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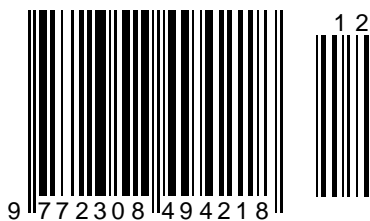
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LINGUISTIC UNITS USED WITH THE TERM «COMPLEX» IN UZBEK LANGUAGE

Abstract: The article is devoted to the description of linguistic units, which have been explained under the term "complex" in the Uzbek language, the features of their use at the language level. The classification of complex sentences at the syntactic level, complex simple sentences, and compound-complex sentences was described. The consistent approach to the naming language units according to their structure, the interpretation and order of terms associated with the word "complex" was also studied.

Key words: language, name, term, syntactic level, phrase, sentence, exclamation, complex sound, complex suffix, complex noun, complex part, compound-complex, complex syntactic integrity, composite sentence, complex simple sentence, compound-complex sentence, sentence composed of compound-complex, complex type of compound sentence.

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Introduction

In recent years, as a result numerous research works in the field of science, radical changes have been taking place in all areas including the emergence of new theories in linguistics.

In this article, we have discussed the use of the word "complex" as a term in the Uzbek language, and the definitions given to them. The article also focuses on cases in which the word "complex" does not justify itself as a term, and the interpretation or evaluation of a linguistic unit under different terms only leads to misunderstanding.

The main part

In the initial stage, the lexical meaning of the word "complex" has been discussed:

the word **COMPLEX** is defined as a composed, structured, collected and mixed. The Uzbek dictionary defines such meanings as:

1. difficult to solve, understand, accomplish; complex, difficult. *A complicated matter.*

2. consisting of several parts, and elements; content. *Complex substance. Complex number (mat.), complex cut (gram.)* II Structurally extraordinary work. *Sophisticated machine.* [1. Part I. Page 481]

The term "**complex**" occurs in the Uzbek language in many areas. In linguistics, the word "**complex**" is used in two different meanings:

1. in a narrow interpretation, it is used as a term for any science. For example: in linguistics: *a complex sound, a complex suffix, a complex noun, a complex part, a complex compound, a complex sentence;*

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2. broadly it is used as a commentary term.

At first, we discuss the name (designation) and term, their general and different aspects:

A name (designation) is the name of a word, event, feature, action, or situation specific to the linguistic (parole) layer of the language. In some sources, there are definitions that the name and term are synonymous. However, it is impossible to agree with this opinion. Because the term is used as the name of its units within a particular science. No term can be a term. Nevertheless, every term, in general, falls within the scope of the terms.

A **term** is a word or phrase, which is a clear and stable expression of a particular concept specific to a field of science, technology, or profession; the name: *Botanical terms. Jewelry terms. Cotton terms. - Yuldash explained Elmurad the unknown terms.* (Shuhrat) [Part 1. II. 165]

The word "**complex**" in the meaning of term is actively used in many sciences. Linguistics also has linguistic units called "complex" at almost all levels of language. It was found necessary to study the **name** "**complex**" and the **term** "**complex**" used in

textbooks, manuals, monographs and scientific articles in the Uzbek language:

Compound consonants consist of two **consonants** (in $ch = t + sh$, $j = d + j$ *jadal, jora*). In the pronunciation of these sounds, the frontal part of the tongue touches on alveoli, but it is not plosive, the air is mostly slippery. The result is an incomplete explosion and the subsequent sliding creates mixed sounds involving two different methods. [Page 4.34]

Even if the components of **complex suffixes** contain more than one component, they are not divided into compounds: the suffixes *-chi, -lik* in the word *gulchilik* (гулчилик-floriculture) are considered simple suffixes; and the suffix *-chilik* in the word *dehqonchilik* (farming) is a complex suffix because it is inseparable from the suffix *-chi* and *-lik*. If the preceding section is used before suffix *-lik*, the suffixes *-chi* and *-lik* are divided and can be considered simple one. If the preceding section is not used independently, the suffix *-chilik* is not divided into the structural components and can be considered complex suffix. [8. Page 148]

Table 1.

Simple suffix	Complex suffix
чойхоначилик	мардикорчилик
ўқитувчилик	қулчилик
балиқчилик	озчилик
тўқувчилик	шерикчилик
тиқувчилик	йўқчилик
ёзувчилик	қариччилик

The history of linguistics emphasizes three main ways: simplification, restructuring, and complexity. **Complication** is the transition of a word, which was previously considered a root word to a series of compound or complex words, or the transition of single-morph words to two or more morph words. This phenomenon is rare in languages. [4. Page 50]

Complex name. By shortening a number of stable compounds, acronyms are formed and speech conciseness is achieved: *Department of the Internal Affairs (Police agency) - Ички ишлар бошқармаси - ИИБ*. Abbreviation is not the creation of a new word, because the abbreviation refers only to the form of the word and does not affect the meaning. An acronym is therefore an abbreviated form of a stable phrase, or rather a complex noun. [P. 8.175] When we say the abbreviation, its full, expanded meaning comes to one's mind: *DTM - Давлат тест маркази (State Testing Center), DTS - Давлат таълим стандарти (State Education Standard), UN - United Nations.*

Complex number. A number is a set of words that express the number, order, and approximation of an object. [P. 9.107] They are: *one, two, three, four, five, six, seven, eight, nine, ten, twenty, thirty, forty,*

fifty, sixty, seventy, eighty, ninety, one hundred, thousand, million, billion. It consists of words such as ... There are also **complex numbers** made up of these words: *two thousand twenty-one*.

Definitions related to the **term** "**complex**" in the Uzbek language can often be found in the context of the passages. For example: *complex predicate, complex attribute, complex object.* In the following, we will focus on each part separately, proving our point with examples:

Complex predicate. There are two types of predicates according to their structure: *simple* and *complex predicate*. The predicate which is expressed in one word is a simple predicate. The predicate consisting of more than one word is called a **complex predicate**. Auxiliary words (auxiliary verb, conjunction, relative word, etc.) also form a complex predicate. The extended compound and phrase become a single part of the clause and cannot be divided into other parts within themselves. In this case, they are complex predicate: *Дадам қўли очик эдилар (Dad was open-handed). Улар беш кишидан иборат эди. (They consisted of five people).* [7. Page 55]

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Table 2.

