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## FEATURES OF THE CONCEPT OF A SALES MARKET FOR FINISHED PRODUCTS, DEPENDING ON THE LIFE CYCLE

**Abstract:** *in the article, the authors considered the possibilities of producing competitive and demanded products, which are possible only if there are managers who are professionally trained and motivated for the results of their activities. And understandable are the studies carried out by the authors of the objective reasons for the unsatisfactory state in the industry, which would justify this decline in production in light industry, therefore, the results of an assessment of economic policy should be either useful or harmful - this should always be an axiom. If this does not happen, then something in this very economic policy is not a professional decision, the actions are harmful to society and timely adjustments are needed. The authors recommend that the market revise the concept of forming it with popular and import-substituting goods, taking into account their availability to consumers of products in the domestic market. Such conclusions 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 them sustainable TP from the results of their activities.*

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

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### Introduction

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The destruction of small towns, which is observed in the regions of the Southern Federal

District and the North Caucasus Federal District, is also typical for other regions of Russia. Migration, lack of jobs, social problems provoke a deepening crisis and the federal authorities urgently need to change this attitude towards their regions, forming a

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new economic and geographical approach in their strategic management, highlighting three vectors of priority development for such regions, namely;

- equalizing (due to the redistribution of resources to equalize the living standards of the population, especially in small towns);
- stimulating (creation of conditions in regions with specific advantages of the formation of social conditions of life);
- geoeconomic (ensuring security through the costly development of these regions, taking into account border and strategically important ties with other regions).

Planning belongs to the fundamental features of the history of human life, characterizes the essence of rationality in the form of consciousness. In order to become homo sapiens, man went through the evolutionary path of 2.5 million years. Our ancestors were homo habilis, homo erectus, immediate predecessors who failed to take advantage of intelligence, African homo sapiens, non-ardelans, Cro-Magnons, the Altai form of homo sapiens, and possibly many other forms.

Reasonableness is not only the main sign of the quality of a modern person, it indicates the vector of development of the species. Labor, sociality arose in the process of natural changes, therefore, it is not surprising that once upon a time there were "skillful people" who were replaced by "upright people" who assimilated the stable characteristics of "skillful people". The merit of homo sapiens is that, by developing his rationality, he was able to give the development of labor the form of labor activity, and the quality of social life to social ties. Labor activity has become the basis of human history, society - a form of its organization, rationality - a driving force. It is not enough to be reasonable, you need to realize the total significance of the mind as the ability to cognize and control activity. All crises in history are a product of the crisis of the rationality of consciousness, his cognitive ability and social responsibility. The concepts of "consciousness" and "intelligence" are different. Reasonableness is a sign of a species, consciousness is a sign of a social subject, which can be a person, community - marriage, family, social group, historical form of community. At the same time, consciousness and rationality differ exclusively within the framework of their historically established unity, they define the dualism of human nature, protect man as a product of evolution and serve as a tool for his further development.

In rationality, the power of our knowledge, consciousness is a means of knowledge management, it directs and limits activity in the mutual interests of social subjects and the natural conditions for the implementation of activities, therefore science is both a special form of cognition and a social means of regulating the possibilities of applying knowledge. The need for science is due to developing labor. Labor

in the world of living beings before the human formation remains unchanged and is regulated by instincts, conditioned reflexes. The highest achievement of knowledge at this level is intelligence. Understanding, which opens access to knowledge of the laws of relations and changes, has acquired relevance with the possibility of sustainable transformation of the habitat. Science ensures the effectiveness and safety of human participation in the development of reality as natural, and social. Together with philosophy, it is designed to embed human reality into the logic of world development.

Activity management is an initial requirement for the sustainability of human existence in the developing world. Scheduling is a versatile activity management function. Conflicts in understanding the importance of planning activities are explained by the interpretation of the concept itself, and are primarily of verbal origin. Even Plato and Aristotle realized the epistemological peculiarity of the concept as a form of human knowledge. The concept, in contrast to figurative thinking - intelligence - generalizes a range of specific phenomena, therefore it also presupposes its own characteristic expressiveness. Only a word can form a concept. It is with the verbal expression of the concept that numerous difficulties in achieving understanding are associated.

We define a general phenomenon not directly, but indirectly through the concept created by consciousness. The concept is revealed with the help of words. The importance of the verbal tool in scientific cognition prompted famous thinkers in the 1920s and 30s to organize a special study of the possibilities of the word as a way to formulate scientific understanding. The linguistic direction in the positivism of the stated problem could not be solved, but it made it possible to comprehend its significance for science. The transformation of science in the process of scientific and technological revolution in the middle of the twentieth century into a direct productive force has shown that the correct interpretation of the content of a concept in words is also significant for managing the practical application of scientific creativity in economic activity.

The 21st century has sharpened the scientific, philosophical and practical interest in competition. 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 executor and manager, 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.

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A special place in this struggle, you cannot call it otherwise, is occupied by the attitude of self-awareness, the system-forming factor of which is professional culture. If human capital determines the growth of production, then the quality of education lays the foundation for human capital. Competencies are not effective in themselves, they are valid when they are formed as the needs of a person, developed in many ways and in harmony with his own, national and universal interests. The formula for the harmony of personal interests is extremely simple. It was discovered 2500 years ago by Confucius, and I. Kant clarified it, giving a rational look "another person should not be a means for you". Summing up the thoughts of our great ancestors, let's say: the only reliable effective means of sustainable development of all manifestations of human life will be the achievement of mutually interested coexistence of people. With regard to production in general and consumer goods, in particular, the conclusion is even more simplified to the creation in a specific production of technical, economic and humanitarian (socio-cultural and psychological) conditions aimed at a high-quality, demanded and affordable product. The organization of production can be considered reasonable only when it is subordinated to a single goal - the satisfied customer needs. Unfortunately, our modern economic organization opposes producer and consumer, turning them into adversaries, instead of stimulating them to act as a team. With regard to production in general and consumer goods, in particular, the conclusion is even more simplified to the creation in a specific production of technical, economic and humanitarian (socio-cultural and psychological) conditions aimed at a high-quality, demanded and affordable product. The organization of production can be considered reasonable only when it is subordinated to a single goal - the satisfied customer needs. Unfortunately, our modern economic organization opposes producer and consumer, turning them into adversaries, instead of stimulating them to act as a team. With regard to production in general and consumer goods, in particular, the conclusion is even more simplified to the creation in a specific production of technical, economic and humanitarian (socio-cultural and psychological) conditions aimed at a high-quality, demanded and affordable product. The organization of production can be considered reasonable only when it is subordinated to a single goal - the satisfied customer needs. Unfortunately, our modern economic organization opposes producer and consumer, turning them into adversaries, instead of stimulating them to act as a team. With regard to production in general and consumer goods, in particular, the conclusion is even more simplified to the creation in a specific production of technical, economic and humanitarian (socio-cultural and psychological) conditions aimed at a high-quality, demanded and affordable product. The organization of production can be considered reasonable only when it is subordinated to a single goal - the satisfied customer needs. Unfortunately, our modern organization of the economy opposes the producer and the consumer, turning them into opponents, instead of stimulating

them to act as a team. demanded and affordable product. The organization of production can be considered reasonable only when it is subordinated to a single goal - the satisfied customer needs. Unfortunately, our modern economic organization opposes producer and consumer, turning them into adversaries, instead of stimulating them to act as a team.

Where are the reasons for this abnormality, what? Is this connected with objective factors, we have not yet been able to overcome the resistance of whose forces, or are the braking forces of an inertial nature, have we inherited, introduced in the order of modernization and we are able to fight them, and not with the consumer in the market? What are our reserves? The success of the critics of the Soviet system of managing the national economy, on the wave of which they tried to put an end to the socialist gains in planning, was largely the result of elementary pseudoscientific speculation in the content of basic concepts, successfully superimposed on the provoked objective difficulties and the low level of mass economic and political thinking - the habit of waiting "instructions from above", hopes for the prudence of statesmen. The 1990s will go down in national history not only as a time of another political turmoil, socio-economic crisis, but also as a test of national self-awareness, a harsh time of its cleansing from various temptations. You need to rely exclusively on yourself. Everyone in the West, East, South of Russia should have the status of partners in solving global challenges, it is not reasonable to ignore the experience of others, but you need to follow the common path in your own way. You can only believe in yourself, regularly checking your achievements against the direction and plans of development, this is a strategic postulate. should have the status of partners in solving global challenges, it is not wise to ignore the experience of others, but you need to follow the common path in your own way. You can only believe in yourself, regularly checking your achievements against the direction and plans of development, this is a strategic postulate. should have the status of partners in solving global challenges, it is not wise to ignore the experience of others, but you need to follow the common path in your own way. You can only believe in yourself, regularly checking your achievements against the direction and plans of development, this is a strategic postulate.

As for the practical course of implementing the political strategy, here the situation has also cleared up. Without planning, there is no sustainability in development. You need to understand the multidimensionality and scale of planning. The organization of production in all its scales requires planning. Socialism and capitalism should be viewed not as alternatives to social progress, but as different planning systems for socio - economic development. Socialism cannot be historically one-dimensional,

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since it is historically prepared and must absorb the national specifics of development, and capitalism is just as diverse. Socialism and capitalism have a common production platform, they require the industrialization of the economy. K. Marx and F. Engels viewed socialism as a solution to the contradictions of an industrially developed economy.

The modern world economy has a global, more precisely, integrated look, thanks to the fact that it has become industrial by the third millennium. Along with industrialization, the contradictory nature of the organization of production and the forms of its stability was revealed. Hence the permanence of crisis phenomena. The erection of competition and freedom of the market to an absolute has led to the fact that they have ceased to reckon with the magnitude of losses from the struggle of all against all. Japan, having borrowed the specifics of the socialist practice of the Soviet Union, opposed the principle of participation in management to the ideal of competitive struggle for survival. Japanese analysts have rightly identified the advantages of consolidation in creativity over the desire to defeat a competitor at any cost. Participation does not negate the importance of competition, it gives competition a cultural expression, naturally inherent in a civilized form of life. Competition in the field of activity is a refined form of struggle for survival. It is regulated by law, but the moral value of the social organization of human life is suppressed in it. Competition in the absence of dominance in the relationship of solidarity inevitably leads to disunity, conflict and, as a result, to the strengthening of the functions of law due to the weakening of the position of morality.

Physics recognizes four forces: electromagnetic, gravitational, strong and weak interactions. By analogy with nature in modern social life, strong and weak interactions can also be distinguished. Strong - provides morality. The fact that moral interaction is really strong confirms the way to maintain it - self-control of the consciousness of the individual and all group subjects that form society. The weakness of the legal interaction of social subjects with each other and with society as a whole requires the organization and functioning of a special state institution. The Neanderthal man, like the Cro-Magnon man, was already intelligent and socialized, moreover, in physical status he possessed greater strength, but he could not withstand the competition and died out. One of the versions of anthropologists claims that the weak link of the Neanderthal was his lack of communication. Social relations should serve as the greatest possible realization of the potential of homo sapiens. Competition in the economy reproduces subjective originality, in particular, the identity of the individual, and, in a certain sense, it is natural and reasonable, but homo sapiens has developed in society, therefore, not differences are called to be

social and economic dominant, but the need for joint creation of something new.

All the outstanding learned economists of the nineteenth century were noted in the history of philosophical thought. This fact is indicative. It illustrates the specifics of economics. Its subject is the processes on which the personal and social life of a person is based. The attempts of liberal economists to isolate economic activity and oppose it to political activity is nothing more than the desire to bring capitalism beyond their own understanding of social progress in the recent past - to stop social history at its bourgeois level. Neoliberal ideologues refuse to support the logic of a democratic approach to understanding history. When the democratic movement was formed in England and France, its founders represented capitalism as a way of resolving social and political contradictions. Feudalism has exhausted its historical resources, the democrats argued, and must give way to the social system that is historically more dynamic, capable of meeting social needs to a greater extent. Bourgeois society, following this pattern, will also become obsolete over time, but in the old feudal tradition it will cling to the lost right to represent a social perspective.

It is easy to see that less and less propaganda uses the terms "capitalism", "bourgeois society", replacing them with "industrial", "new industrial", "post-industrial", "technotronic", "information" societies. The concept of "mode of production" is simplified in liberal interests to "form of organization of production", and political economy is minimized into economics. The goal of such a transformation is to transfer economic thinking to the level of technical concepts, which will simplify economic methodology, limiting itself to mathematical calculations and models. The main thing is to remove the burden of political responsibility from economic theory, to separate economic reflection from state concerns. Property relations and distributions are camouflaged, their disproportions are transferred to the section of technical problems. The meaning of the outstanding achievements of economics is distorted. So, A. Smith's justification of the need for freedom for subjects of production activity is reduced to freedom of competition, while the Scottish scientist also had in mind freedom of cooperation for producers, which is especially significant in relation to small and medium-sized commodity production. Cooperation develops economic planning.

In light of current tensions in international relations, projecting political constraints on economic relations seems to be an extremely significant measure to understand the concepts of "management", "organization" and "planning". It is on them that the revision of the classical political and economic scientific heritage is focused.

Control theory, in general, was formed by the end of the 1950s, when, after numerous experiments



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using differential equations and the calculus of variations, modifications of classical theories and methods, it was found that the seemingly different problems of engineering activity and economic change have a common mathematical description. Management, as a specific subject-oriented activity, presupposes the need for a high level of organization of the process, which is impossible without the inclusion of planning, built on scientific calculations, in the activity. The problem here is not at all Hamlet's: "to be or not to be !?" Problem: what kind of planning should be? At a time when the producers were artisans and guild organizations, the production was very small, therefore, everyone planned according to their possibilities, planning was not a pressing issue. The situation changed radically with the Industrial Revolution. Production has become massive, the time has come for competition for the market for raw materials, sales, and labor.

Reflecting the changes that have taken place, planning has changed in all its modes of action and forms of manifestation. Hence the differences in the attitude to planning among producers and in economic theory, which is going through a difficult time in its history. Bulgakov's professor Preobrazhensky instructed: revolutions, in order to be successful, must begin and ripen in the minds of people. The writer's observations confirmed the events of the crises of the 21st century. Critical researchers were uncomfortable even before the newest crises, they came close to understanding that economic recessions, recessions that significantly hinder social progress, are not caused by external factors: financial adventures, political and military conflicts, infectious pandemics. Their reasons are in the contradictions of production itself, in particular, the inefficiency of management, conjuncture caused by political considerations that run counter to the pattern of economic movement. The unmeasured number of Nobel laureates among economists, approaching the number of physicists who have developed a modern scientific picture of nature, only once again convinces of the stability of the crisis of economic theory.

The manifold increased interest in Europe in Karl Marx's "Capital" demonstrates disappointment in the research talent of contemporary economists. Europeans are not embarrassed that the scientific analysis of A. Smith, D. Ricardo, K. Marx, J. St. Mill, was carried out within the limits of the requirements of the classical period in the history of science, which replaced the non-classical, giving way to the post non-classical. The essence is not in the names, it is in the changing ideas about the specifics of scientific knowledge. Scientific knowledge is fixed in theory, but not every theory has the quality of scientific character. The development of science is, from a methodological and epistemological point of view, a change in the rules for achieving the quality of the cognitive process. "... The growth of scientific

knowledge, wrote one of the most authoritative experts in the field of epistemology, K. Popper, is the most important and interesting example of the growth of knowledge. In considering this question, it should be remembered that almost all problems in traditional epistemology are associated with the problem of the growth of knowledge. I am inclined to state even more: from Plato to Descartes, Leibniz, Kant, Duhem and Poincaré, from Bacon, Hobbes and Locke to Hume, Mill and Russell, the development of the theory of knowledge was inspired by the hope that it would help us not only to learn something about knowledge, but also to make a certain contribution to the progress of knowledge, that is, to the progress of scientific knowledge. "

The German specialist drew attention to an important change in the vector of movement of scientific and philosophical knowledge. In the initial period of the history of science and philosophy, when a scientist and a philosopher most often acted as one person, there was a belief that the subject of study were objects of interest, or the knowledge about them that had already been obtained in experience - ideas, images, concepts. A new interpretation came from Berkeley, Hume: it is necessary, in the name of achieving objectivity and the significance of knowledge, to investigate not thoughts, opinions, views, but logical signs of judgments, statements and proposals. K. Popper commented on this shift of interest in the following way: "I am ready to admit that this replacement of Locke's" new method of ideas "with a" new method of words "was undoubted progress, and it, at one time, was urgently needed." However, K. Popper refused to recognize the "new method of ideas" as the main method of epistemology, explaining his opinion by the one-sidedness and vulnerability of its use. We were forced to recall the thoughts of K. Popper the following consideration: the classics of political economy began with a real-life subject, trying to discover its stable characteristics, developed concepts that reflect these features, tried to "glue" them into a system describing a change in the state of the object of research, rested against the contradictions of ideas and reality, they discussed, relying on the real practice of the analyzed phenomenon. They were contemporaries of the Industrial Revolution and the revolutionary potential of classical capitalism. the classics of political economy began with a real-life subject, trying to discover its stable characteristics, developed concepts reflecting these signs, tried to "glue" from them a system describing a change in the state of the object of research, rested on the contradictions of idea and reality, discussed, relying on the real practice of the analyzed phenomenon ... They were contemporaries of the Industrial Revolution and the revolutionary potential of classical capitalism. the classics of political economy began with a real-life subject, trying to discover its stable characteristics, developed

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Capital was then industrial capital. Financial capital was just being formalized into an independent system. Political economy did not reflect speculation, virtual phenomena, it served the real movement. The vector of industrial and economic progress coincided with the ideology of those who were interested in it. The transformation of victorious capitalism turned out to be in the interests not so much of society as a whole, but of a certain part of it, by the way, also torn apart by the specifics of interests.

