -> Histogram with grouping (Figure 10):

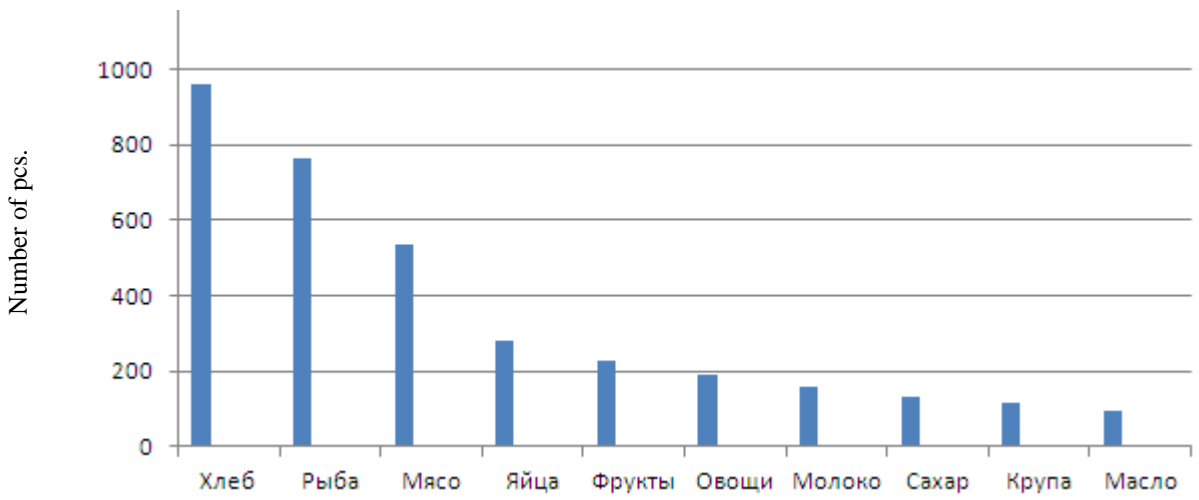


Figure 10. - Building a histogram

Now let's transform the chart into a more convenient view. Select the row "Increasing percentage of profit,%" and transfer it to the

secondary axis (right-click on the row, select Format data series -> Row parameters -> Along the secondary axis) (Figure 11):

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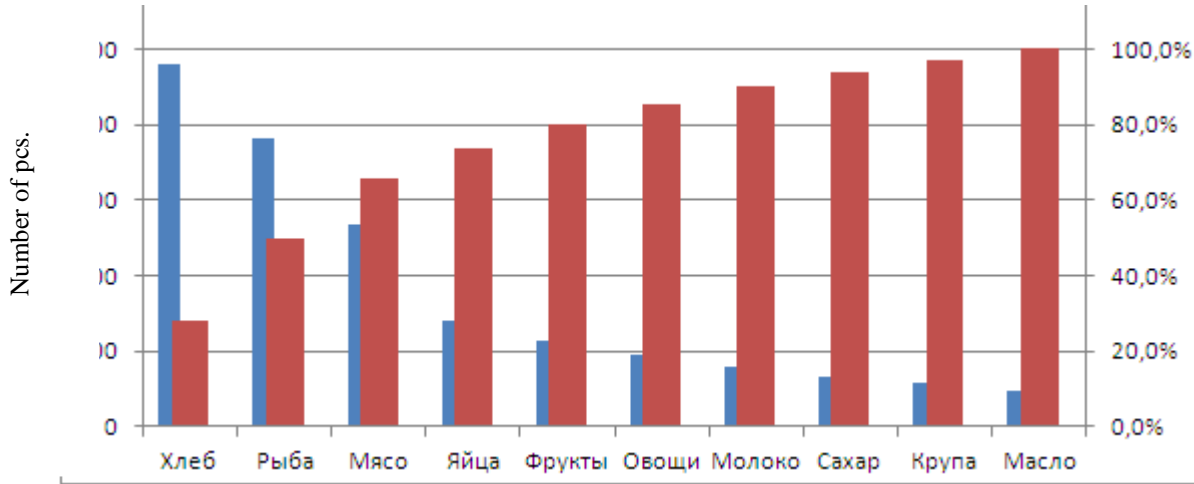