Simplepredicate	Complex predicate
<i>Пахта ва тилладан юрт <u>безанади</u>.</i>	<i>Минг йилларким булбул каломи ўзгармайди – <u>яхлит ҳамшиа</u>. (А.Орипов)</i>
<i>Ҳақиқат <u>аччиқ</u>.</i>	<i>Ёлгон узоққа кетса ҳам, ҳақиқат <u>қувиб етар</u>. (Мақол)</i>
<i>Мунча секин <u>қимирлайди</u>? (А.Мухтор)</i>	<i>Юзни ерга қаратиши бундан <u>ортиқ бўладими</u>? (Ў.Ҳошимов)</i>
<i>Болам ёлгон шеър <u>айтмас</u>. (А.Обиджон)</i>	<i>Ҳамма гап – <u>менинг йўқлигимда</u>.</i>

Complex modifier. A modifier is often connected to a predicate, it expresses the place, time, and state, reason, purpose, degree and quantity of the action understood from it and composes a subordinate

part. A modifier expressed by an independent word is a simple modifier, and a case expressed by an expanded compound is a **complex modifier**. [7. Page 80]

Table 3.

Simple modifier	Complex modifier
<i>Киши кўпгина <u>нарсаларсиз</u> ҳам яшай олади, лекин <u>танҳоликда</u> яшай олмайди. (Л.Берне)</i>	<i>Фақат <u>одамлар...орасидагина</u> киши ўзини ўзи англашига қодир. (И.Гёте)</i>
<i>Киши жамият учун яралган. У <u>ёлғиз</u> яшашига лаёқатли эмас ва яққа яшашига журъати етмайди. (У.Блекстоун)</i>	<i>Дегил инсон десанг ани не ажаб, бўлмаса <u>қирқ яшарда</u> ақл-у адаб. (Сайфи Саройи)</i>

Complex object. The Object is subordinate part of the clause, which is governed by a verb. The object may be in the form of a compound. The **complex**

object, expressed by an independent compound, serves to clarify the content of the sentence. [Page 7.84]

Table 4.

Simple object	Complex object
<i><u>Яхшига</u> қора юқмас, <u>ёмонга</u> эл боқмас. (Мақол)</i>	<i>Кимки <u>бўш вақтини</u> оқилона ўтказа олса, шахсий маданияти олий даражадаги кишидир. (Б.Рассел)</i>
<i><u>Вақтини</u> бой бераётганида хуноб бўладиган одам энг доно одамдир. (Данте)</i>	<i><u>Вақт</u> ва <u>сўв</u> <u>тошиқини</u> ҳеч қачон қутиб турмайди. (В.Скотт)</i>

Complex components. The parts of speech are of two kinds according to their structure: simple and complex components. **Complex components** are represented by two or more words connected to each other. *Complex parts* are represented as follows:

1. stable compounds are the complex component of the clause: *Сен ўлгур, бу уйга бир марта ҳам бошингни тикмадинг. (Ойбек) Аммо турмуш раиснинг “каромат”ини пучга чиқарди. (Ш.Рашидов)*

2. independent compounds can also form the complex component of the clause: *Дадам ўша замон бизни оинасиникига олиб борди. (А.Қаҳҳор) Аҳмад Хусайн қулбачаларнинг...бири...олдида тўхтади. (Ойбек) Тўрт томони баланд уй-айвонлар билан ўралган ҳовлида нафас бўғилла бошлади. (Ойбек)*

Syntactic analysis of complex components represented by a stable compound is impossible in terms of internal connection. In this case, its meaning is lost. Syntactic analysis of complex components

represented by an independent compound is possible in terms of internal structure. This is considered a secondary analysis. In the secondary analysis of the above free-joining complex component is divided into the following parts: tort - attribute, tomoni–attributive, *уй-айвонлар билан-* object, *ўралган –* object, *баланд -*attribute, *тўрт томони-* subject, *ўралган-*predicate. [Page 2.121]

Complex compounds. Phrase syntax studies a group of grammatically related words in a sentence. The basis of the syntax of word combinations are forms of interconnection - adhesion, govern, transformation. In terms of form, it is the richest and most complex govern: *юртга садоқат, ҳосилдан нишона, кўзларимда нам, ишонч учун ташаккур, сайр ҳақида сўхбат*.

The main element of the compound verb requires that the words denoting the names of official documents, such as *ҳужжат, шартнома, қарор, гувоҳнома*(a document, contract, decision, certificate) come with auxiliaries *ҳақида,*

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тўғрисида(about): *битим тўғрисида имзо чекмоқ, мусобақа тўғрисида шартнома тузмоқ.* (to sign an agreement, to conclude a contract about the competition). Such constructions exist as integral and **complex compounds**, which are more common in headings and shortened due to the omission of the auxiliary part of the verb, or such compounds are used in the form of subject govern. [Page 2.79]

An element can define the whole compound. In this case, the governing element is actually come from the compound (it indicates the state of domination-subordination): *Шишадек тиниқ осмон* (*шишадек – subordinate, тиниқ осмон- governor*).

In some cases, the subordinate was actually come from compound; the subordinate subject is the main in itself, contains subordinate elements, where

the union of these two elements governed: *Кўп болали аёл* - *кўп*(subordinate) + *бола* (main) *ли* – subordinate, *аёл* – main. *Инак кўйлакли ёш қиз.*[Page 3.16]

Complex introduction. Introduction is the attitude of the speaker to the opinion he expresses (belief, suspicion, affirmation, denial ...), the relation of the opinion to someone (belonging, relevance), the degree of importance of the components of his opinion (first, second ...) and its components represents colorful meanings such as additional information or comments. The input is as simple and complex as all the parts. Simple introductions are represented by words and phrases, while **complex introduction** are represented by word combinations, extended components, and sentences. [7. Page 127]

Table 5.

Simple introduction	Complex introduction
<i>Шунингдек, кўп одамлар ҳам бировнинг шоҳона зиёфатида меҳмон бўлишдан ўз уйларида камтарона кун кечиришни афзал кўрадилар. (“Эзоп масаллари”)</i>	<i>Отинойи, кўтинча, ўз иши билан шугулланар, дарсоа, асосан, халифа (ҳозирги тил билан айтганда, синф бошлиғи) раҳбарлик қилар, шўхлик қилган қизларга ҳам халифанинг ўзи жазо берар эди. (К.Қахҳорова)</i>

Complex exclamation. Exclamation is a word or phrase that focuses on the speaker’s speech and represents another person or object. There are three types of exclamation according to their structure: a) shortened exclamation, b) extended exclamation, and c) **complex exclamation.** *Инсон тез ўтувчи орзу-ҳавасларга уйинчоқ бўлмаслиги керак, Тўғонбек.* (Ойбек) Exclamation expands with its own words: *Шеър айтгим келяпти, азиз дўстларим, шеър айтгим келяпти, гўзал Фарғона.* (Ғ.Ғулом) *Шерюрак эй қаҳрамон, ёвдан жаҳонни пок эт.* (Х.Олимжон) *Азиз ота-оналар, меҳрибон устозлар, билимга чанқоқ ўқувчилар, байрамнингиз қутлуг бўлсин.*