Economic theory, which has a connection with the activities of social subjects, began to lose the need for objectivity and therefore moved from the position of analyzing ideas to analyzing the forms of their expression. The methodological equipment of economic analysis has also changed. Quantitative analysis has supplanted the quality of the scientific synthesis of primary information. Conceptual analysis was replaced by linguistic exercises and semantic research under the plausible pretext of overcoming the ambiguity of concepts. Not a single science has produced as many new terms as in economic theory. The formation of new words is a natural phenomenon for science, but in each case, the legitimacy of neologisms is needed. Physicists, mathematicians, chemists, as a rule, make do with the accumulated stock of verbal expression of concepts.

The concept of "planning" summarizes the functioning of subjects of economic activity, the scale of its movement and much more. Planning can be within a single enterprise, then it is not a political element of management, it is determined by the management, proceeding from the economic situation; sectoral, on this scale it already has signs of a political phenomenon. Planning is divided into directive - mandatory for execution and indicative, that is, conditional, allowing you to count on preferences. Distinguish between current and long-term planning. But, regardless of its nature, planning is a universal management tool in the systemic organization of activity - cognitive, practical, synthetic. F. de P. Hanika - professor at the University of Khartoum, gave a course in Cambridge. In the book "New ideas in the field of management" on the example of drawing up financial estimates, he distinguishes three main points in resource management and in all planning comes first. Moreover, he begins the final chapter "Operations Analysis" with "Improving management technology" and concludes: "A group of new methods based on network analysis and used in planning and regulating

the execution of complex projects is rapidly evolving."

On the crest of a wave of scientific and technological revolution in 1967 in the United States, the well-known analyst and government official J. Galbraith publishes the monograph "New Industrial Society". Interest in the views of a specialist is evidenced by a rare fact: just two years later, Galbraith's book was translated and republished in the USSR with a foreword by N.N. Inozemtseva, S.M. Menshikov and A.G. Mileikovsky. The reflections of J. Galbraith are still interesting and relevant, therefore, in the context of our preface, we will cite fragments of his text selectively, but relatively completely. J. Galbraith stated: "Of all the words in the lexicon of a businessman, words such as planning, government support and socialism are the least pleasing to his ear. Discussion of the likelihood of these phenomena occurring in the future would lead to the realization of the amazing extent to which they have already become facts.

J. Galbraith sees the future not in confrontation, but in convergence: "Thinking about the future, the scientist wrote, would also reveal the importance of the trend towards convergence of industrial societies, no matter how different their national or ideological claims may be. We mean convergence due to approximately similar planning and organization systems. Convergence is associated, first of all, with the large scale of modern production, with large investments of capital, perfect technology and with a complex organization as the most important consequence of these factors. All of this requires control over prices and, as much as possible, control over what is being bought at those prices. In other words, the market must be replaced by planning... Large scale industrial production requires so that the sovereignty of the market and the consumer is largely eliminated." Further J. Galbraith makes an even more imperative conclusion: "The industrial system does not have the ability to regulate aggregate demand - the ability to provide sufficient purchasing power to absorb everything it produces. Therefore, she relies on the state in this area." The economic policy of the government of Boris N. Yeltsin was determined not by the international experience of political and economic reforms, but by the circle of liberal advisers from the United States who went bankrupt in their own country. Those who happened to listen to Gaidar's speeches in the substantiation of the economic redistribution of society were constantly surprised at their terminological richness and unintelligible effect. Gaidar was aware of the adventurism of the economic program, its grave consequences for the people and national history,

It was not by chance that J. Galbraith devoted a separate chapter to education and emancipation, reminding university professors of their professional responsibility for the social consequences of their

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ination. Professional education, due to its systemic position, should form an understanding of the essence of economic and political processes among specialists. It is dangerous to substitute education for enlightenment and training, it is designed to create conditions for the formation of the worldview position of the individual: "Not a single intellectual, not a single artist, not a single teacher, not a single scientist has the right to allow himself the luxury of doubting his responsibility. Nobody, except them, can take upon themselves the protection of essential, important goals for our time," concluded the American politician, worried about the fate of the world.

Social and cultural aspects of planning run through the entire history of improving the quality management system for production and manufactured goods. It is easy to trace how the scale of the approach to quality planning changed from the first experiments of F. Taylor, A. Fayol, G. Ford Jr., and A. Sloan through the studies of A. Maslow's needs, V. Shewhart's proposals, E. Deming's management program, additions to K. Ishikawa, to the recommendations of I. Juran, F. Crosby, A. Feigenbaum and the achievements of Soviet specialists. In the history of quality management, the importance of two factors has become clearer than otherwise:

first, the dependence of quality on planning excellence;

secondly, the need to consider planning not only in the technological aspect, but also in the broad socio-cultural aspect, in order to involve the entire spiritual and physical potential of the individual in production activities.

Two centuries ago, the French sociologist and economist Proudhon decided to understand the origins and causes, and at the same time in the minds of the disadvantaged under the conditions of capitalist accumulation. He expounded his thoughts in the book "The Philosophy of Poverty", to which K. Marx responded with his monograph "The Poverty of Philosophy", which was pretty much forgotten. Marx showed the dependence of socio-economic research on the philosophical maturity of analysts. By that time, K. Marx and F. Engels were actively introducing a new view of philosophy, declared in K. Marx's "Theses" about L. Feuerbach. Philosophy cannot be only a form of a contemplative worldview, philosophical reflection should serve as a tool for comprehending the worldview and methodological foundations of human activity in its entire spectrum from cognition to transforming reality.

We have already noted the stable connection between leading political economists and philosophy at a time of intensive bourgeois progress. This progress was contradictory, unevenly distributed, but it was, because there was a philosophy of bourgeois development. Economics relied on philosophical methodology and scientific discoveries. The leader of

progress was industrial capital, focused on the construction of real production facilities, the use of scientific and technological achievements. In the twentieth century, capitalism has changed significantly, its ideologues have lost their former confidence in a prosperous future. Rational thinking supplanted empiricism, and with it came utilitarianism in its most primitive expression. The result of the reorientation was a spiritual crisis, noted by all outstanding thinkers - K. Jaspers, M. Heidegger, Z. Freud, P. Sorokin, K. Popper, B. Russell, J.P. Sartre. Planning has a world outlook scale, it is a function of rationality, which took shape in human consciousness. Let us repeat: such fundamental signs of consciousness as the ability to abstract and generalize in combination with anticipatory reflection of changes in reality intersect precisely in the need to plan activities. Otherwise, the knowledge of the laws of change, the delayed effect of actual action loses its meaning.

Planning can also be understood as the realization of freedom of action. The question: what kind of planning ensures the effectiveness of activity is solved in theory, but the reality of planning is determined by politics, and politics only partially coincides with logical necessity. If politicians really strive to make the development of production high-quality and efficient, then they must expand planning to a total scale, find a balance in the structure of investments, thinking, first of all, about enhancing human potential. In order for human capital to work and become profitable, its corresponding accumulations are needed. This is the law of normal capitalism. There are examples of the implementation of economic policy focused on the planned development of the human factor. Let us refer to the Chinese modification of the principle of inclusiveness developed by D. Acemoglu and J. Robinson. The Chinese have concretized the ideas of the authors of the project in ways of achieving common goals: by putting forward the development of human resources as a priority; a focus on achieving full employment; professional development of workers, social security and sustainability of promotion, which guarantees small towns of the regions of the Southern Federal District and the North Caucasus Federal District of reducing the migration of the population located in these regions, we consider it justified to focus on the analysis of planning experience, the reasons and conditions for the effectiveness of production development, depending on which planning should be a locomotive progress in the real sector of the economy of these enterprises located in small towns. Theoretical research is combined with a critical analysis of specific practical results, what determines the success and forms the stability of these enterprises. The vector of modernization of the regional management approach has been determined. Time has already passed for hours. It remains to recall that

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“Time is our living space”, therefore, lost time, untimely actions inevitably lead to the loss of the advantage of an advantageous position in the competing world - failure to understand this is mortally dangerous for all of Russia.

### Main part

The life cycle of any product (including a pair of shoes) is a concept that describes product sales, profits, customers, competitors and marketing strategy from the moment a product enters the market until it is removed from the market. Currently, enterprises operating in a competitive environment with variable external influences attach increasing importance to marketing research of their products. It is also important that the information acquired in the course of such research is used in multivariate analysis and substantiation of management decisions on the range of manufactured products, their quantity, prices, consumer properties, etc. If the value of the results of the marketing system at the enterprise is underestimated, its production capacity becomes unclaimed, intellectual and human resources. The dynamics of the impact of market demand on manufactured goods should be monitored by the marketing service at all stages of their life cycle and taken into account in systems responsible for the quality and quantity of manufactured products, their price, the introduction of innovations, and the development of new types of products. Thus, all types of products, technologies and services have a certain life cycle. The success of the enterprise depends on the degree of coordination between the various stages of the main life processes. The market situation changes at each stage of the life cycle and requires a corresponding change in the strategy and tactics of the company's behavior in the market, which is of particular importance. The main types of products go through 4-5 stages before disappearing from the market: responsible for the quality and quantity of manufactured products, their price, the introduction of innovations, the development of new types of products. Thus, all types of products, technologies and services have a certain life cycle. The success of the enterprise depends on the degree of coordination between the various stages of the main life processes. The market situation changes at each stage of the life cycle and requires a corresponding change in the strategy and tactics of the company's behavior in the market, which is of particular importance. The main types of products go through 4-5 stages before disappearing from the market: The dynamics of the impact of market demand on manufactured goods should be monitored by the marketing service at all stages of their life cycle and taken into account in systems responsible for the quality and quantity of manufactured products, their price, the introduction of innovations, and the development of new types of products. Thus, all types of products, technologies and services have a certain life cycle. The success of the enterprise depends on the degree of coordination between the various stages of the main life processes. The market situation changes at each stage of the life cycle and requires a corresponding change in the strategy and tactics of the company's behavior in the market, which is of particular importance. The main types of products go through 4-5 stages before disappearing from the market: The dynamics of the impact of market demand on manufactured goods should be monitored by the marketing service at all stages of their life cycle

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- presentation (introduction to the market);
- growth (development);
- maturity (stabilization);
- decline (decline and renewal of products);
- dying (dying and the beginning of the cycle of renewal of goods).

Figure 1 provides a graphical illustration of the life cycle of a product on the market.



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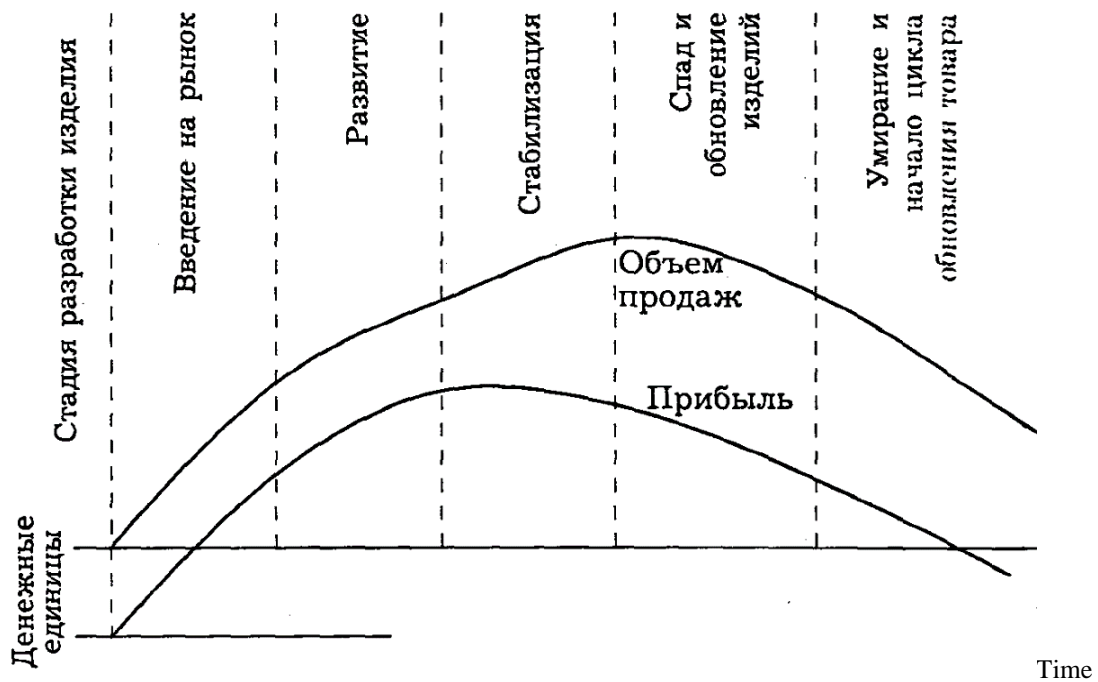


Figure 1. Life cycle of a product on the market

The given graphic illustration is conditional. Each product has its own characteristics of the life cycle. So, the following stages of the product life cycle can be distinguished:

the first stage is the presentation stage (the period of product introduction on the market). At this stage, the demand for the product grows slowly. This is due to the fact that the period when a new type of product is introduced to the market is not yet known to most prospective buyers. At this stage, the company makes a small profit. Often, an entrepreneur calculates losses, sometimes even very large ones. Sellers are usually very careful about replenishing their assortment with products that are in the presentation stage. They realize that the majority of regular customers are not familiar with this type of product, so there is always a difficulty in selling these products. As a result, sellers may claim various privileges for themselves, which include: free supply of billboards and other materials, joint advertising costs, etc. A powerful retailing firm may even claim exclusive distribution rights in its trading region. At this stage, prices are set at a minimum; the enterprise has little or no profit;

the second stage is the growth stage. If the product survives the first stage, it continues to develop. At this stage, sales are growing rapidly. Modified versions of the base model must be offered to meet the growing market. Relative margins are high;

the third stage is the stage of maturity. At this stage, the product has its own market and is in demand. At the stage of maturity, competition

increases and reaches its maximum, as many firms enter the market. As a result, profits in general and per unit of product are reduced, since discount provision is widely used;

the fourth stage is the recession stage. At this stage, the product, which does not undergo any changes, bothers consumers, or the need that it was intended to satisfy disappears. An unpredictable reason for a decline in sales during a recession can be technical obsolescence of the product. During the downturn, sales in the industry as a whole are reduced and many firms leave the market, as the number of consumers decreases, and the product range concentrates on the models that sell best;

the fifth stage - the stages of decline and dying, that is, the decline and renewal of the product, as well as the dying and the beginning of the cycle of renewal of the goods, are characterized by a slow and then a sharp drop in demand. In the face of declining sales and profits, manufacturers sometimes struggle to restore demand for a particular product. They include the following steps:

- new type of packaging;
- special advertising;
- price changes.

Although it is quite difficult to abandon manufactured products, sooner or later, as sales continue to decline, entrepreneurs are forced to make such a decision. At this stage, the following measures are taken:

- removal from production of this type of product;
- gradual contraction of investments;

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development of private organizational changes in relations with intermediaries so that they do not suffer losses along the way, and an inventory of surpluses.

For products that are clearly in decline, sales reps begin to cut back on deliveries, try to minimize repeat orders, and then phase out the supply. They can even lower the prices of the leftovers in order to abandon the goods completely. Thus, each stage of the product's life cycle is a variable that determines marketing actions in the target market. The life cycle of a product depends on the number of substitute

products, their competitiveness, as well as on the correct management decisions aimed at developing support measures to optimize the structure of the product life cycle. The main activities to optimize the structure of the product life cycle include:

- correct use of various marketing elements at different stages of the product life cycle;
- production strategy of the company.