Figure 11. - Transferring the row to the auxiliary axis

We will also change the chart type for this series to a regular line chart (right-click on the series, select

Change chart type for the series) (Figure 12):

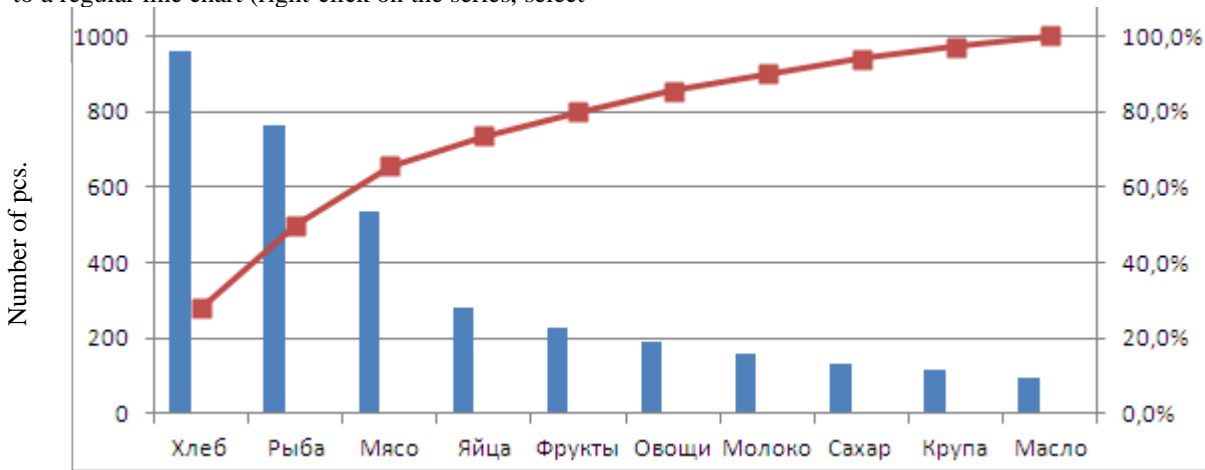


Figure 12. - Changing the type of chart for a series

Further, we carry out similar actions for the "Coefficient" row, which we transfer to the auxiliary

axis and make it a horizontal line (Figure 13):

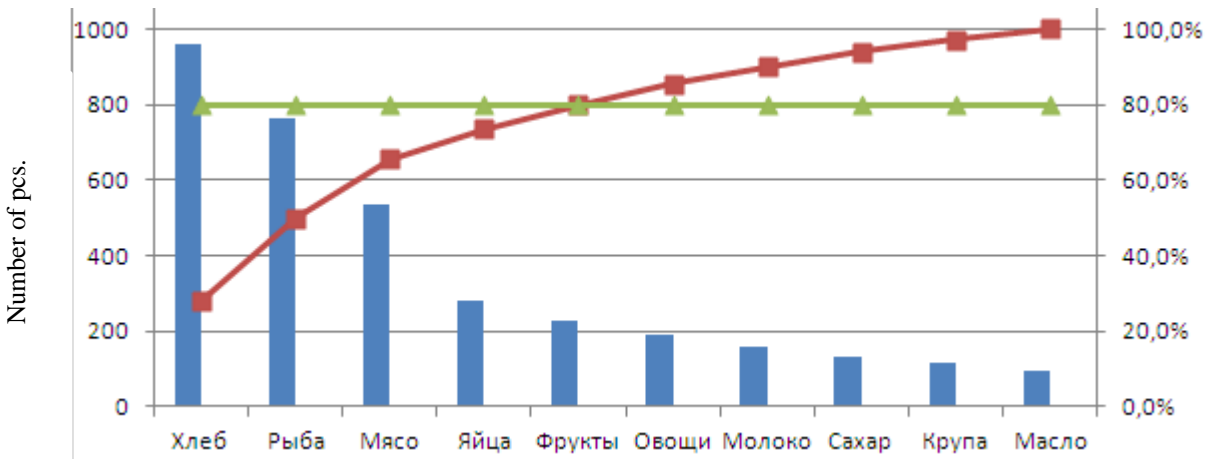


Figure 13. - Adding a horizontal line to the diagram

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Let's add highlighting to the chart that shows which specific product groups bring the main profit. Select the "Highlight" row and transfer it to the