Complications with complex content usually come at the beginning of the conversation: *Гулноз, қизим, кўзани олиб, булоққа бориб кел.* (М.Ибрагимов)[page 2,140]

Complex sentences in Uzbek language are classified differently by Uzbek scientists. For example, in modern Uzbek literary language, two different terms are used in relation to a complex simple sentence, i.e. a concept:

- 1) "complex sentence",
- 2) "complicated simple sentence"

According to academician G.Abdurahmanov, sentence is a part of speech, expressing a certain idea. There are four types of sentences according to their structure: simple sentences, complex sentences, compound sentences, and periods. A **compound sentence** is a sentence construction that contains separate parts, exclamation, or introductory parts and

combinations in addition to the main parts of speech. These different constructions differ from simple sentence constructions in content and structure. In complex sentences, a complex meaning is understood: *Йигим-теримни олганимиздан кейин, баҳоргача икки юз йигирма гектар янги ер очишимиз керак.* (А.Қахҳор) This statement expresses, firstly, the need *йигим-теримнинг олиними*, and, secondly, the need *янги ер очилиши*. Moreover, the attributive construction of this sentence differs from the ordinary parts of speech in its intonation and structure, and closes the following sentences. There is also the above feature in sentences involving gerundial, conditional, and adverbial modifier constructions. Exclamatory, introductory, and compound sentences also differ from simple sentences with expressing complex ideas and are structured. Therefore, it is important to study such constructive sentences as complex sentences. [2. Page 98.99]

According to the scientists A.Berdaliev and B.Sheronov, the idea is complicated in **simple sentences**. In addition to the main idea of the sentence, another idea is added. In this case, the structure of the sentence is complicated by introductory, composite, separated parts: *Ўз эрини олган юрғизмаган аёл, шубҳасиз, уни орқага тортади.* (“Тафаккур гулшани”)[page 5.110]

Based on the above findings, it should be noted that we can see complex sentences and complicated simple sentences as a single phenomenon.

The naming of a concept at the syntactic level of the Uzbek linguistics under different terms is also

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observed in the context of compound sentences. Below, the scholars G.Abdurahmanov, A.Gulamov, M.Askarova, M.Irisqulov, refer to the evidence and examples under the term "complex compound sentence" in the textbooks and manuals:

According to academician G.Abdurahmanov, in the modern Uzbek literary language, the following sentences are more than one subordinate to the main sentence, forming the complex type of compound sentence. In addition, not only subordinate clauses, but also compound subordinate clauses can be more than one in a context and form a compound sentence with a **complex type of compound sentence**.

The complex type of compound sentence can be structured compound subordinate clause + subordinate clause with several compounds + main clause, mixed sentence + main clause, subordinate clause with several compounds + subordinate compound clause, mixed sentence + compound subordinate clause.

The intonation of the equation exists in the complex components: *Камтар бўлсанг, обрў ортар; Гердайсанг, энса қотар.* (Proverbs)

Equivalent compounds, which connect the parts of speech between such components, or particles used in this function, can be used: *Шундай одамлар борки, улар фақат ўзларини ўйлайдилар; лекин шундай одамлар борки, улар ўз ҳаётларини халқ хизматига бағишлайдилар.* (P.Tursun)

In some cases, the predicate is common to both components: *Айтсам, тилим куюди; айтмасам, дилим.* (Proverbs)

Compound sentences with complex components are formed by the addition of three or more compound sentences. In this case, there is an equilibrium and subordination relationship between the components: *Чой дамладингми, ҳиди гуркираб турсин; ош пиширдингми, масаллиги жойида бўлсин; ётоқда ётибсанми, кўпчиликнинг жойи – ётоқ озода бўлсин.* (H.Gulom) [2.496, p. 497]

Another scholar M.Irisqulov, states that a **complex compound sentence (mixed compound sentence)** consists of at least two equal (ie connected) **sentences** and one or more subordinate clauses: *Соғлиқ яхши бўлса, иш ҳам унумли бўлади, киши чарчамайди. Баҳор келди, аммо ҳаво анча совуқ, чунки қиш бир оз чўзилиб кетди.* [4. Page 135]

According to our scholars A.Gulamov and M.Askarova, compound sentences do not always consist in a combination of two simple sentences. Compound sentences also consist of a combination of three or more simple sentences. Such sentences **are** called **complex type of compound sentences**. Simple sentences in such a compound sentence do not differ in structure and grammatical features from simple sentences in a connected or compound sentence. In compound sentences of the compound type, simple sentences are joined by compounding or by both

composition and subordination. In this regard, they can be divided into three groups:

1. Complex compound sentences formed by subordination (composite sentences with several compounds): *Ким ишининг ҳавасини олса, ким шу ишдан бир нима чиқишига ишонса, ўша ударник бўлади.* (A.Qahhor) *Борди-ю рост бўлса, ҳаммаси эмас, ярми рост бўлганда ҳам, жуда хунук гап-ку.* (A.Qahhor)

2. Composite sentences formed by complex compounds: *Адрлар ранг-баранг гуллар билан ясанани, сойликда сувлар тошиб ҳайқиради, лекин буларнинг барчасини она кўрмади сира!* (Oybek)

3. Composite sentences formed by compound and subordination (or compound sentences of the mixed type): *Бу гап кутилмаган бўлса ҳам, Мирҳомидхўжанинг ёшига муносиб равишда таранг ва тиниқ қизил юзи оқаришиди, оқ оралаган чўққи соқол хиёл титради.* (A.Qahhor) *Карим келгач, сен кетгин; лекин мен бора олмайман, чунки бу ерда анча иш бор.* [Page 3,233]

According to the scientists A.Berdaliev and B.Sheronov, a **complex compound sentence** is a multi-compound type of compound sentences with more than two predicate parts. There are three types of predicate units in complex compound sentences, depending on the type of syntactic connection:

- a) the composite sentence with complex compound connected by the equation;
- b) the complex compound sentence related to subordination;
- c) the complex compound sentence involving both equations and subordinations: *Шуни билинг: ўчмас номингиз, ўчмас боғларда босган изингиз.* [Page 5.194]

Professor I.Rasulov first used **the name of complex syntactic cohesion in Uzbek**. This complex name is applied to a group of two or more relatively independent sentences that serve to illuminate a sub-topic under the Uzbek language, and is the largest unit of syntactic level: *Меҳнат жамиятни яратади. Меҳнат инсонни яратади. Меҳнат инсонни безайди, одамни одам қилади.* (Z.Obidov)

It should also be noted that this term has not risen to the level of a term. Because the term "complex syntactic cohesion" is a complex word in the sense of commentary, it can also be applied to other linguistic units. In particular, compound expressions, complex forms of simple and compound sentences can also be evaluated as complex syntactic cohesion. The term must be used, at least in one meaning, as a single linguistic unit within the discipline name. In Uzbek linguistics, the term "super syntactic cohesion" is interpreted in relation to such a large unit of speech. [Page 6.35]

A deep study of the above terms and definitions used for units of different levels of the Uzbek language reveals that some of them ("**complex compound sentence**", "**composite sentence with**

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complex compound”) are applied to the same speech form, some of the definitions are almost identical or repetitive. (“*Complex syntactic cohesion*”) does not justify itself as a term.