Table 1 shows the main elements of marketing at different stages of the life cycle.

**Table 1. The main elements of marketing at different stages of the product life cycle**

Marketing elements	Product life cycle stages				
	performance	height	maturity	decline	dying
Goals	Bring the product to the market	Conquer a strong position	Maintain market position	Introduce all stocks into circulation	Move to a new lossless lifecycle
Price	High	High then slowly starts to decline	Stabilizes, then decreases	Keeps on falling	Minimal (up to scanty)
Sales channels	Agents supplying trial lots	Channels used to increase sales, wholesalers included	All possible channels involved	The number of distribution channels is decreasing	Only those channels that provide the minimum supply are valid
Advertising	On the consumer properties of a new product, its advantages, its prestige is emphasized	Advertising is intensified, focuses on a variety of shopping motives	Supportive, persuasive	Supportive, reminiscent	Reminding

It is very important to maintain an optimized life cycle, to determine the initial price for the goods produced and the maximum possible amount of price reduction, provided that the breakeven of production is maintained. To optimize this factor, the enterprise should develop discount systems that allow attracting various consumer segments to purchase the company's products and thereby reduce the stocks of manufactured but not yet sold products at the moment when it becomes clear that this product is losing its previously occupied market niche. ...

In the practice of pricing, a large number of discounts are known that are used at various levels: enterprises, sales organizations and trade. The most common types of discounts for shoe industry enterprises are:

bonus - a price discount of up to 10%, which is provided to a large wholesale buyer for a specified volume of turnover within a certain period;

seasonal - provided to the consumer when shoes are sold out of the season of the main sale, the purpose of introducing discounts of this type is to maintain a constant level of sales throughout the year, in addition,

this discount saves the manufacturer from part of the warehouse costs and reduces the risk of liquidity;

dealership - provided to wholesalers and retailers, agents and intermediaries to cover their costs;

special - provided to regular customers; discount to encourage sales - a measure to reduce the selling price of shoes, which is guaranteed to resellers if they take new types of shoes for sale or vice versa types of shoes that are at the stage of decline in their life cycle;

discount on trial lots and product orders - set by the manufacturer in order to interest the buyer in new models of shoes;

discount for faster payment - a measure of price reduction for each "saved" week against the deadline specified in the contract;

discount for settlement with real money - a consumer who pays for deliveries on time with real money, and not their substitutes, can obtain a discount from the base price, because the enterprise usually includes possible losses from non-payments in the last price;

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a discount for the regularity of orders is set by the manufacturer in order to retain a regular customer;

advertising - a discount on the price of footwear provided by the enterprise to a retailer in order for the latter to organize local advertising of footwear;

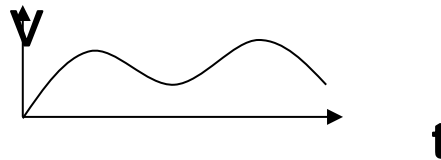
sales - a discount from the wholesale price provided by the supply and sales organization for the performance of functions for the sale of footwear in transit with participation in the calculations;

trade - a part of the retail price of footwear that remains at the disposal of trade organizations and enterprises to cover distribution costs and generate profits;

price discount - applied in case of purchasing shoes of reduced quality.

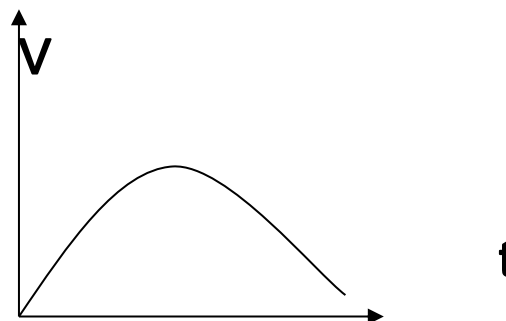
In addition, an enterprise can initiate a price reduction in the event of underutilization of production capacities, a reduction in market share under the onslaught of an aggressive competitive environment, etc. If an enterprise uses a proactive periodic price reduction as a tool for influencing consumers, taking care of its costs, developing measures to reduce them by improving equipment and technology, introducing new types of materials into

production, constantly improving the quality of footwear, then one should be wary of a premature or sharp decrease product prices. Because the retail consumer of footwear may develop a stereotype about the "poor quality" of the goods offered to him. And as a result, the company will not receive an increase in profits due to an increase in sales due to a decrease in prices, and a sharp drop in demand for this type of footwear and, as a consequence, a decrease in sales volumes and a negative financial result for this type of product. The life cycle of footwear is significantly influenced by such phenomena of the time as: style, fashion, fetish. Style is the main peculiar form of expression that arises in a particular area of human activity. Once created, a style can exist for many generations, sometimes gaining wide popularity, sometimes losing it. Figure 5.2 shows a typical lifecycle curve of product style. Once created, a style can exist for many generations, sometimes gaining wide popularity, sometimes losing it. Figure 5.2 shows a typical product lifecycle curve. Once created, a style can exist for many generations, sometimes gaining wide popularity, sometimes losing it. Figure 5.2 shows a typical product lifecycle curve.



**Drawing. 2. The influence of style on the product life cycle**

Fashion is the most popular or widespread style at a given time in this field of activity. Figure 3 shows the impact of fashion on the product lifecycle.



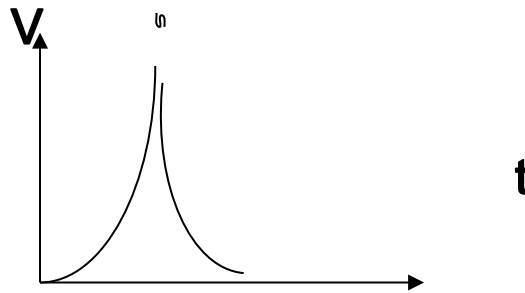
**Figure 3. Influence of fashion on the product life cycle**

Fetish are private manifestations of fashion that gain everyone's attention, are perceived with great enthusiasm, quickly peak in popularity and very quickly go into decline. Their recognition cycle is

short and, as a rule, the number of their adherents is limited. Figure 4 shows the influence of the fetish factor on changing the product life cycle.

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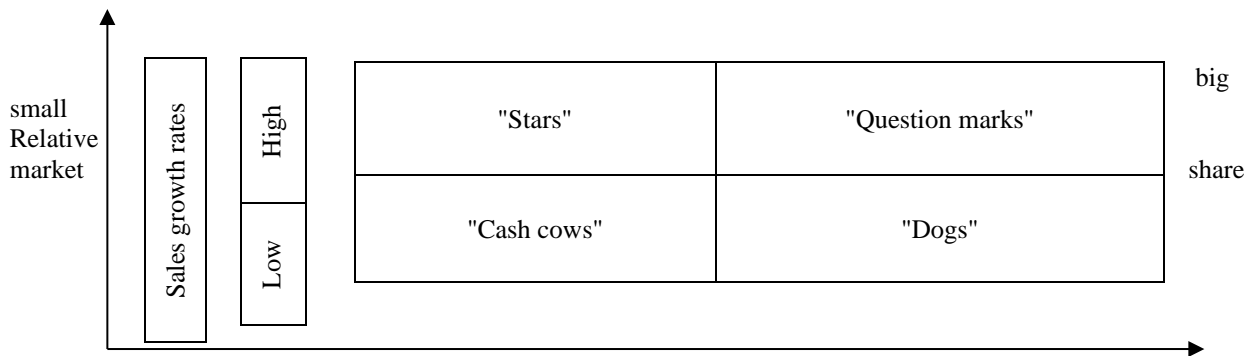
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**Figure 4. Influence of fetish on product life cycle change**

Thus, the shoe manufacturer must plan its manufacturing strategy based on the possibilities of using marketing elements to optimize the structure of the product life cycle. Different companies have different approaches to determining the strategy for the production of goods and services, depending on the needs of customers, available resources, market conditions, etc. Moreover, the same company may use different strategies in relation to different goods. The choice of strategy is usually based on the competitiveness of the product. Various approaches or methods for analyzing the portfolio of orders have

also been developed, which make it possible to evaluate the range of the production assortment in terms of the profitability of its individual elements. One such approach, with the help of which the sales and marketing manager can make decisions about the strategy of the company in the implementation of certain goods or services, was proposed by the Boston group. This method allows you to classify various combinations of goods and services of a firm with a differentiated production program based on the so-called growth matrix, or “portfolio of business areas” (Figure 5).



**Figure 5. Matrix of the Boston Advisory Group**

The application of this classification requires taking into account the existing and potential market segmentation, various temporal aspects of the profitability of a particular combination of goods and services, as well as the influence of competition. For example, a company may be the largest in its industry, but not hold a leading position in one of the market segments.

In Figure 5, combinations of goods and services classified as “stars” are located in the upper left quadrant. These products are characterized by rapid sales growth, which requires large amounts of working capital, but the cash flow is also large, since these combinations of goods and services are leading in their market segments. Usually, in this case, there is a balance in the cash flow within the company. Sales agents willingly sell such combinations of goods and services: their production volumes are large, they are

leading in the market and are in great demand, but, as a rule, they do not bring profit to the manufacturer. Over time, but as their life cycle develops, the sales dynamics slows down, and they turn either into “cash cows” or, if their market share decreases and they lose competitiveness, into “dogs”, that is.

Combinations of goods and services that are classified as “cash cows” are characterized by low sales growth dynamics. However, their market share is usually high and can be milked because they can generate more revenue than is required to invest in production. These product combinations are especially popular with sales agents because of their high demand and are attractive to the sales and marketing manager because they can generate the real money needed to develop and support the sale of new or upgraded products and services.



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The really difficult problems are posed to company management, marketing and sales managers, by the question mark (problem children) products in the upper right quadrant of the matrix. They tend to have a small market share, often need support, and lag far behind the leading products in terms of market position and customer confidence. Those who deal with them inevitably have the following questions: will they become “stars” or “cash cows”; how much time and money it will take to get them “on their feet”; what are their market prospects? Such combinations of goods and services, as a rule, do

not enjoy the sympathy of sales agents. Small market share and weak demand, often low trust and lack of customer awareness, weak advantages over competing products make them difficult to market. However, in the event that they turn into “stars” or “cash cows”, sales agents should devote maximum efforts to organizing their distribution. In doing so, the sales and marketing manager may be faced with the need to introduce a special incentive commission rate and provide personal leadership to support the sales force's efforts to market these combinations of goods and services.

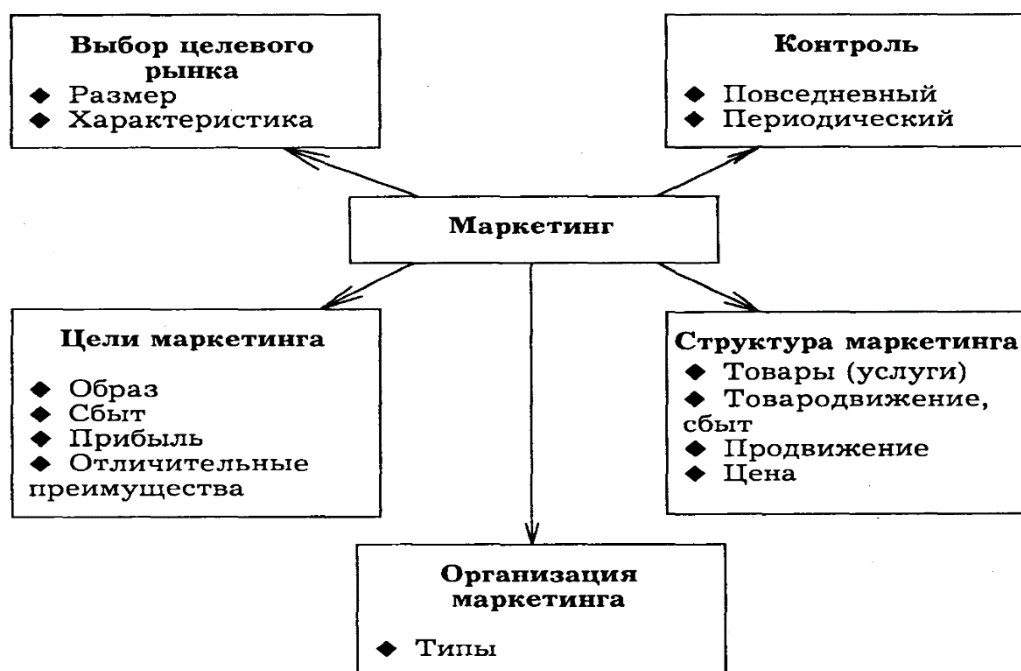


Figure 6. Factors controlled by marketing

The development of new combinations of goods and services is carried out taking into account the goals and strategies of enterprises and is accompanied by an analysis of the position of the company, the consequence of which is the decision on the possible diversification of activities. When developing a strategy, a prerequisite is to take into account the factors that are controlled by marketing (Figure 6). As well as factors - which are not controlled by marketing (Figure 7).

Marketing research and study of the profitability of new - production concepts are carried out separately from the assessment of technological capabilities, since it may be advisable to transfer production in part or in full to a contractor. After evaluating the results of production, a decision can be made to resume it. So, product lifecycle management is the process of managing a product from conceptual development to disposal. When this process works effectively, the company is able to drive profitable innovation - accelerate new product development,

bring them to market quickly, and continually improve quality while reducing costs.

At the same time, striving to withstand the competition, shoe enterprises are forced to constantly improve the consumer properties of the goods they produce and expand the range of conditions for supply and services, although all this is to some extent taken into account in the price and is ultimately paid for by the consumer. When setting the price of a product, an enterprise must also take into account the level of already established prices for other goods of a similar purpose and quality on the market. The presence of stages in the life cycle of a shoe requires a constant change in the pricing strategy. The life cycle of a product is characterized by fluctuations in the volume of sales and profits from its sale. Accordingly, the price will vary depending on the stage of the product's life cycle. Therefore, we can conclude that the price set by the enterprise for the goods depends on production costs.

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Figure 7. Factors uncontrollable by marketing

The development of a market economy sets the task of developing new approaches to the management of microeconomic systems. Usually, the functioning of any enterprise in a market economy is aimed at obtaining maximum profit, the value of which is significantly influenced by the rationality of decisions made by the company's management based on taking into account external and internal factors, as well as analyzing the economic situation in the market. Recently, the direction associated with maintaining profits at a certain level that satisfies the management of the enterprise has become relevant. Currently, many phenomena of the real economic situation can be explained using economic and mathematical models. Therefore, in order to make an adequate decision based on forecasting the profit of an enterprise, it is necessary to develop an economic and mathematical model of the process of its change, which takes into account both external and internal factors. In addition, in the context of a changing economic situation, it is useful to apply dynamic models that reflect in time the process of production, storage and sale of products. The constructed models of such processes turn out to be more complex due to the need to take into account many local factors. At

the same time, the potential area of application of these models is much wider. For example, the construction of an economic and mathematical model of the process of changing the profit of an enterprise is primarily necessary for the management to make informed managerial decisions to regulate the levels of manufactured and sold products. The model will allow reflecting not only the periods of time for increasing the volume of production and obtaining more profit, but also the periods associated with its reduction and the sale of only products stored in the warehouse. In addition, the management of the enterprise, on the basis of the economic and mathematical model of the process of changing profits, will be able to make correct economic decisions in cases where the predicted value of the enterprise's profit is very small or completely absent.

The developed dynamic model makes it possible to determine the profit from the goods sold, taking into account the seasonality of demand, the current price of the product, the cost, and to carry out regulation based on the data on the quantity of goods produced and sold in the market. With the help of the constructed model, the processes occurring in the production, sale and storage of finished products, as

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well as in the field of its repair, are taken into account. In addition, the model can form the basis of expert decision-making systems for calculations related to determining the profit of an enterprise, which will help remove uncertainty in the process of establishing a

company's profit with seasonal fluctuations in demand for products in a market economy.

Let's move on to considering the economic and mathematical model of the process of changing the profit of an enterprise, presented in the form of the following differential equation (1):

$$\frac{dW(t)}{dt} = p_1 \frac{dN_{np}(t)}{dt} - c \frac{dN(t)}{dt} - k_2 * N_p(t) * p_1 \quad (1)$$

The resulting equation is formed on the basis of the developed models for the quantity of goods sold  $N_{np}$ , the total quantity of goods  $N_p$ . The equation includes such parameters as the cost price -  $s$ , the

current product price  $p_1$ , the current time  $t$  and the payment for storing units of the product per unit of time  $k_2$ .