secondary axis. Set the side gap to 0 - right-click on the row, select Format data series -> Row parameters -> Side gap (Figure 14):

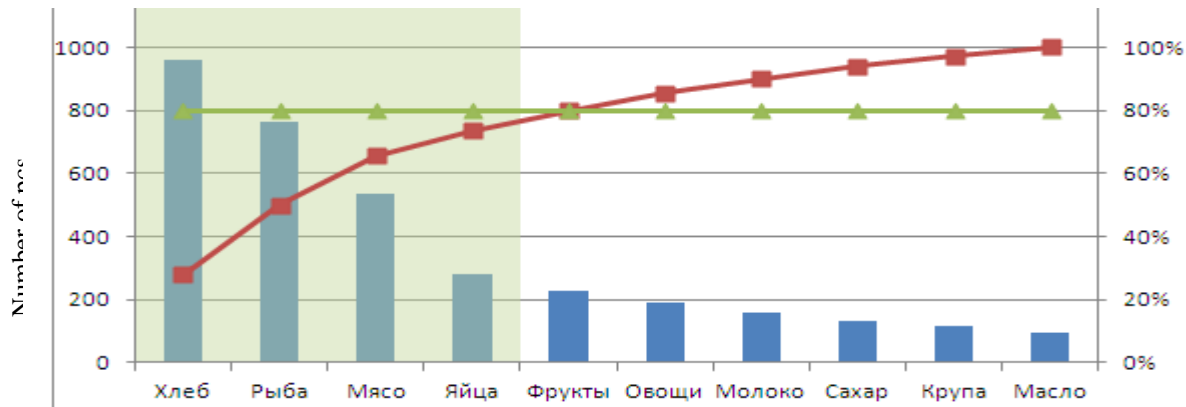


Figure 14. - An example of a Pareto chart in Excel for product sales data (Figure 4)

We customize the chart at our discretion and get the final look of the Pareto chart in Excel (Figure 1.14):

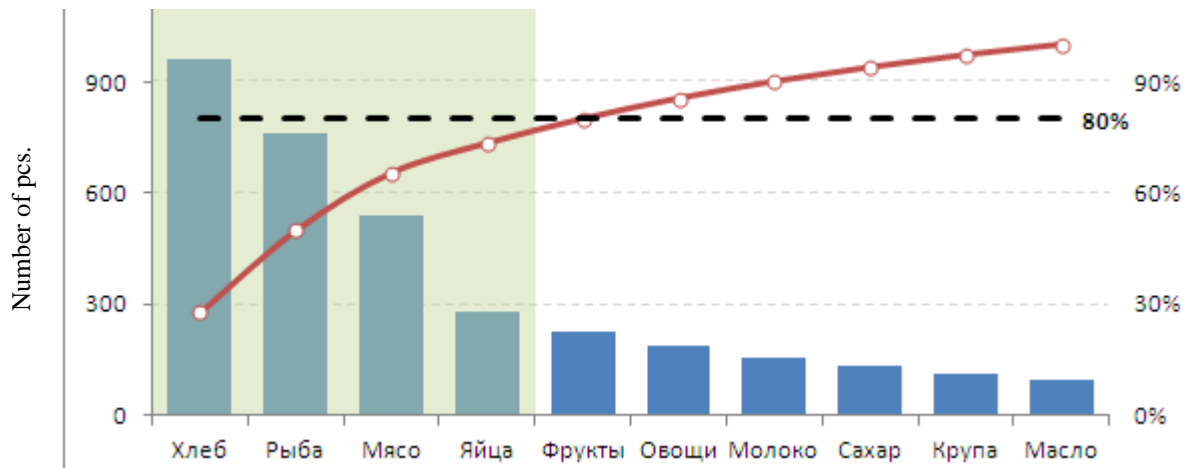


Figure 15. - The final view of the Pareto chart in Excel (wrong)