Interpreting or evaluating a linguistic unit under different terms only leads to misunderstanding (*complex simple sentence II is a complex sentence; complex compound sentence is like a complex type II compound sentence*). Such cases lead to a violation of consistency in the use of terms. In our opinion, it is necessary to regulate the terms related to the word “complex”, which are actively used in the teaching of the subject “Modern Uzbek” at its level, in the naming of linguistic units called “complex”. It is well known that the term “complex” is related to the type of structure of linguistic units. Therefore, in our opinion,

it is expedient to use the following three terms in naming language units according to their structure:
simple → **compound** → **complex**.

Conclusion

In particular, according to the structure of sentences, it is better to name them as “simple sentence”, “compound sentence”, “complex sentence”. Then each type of sentence can be studied in groups within itself. For example: there are two types of simple sentences - *simple sentences, complex simple sentences*; a compound sentence is like a *simple compound sentence, a complex compound sentence*. If the sentences are named (evaluated) in this way according to their structure, we can reach the sequence.

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FEATURES OF THE FORMATION OF EFFECTIVE TECHNOLOGICAL PROCESSES FOR THE PRODUCTION OF PRIORITY AND DEMANDED PRODUCTS BY CONSUMERS IN THE REGIONS OF THE SOUTHERN FEDERAL DISTRICT AND THE NORTH CAUCASUS FEDERAL DISTRICT

Abstract: *in the article the authors have developed software that allows you to track the flow of funds from the result of marketing policy in order to guarantee the enterprise a warning from bankruptcy. The collective monograph provides examples of calculating the main technical and economic indicators that allow enterprise managers to make the only right decisions that create economic stability for them. Of particular interest are the results of the authors' studies, due to the care of children, so that the shoes they use, purchased outside specially provided stores, would not be dangerous for them, forming pathological abnormalities of the foot in them due to the shoe's non-compliance with the requirements of technical regulations. Unfortunately, the number of children with acquired pathological changes in the foot is increasing.*

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 need for a flexible organization of the production system is explained by economic and organizational laws. The relationship between the

producer and the consumer determines the economic law of mutual benefit. Organizational laws determine the requirements for adapting the production system to an open economy, which, in turn, is adjusted by the law of ensuring the adequacy of the internal structure and possible types of organization of footwear

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production to the conditions of the external market environment. By expanding the assortment and ensuring high quality of manufactured goods, enterprises gain new sales markets and maintain their positions in an already conquered market. The idea of working for an individual consumer allows enterprises to fulfill additional orders without changing the main production plan even in conditions of large-scale production.

Flexibility is the dominant concept in the literature on the most progressive trends in the development of modern industry. Therefore, it is necessary to clearly define this concept based on the analysis of modern systemic concepts. It should be noted that the main research related to the flexible production system was carried out for the conditions of mechanical engineering, due to the widespread use of numerically controlled machines in this industry, including machining centers, industrial robots and other computer-controlled equipment, which is not typical for light industry.

A large number of publications and authors dealing with the problem of production flexibility predetermines different approaches to the content of this concept. So, V.F. Gornev understands flexibility as the possibility of a sufficiently fast and economical change in the structural elements of the production system, parameter arrangements, algorithms and operating programs. At the same time, the flexibility of the production system is determined by the range of changes in the technical characteristics and elements of the production system; versatility of technical solutions for main and auxiliary equipment; the time required to change the technical characteristics; improving the management system. The author compares the concept of flexibility with the concept of adaptability of production processes.

M.Kh. Bleherman refers to flexibility as the ability of a production system to adapt to changing operating conditions with minimal cost and no loss or very little loss of productivity.

The concept of flexibility according to D.A. Nysu reflects the ability of the system to maintain certain production parameters (productivity, accuracy, economic efficiency) within specified limits under non-stationary operating conditions and compensate for various external influences by changing internal parameters according to appropriate criteria in space and time.

Yu.M. Solomentsev proposes to consider the flexibility of automated machine tool systems (ACC) as their ability to adapt to a change in the nomenclature of parts and various production situations. In this case, adaptation is understood as the transition of the ACC from an inoperative state to a working one, and by a production situation - organizational features associated, for example, with equipment and tool failures, with the launch of extraordinary parts for processing, etc.

V.N. Samochkin defines the flexibility of an enterprise as "the ability to obtain the desired result, which allows it to master, within a certain period of time, a regular number of products that can be demanded by the market and, in turn, allow it to obtain the necessary result in the future, ensuring the survival and development of the enterprise" ...

P. Blyton considers the concept of flexibility by J. Atkinson only as the flexibility of the workforce, including functional in terms of number, time and financial flexibility.

Thus, flexibility is a system characteristic reflecting the ability of any system to adapt to the dynamics of internal and external influences, maintaining the performance indicators at the required level of efficiency. The main principles, the implementation of which allows you to achieve an appropriate level of flexibility, are modularity, variance, consistency, information content.

Flexible technology - the ability to structural changes, quick adaptation of production elements in conditions of dynamism and intensification.

The concept of flexibility reflects the ability of a system to maintain certain parameters (productivity, economic efficiency) within specified limits under non-stationary operating conditions. It also compensates for various external influences by changing internal parameters according to appropriate criteria in space and time.

There are other interpretations with a significant range of understanding of flexibility from readjustment to full automation. Even a cursory analysis of the views reflected in the literature on the concept of flexibility of the production system indicates that it has not yet been finally formulated. To a greater extent, it is revealed in the definition proposed by B.V. Prykin, who considers flexibility as the ability of a system to perceive innovations and adapt to new conditions of functioning in the event of deviations from its existing state without violating its integrity. Based on the study of all available views on the problem of the flexibility of the production system, the concept of the flexibility of the production system is formulated as follows: "The concept of flexibility is to create such a production system,

Main part

The integration processes taking place in the world economy are influenced by two main directions that have developed in the new technological paradigm: an orientation towards increasing productivity and competitiveness. Structural restructuring of the economy at the end of the XX century. was carried out under the influence of the spread of new information technologies, increased uncertainty of functioning and the development of new models of management and marketing.