Integrating equation (1), we have (2):

$$W(t) = \int p_1 dN_{np}(t) - \int c dN(t) - \int k_2 N_p(t) p_1 dt \quad (2)$$

We represent the resulting expression in the following form (5.3):

$$W(t) = I_1(t) - I_2(t) - I_3(t) + C \quad (3)$$

where  $C$  is the constant of integration.

First, consider the integral  $I_1(t)$  included in expression (4):

$$I_1(t) = \int p_1 dN_{np}(t) = \int p_1 \left( n_0 + \Delta p_1 \cos\left(\frac{m\pi t}{\tau} - \varphi_2\right) \right) \left[ I_{3'}(t) + I_{4'}(t) \right] dt \quad (4)$$

We represent the integral in the following form (5):

$$I_1(t) = I_{14}(t) + I_{24}(t) + I_{34}(t) + I_{44}(t) + I_{54}(t) + I_{64}(t), \quad (5)$$

where

$$I_{14}(t) = \int p_1 n_0 I_{3'}(t) dt$$

$$I_{24}(t) = \int p_1 \Delta p \cos\left(\frac{m\pi t}{\tau}\right) \cos(\varphi_2) I_{3'}(t) dt$$

$$I_{34}(t) = \int p_1 \Delta p \sin\left(\frac{m\pi t}{\tau}\right) \sin(\varphi_2) I_{3'}(t) dt$$

$$I_{44}(t) = \int p_1 n_0 I_{4'}(t) dt$$

$$I_{54}(t) = \int p_1 \Delta p \cos\left(\frac{m\pi t}{\tau}\right) \cos(\varphi_2) I_{4'}(t) dt$$

$$I_{64}(t) = \int p_1 \Delta p \sin\left(\frac{m\pi t}{\tau}\right) \sin(\varphi_2) I_{4'}(t) dt$$

$$I_{3'}(t) = -\frac{m\pi Na}{\tau} \left( \frac{(1-k)(n_0 + \Delta p \cos(\varphi_2))}{\left[ (1-k)(n_0 + \Delta p \cos(\varphi_2)) \right]^2 + \left( \frac{m\pi}{\tau} \right)^2} \times \cos\left(\frac{m\pi t}{\tau}\right) \sin\left(\frac{m\pi t}{\tau}\right) - \frac{\frac{m\pi}{\tau}}{\left[ (1-k)(n_0 + \Delta p \cos(\varphi_2)) \right]^2 + \left( \frac{m\pi}{\tau} \right)^2} \cos\left(\frac{m\pi t}{\tau}\right) \cos\left(\frac{m\pi t}{\tau}\right) \right)$$

$$I_{4'}(t) = \frac{m\pi Na}{\tau} \sin(\varphi_1) \times \left( \frac{\frac{m\pi}{\tau}}{\left[ (1-k)(n_0 + \Delta p \cos(\varphi_2)) \right]^2 + \left( \frac{m\pi}{\tau} \right)^2} \times \sin\left(\frac{m\pi t}{\tau}\right) - \frac{(1-k)(n_0 + \Delta p \cos(\varphi_2))}{\left[ (1-k)(n_0 + \Delta p \cos(\varphi_2)) \right]^2 + \left( \frac{m\pi}{\tau} \right)^2} \times \cos\left(\frac{m\pi t}{\tau}\right) \right)$$

Next, we sequentially calculate integrals (4).

Let's start with the integral  $I_{14}(t)$ . As a result, we have:

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<b>GIF (Australia)</b>	<b>= 0.564</b>	<b>ESJI (KZ)</b>	<b>= 9.035</b>	<b>IBI (India)</b>	<b>= 4.260</b>
<b>JIF</b>	<b>= 1.500</b>	<b>SJIF (Morocco)</b>	<b>= 7.184</b>	<b>OAJI (USA)</b>	<b>= 0.350</b>

$$I_{14}(t) = p_1 n_0 \left[ \frac{m\pi Na}{\tau} \cos(\varphi_1) * \frac{(1-k)(n_0 + \Delta p \cos(\varphi_2))}{\left[ (1-k)(n_0 + \Delta p \cos(\varphi_2)) \right]^2 + \left( \frac{m\pi}{\tau} \right)^2} \left( -\frac{\tau}{m\pi} \right) * \cos\left( \frac{m\pi}{\tau} \right) - \frac{\frac{m\pi}{\tau}}{\left[ (1-k)(n_0 + \Delta p \cos(\varphi_2)) \right]^2 + \left( \frac{m\pi}{\tau} \right)^2} * \frac{\tau}{m\pi} * \sin\left( \frac{m\pi}{\tau} \right) \right]$$

Let us proceed to calculating the integral I24 (t).

As a result, we get:

$$I_{24}(t) = p_1 \Delta p \cos(\varphi_2) \left[ -\frac{m\pi Na}{\tau} \cos(\varphi_1) * \frac{(1-k)(n_0 + \Delta p \cos(\varphi_2))}{\left[ (1-k)(n_0 + \Delta p \cos(\varphi_2)) \right]^2 + \left( \frac{m\pi}{\tau} \right)^2} * \left[ -\frac{1 \cos\left( \frac{m\pi}{\tau} \right)^2}{2m\pi} \tau \right] - \frac{\frac{m\pi}{\tau}}{\left[ (1-k)(n_0 + \Delta p \cos(\varphi_2)) \right]^2 + \left( \frac{m\pi}{\tau} \right)^2} * \left[ \frac{-\frac{1}{2} \sin\left( \frac{m\pi}{\tau} \right) \cos\left( \frac{m\pi}{\tau} \right) + \frac{1}{2} \left( \frac{m\pi}{\tau} \right)}{(m\pi) * 1/\tau} \right] \right]$$

Let us find the integral I34 (t):

$$I_{34}(t) = p_1 \Delta p \sin(\varphi_2) \left[ -\frac{m\pi Na}{\tau} \cos(\varphi_1) * \frac{(1-k)(n_0 + \Delta p \cos(\varphi_2))}{\left[ (1-k)(n_0 + \Delta p \cos(\varphi_2)) \right]^2 + \left( \frac{m\pi}{\tau} \right)^2} * \left[ \frac{-\frac{1}{2} \sin\left( \frac{m\pi}{\tau} \right) \cos\left( \frac{m\pi}{\tau} \right) + \frac{1}{2} \left( \frac{m\pi}{\tau} \right)}{m\pi} \tau \right] - \frac{\frac{m\pi}{\tau}}{\left[ (1-k)(n_0 + \Delta p \cos(\varphi_2)) \right]^2 + \left( \frac{m\pi}{\tau} \right)^2} * \left[ -\frac{1 \cos\left( \frac{m\pi}{\tau} \right)^2}{2m\pi} \tau \right] \right]$$

Let us proceed to calculating the integral I44 (t):

$$I_{44}(t) = p_1 n_0 \left[ \frac{m\pi Na}{\tau} \sin(\varphi_1) * \left[ \frac{\frac{m\pi}{\tau}}{\left[ (1-k)(n_0 + \Delta p \cos(\varphi_2)) \right]^2 + \left( \frac{m\pi}{\tau} \right)^2} * \left( -\frac{\tau}{m\pi} \right) \cos\left( \frac{m\pi}{\tau} \right) - \frac{(1-k)(n_0 + \Delta p \cos(\varphi_2))}{\left[ (1-k)(n_0 + \Delta p \cos(\varphi_2)) \right]^2 + \left( \frac{m\pi}{\tau} \right)^2} * \left( \frac{\tau}{m\pi} \right) \sin\left( \frac{m\pi}{\tau} \right) \right] \right]$$

We calculate the integral I54 (t):

$$I_{54}(t) = p_1 \Delta p \cos(\varphi_2) \left[ \frac{m\pi Na}{\tau} \sin(\varphi_1) * \left[ \frac{\frac{m\pi}{\tau}}{\left[ (1-k)(n_0 + \Delta p \cos(\varphi_2)) \right]^2 + \left( \frac{m\pi}{\tau} \right)^2} * \left[ -\frac{1 \cos\left( \frac{m\pi}{\tau} \right)^2}{2m\pi} \tau \right] \right] \right]$$



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$$-\frac{(1-k)(n_0 + \Delta p \cos(\varphi_2))}{\left[(1-k)(n_0 + \Delta p \cos(\varphi_2))\right]^2 + \left(\frac{m\pi}{\tau}\right)^2} * \left[ \frac{\frac{1}{2} \sin\left(\frac{m\pi}{\tau}\right) \cos\left(\frac{m\pi}{\tau}\right) + \frac{1}{2} \left(\frac{m\pi}{\tau}\right)}{m\pi} \tau \right]$$

Consider the integral I64 (t) as a result we get:

$$I_{54}(t) = p_1 \Delta p \cos(\varphi_2) \left[ \frac{m\pi Na}{\tau} \sin(\varphi_1) * \left[ \frac{\frac{m\pi}{\tau}}{\left[(1-k)(n_0 + \Delta p \cos(\varphi_2))\right]^2 + \left(\frac{m\pi}{\tau}\right)^2} * \right. \right. \\ \left. \left. * \left[ \frac{\frac{1}{2} \sin\left(\frac{m\pi}{\tau}\right) \cos\left(\frac{m\pi}{\tau}\right) + \frac{1}{2} \left(\frac{m\pi}{\tau}\right)}{m\pi} \tau \right] - \frac{(1-k)(n_0 + \Delta p \cos(\varphi_2))}{\left[(1-k)(n_0 + \Delta p \cos(\varphi_2))\right]^2 + \left(\frac{m\pi}{\tau}\right)^2} \left[ \frac{1 \cos\left(\frac{m\pi}{\tau}\right)^2}{2m\pi} \tau \right] \right. \right]$$

Next, we define the integrals I2 (t), I3 (t):

$$I_2(t) = \int cdN(t)dt$$

$$I_2(t) = cNa \left( \frac{m\pi}{\tau} \right) \sin\left(\frac{m\pi}{\tau} - \varphi_1\right)$$

$$I_3(t) = \int k_2 p_1 N_p(t) dt,$$

where  $N_p$  - the amount of goods on the market is determined from the expression:

$$N_p(t) = -\frac{m\pi Na}{\tau} \cos(\varphi_1) * \left[ \frac{(1-k)(n_0 + \Delta p \cos(\varphi_2))}{\left[(1-k)(n_0 + \Delta p \cos(\varphi_2))\right]^2 + \left(\frac{m\pi}{\tau}\right)^2} * \sin\left(\frac{m\pi}{\tau}\right) - \right.$$

$$\left. - \frac{\frac{m\pi}{\tau}}{\left[(1-k)(n_0 + \Delta p \cos(\varphi_2))\right]^2 + \left(\frac{m\pi}{\tau}\right)^2} * \cos\left(\frac{m\pi}{\tau}\right) \right] + \frac{m\pi Na}{\tau} \sin(\varphi_1) *$$

$$* \left[ \frac{\frac{m\pi}{\tau}}{\left[(1-k)(n_0 + \Delta p \cos(\varphi_2))\right]^2 + \left(\frac{m\pi}{\tau}\right)^2} \sin\left(\frac{m\pi}{\tau}\right) + \frac{(1-k)(n_0 + \Delta p \cos(\varphi_2))}{\left[(1-k)(n_0 + \Delta p \cos(\varphi_2))\right]^2 + \left(\frac{m\pi}{\tau}\right)^2} \cos\left(\frac{m\pi}{\tau}\right) \right]$$

As a result, we get:

$$I_3(t) = k_2 p_1 \left( \frac{m\pi Na}{\tau} \cos(\varphi_1) * \left[ \frac{(1-k)(n_0 + \Delta p \cos(\varphi_2))}{\left[(1-k)(n_0 + \Delta p \cos(\varphi_2))\right]^2 + \left(\frac{m\pi}{\tau}\right)^2} \left( -\frac{\tau}{m\pi} \right) \cos\left(\frac{m\pi}{\tau}\right) - \right. \right.$$

$$\left. - \frac{\frac{m\pi}{\tau}}{\left[(1-k)(n_0 + \Delta p \cos(\varphi_2))\right]^2 + \left(\frac{m\pi}{\tau}\right)^2} \left( \frac{\tau}{m\pi} \right) \sin\left(\frac{m\pi}{\tau}\right) \right] + \frac{m\pi Na}{\tau} \sin(\varphi_1) *$$

$$* \left[ \frac{\frac{m\pi}{\tau}}{\left[(1-k)(n_0 + \Delta p \cos(\varphi_2))\right]^2 + \left(\frac{m\pi}{\tau}\right)^2} * \left( -\frac{\tau}{m\pi} \right) \cos\left(\frac{m\pi}{\tau}\right) + \frac{(1-k)(n_0 + \Delta p \cos(\varphi_2))}{\left[(1-k)(n_0 + \Delta p \cos(\varphi_2))\right]^2 + \left(\frac{m\pi}{\tau}\right)^2} \left( \frac{\tau}{m\pi} \right) \sin\left(\frac{m\pi}{\tau}\right) \right]$$

The constructed model makes it possible to take into account the processes occurring in the production, sale and storage of finished products, as well as in the field of its repair. In addition, on the basis of this

mathematical model, the management of the enterprise can reasonably make managerial decisions to regulate the level of products. Let's consider an illustrated example based on the considered model.

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For this, in Table 2, we present the initial data for solving this economic and mathematical model.

The following conventions are adopted in Table 2:

- t - current time, weeks;
- C - the total cost of the product (pair of shoes) rubles;
- R - return on sales, %;
- p1 is the originally planned selling price of a pair of shoes, rubles;
- p2 is the price at the introduced discount (premium), under the influence of market factors, rubles;
- $\Delta p1$  - the difference between the initial price p 1 and the price p 2, rubles;
- S - the amount of the discount (markup) in% of the price;
- k2 - payment for storage of a unit of goods per unit of time t, in% of the prime cost;
- Na is the amplitude value of the volume of footwear production for the period, units;

Nmax - production of footwear at maximum capacity utilization, units;

Nmin is the estimated production of footwear to meet the most probable needs of the company's regular customers (established by the company's management based on the actual situation in the market), pcs;

t is the period of one turnover of the company's working capital, weeks;

k is the coefficient of the repaired products;

m, n0 are constant coefficients;

$\phi 1, \phi 2$  - phase angles.

Suppose a shoe manufacturing company has an order for the production of 500 pairs of shoes at a price of 395 rubles per pair, 625 pairs at a price of 375 rubles per pair. The production capacities of the enterprise allow producing 2000 pairs of shoes for a period of 4 months. The head of the enterprise must decide how much it is possible to "load" the production capacity of the enterprise in order to sell the rest of the possible production of footwear on his own.

**Table 2. Initial data for calculating EMM - predicting the profit of an enterprise in conditions of unstable demand for children's shoes**

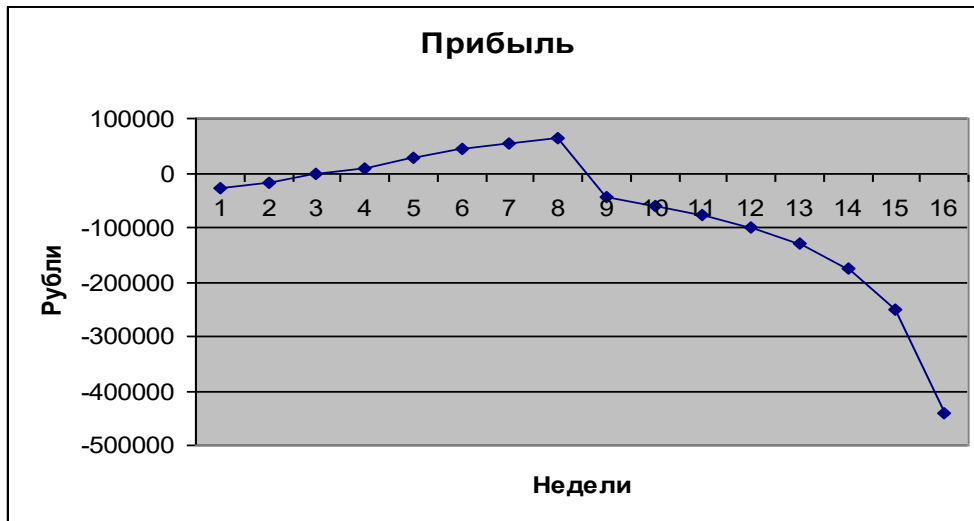
t	C	p1	p2	$\Delta p1$	k2	Na	Nmin	Nmax	T	k	m	NS	$\phi 1$	$\phi 2$	n0
1	305	395	350	45	0.3	112.5	100	125	12	0.01	-1	3.14	65	45	1
2	305	395	350	45	0.3	112.5	100	125			-1		60	45	
3	305	395	350	45	0.3	112.5	100	125			-1		60	45	
4	305	395	350	45	0.3	112.5	100	125			-1		45	45	
5	305	395	350	45	0.3	112.5	100	125			-1		45	45	
6	305	395	350	45	0.3	112.5	100	125			-1		45	45	
7	305	395	350	45	0.3	112.5	100	125			-1		45	45	
8	305	395	350	45	0.3	112.5	100	125			-1		45	45	
9	305	395	350	45	0.3	112.5	100	125			-1		50	50	
10	305	395	350	45	0.3	112.5	100	125			-1		55	55	
11	305	395	350	45	0.3	112.5	100	125			-1		60	60	
12	305	395	350	45	0.3	112.5	100	125			-1		65	65	
13	305	395	350	45	0.3	112.5	100	125			-1		70	70	
14	305	395	350	45	0.3	112.5	100	125			-1		75	75	
15	305	395	350	45	0.3	112.5	100	125			-1		80	80	
16	305	395	350	45	0.3	112.5	100	125			-1		85	85	

Let's say the management of an enterprise decided to additionally produce (in excess of orders) another 475 pairs of shoes and sell this volume on their own. Thus, the program for the production of children's shoes for the period will total 1625 pairs.