If Figures 12 and 13 are constructed correctly and the condition for the formation of the cumulative percentage is satisfied, the total value of which cannot be more than 100%, and the scaling must be implemented in accordance with the rules for the design of charts, namely: the scale of the right ordinate is set to 10% and the axis is divided like this way, there are always only ten parts, which provokes the formation of the left ordinate axis, namely, choosing the scale ratio between the left and right ordinate axes 1: 1; 1: 2; 1: 5; 1: 10; or 1: 1; 2: 1; 5: 1; 10: 1; then Figures 15 and 16 are incorrectly constructed.

The Pareto chart allows you to distribute efforts to resolve emerging problems and establish the main factors with which you need to start to act in order to overcome the problems that arise.

Further, we carry out similar actions for the "Coefficient" series, which we transfer to the auxiliary axis, and make it a horizontal line:

We customize the chart at our discretion and get the final look of the Pareto chart in Excel (Figure 16), but the plotted incorrectly - the ordinate axis has the designation 120%, and it should be no more than 100%

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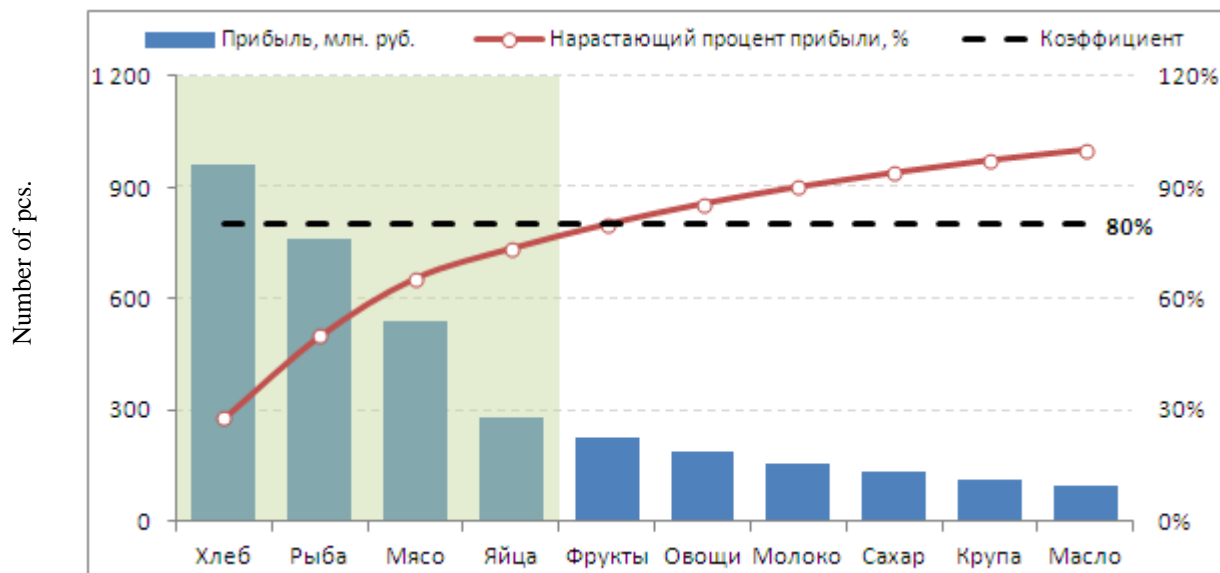


Figure 16 The second option for building the final form of the Pareto chart in Excel

Let's clarify the stages of solving the problem of constructing a Pareto chart in Excel, namely:

Stage 1. First you need to decide:

1. What problems need to be investigated (e.g. defective products, money losses, accidents);
2. what data needs to be collected and how to classify them (for example, by the types of defects, by the place of their occurrence, by processes, by machines, by workers, by technological reasons, by equipment, by measurement methods and measuring instruments used; not common signs combined under the general heading "other");
3. Determine the method and period of data collection.