The mass production model was based on increasing labor productivity through economies of

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scale in a conveyor mechanized process of manufacturing standardized products, subject to the control of a vast market by a specific organization - a large corporation built on the principle of vertical integration and an institutionalized, social and technical division of labor. These principles were embedded in management methods called "Taylorism" and "scientific organization of labor."

When demand became unpredictable in terms of quantity and quality, world markets diversified and as a result became difficult to control, and the pace of technological change made highly specialized production equipment obsolete, the mass production system became too rigid and expensive for the new economy. The provisional response to this rigidity was a flexible manufacturing system. It was practiced and conceptualized in two different forms: as a flexible specialization, as formulated by Piore and Sabel, based on the experience of the industrial regions of Northern Italy, where "production adapts to incessant changes without pretending to control them" in the structure of industrial crafts or custom production.

At the same time, the concept of flexible specialization is based on the methods of implementing the "flexible production paradigm" as the most adequate response to market changes.

However, the practice of industrial management in recent years has introduced another form of flexibility: dynamic flexibility, as defined by Corea, or flexible manufacturing with high volume output, as defined by Cohen and Zisman, also adopted by Bayren, characterizing the transformation of the insurance business. Flexible, high-volume manufacturing systems, typically associated with growing demand for a given product, combine high production volumes for economies of scale, with customized, easily reprogrammable production systems that allow economies of scale. New technologies make it possible to rebuild assembly lines typical of a large enterprise into a set of easily reprogrammable production units,

In industrialized countries, large-scale and mass production is only 20%, and single, small-scale and batch production is 80%.

For many decades, the most efficient technological systems, in terms of flexibility, were automated lines built on the basis of an aggregate principle from standardized parts in a mass production environment. These lines are designed taking into account a specific technology, volume and cycle of production, capabilities and production areas of the customer, etc. The technical revolution in all areas of technology has led to frequent product changes. The trend towards diversification has manifested itself in the creation of various models of all types and types of shoes, adapted to the specific requirements of the consumer. The rapid renewal of the range of shoes and the decrease in serial production as a result of the

appearance of modifications (individualization of consumer demand) led to the fact that that traditional rigid automated lines in many cases ceased to meet the requirements of modern technological development, and their use hinders the production of new models of footwear. In order to resolve the contradictions caused, on the one hand, by the small serial production of production facilities, and, on the other hand, by the large scale of production itself, methods of group technology were developed. These goals are achieved by creating technological systems for processing shoe parts and assemblies, which are complex complexes with a high flexibility and level of automation. All technical means in the complexes are controlled by computer controllers of different levels from control devices for individual elements to an automated production control system (ACS) and an automated process control system (ACS). From these positions, flexibility acquires the following definition: the ability of a technological system to maintain the necessary performance characteristics and parameters when the goals and objectives of the production of footwear change within the specified limits, which is achieved by changing the structure, organization and program of the system. Modern equipment for small batch production offers almost unlimited flexibility, since is a universal equipment with manual control. In these systems, the main problem was and remains not the problem of flexibility, but the problem of automating all functions while maintaining the existing flexibility. Thus, in the development of modern shoe production systems for small-scale industrial production, a different technical and organizational approach is characteristic, which ensures the achievement of high flexibility.

– division of tasks in the production cycle between specialists, autonomous groups or independent firms in such a way that each unit can maximize the "economics of scale" and expertise gained from specialization in one area, and at the same time be able to vary the final product in quantity and shape without losing overall efficiency ;

– rejection of Taylorism (reliance on skills, versatility, participation of workers in the struggle for product quality and the flow of ideas; reintegration of mental and physical work);

– decentralization of the decision-making mechanism (to reduce the alienation of workers, increase their responsibility and increase the speed of response to changing market signals);

– development of multipurpose technologies that are flexibly adaptable to various tasks and volumes;

a culture of cooperation, the development of the negotiation process between firms and within firms as a key condition that maintains the necessary interdependence and flexibility.

The problem of ensuring flexibility must be addressed not only for newly created enterprises, but

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mainly for existing ones. In this case, it is divided into two components: flexibility associated with the preparation of production, and flexibility associated with the functioning of the production itself, which in turn are subdivided into the flexibility of design solutions; flexibility of the technological process; flexibility of the organizational structure; information

flexibility. The formation of flexible technological processes is a reaction of production to the individualization of consumer demand, and a change in production is considered as a change in the purpose of production. In turn, changing goals requires the transition of the production system to a new state.

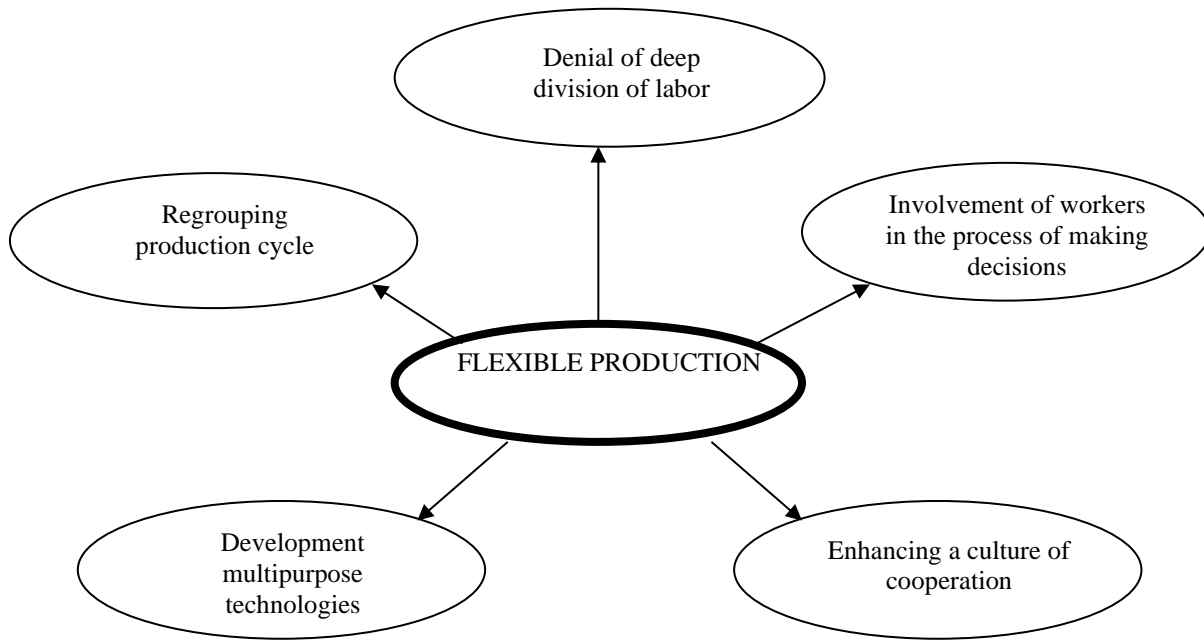


Figure 1 - Methods for ensuring production flexibility

Consider Figure 2, which characterizes the regulation of a flexible system with one degree of freedom, which is equivalent to the regulation of one parameter in a system with an arbitrary number of degrees of freedom, assuming the complete independence of this parameter from the other. In this scheme, $X(t)$ and $Y(t)$ are the "production goal" variable and the "input parameter" variable with the given constraints, respectively; $f(t)$ - external disturbance; t is time.