Solving this EMM model with basic conditions: production program - 1600 pairs; the possible size of the discount up to the price level for a pair of up to 350 rubles, in MS Excel we get the following data, presented in Figure 8.

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**Figure 8. Dynamics of the enterprise profit**

Thus, from Figure 8 it can be seen that the enterprise in the production of footwear under these conditions will make a profit within 5.5 weeks. Somewhere from the middle of the third week to the

end of the 8th week, further production of this type of children's footwear becomes impractical. Table 3 shows the values of the dynamics of profit.

**Table 3. Profit dynamics, rub.**

Weeks	1	2	3	4	5	6	7	8	TOTAL
Profit	-28287.5	-17002.6	-1217.64	9667,719	27453.06	13956	17135.98	61241.57	82946.6

Table 3 shows that the total profit that can be achieved by the enterprise under these conditions is 82,946.6 rubles. At the same time, when selling goods at a price in the forecast period that exceeds the

original one, for example, by 10 rubles. (405 rubles) we get a completely different nature of the graph (Figure 9)



**Figure 9. Dynamics of the profit of a shoe company when planning a mark-up**

Figure 9 shows that the enterprise in these conditions will make a profit for only 4.5 weeks. And the size of the total profit for this period will be

reduced to 80,464.5 rubles. (Table 5.4) Thus, the period of economic life of children's shoes with the introduction of the allowance will be reduced by 1

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week, which will entail a decrease in the profit of the enterprise by 2482.1ruble. This is due to the fact that at a relatively high price of the product, there is a

gradual decline in demand, and, accordingly, in the volume of sales together with profit.

**Table 4. Profit dynamics at markup**

Weeks	Profit
1	-29116.3
2	-17881.4
3	-2158.25
4	9927,772
5	28222.75
6	11126.32
7	15034.23
8	65309.36
<b>TOTAL</b>	<b>80464.5</b>

Obviously, in this situation, the price of the product should not be increased, but a more correct solution would be to reduce the cost of production. The presented model for calculating the price optimization equation for a specific production program makes it possible to trace in what period of time it is better for the management of the enterprise to set the maximum price for the manufactured products, or not to sell the products at all, since the enterprise may incur losses. When analyzing and forecasting socio-economic phenomena, the researcher is often faced with the multidimensionality of their description. This happens when solving the problem of segmenting the market, building a typology of countries based on a fairly large number of indicators, forecasting market conditions for individual goods, studying and predicting the economic depression and many other problems.

The purpose of calculating this economic and mathematical model is to substantiate the creation of a cluster in the Southern Federal District and the North Caucasus Federal District. Often in economic research, the problem arises of analyzing data that is heterogeneous in some sense. In such cases, before proceeding to the construction of regression models, it is necessary to select homogeneous groups of objects and build regression dependencies within each group. The development of this approach is a variant of classification according to several generalizing indicators (main components) obtained using the methods of factorial and component analysis.

Multivariate analysis methods are the most effective quantitative tool for studying socio-economic processes described by a large number of characteristics. These include cluster analysis, taxonomy, pattern recognition, factor analysis. Cluster analysis is one of the multidimensional methods for classifying enterprises. It is a set of methods that allow classifying multidimensional observations, each of

which is described by a set of initial variables  $X_1, X_2, \dots, X_m$ .

The task of cluster analysis is to split the initial set of objects into groups of similar, close objects. These groups are called clusters. The results of such a classification should have meaningful interpretation. Cluster analysis methods allow solving the following tasks:

- carrying out the classification of objects, taking into account the signs that reflect the essence, the nature of objects. The solution of such a problem, as a rule, leads to a deepening of knowledge about the set of classified objects;
- verification of the put forward assumptions about the presence of some structure in the studied set of objects, i.e. search for an existing structure;
- construction of new classifications for poorly studied phenomena, when it is necessary to establish the presence of connections within a set and try to bring structure into it.

Cluster analysis is a set of different algorithms for distributing objects into clusters. Today, a huge number of clustering algorithms are known.

One of the most common cluster analysis methods is the k-means method, which refers to iterative cluster analysis methods. It is often referred to as the reference method for cluster analysis. The number of clusters  $K$  is set by the user. The procedure is as follows. The first step is to determine the  $K$  clusters - standards. Further, each object is attached to the nearest reference. As a criterion, the minimum distance within the cluster relative to the average is used. As soon as the object is included in the cluster, the average is recalculated. After recalculating the reference, the objects are again distributed to the nearest clusters, etc. The procedure ends when the process is stabilized, i.e. while stabilizing the centers of gravity.

Enterprises - benchmarks combined into a cluster are shown in Table 5.



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**Table 5. Enterprise benchmarks**

No.	Manufacturer's name	Issue 2019	Volume of sales
1	LLC "Bris - Bosphorus"	15064	14310.8
2	LLC "Mercury TV"	89.3	84,835
3	LLC "Mira"	175.7	166.91
4	Donobuv CJSC, Rostov region	964.7	916.47
5	State Enterprise KBR "Narbek"	43.3	41,135
6	CJSC "Migrikol"	212	201.4

Let's find the distance between all six objects. The calculation is carried out according to the formula (6):

$$\rho(x_i, x_j) = \sqrt{\sum_{e=1}^k (x_{ie} - x_{je})^2} \quad (6)$$

The results obtained are presented in the form of table 6.

$$\rho(S_l, S_{(m,g)}) = \alpha p_{lm} + \beta p_{1g} + \gamma p_{mg} + \delta (p_{lm} - p_{1g}) \quad (7)$$

**Table 6. Distance between objects**

X1	15064	89.3	175.7	964.7	43.3	212
X2	14310	84.83	166.91	916.47	41.1	201.4
		20654.23	20535.05	19446.77	20717.70	20484.98
	20654.23		119.17	1207.46	63.47	169.24
	20535.05	119.17		1088.28	182.64	50.07
	19446.77	1207.46	1088.28		1270.93	1038.21
	20717.70	63.47	182.64	1270.93		232.71
	20484.98	169.24	50.07	1038.21	232.71	
No.	1	2	3	4	5	6

After the calculations made, we get table 7.

**Table 7. Distance between object and cluster**

# 1	# 2	No. 3.6	No. 4	No. 5
	20654.70	20485.20	19447.30	20718.20
20654.70		50.70	1207.40	63.45
20485.20	50.07		1088.20	182.40
19447.30	1207.40	1038.2		1270.90
20718.20	63.40	182.40	1270.90	

As a result of the calculation according to the model, object No. 2 was joined to the cluster, since they are the closest,  $d_{2.3.6} = 50.7$ . In our case, this is the company "Mercury TV" LLC.

In what follows, the distance between the clusters will be found according to the principle of the "nearest neighbor", using the recalculation formula (8)

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**Table 8. Distance between object and cluster**

# 1	No. 2,3,6	No. 4	No. 5
	20485.20	19447.30	20718.20
20485.20		1270.90	63.4
19447.30	1038.2		182.40
20718.20	63.4	182.40	

As a result of the calculation according to the model, object No. 5 was joined to the cluster, since they are the closest,  $d_{5,2,3,6} = 63.4$ . In our case, this

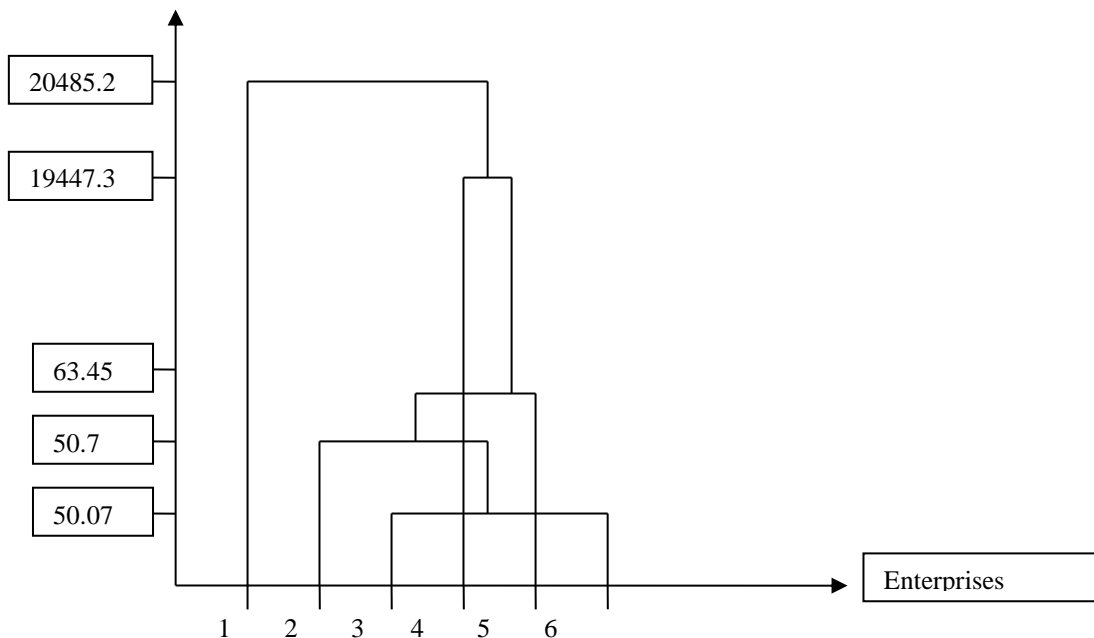
is the enterprise of the State Enterprise KBR "Narbek".

**Table 9. Distance between object and cluster**

# 1	No. 2,3,6,5	No. 4
	20485.20	19447.30
20485.20		63.4
19447.30	63.4	

We will join the existing cluster to the enterprise No. 4 CJSC "Donobuv", Rostov region.

The results of the hierarchical classification of objects are presented in Figure 10 as a dendrogram.



**Figure 10. Dendrogram**

As a result of cluster analysis, we get groups of similar objects. They are objects numbered 2,3,6, 1,4.

In conclusion, it should be noted that various methods of cluster analysis allow one to obtain clusters that differ in size and shape.

On a functional basis, a shoe cluster can be formed in the Southern Federal District and the North Caucasus Federal District. When using a mathematical model, it is necessary to take into account that it groups homogeneous groups of

enterprises, combining them according to the criterion of the minimum distance. Therefore, within a cluster can be allocated for clusters. Any production of shoes or other goods must begin with a sales plan that is developed by the sales (marketing) department. This financial forecast should include the planned sales volumes for the period, the planned sales price and the projected profit for this type of product. For the mathematical model, a type of product such as children's shoes was chosen. In the Southern Federal

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District and the North Caucasus Federal District, there is no production of this type of product, and, therefore, all products are imported. Establishing production in our region is considered economically profitable and expedient.

But in industrial production, you need to know the moment in time when you should stop producing a given shoe model and switch to a new model or sew another model in large volumes (diversification of products).

For this purpose, you can use such an indicator as price elasticity. It shows the percentage change in sales as a result of a 1% price change and can be compared across different brands. The price elasticity related to the sales function considered here has the following properties

its absolute value increases as the positive or negative values of the deviation from competitors' prices increase;

the considered sales function does not prescribe an unambiguous dynamics of price elasticity over time (it can increase, decrease or remain unchanged);

since the influence of absolute prices is not significant, that is, price changes do not lead to a decrease in primary demand, but to a change in market share, direct price elasticity and cross price elasticity (percentage change in sales with a one percent change in competitors' prices) coincide in magnitude and distinguish them not necessary.

At the first stage of building a model, we will predict the ideal scheme for selling children's shoes by a manufacturing enterprise through a store. The company incurs additional costs for hiring personnel and renting a shopping pavilion. The amount of additional costs may vary and depend on market conditions. The initial data of the ideal model are summarized in Table 10.

**Table 10. Initial data**

Indicator, rubles:	Sum
Variable costs	302.95
Fixed costs	5598.13
Selling price	395
Number of units sold	2000
Sales volume at a point of sale	5000
Seller's salary	5000
Number of sellers	2
Trading floor area, sq. m	100
Rent for 1 sq. m	100

Sales volume forecast for 1 month (25 working days). The volume of sales increases by 5 pairs per day. The firm will start to make a profit on the 10th day of sales, when the volume of sales per day reaches 65 pairs of shoes. Up to this point, the company must sell 360 pairs. If the additional costs of the enterprise grow, then the break-even point will move to the right, therefore, the enterprise will receive a smaller amount of profit (on the graph, profit is shown as a shaded triangle). Let's build a break-even chart based on table 10.

When using the break-even chart in this form, keep in mind the following:

calculating break-even conditions and building break-even charts are just tools for analyzing price decisions, but not a device for predicting future commercial results;

-the break-even graph in the form shown in Figure 11 is built on the basis of the possibility of a linear increase in production (sales) volumes without

any consideration of seasonality. Meanwhile, for many types of goods, it is illegal to ignore the seasonality. For example, for production, where costs are carried out mainly at the beginning of a long production cycle, and the sale of finished products - only after its completion (this is how, say, a shoe company can work, preparing an entire batch of products for wholesale to trading firms on the eve of a new season);

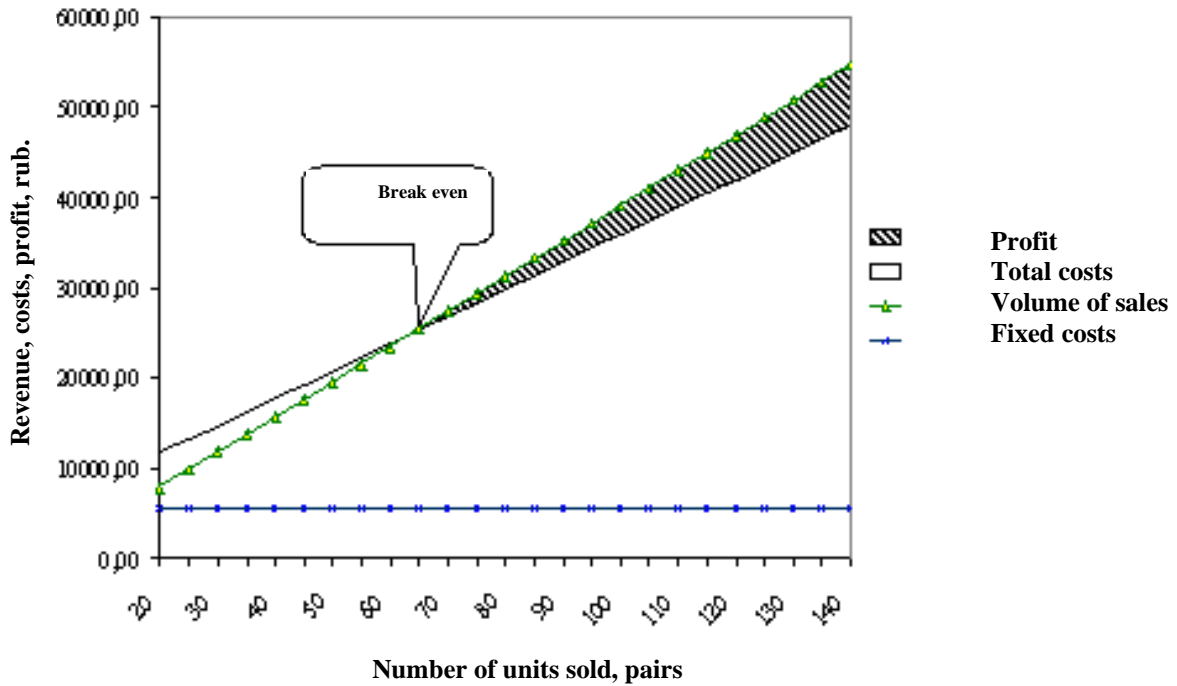
When analyzing the conditions for reaching breakeven, one must not forget that this is just an intermediate finish on the way to the main goal - the achievement of the highest profitability of sales.