Stage 2. Development of a checklist for registering data with a list of the types of information collected.

Stage 3. Filling out the data registration sheet and calculating the totals.

Stage 4. Development of a table for checking data with columns for totals for each checked feature separately, the accumulated sum of the number of defects, percent of the total and accumulated interest (table 3).

Stage 5. Arrangement of data obtained for each checked attribute, in order of importance and filling out the table (see table 3).

Table 3. Results of data registration by types of defects for building a Pareto chart in Excel

Types of defects	Number of defects	Accumulated number of defects	The percentage of the number of defects for each feature to the total amount	Accrued interest
Deformation	104	104	52	52
Scratches	41	146	21	73
Sinks	twenty	166	ten	83
Cracks	ten	176	5	88
Stains	6	182	3	91
The gap	4	186	2	93
Other	fourteen	200	7	100
Total	200	-		

The group "other" should be placed in the last line regardless of its numerical values, since it is a set of features, the numerical result for each of which is

less than the smallest value obtained for the feature selected in a separate line.

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Stage 6. Drawing horizontal and vertical axes.

1. The vertical axis contains percentages, and the horizontal axis contains intervals in accordance with the number of controlled features.

18 and 19).

2. The horizontal axis is divided into intervals in accordance with the number of controlled features.

Stage 7. Building a bar chart (figure

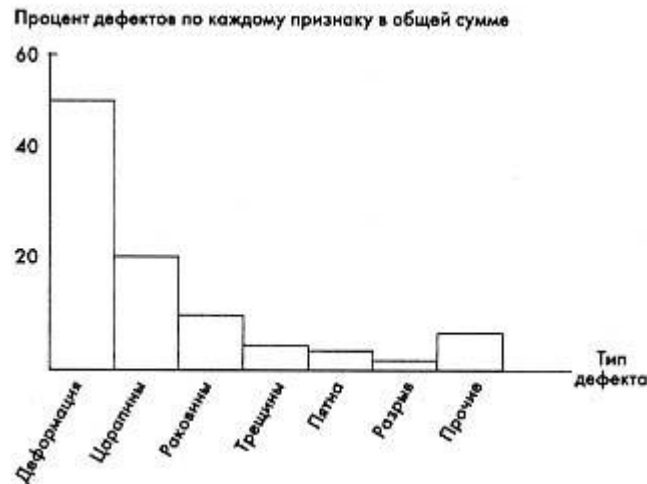


Figure 18. Pareto Chart

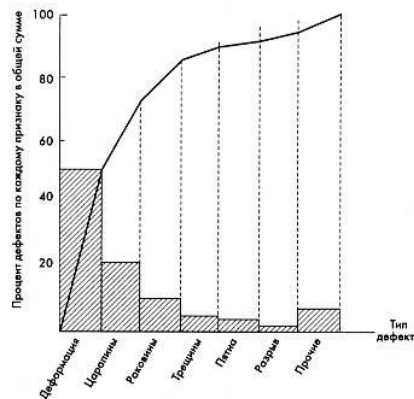


Figure 19. Cumulative Curve in Pareto Chart

Stage 8. Drawing a cumulative curve (Pareto curve) on the diagram (Fig. 19).

Step 9. Drawing on the diagram of all designations and inscriptions concerning the diagram (name, marking of numerical values on the axes, the name of the controlled item, the name of the diagrammer), and data (the period of information collection, the object of research and the place of its conduct, the total number of objects of control).

After identifying the problem by building a Pareto chart from the results, it is important to determine the causes of its occurrence. This is necessary to solve it. When using a Pareto chart to identify performance and causes, the most common method is ABC analysis.