For example, $Y(t)$ is the current value of the unit cost, and $X(t)$ is the current number of model names simultaneously processed in a flexible system, each of which is characterized by a vector (labor intensity; number of workers, operating and maintenance costs; cost of basic and supporting materials). Then the transfer function of the system for the goal $W_c = dY / dX$ reflects the intensity of the change in the input

characteristics of the system depending on the change in goals or, in other words, the dependence of the cost on the change in the components of the specified vector, which is described by a certain mathematical model. On the assumption that the process is continuous and the connections are linear or linearizable, the transfer function of an open-loop dynamic system can be used for frequency analysis of the stability of its given state.

The response of the system to external disturbances is characterized by the transfer function for external influences $W_{wn} = dY / df$. This function determines the stability or margin of stability of the system to external influences in a steady state. Thus, each steady state is characterized by indicators of dynamic quality: stability, stability margin, resistance to external influences.

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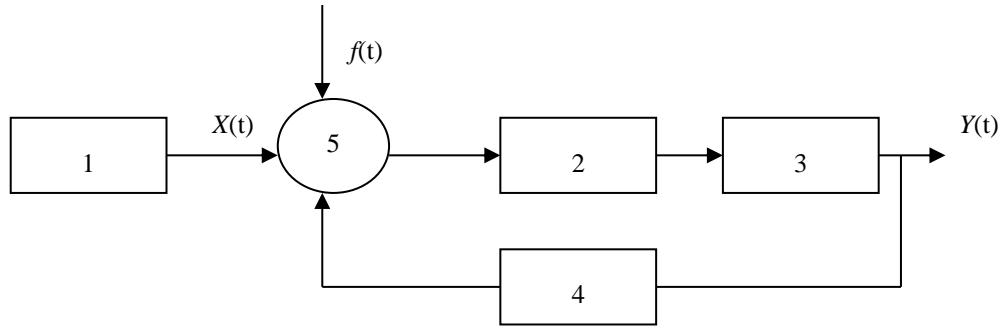


Figure 2 - Block diagram of flexible system regulation:

1 - the formation of goals and objectives of processing; 2 - generation of options for structure, organization and action program; 3 - decision making; 4 - analysis of the accepted option; 5 - analysis of deviations

Changing the purpose of production requires the transition of the system to a new state. The transient process is characterized by the time, speed and accuracy of the transition. These characteristics are dynamic indicators of the flexibility of the technological system. Unlike static ones, they characterize the limiting possible changes of a particular parameter and the number of technologically distinguishable (definable, quantized) states.

In connection with the multicriteria and multiparametric nature of steady states and transient processes in the system, the transition of the system to a new state in accordance with the set goal can be considered as its exit into the range of permissible values, and not into the optimal point of the criteria space. This is due to the fact that in a real multicriteria system, the optimal value of one of the indicators is achieved only when the other deteriorates.

Figure 3 shows a diagram of the transition of the system from state 1 to state 2 and the corresponding admissible areas ΔNS_1 and ΔNS_2 adjustable parameters. It can be seen from the diagram that the transition of their state 1 to state 2 is characterized by

the transition time T , the static deviation X_0 , the overshoot value δ (oscillation), as well as permissible values ΔNS_1 and ΔNS_2 adjustable parameter ($X_2 > X_1$). Thus, the speed of overcoming the crisis situation, which is associated with a reorientation to the production of a new range of footwear and the development of new technologies, is an indicator of the flexibility of technological and production processes.

Analysis of the dynamic transition scheme to a new state allows us to consider flexibility as a property that provides the best quality of the transition process and maintenance of the new state (Figure 3). From the presented dynamic model of the transition to a new state, two tasks can be formulated, the solution of which must be provided with the properties of flexibility. Firstly, this will improve the quality of the transient process (time, speed, accuracy), and secondly, ensure the maintenance of the new state. Obviously, the transition process is an adaptation to a new range of products, or, in other words, preparation of production for the transition to a new product. In turn, maintaining a new state is nothing more than adaptation to various production situations.

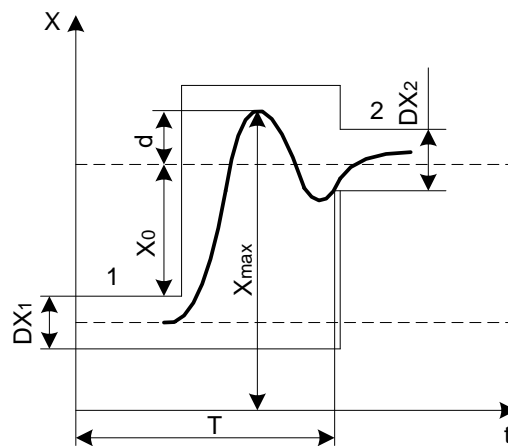


Figure 3 - Scheme of the system transition to a new state:

T - transition time; X_0 - static deviation; X_{max} - dynamic deflection; δ - the amount of overshoot; ΔNS_1 and ΔNS_2 - the range of admissible values of the controlled parameter in states 1 and 2; t - current time

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Thus, flexibility allows the transition of a dynamic system of shoe production from one stable state to another in accordance with the production goal.

The greater the required deviations of the system and the higher their speed, the more complex the regulators and technical means, the higher the costs of creating and operating the system. Therefore, there is an economically rational flexibility for defining production conditions and a rational level of automation for its implementation.

In serial and large-scale production, the nomenclature of fixed models of one type of footwear is limited and the regulation system is significantly simplified; operating costs and changeover costs are split into large batches of models, resulting in an overall cost-effective production.

Consider the classification of the flexibility of the production system, taking into account the preparation and operation. YES. Nys distinguishes the following forms of flexibility: constructive, technological, parametric. (fig. 4). According to this classification, the constructive form of production flexibility is realized through the configuration of the machine transport system and the control system. Technological flexibility is provided by the following components: route, operational, software types of flexibility. It is obvious that the configuration of functional systems is determined by the adopted technological process and means of technological equipment, while the concept of constructive and technological flexibility according to D.A. Nysu can be combined into a single technological flexibility.