When calculating the conditions for reaching break-even or plotting the corresponding graphs, it is important to correctly set the data on the degree of utilization of production capacities and the conditions for the sale of goods. For example, the above graph was built for the conditions of full, one hundred percent use of production capacity and full

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implementation of all manufactured products, that is, it characterized the company's result at all the maximums: output, sales, revenue.



**Figure 11. Break-even graph (children's shoes)**

In practice, it is simply dangerous to adhere to such an overly optimistic approach, and all conditions must be adjusted downward. So the use of production capacity should be taken at the level of 75-80%. It

should be taken into account in the calculations and the possibility of settling a part of the manufactured products in stocks due to the slow implementation process.

**Table 11. Sales volume of children's shoes**

Number	Number of prod. Steam	Volume of sales	Fast. costs	Change costs	Total costs	Profit	Add. Izder.
1	20	7820,00	5598.13	6059	11657.13	-3837.13	80
2	25	9775,00	5598.13	7573.75	13171.88	-3396.88	100
3	30	11730,00	5598.13	9088.5	14686.63	-2956.63	120
4	35	13685,00	5598.13	10603.25	16201.38	-2516.38	140
5	40	15640,00	5598.13	12118	17716.13	-2076.13	160
6	45	17595,00	5598.13	13632.75	19230.88	-1635.88	180
7	50	19550,00	5598.13	15147.5	20745.63	-1195.63	200
8	55	21505,00	5598.13	16662.25	22260.38	-755.38	220
9	60	23460,00	5598.13	18177	23775.13	-315.13	240
10	65	25415,00	5598.13	19691.75	25289.88	125.12	260
11	70	27370,00	5598.13	21206.5	26804.63	565.37	280
12	75	29325,00	5598.13	22721.25	28319.38	1005.62	300
13	80	31280,00	5598.13	24236	29834.13	1445.87	320
14	85	33235,00	5598.13	25750.75	31348.88	1886.12	340
15	90	35190,00	5598.13	27265.5	32863.63	2326.37	360

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16	95	37145,00	5598.13	28780.25	34378.38	2766.62	380
17	100	39100,00	5598.13	30295	35893.13	3206.87	400
18	105	41055,00	5598.13	31809.75	37407.88	3647.12	420
19	110	43,010.00	5598.13	33324.5	38922.63	4087.37	440
20	115	44965,00	5598.13	34839.25	40437.38	4527.62	460
21	120	46920,00	5598.13	36354	41952.13	4967.87	480
22	125	48875,00	5598.13	37868.75	43466.88	5408.12	500
23	130	50830,00	5598.13	39383.5	44981.63	5848.37	520
24	135	52785.00	5598.13	40898.25	46496.38	6288.62	540
25	140	54740,00	5598.13	42413	48011.13	6728.87	560
Σ	2000	782000		605900	745853.25	36146.75	8000

Downward adjustments are also desirable in order to take into account possible disruptions in the production, transportation or sales organization of goods. Let's take the constructed ideal model for the forecast presented by the company's marketers. Let's see how the amount of profit will change depending on the influence of seasonality. The volume of shoe sales is growing disproportionately (faster) than in the previously considered model (table 12).

With the increased growth in sales by the end of the month, the company will have to produce about 4,000 pairs of children's shoes of this model, but the production program is designed for 2,000 pairs. To reach a new level of production and sales, investments are required in the acquisition of additional equipment and the construction of a new workshop.

**Table 12. Growth in sales**

Day	Number of prod. units., steam	price, rub.	Volume of sales	Add. costs	Fast. costs	Change costs	Total costs	Profit
1	20	395	7820	80	5598.13	6059	11657.13	-3837.13
2	25	395	9775	100	5598.13	7573.75	13171.88	-3396.88
3	30	395	11730	120	5598.13	9088.5	14686.63	-2956.63
4	35	395	13685	140	5598.13	10603.25	16201.38	-2516.38
5	40	395	15640	160	5598.13	12118	17716.13	-2076.13
6	46	395	17986	184	5598.13	13935.7	19533.83	-1547.83
7	53	395	20723	212	5598.13	16056.35	21654.48	-931.48
8	61	395	23851	244	5598.13	18479.95	24078.08	-227.08
9	71	395	27761	284	5598.13	21509.45	27107.58	653.42

Therefore, the firm's management needs to consider raising the price by 10% instead of increasing the scale of output in order to reduce the amount of demand to the level provided by the current capacity of the firm. Naturally, at the same time, the firm's management hopes to get an increase in profits due to sales at prices with a higher specific gain (selling price minus variable costs). As it is easy to calculate, it will increase accordingly by 39.5 rubles, that is, it reaches 131.55 rubles. or 30.28% of the new price. It is required to check the conditions for the successful implementation of such a policy.

First, let us determine the scale of the break-even reduction in sales after the price increase. The relative break-even change in sales will be (%):

$$BSCp = -\Delta P / (CM + \Delta P) \cdot 100 = -39.5 / (92.05 + 39.5) \cdot 100 = -30,$$

where BSCp is the break-even increase in sales as a result of price changes,%;

- ΔP - price change;
- CM - specific gain.

Determining the break-even change in sales in absolute terms, we in this case take as a starting point not already achieved, but the expected sales volume (after all, we want to prevent its achievement). Then the break-even change in sales is (pairs):

$$BSCa = 4000 \cdot (-0.3) = 1200.$$

Thus, if after an increase in the price of shoes, the volume of its sales is reduced by less than 1200 pairs, then the enterprise will receive a greater profit than before. If the volume of sales falls by more than



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1200 pairs, then the firm will face a reduction in profit from sales (the price effect will be less than the volume effect).

We also need to consider the benefit of avoided fixed cost increases. According to the engineering service of the company, the purchase of equipment that would allow the company to produce up to 4,000 pairs of shoes per month would require expenses in the amount of 100,000 rubles. Consequently, taking into account the averted need to bear such costs, the company will not lose with an increase in price even if its sales are reduced even by more than 30%, namely by 30%, plus the break-even decrease in sales, which nullifies the profit of the company from prevented growth of conditionally fixed costs. Calculation of such a complex break-even reduction in sales (in which we show the amount of costs for not purchased equipment, respectively, with a minus sign) gives us the following result:

$$BSC_p = -30 + (-100000) / (131.55 \ominus 4000) \ominus 100 = -30 - 19 = -49\%$$

$$BSC_a = -0.49 \ominus 4000 = -1960 \text{ (pairs of shoes).}$$

To make the economic boundaries of the decision to cut prices more obvious to us, let us summarize them in Table 13.

Let's pay attention, first of all, to options 3, 6 and 8. Option 3 corresponds to a situation when a decline in sales after an increase in prices allows the company to produce the same volume of products, that is, investing in additional equipment is unnecessary. From this point on, the firm begins to receive additional profit by saving on conditionally fixed costs. Therefore, from this level of sales reduction in column G, the cost of purchasing equipment appears, equal to 100,000 rubles. Since these are saved costs, we show them with a minus sign. Option 6 corresponds to a situation where price and economies of scale cancel each other out and the gain becomes zero. In other words, the increase in winnings after the price increase (39.5 rubles), multiplied by the entire volume of possible future sales (4000 pairs),

But since the company also saves conditionally fixed costs, then in fact at this moment its change in profit has not yet become zero. She still receives an increase in profit in the amount of the saved conditionally fixed costs (100,000 rubles).

**Table 13. Determining the break-even sales volume when the price rises**

Variants	The scale of the potential reduction in sales		Change in the total value of the firm's gain from sales, rub.			Prevented growth conditionally fixed costs, rub.	The change total profit after price changes (E-F)
	%	couple s (4000 *%) /100	Increase based on potential future sales (39.5 * 4000)	Decrease per sales decrease (131.55 * B)	TOTAL (Y + D)		
A	B	V	G	D	E	F	Z
1	0	0	158000	0	158000	0	158000
2	10	400	158000	-52620	105380	0	105380
3	15	600	158000	-78930	79070	0	79070
4	20	800	158000	-105240	52760	-100000	152760
5	25	1000	158000	-131550	26450	-100000	126450
6	30	1201	158000	-158000	0	-100000	100,000
7	40	1600	158000	-210480	-52480	-100000	47520
8	49	1961	158000	-258000	-100000	-100000	0
9	50	2000	158000	-263100	-105100	-100000	-5100
10	60	2400	158000	-315720	-157720	-100000	-57720

And only in option 8, the growth of the firm's profits really becomes zero. Only with such a drop in sales - by 1,961 pairs against a possible future level of 4,000 pairs - the volume effect completely balances

both the price effect and the savings of conditionally fixed costs.

This means that if an increase in prices by 10% causes a drop in the number of sales by 50% or more,

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then the company must look for another option for a pricing solution.

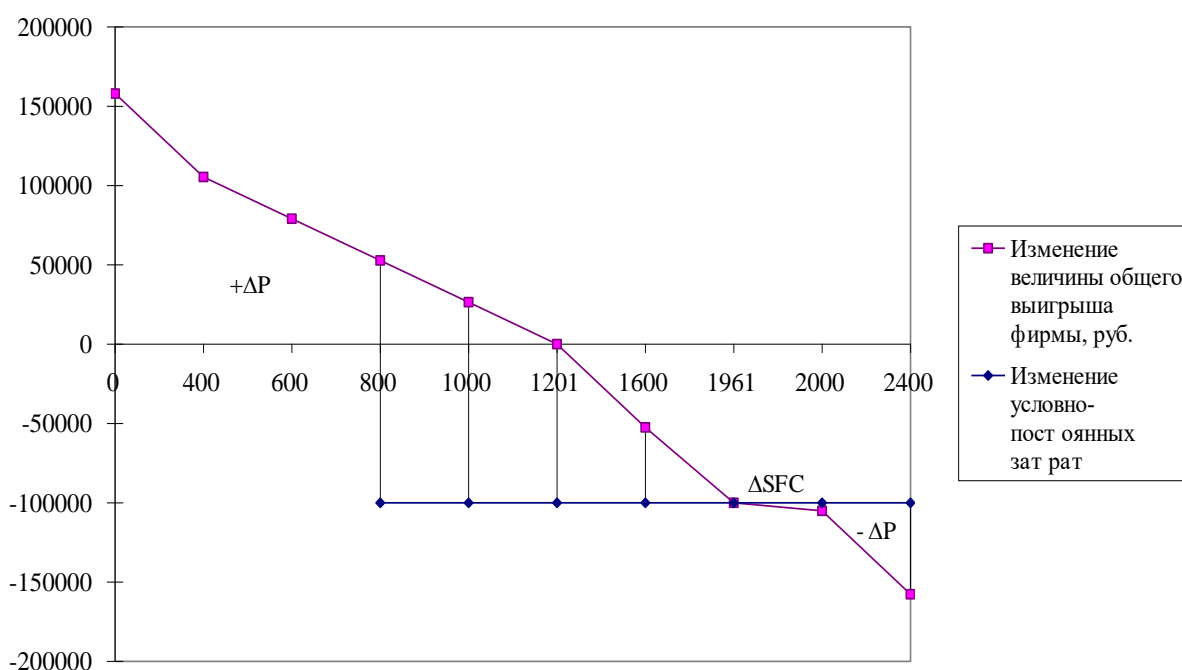
This can be seen even more clearly in Figure 12.

As we can see, with a reduction in sales in the range of 0-800 pairs, the company receives additional profit (+ $\Delta P$ ) due to the fact that from each unit sold, he receives a greater gain than at the previous price, and its sum exceeds the loss of gain as a result of reduced sales. When the reduction in sales reaches 800 pairs, the situation changes: the profit growth of the company also begins to be influenced by savings on unrealized conditionally fixed costs. Therefore, the real break-even point is shifting from the position of 1201 pair to the position of 1961 pair of sales reduction. At this point, the losses due to the volume

effect cancel out all the gains from the price effect and prevent the growth of nominally fixed costs.

If, however, the drop in sales also exceeds this threshold, then the firm will begin to incur direct losses (- $\Delta P$ ).

As a result of a 10% price increase, sales of children's shoes increased by 15% from the previously planned sales volume of 2,000 pairs to 2,300 units. Since the enterprise had a stock of production capacity, it was able to increase the volume of production without additional conditionally fixed costs.



**Figure 12. Economic consequences of price increases and prevention of investment in capacity expansion: + $\Delta P$ , - $\Delta P$  is the increase and decrease in the firm's profits, respectively;  $\Delta SFC$  - change of conditionally fixed costs**

Now let's consider a situation when a firm is forced to reduce the price of shoes, as well as incur additional conditionally fixed costs. First, consider the option when the demand for shoes has an elasticity

equal to one, and therefore the sales volume increases by exactly the same percentage as the price decreases (table 14).

**Table 14. Conditions for the firm to reach breakeven when the price is reduced by 5%**

Indicators of change conditions of the firm	Meaning	
	The original	After price reduction
Price per pair, rub.	434.5	412.8
Price change, %	-	5%
Specific gain of the firm, rub.	131.55	109.8
Winnings, % of the price	30.28%	26.61%
Break-even change in sales volume, %	-	19.8%
Break-even change in sales volume, pairs	-	455

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Total sales, pairs	2300	2755
The total profit of the company, rub.	302565	302565

The break-even change in the volume of sales is:  
 $BSCp = -(-21.7) / (131.55 + (-21.7)) \cdot 100 = 18.9\%$

Thus, a 5% price reduction will pay off for the enterprise only if the number of pairs of shoes sold increases by 18.9% or 455 pairs. Let us simulate several scenarios for the development of events, putting in them different levels of elasticity of demand - both less and more than one (Table 15). This will help us analyze the financial implications for the firm of the combined decision of lowering prices and purchasing additional equipment to increase footwear output to meet the increase in demand after the price decline. To make the logic of its construction more understandable, let us analyze, for example, option 3,

in which the increase in the number of pairs of shoes sold (after a single 5% price reduction for all analyzed options) will be 15%. Without calculations, we would estimate such an elastic change in demand as a very favorable scenario for the development of events. But we will make calculations. So, a 15% increase in sales would mean that the firm could sell 345 more pairs of shoes per month, which would increase the number of sales to 2,645 pairs. But since they will now be on sale for 21.7 rubles cheaper (not at 434.5 rubles, but only at 412.8 rubles), then, based on the previous sales volume (2300), the loss of the company (price effect) will be -49,967.5 rubles. Obviously, this value is the same for all considered options.

**Table 15. Modeling the financial implications of price reductions and purchasing additional equipment**

Variants	The scope of the possible changes in sales volumes, %	Increase in the number of goods sold, pairs, $2300 * B / 100$	Change in the total value of the firm's gain from sales, rub.			Incremental fixed costs per month, rub.	Change in total profit after price change, rub. (HEDGEHOG)
			Reduction based on the previous sales volume ( $21.7 * 2300$ )	Increase in calculation to increase sales ( $109.8 * B$ )	TOTAL (Y + D)		
A	B	V	G	D	E	F	Z
1	0	0	-49967.5	0	-49967.5	0	-49967.5
2	10	230	-49967.5	25259.75	-24707.8	10000	-34707.75
3	15	345	-49967.5	37889.63	-12077.9	10000	-22077.88
4	19.8	455	-49967.5	49967.5	0	10000	-10000
5	23.7	546	-49967.5	59967.5	10000	10000	0
6	30	690	-49967.5	75779.25	25811.75	10000	15811.75
7	40	920	-49967.5	101039	51071.5	20,000	31071.5

But an increase in sales will bring the firm and an increase in profits. Since variable costs are not affected by price changes and remain at the same level - 302.95 rubles, the new value of the specific gain after the price reduction will be 109.8 rubles. ( $412.8 - 302.95$ ). Multiplying it by the increase in the number of pairs of shoes sold, we get the increase in the firm's profit (volume effect). For this option, it will be 37,889.63 rubles. ( $109.8 \cdot 345$ ). The total resulting change in the value of the firm's gains under the influence of price and scale effects will be -12077.9 rubles. ( $-49967.5 + 37889.63$ ).

Since the company could not provide such an increase in output using the existing equipment park, it purchased additional equipment, which led to an increase in the amount of its fixed costs per month by

10,000 rubles. This accordingly leads to an even greater reduction in the amount of its gain. For this option, it will be -22077.88 rubles.

Consequently, this option, despite a 15% increase in the number of pairs of shoes sold, will be unsuccessful for the company. Her monthly winnings will be reduced by -22077.88 rubles.