The essence of ABC analysis in this context is to identify three groups that have three levels of importance for quality management:

1. group A - the most important, significant problems, causes, defects. The relative percentage of Group A in the total number of defects (causes) is usually 60 to 80%. Accordingly, the elimination of the causes of group A has a high priority, and the related activities are the highest efficiency;

2. group B - reasons that in total have no more than 20%;

3. group C - the most numerous, but at the same time the least significant causes and problems.

An example of using ABC analysis within the Pareto chart is shown in Figure 20.

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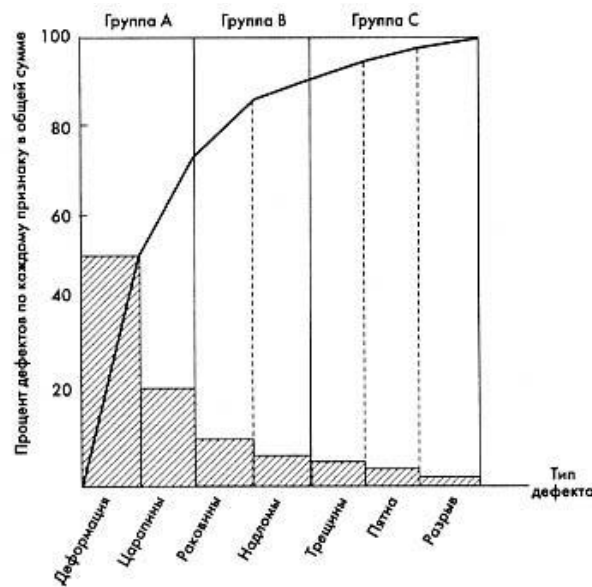


Figure 20 - An example of using ABC - analysis within the framework of the Pareto chart

ABC analysis makes it possible to reasonably determine the priorities of work on managing the quality of manufacture of import-substituting products.

Conclusion

The quality is "written by nature" to be at all times in the epicenter of scientific and amateurish reflections. The problem of ensuring the quality of activities is not just universal, relevant, it is strategic.

The domestic light industry is going through hard times, and the consumer is offered products of dubious quality that have entered our markets by counterfeit and other illegal means, that is, they have no guarantees for buyers to exercise their rights to protect themselves from unscrupulous manufacturers and suppliers.

To reanimate the role and importance of a quality-oriented strategy, since only in this case business leaders will subjectively and objectively have to improve their production using nanotechnology, innovative processes and digital production, so that competitive and import-substituting materials and products fully meet the needs of domestic consumers. At the same time, our statement is substantiated that the consumption of domestic materials and products is regulated by the market. In this case, market requirements should shape the role of the state and consumers in production in the formation of sustainable demand for domestic materials and products, namely:

maintain a range of goods, regulating it by federal, regional and municipal orders;

stimulate price stability; increase consumer ability and gradually improve their quality. The implementation of these tasks will create the basis for the consumer to realize the need to pay for the advantages of high-quality materials and products,

and the manufacturer to realize that improving the quality of materials and products cannot be associated only with rising prices, but also due to technical innovations in digital production, aimed on the use of new technological and engineering solutions.

Today, and even more so tomorrow, it is important to implement one of the defining principles of production efficiency - the manufacturer produces exactly what is needed not only for domestic, but also for foreign consumers.

It is no less important to understand the role and significance of quality activities, that is, how much managers have penetrated into the essence of things, have learned to manage things, change their properties (assortment), form, forcing them to serve a person without significant damage to nature, for the good and in the name of man.

Both political leaders and the government have recently begun to talk about the need for a competent industrial policy. However, if we carefully consider the normative, methodological documents on the structural restructuring of industry, then the thought arises whether we are not stepping on the same rake here that we have been stepping on during all the years of reforms.

What is the essence of economic reforms and the importance of industrial policy in them, which are theoretically substantiated and practically tested by a number of developed countries?