Parametric flexibility allows you to adjust reliability, transition time to a new state, efficiency, transition accuracy, productivity. It is fundamentally nothing more than organizational flexibility. its influence on such components as reliability, transition time, productivity is determined not only by the nature of the technological process, but also to a greater extent by organizational reasons.

Yu.M. Solomentsev et al., The flexibility of a machine tool system is taken as its transition from a non-working state to a working one and adaptation to changes in various production situations, which mean possible equipment and tool failures, the launch of extraordinary parts for processing and other organizational features. At the same time, technological, structural and organizational flexibility stand out separately. Technological flexibility should

ensure the adaptation of the system to the changing nomenclature of parts. The structural flexibility of the system should allow it to fulfill its service purpose in the event of a failure of any of the components (machine tool, CNC system, tool, etc.). In addition to reliability, structural flexibility includes the ability to transfer the functions of a failed component to another.

When analyzing the presented classifications, the general characteristics of the forms of flexibility of Yu.M. Solomentsev and D.A. Nysa Technological flexibility according to Yu.M. Solomentsev is substantively identical to those identified by D.A. Lowered constructive and technological forms, united into a single technological one. Structural and organizational form of flexibility Yu.M. Solomentseva corresponds to the parametric one according to D.A. Nysu.

M.Kh. Bleherman identifies the following types of flexibility - the flexibility of expanding the system; flexibility of the nomenclature and volume of production; system adaptability; technological flexibility. The flexibility of system expansion implies the possibility of modular expansion of the production system. The flexibility of the nomenclature and the volume of production provides for the ability to update products and manufacture them with any launch batch. The adaptability of the system reflects the duration and cost of the transition to the manufacture of the next part name. Technological flexibility (route and operational) - the use of various options for the technological process to compensate for all kinds of deviations. All of these sorts of flexibility are also one technological flexibility.

V.F. Gornev distinguishes between the flexibility of the basic elements of the production system; flexibility of technological equipment; structural flexibility; flexibility of the control system. The flexibility of the basic elements of the production system is ensured by the design capabilities and technical characteristics of equipment and technical controls, their full or partial interchangeability or economically effective replacement. The flexibility of technological equipment can be considered by groups of technological equipment: separately by devices and instrumentation (Figure 4). Both of these forms of flexibility are determined by the design capabilities and technical characteristics of technological equipment: equipment and technological equipment.

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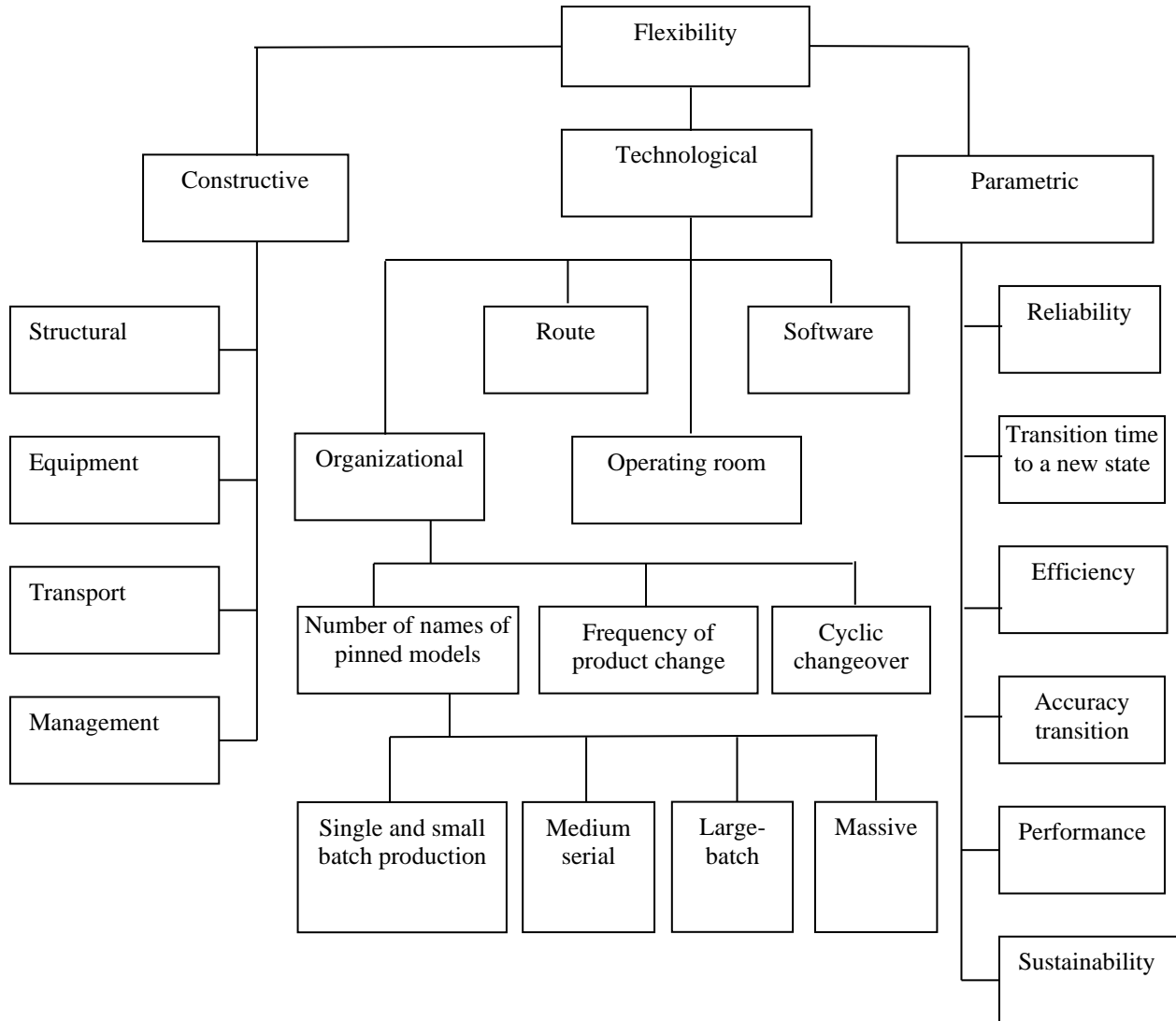


Figure 4 - Classification of forms of flexibility

Structural flexibility is determined by the possibility of implementing different variants of technological processes within the same production system in order to optimize the process when conditions change due to the appropriate structure of the system. Flexibility of the control system, in the presence of which it is possible to jointly or separately operatively change short-term production plans relative to the projected ones, intra-module and organizational control due to the presence of unplanned technological disturbances.