The firm will be able to get an increase in the winnings only if the increase in the number of sales is more than 23.7%.

But let's pay attention to option 7, where we modeled the most favorable development of the situation - an increase in the number of sales by 40%, or 920 pairs of shoes. Such an increase in the volume of the enterprise can be achieved with additional fixed costs in the amount of 20,000 rubles. But in this case,

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the gain will also be the largest of all the options under consideration, which will be ensured by an extremely large volume effect - it will bring the company an increase in gain in the amount of 31,071.5 rubles.

Let's look at our sales forecast again. As a result of a 5% price reduction, sales rose 39.1% to 3200 pairs of shoes per month. Also, the company was forced to purchase additional equipment (10,000 rubles) to ensure an increase in sales

Consider another situation where the variable costs of a product (a pair of shoes) change. Refer to the above BSCp formula. To do this, we just need to subtract the change in variable costs from the change in price before calculating the break-even change in sales (%). Let us also pay attention to the fact that, in contrast to the calculation that we carried out for an isolated change in price, in this case the values used for the calculation must necessarily be expressed in absolute monetary units (in rubles or another currency). And then the equation will take the following form:

$BSCp = -(\Delta P - \Delta VC) / (CM_0 + (\Delta P - \Delta VC)) \cdot 100$ ,  
where BSCp is the amount of break-even sales growth, %;

$\Delta P$  - price change;

$CM_0$  - the previous absolute value of the specific gain;

$\Delta VC$  - change in the value of variable costs.

Returning to the problems of our enterprise, we use this formula to calculate the break-even sales growth it needs. Let's say changes in variable costs were 15 rubles. Consequently, the change in the specific gain will be equal to:

$$\Delta CM = (\Delta P - \Delta VC) = -21.7 - (-15) = -6.7.$$

Since we previously established that the specific gain before the change in prices was equal to 131.55 rubles, now nothing prevents us from calculating the break-even change in the volume of sales.

$$BSCp = -(-6.7) / (131.55 + (-6.7)) \cdot 100 = 4.85\%.$$

In physical terms, this will be, respectively:

$$2300 \cdot 0.0485 = 111 \text{ pairs.}$$

Now let's turn to the analysis of the impact on the break-even sales growth of possible changes in fixed costs. The formula for calculating this effect is as follows:

$$BSV = \Delta FC / CMA,$$

where BSV is the break-even sales volume, NAT. units;

$\Delta FC$  - increase in the amount of fixed costs, rubles;

$CMA$  - specific absolute gain, rub.

Since we remember that the unit gain is equal to the price minus variable costs, we can easily find for this example that the break-even increase in sales volume required to compensate for such an increase in fixed costs is:

$$BSV = 10,000 \text{ rubles} / (412.8 \text{ rubles} / \text{pair} - 302.95 \text{ rubles} / \text{pair}) = 91 \text{ pairs}$$

Now managers of the enterprise will be able to make a decision, which will depend on the following conditions:

How likely is it, given the current market situation, that it will be possible to sell the required volume of products on a monthly basis?

How big is the danger that the sales volume will be less and the company will begin to incur losses?

Is it possible to abandon the chosen pricing strategy and how quickly can this be done?

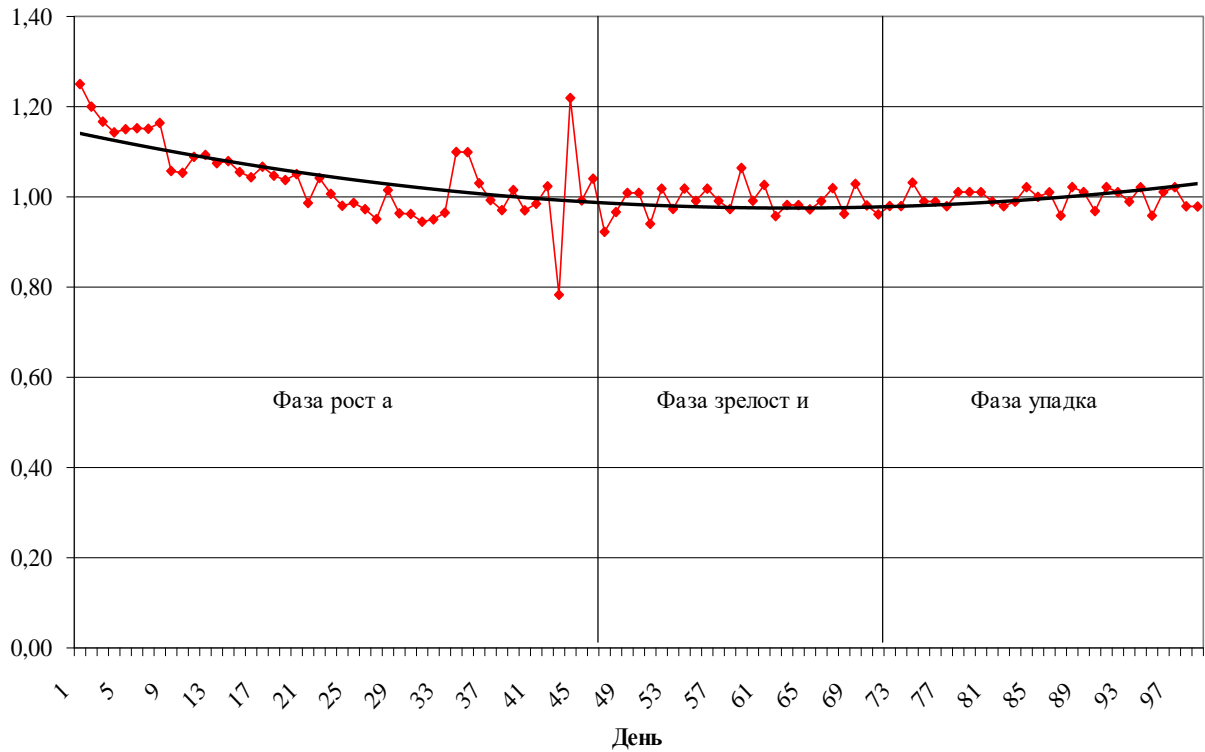
These are the questions that specialists - marketers will have to solve.

Let's look at the model again. On day 60 of shoe sales, the price effect ceases and sales begin to decline. The company again decides to reduce the price of products, but demand is less and less responsive to such a change. Here the firm must increase sales through marketing campaigns, brand development, retail merchandising, etc. These activities will increase the maturity stage of the shoe's life cycle and generate additional profit.

But when the demand for shoes stops responding to price changes and other non-price factors, the firm needs to stop producing this model. At this point, the elasticity of demand will begin to increase and the stage of maturity will enter the stage of decline (Figure 5.13). The trend line drawn on the elasticity of demand showed that this brand of children's shoes was in the growth stage from 1 to 49 days, from 49 to 73 - on stage of maturity and from 73 to 100 days at the stage of decline.

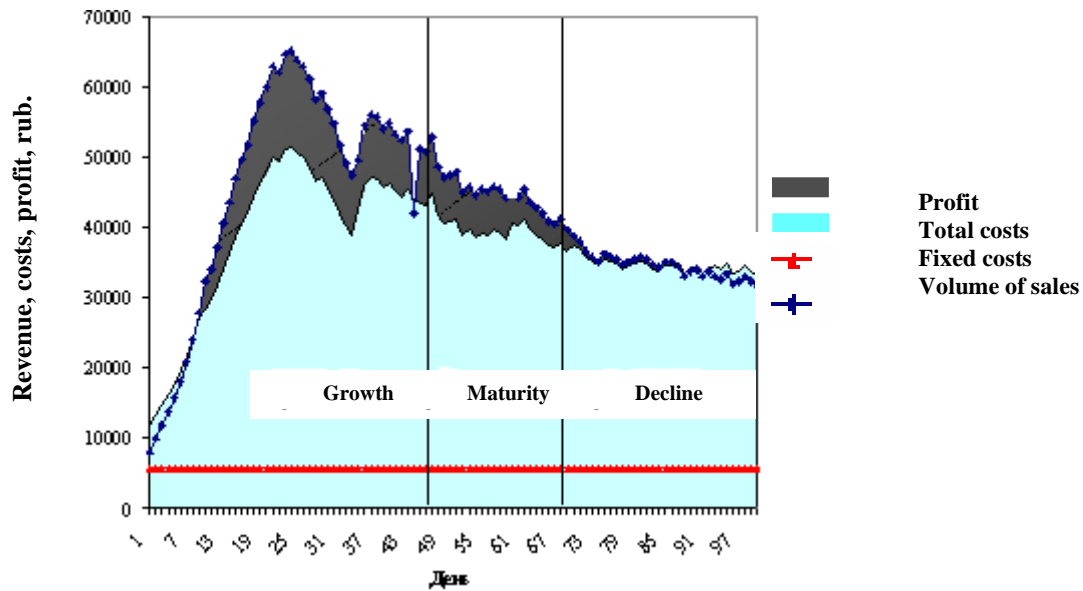
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**Figure 13. Elasticity of demand**

Let's analyze the change in profit over the life cycle of a shoe (Figure 14).



**Figure 14. Sales of footwear over the life cycle of a footwear**

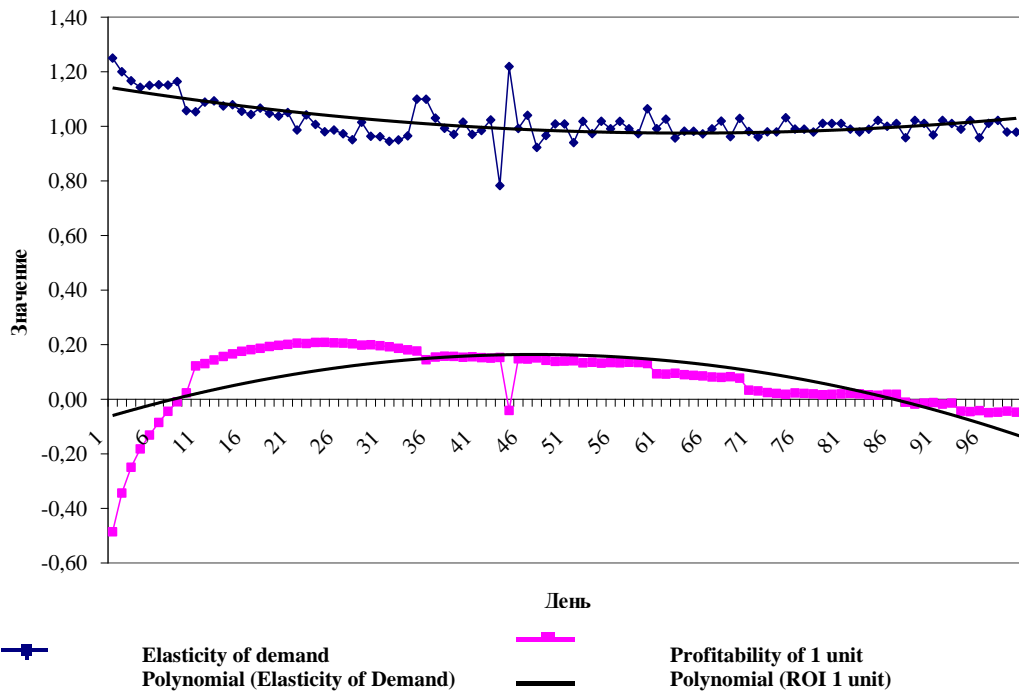
As can be seen from Figure 14, the company received the maximum profit at the growth stage and the minimum at the decline stage.

Let us compare the results obtained with the profitability of 1 pair of shoes over the life cycle of a model of children's shoes (Figure 15).



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**Figure 15. Elasticity of demand and profitability of 1 pair of shoes depending on the stage of the life cycle**

At the stage of growth, the profitability of 1 unit (pair) reaches its maximum value (about 20%), at the stage of maturity it decreases to 15%, and by the stage of decline it reaches its minimum values.

Compare the elasticity of demand and the daily sales divided by the average sales for the period (Figure 16).

Average life cycle sales were 105 pairs. The maximum excess over the average level is observed during the growth stage. Slightly above average at maturity and below average during decline. At the stage of maturity, the enterprise needed to apply one of the above recommendations to increase sales in order not to receive losses in the future.

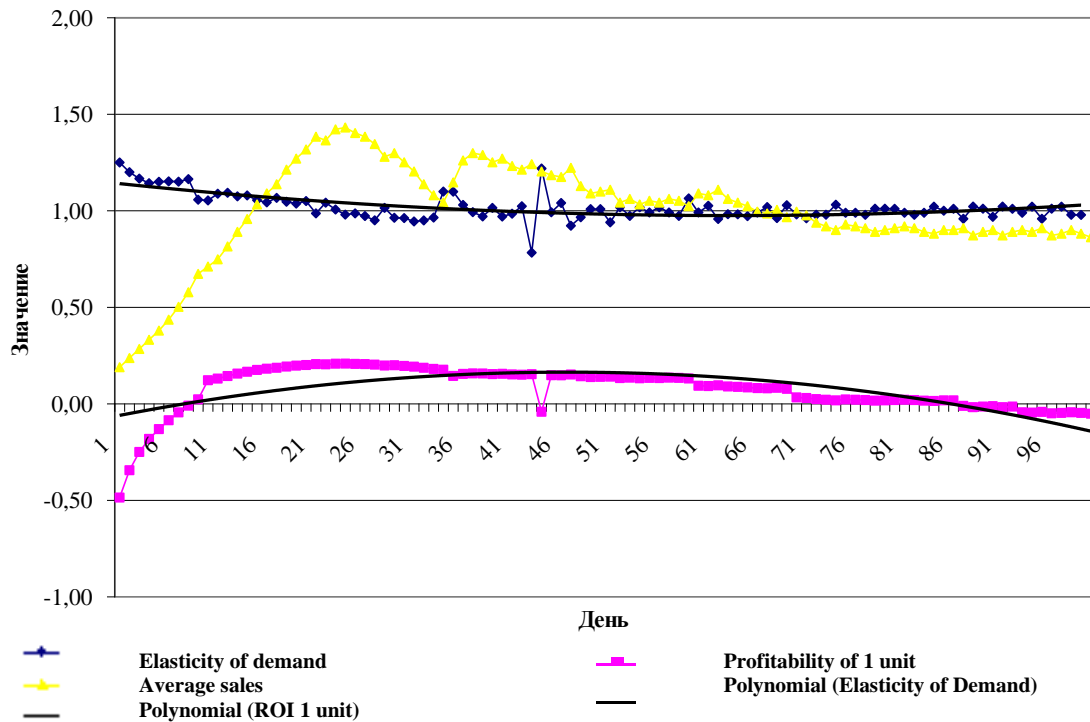
Let's add to the graph shown in Figure 17 a break-even sales volume calculated for each day of the life cycle of a shoe brand.

The break-even sales chart overlaps with the average sales chart during the maturity-to-decline stage. Thus, when the following facts occur at an enterprise for a particular category (brand) of products:

1. The elasticity of demand is growing;
2. The profitability of 1 unit of production decreases;
3. The volume of sales is decreasing;
4. The volume of sales is approaching the break-even sales volume, the company needs to stop producing this brand of footwear or modernize it, that is, to give additional properties necessary to consumers.

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**Figure 16. Daily sales divided by average sales**

The company needs to stop producing footwear of this model between 60 and 70 days of sale. Further production will bring losses, since the demand for this model becomes inelastic.

$$Pr = V (Ts - Z_{perm.}) - Z_{post.}$$

The amount of profit depends on the number of pairs of shoes sold, the difference between the price of a pair of shoes and the amount of variable costs attributable to it, i.e. the amount allocated to cover fixed costs, and the amount of fixed costs. When using operating leverage, business leaders have the ability to influence three main elements: fixed costs, variable costs and prices, each of which is in one way or another related to the volume of sales. Let us consider the effect of changes in each of the specified elements using the example of OOO VeRost upon release.

Expenses for preparation and development of production - 0

equipment maintenance and operation costs - 18.65 rubles;

general production costs - 10.26 rubles;

raw material

general operating expenses - 114.95 rubles;

selling expenses - 14.84 rubles.