These are the fight against inflation, the strengthening of the national monetary unit and financial stabilization. This is a change in the forms of ownership in various spheres of the economy through the process of privatization. This is a restructuring of the economy under the conditions of market relations.

Moreover, all these fundamental processes of economic reform must be based on structural adjustment. Both financial stabilization and

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privatization should be subordinate to the process of structural adjustment, since it is structural adjustment that determines the final result of reforms and the effectiveness of adaptation of various forms of production to civilized market relations.

The end result should also be the basis for the restructuring of the economy. And these are products, services - their competitiveness in the domestic and world markets.

What happened in the Russian reforms? All three basic processes (financial stabilization, privatization and restructuring) went on their own, without interconnection. Therefore, the methods used by the government and the Central Bank to combat inflation and other economic indicators often ran counter to the tasks of structural adjustment.

As for the process of restructuring, the government's position is expressed by the following statement: "the market will put everything in its place by itself." With such a position towards structural restructuring, it is not surprising that at that time there was no place for the words quality, competitiveness, import substitution in the national economic policy.

This is, unfortunately, the reality of the reforms carried out today. In this connection, I would like to refer to the well-known world experience.

A world-renowned quality specialist E. Deming, who at one time was a scientific advisor to the Japanese government and led Japan out of the economic crisis, in his book "Out of the Crisis" says: "managing paper money, not a long-term digital production strategy is the way into the abyss".

Regarding whether the state needs to pursue industrial policy, one can quote the statement of the outstanding economist of the past, Adam Smith, who 200 years ago laid the foundations for the scientific analysis of the market economy. About the role of the state, he said: "... only it can, in the interests of the nation, limit the greed of monopolists, the adventurism of bankers and the egoism of merchants." It is as if today about us and about our situation in the economy.

What are the results of economic activity today, what are the achievements in this area? Growth of gold and foreign exchange reserves, decrease in inflation, budget surplus and other financial and economic achievements. Is this the end result of public administration? And not the quantity and quality of goods and services sold in the domestic and foreign markets, and not the population's ability to pay to purchase these goods and services? And, ultimately, not the quality of life of the country's population ???

Therefore, it is quite natural that today the task is posed for all levels of the executive and legislative authorities - to improve the quality of life of Russian citizens.

Let's carry out an enlarged factor analysis of the quality of life problem. The quality of life of citizens

depends on the quality of consumed goods and services in the full range - from birth to ritual services, as well as on the ability to pay of citizens, which allows them to purchase quality goods and services. These two factors (quality and solvency) depend on the state of the country's economy, which in turn depends on the efficiency of enterprises in various sectors of the economy, including light industry. The efficiency of enterprises' work depends on the state of management, on the level of application of modern management methods.

The existing world practice of widespread use of modern methods is based on standardization and certification. Standardization allows you to generalize best practices, formalize them in an accessible and understandable form and make them the property of everyone who wants to apply these best practices. Certification allows you to assess the level of implementation of the requirements of standards in practice and give an appropriate guarantee for the consumer. Currently, no more efficient mechanism has been invented for the dissemination of advanced experience in solving various problems, and in the world there are corresponding international structures for standardization and certification.

An analysis of the current international standards, which are aimed at improving the level of enterprise management, shows the following areas of their action:

- quality management systems (a series of international standards ISO 9000 and industry supplements);
- environmental management systems (series of international standards ISO 14000);
- occupational safety and health systems (OHSAS 18001);
- social responsibility system (SA 8000)

The structure of the "quality of life" problem and a set of international standards aimed at solving it.

At the same time, international standards for quality management have the most significant and global character. The use of modern methods in them makes it possible to solve not only the problem of improving quality, but also the problem of economy and the problem of productivity. That is, today the concept of "quality management" is being transformed into the concept of "quality management".

Thus, solving the problem of increasing the efficiency and competitiveness of the economy, and ultimately the quality of life, is impossible without the implementation of a well-thought-out and competent industrial policy, in which innovations based on digital production and quality should become the priority directions of the state's economic policy.

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