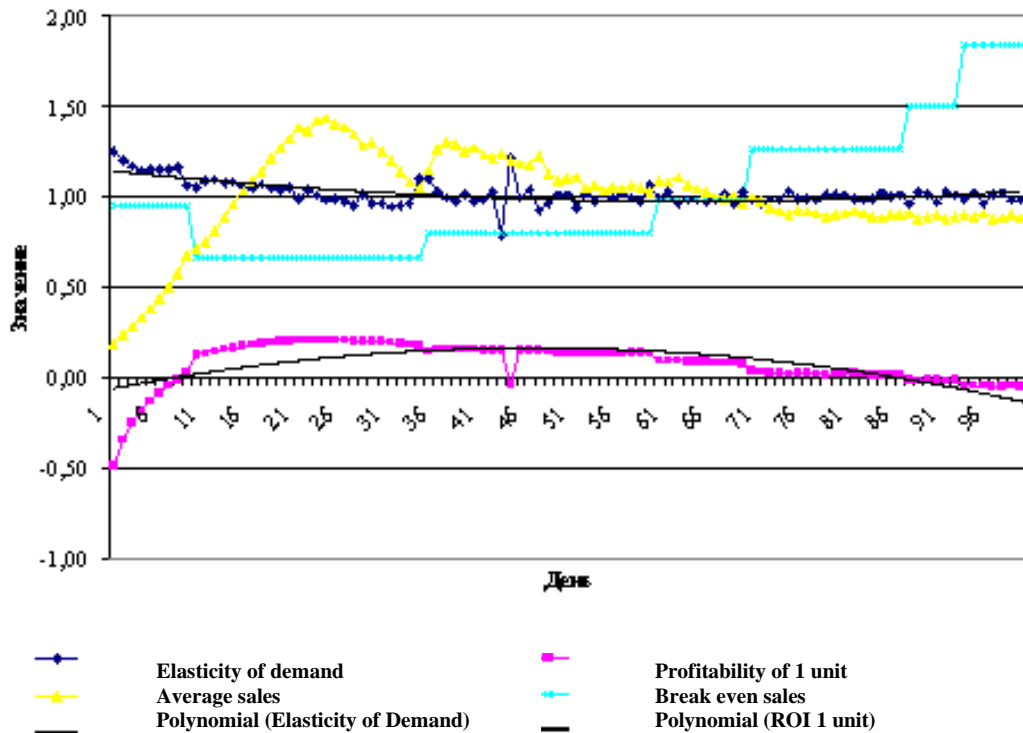
Thus, fixed costs are 159.41 rubles. (21.06%).

The amount of fixed costs in total for the entire volume of production is 2,486,796 rubles, respectively, the amount of revenue minus variable costs (i.e. the sum of fixed costs and profit) per one pair of shoes is 292.61 rubles.

RUB 2,238,116.4 other things being equal, will cause a reduction in volume,

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**Figure 17. Break-even sales**

The processes of globalization, the strengthening of international competition that characterize the world economy, were an objective prerequisite for changing the competitiveness management paradigm, which consists in abandoning traditional industrial policy and moving to a new industrial policy based on clusters (cluster policy). As a result of globalization, factors of production are becoming mobile, competition between countries is increasing, therefore, not only innovation and education, but also interconnections between enterprises are important for developing and maintaining superiority over competitors, which has led to the creation of network structures - clusters. The cluster is considered as a network organization of geographically interconnected and complementary enterprises (including specialized suppliers, including services, as well as manufacturers and buyers), united around a scientific and educational center, which is linked by vertical ties with local institutions and authorities in order to increase the competitiveness of enterprises, regions and the national economy. Organizational system (organization) is a system, i.e. a set of interrelated elements, but it is not just a set of elements, but it exists or is created artificially to achieve certain goals, that is, the system is a means to achieve goals. An economic and mathematical model for creating a TOP in the Southern Federal District is also presented. The calculations were made by the method of multidimensional classification and

analysis of the effectiveness of TOP. As a result of the calculation according to the model, the enterprises were merged on the basis of the TOP. which is linked vertically with local institutions and authorities in order to increase the competitiveness of enterprises, regions and the national economy. Organizational system (organization) is a system, i.e. a set of interrelated elements, but it is not just a set of elements, but it exists or is created artificially to achieve certain goals, that is, the system is a means to achieve goals. An economic and mathematical model for creating a TOP in the Southern Federal District is also presented. The calculations were made by the method of multidimensional classification and analysis of the effectiveness of TOP. As a result of the calculation according to the model, the enterprises were merged on the basis of the TOP. which is linked vertically with local institutions and authorities in order to increase the competitiveness of enterprises, regions and the national economy. Organizational system (organization) is a system, i.e. a set of interrelated elements, but it is not just a set of elements, but it exists or is created artificially to achieve certain goals, that is, the system is a means to achieve goals. An economic and mathematical model for creating a TOP in the Southern Federal District is also presented. The calculations were made by the method of multidimensional classification and analysis of the effectiveness of TOP. As a result of the calculation according to the model, the enterprises

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The calculated technical and economic indicators can be the result of the performed studies. So, the estimated output of pairs of shoes at the end of the fifth year of the TOP operation will be 190,156,000 pairs, which will ensure economic stability for the TOP by this time. The estimated gross profit at the end of the fifth year of the cluster will be 26,928,568.4 thousand rubles, the total cost of production, respectively 162921748.2 thousand rubles. It is planned to create 76,268 jobs. The average monthly wage of one worker for the production of men's shoes will be 11,761.94 rubles, for the production of women's and children's shoes 10,504.46 rubles. and 10425.8 rubles. respectively. The most profitable is the production of women's shoes - 18.8%, the profitability of the production of men's shoes will be 16.6%. The production of children's shoes is less profitable 9, 31% and this is not surprising, since making shoes for children requires the highest costs. The average profitability will be 16.64%. We also considered various options for selling shoes during the month, for example, 100% sales of manufactured shoes, 80% and 50%. Calculations indicate that with 100% of the sale of footwear in the specified period of time, not only the costs of production and sale of footwear are covered, but also a fairly significant profit is obtained. This testifies to the effective activity of the TOP, as well as to the correct marketing and assortment policy, it is also possible to make a profit when selling 80% of the manufactured children's, men's and women's shoes. We also considered various options for selling shoes during the month, for example, 100% sales of manufactured shoes, 80% and 50%. Calculations indicate that with 100% of the sale of footwear in the specified period of time, not only the costs of production and sale of footwear are covered, but also a fairly significant profit is obtained. This testifies to the effective activity of the TOP, as well as to the correct marketing and assortment policy,

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If only 50% of all shoes are sold, the activities of the TOP will not bring income, which allows us to assert that such cases are inadmissible when the sale of manufactured shoes will be less than 50% within a month. If such a situation arises, it is necessary to attract borrowed funds to cover the costs and the subsequent release of products, which provokes the possibility of the TOP to become bankrupt. To ensure 100% sales of manufactured footwear, a competitive assortment of men's, women's and children's footwear has been developed, taking into account factors affecting consumer demand: compliance with the main fashion trends, economic, social and climatic characteristics of the regions of the Southern Federal District, as well as the national characteristics of residents of the regions of the Southern Federal District. Within the framework of the TOP, the production of footwear is envisaged using both mechanized innovative technical processes, and manual labor, which should ensure the demand of both an elite consumer and a mass consumer, creating the preconditions for the sale of all footwear. The developed innovative technological processes for the production of men's, women's and children's footwear using modern technological equipment produced by the world's leading companies will make it possible to produce a wide range of footwear not only by type, but also by fastening methods, which is also a guarantee of sustainable demand for the offered range of footwear. ...

The proposed technological equipment, on the basis of which it is possible to form a technological process for the production of men's and women's, as well as children's shoes, allows, taking into account the available production areas, to choose the optimal

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volume of production of shoes with high TPE. The decision to create a center for standardization, certification and quality management is justified. Such a center will ensure the preparation of certificates of conformity and declarations of conformity for the entire range of footwear, which will be manufactured within the shoe cluster. The presence of such documents will form the confidence of the buyer, create an image, and therefore a high demand, which, from our point of view, is a determining factor for the competitiveness of the proposed range of shoes.

Based on the current state of affairs in the country's economy, in our opinion, the most significant problem in the development of the regional consumer market is the lack of a full-fledged regulatory framework that ensures the functioning of the mechanism of state regulation of the regional consumer market. Thus, it is the intervention of the state that should correct the state of affairs on the footwear market in the Southern Federal District and the North Caucasus Federal District, and provide an opportunity for the development of the domestic footwear industry.

From the analysis made, we note the following trends in the development of the footwear industry in the territory of the Southern Federal District and the North Caucasus Federal District are distinguished by a high level of migration of the able-bodied population to developing industries. The leather and footwear industry for the two districts can be confidently called developing. The Southern Federal District and the North Caucasus Federal District rank first among the regions of the Russian Federation in terms of the volume of footwear produced.

1. On the territory of the region there are unused industrial fixed assets suitable for restoration.

2. In the Southern Federal District and the North Caucasus Federal District, there are many specialized educational institutions for training personnel in the field of the leather and footwear industry.

It is also necessary to increase the investment attractiveness of the industry and create conditions for increasing its competitiveness. An important measure is to protect the domestic market from illegal import and turnover of light industry goods, create conditions for increasing its transparency and ensure non-discriminatory access of industry producers to trade organizations. To do this, it is necessary to introduce high duties on the import of finished shoes and low on the import of basic and auxiliary materials and equipment. Again we have to repeat about the need to regulate the level of prices and tariffs, which would guarantee both the manufacturer and the trade not only reimbursement of justified costs, but also the accumulation of funds for the development of production.

It is necessary to allocate funds to finance the development of technical regulations for light industry products and provide advice on their implementation. I would like to note that there is a historically established adaptation of peoples living on the territory to manual production, the presence of their own national technologies and the design of manufactured shoes, adapted to the climatic conditions and landscape of the region. The prerequisites for the development of footwear production in the region are very significant.

We offer the following set of measures:

1. Creation of a regional development and maintenance program

domestic shoe production in the region.

2. Taking measures to reduce the import of imported footwear into

region. These measures should include, first of all, the suppression of the trade in footwear that is smuggled and without permission to sell it on local markets.

3. Assistance in the employment of young professionals, graduates

universities, existing and newly created shoe enterprises.

4. Assistance to enterprises in the process of promoting domestic shoe brands in local markets.

First of all, it is necessary to develop a competent marketing strategy for regional shoe companies.

5. Creation of a special lending program for light industry enterprises in the region, taking into account the specifics of production: the seasonal nature of the products sold and the peculiarity of the turnover of working capital of enterprises in the industry.

In our opinion, for the successful implementation of all the above measures, the interest of the regional authorities in the formation and development of the ASEZ is necessary, they reduce the prices for components and energy costs, for a convenient transport interchange. All this together will allow such a formation a long life and stable positions not only in domestic but also in foreign markets. All that is needed is the goodwill and support of all participants in the municipal, regional and federal branches of government.

### Conclusion

The quality is "written by nature" to be at the epicenter of scientific and amateurish reflections at all times. 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



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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 equally important to understand the role and significance of quality activities, that is, how much the leaders have penetrated into the essence of things, 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 started talking about the need for a competent industrial policy. However, if we carefully consider the normative, methodological documents on the 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. At the same time, structural adjustment should be the basis for all these fundamental processes of economic reform. Both financial stabilization and 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 in the national economic policy. This is, unfortunately, the reality of the reforms carried out today. In this regard, 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: "... the management of paper money, and not a long-term digital strategy production - the way into the abyss."

Regarding whether the state needs to pursue industrial policy, one can cite 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 selfishness of merchants." It's like 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?

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

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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. At present, no more effective mechanism has been invented for disseminating best practices in solving various problems, and corresponding international structures for standardization and certification have been created in the world. 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.

## References:

- (2009). *Quality management of competitive and demanded materials and products*: monograph / Mishin Yu.D. and etc.; under total. ed. V.T. Prokhorov. (p.443). Mines: GOU VPO "YURGUES".
- (2009). *How to ensure a steady demand for domestic products of the fashion industry*: monograph / V.T. Prokhorov and others; under total. ed. V.T. Prokhorov. (p.494). Mines: GOU VPO "YURGUES".
- (2012). *The influence of cash flow on the efficiency of a cluster formed on the basis of shoe enterprises in the Southern Federal District and the North Caucasus Federal District* / L.G. Gretskeya [and others]; under total. ed. Doctor of Technical Sciences, prof. V.T. Prokhorov. (p.354). Mines: FGBOU VPO "YURGUES".
- (2015). *GOST R ISO 9001-2015 Quality management systems. Requirements*. [Electronic resource] / Access mode: <http://www.glavsert.ru/articles/976/>, free, Cap. from the screen. - lang. Russian (date of treatment 05/03/2017).
- (2015). *GOST ISO 9000-2015. Interstate standard. Quality management systems. Basic provisions and dictionary* [Electronic resource]. Access mode: <http://www.consultant.ru/>, free.
- (2012). *GOST R ISO / IEC 17021-2012. National standard of the Russian Federation. Conformity assessment. Requirements for bodies conducting audit and certification of management systems*. [Electronic resource]. - Access mode: <http://www.consultant.ru/>, free.
- (2012). *GOST R ISO 19011-2012. National standard of the Russian Federation. Guidelines for auditing management systems*. [Electronic resource]. - Access mode: <http://www.consultant.ru/>, free.
- (2012). *Production management of competitive and demanded products*: / V.T. Prokhorov [and others]; under total. ed. Doctor of Technical Sciences, prof. V.T. Prokhorov; FSBEI HPE "YURGUES". (p.280). Novocherkassk: YURSTU (NPI).
- (2012). *Restructuring of enterprises - as one of the most effective forms of increasing the competitiveness of enterprises in markets with unstable demand*: monograph / N.M. Balandyuk [and others]; under total. ed. Doctor of Technical Sciences, prof. V.T. Prokhorov. FGBOU VPO

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- Yuzhno-Ros. state University of Economics and Service ". (p.347). Mines: FGBOU VPO "YURGUES".
10. (2014). *Quality revolution: through advertising quality or through real quality*: monograph by V.T. Prokhorov [and others]; under total. ed. Doctor of Technical Sciences, prof. V.T. Prokhorov; ISOiP (branch) DSTU. (p.384). Novochoerkassk: YRSPU (NPI).
  11. (2015). *Advertising as a tool for promoting the philosophy of the quality of production of competitive products* / Kompanchenko E.V., [and others]; under total. ed. Doctor of Technical Sciences, prof. V.T. Prokhorov; Institute of the Service Sector and Entrepreneurship (branch) of the Don State Technical University of Shakhty: ISO and P (branch) of the DSTU, (p. 623).
  12. (2015). *Assortment and assortment policy*: monograph / V.T. Prokhorov, T.M. Osina, E.V. Kompanchenko [and others]; under total. ed. Dr. tech. Sciences, prof. V.T. Prokhorov; Institute of the service sector and entrepreneurship (fil.) Feder. state budget. educated. institutions of higher. prof. education "Donskoy state. tech. un-t "in the city of Shakhty Rost. region (ISOiP (branch) DSTU). (p.503). Novochoerkassk: YRSPU (NPI).
  13. (2017). *The concept of import substitution of light industry products: preconditions, tasks, innovations*: monograph / VT Prokhorov [and others]; under total. ed. Doctor of Technical Sciences, prof. V.T. Prokhorov; Institute of the Service Sector and Entrepreneurship (branch) of the Don State Technical University. (p.334). Novochoerkassk: Lik.
  14. (2018). *The competitiveness of the enterprise and the competitiveness of products are the key to successful import substitution of goods demanded by consumers in the regions of the Southern Federal District and the North Caucasus Federal District*: collective monograph / VT Prokhorov [and others]; under total. ed. Dr. tech. Sciences, prof. V.T. Prokhorov; Institute of the Service Sector and Entrepreneurship (branch) of the Don State Technical University. (p.337). Novochoerkassk: Lik.
  15. (2018). *Management of the real quality of products and not advertising through the motivation of the behavior of the leader of the collective of a light industry enterprise*: monograph / O.A. Surovtseva [and others]; under total. ed. Dr. tech. Sciences, prof. V.T. Prokhorov; Institute of the Service Sector and Entrepreneurship (branch) of the Don State Technical University. (p.384). Novochoerkassk: YRSPU (NPI).
  16. (2019). *The quality management system is the basis of technical regulation for the production of import-substituting products*: monograph / A.V. Golovko [and others]; under total. ed. Dr. tech. Sciences, prof. V.T. Prokhorov; Institute of the Service Sector and Entrepreneurship (branch) of the Don State Technical University. (p.326). Novochoerkassk: YRSPU (NPI).
  17. (2019). *On the possibilities of regulatory documentation developed within the framework of the quality management system (QMS) for digital production of defect-free import-substituting products*: monograph / A.V. Golovko [and others]; under total. ed. Dr. tech. Sciences, prof. V.T. Prokhorov; Institute of the Service Sector and Entrepreneurship (branch) of the Don State Technical University. (p.227). Novochoerkassk: Lik.
  18. Aleshin, B.S. (2004). *Philosophy and social aspects of quality* / B.S. Aleshin and others. (p.437). Moscow: Logos.