Both structuring and flexibility of the management system solve organizational problems, being a generalized organizational form of flexibility.

In turn, B.V. Prykin, as one of the properties of the system, introduces the concept of mobility, that is, the ability of the constituent elements of the system to move, concentrate in the necessary combinations and function rationally in specific situations, which is also a component of organizational flexibility.

On the basis of the foregoing, the structural nature of the concept of flexibility becomes obvious, it is natural that the hierarchy and content of levels in accordance with the tasks to be solved can be measured, expanded and refined. The analysis of the considered approaches makes it possible to establish that there are no fundamental differences between them.

All the proposed forms of flexibility are grouped into two main ones: technological and organizational. The diagram shown in Figure 5 reflects the influence of the reasons and tasks of production adaptation to the prevailing economic conditions and forms of flexibility that contribute to the implementation of these tasks on the flexibility of production as a whole. Thus, the creation of flexible technological processes is a complex transitional process, implemented through technological and organizational flexibility (Figure 5).

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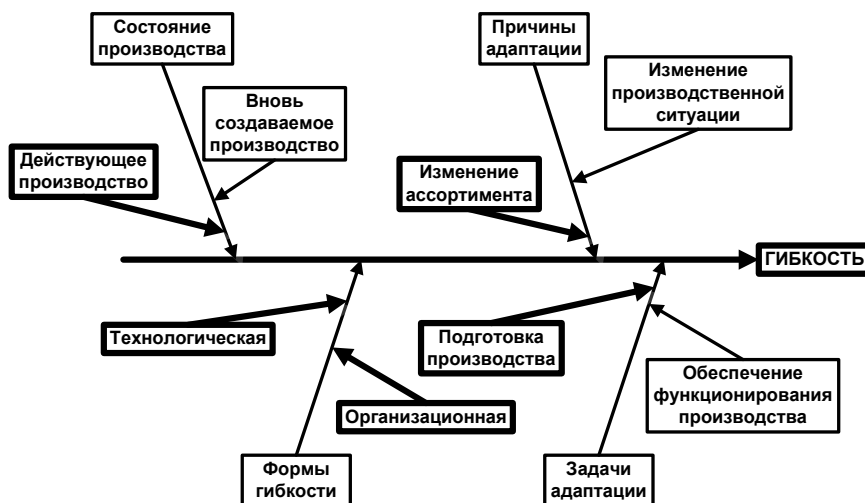


Figure 5 - Diagram of indicators affecting production flexibility

It is known that the concept of competitiveness can be applied to various objects: documentation of technology, products, production, etc. from all categories of competition: philosophical, social, psychological, market, economic, unconditional importance for production have the greatest market and economic, since they characterize its ability as a complex open organizational and economic system to predict its future, to produce specific products and to ensure due to this profit sufficient for the normal functioning and development.

The competitiveness of an enterprise is determined by external and internal factors. The factors of the organization's competitiveness, determined by the external environment, are elements that must be taken into account when forming the flexibility of a production system of any kind, however, in the future, only the influence of internal competitive advantages is considered.

Market and economic categories of the competitiveness of enterprises and the industrial products they produce have been studied in detail in the works of M. Porter, J.-J. Lamben, W.J. Stevenson and others.

So, M. Porter singles out as innovations that allow creating a competitive advantage of production or its products, new technologies, new or changed customer requests, the emergence of a new segment of the industry, changes in government regulation, changes in the cost or availability of production components. At the same time, the changed requests of buyers, the emergence of a new segment of the industry, a change in government regulation, a change in the cost of production components are classified according to the classification of J.-J. Lamben to external factors that do not affect the costs of production itself.

Buyers' actions are manifested in completely new requests or their assessments change dramatically, which serves as an impetus for the design and release of new or modified products. The emergence of a new segment of the industry allows you to enter a new group of buyers. Changes in the cost of components, changes in government regulation, are undoubtedly factors of external influence on production efficiency.

Then the changes in production components and new technologies identified by M. Porter should be considered as the reasons due to which internal factors of the enterprise's competitive advantage appear. Indeed, changing technology creates new opportunities for the development and production of goods. For an already operating production, replacing the entire technological process is an expensive measure, and the improvement of individual stages provides real opportunities for increasing the level of competitiveness of the enterprise. In any case, technology upgrades are almost always associated with additional costs.

W. J. Stevenson proposes to form the competitive advantages of an enterprise through price, quality, specific features of goods or services (production or service orientation), mobility (flexibility) of production, time or timing of processes (timing of certain operations). Among these factors, internal factors include price, quality, production flexibility, time and timing of processes. Product quality, production flexibility and the duration of processes are mainly determined by the technical and organizational level of the enterprise. At the same time, there is a clear influence of flexibility on the price of products and the duration of its production cycle. Indeed, flexibility provides a quick restructuring for the release of a new range of

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products, which leads to a reduction in the duration and costs of its production.

R.A. Fatkhutdinovs are invited to take into account structural, resource, technical, managerial and market factors as internal ones.

Structural factors involved in the design of an organization include:

- production and organizational structure of the enterprise;
- the mission of the organization;
- specialization and concentration of production;
- accounting and regulation of production processes;
- informational and normative-methodological management base, etc.

Resource internal factors for achieving a competitive advantage of an organization are associated with the specifics of relationships with suppliers, taking into account and analyzing all types of resources, with a functional-cost analysis of manufactured products, optimization of the efficiency of resource use, etc.

The technical factors of the organization's competitive advantages are realized through technical innovations, including: possession of patent novelty or know-how of products and technologies, an increase in the proportion of progressive technological equipment and a decrease in its average age, etc.

Management internal factors of the organization's competitive advantage: these are the managers themselves, their level of qualifications, as well as the functioning of management systems, information support for decision-making, quality management in the organization, etc.

The increasingly fierce competition in the international consumer goods market poses new challenges for the shoe industry. This is the problem of the criticality of the time required to create a product and organize its sale, and the improvement of the quality of design and production processes, and problems associated with competition in the maintenance market, and problems associated with direct cost reduction (direct capital; wages in production and etc.).

The results of a study in the field of the state of shoe enterprises in Russia and the South and North Caucasian Federal Districts, in particular, showed their inability to cope with the growing difficulties from the external and internal environment. Having embarked on the path of transition to market relations, shoe enterprises faced a crisis in their economic systems.

The old directions in the management of a shoe factory, emerging in the internal environment (organization of production, cost reduction, efficient use of all resources, growth in labor productivity, etc.) do not provide a way out of this situation. It is

necessary to develop and use new approaches in the field of economic management of the enterprise, including marketing and the development of the competitive status of the enterprise, which facilitates adaptation to the external environment.

Thus, the success of a shoe business depends on how quickly the threat to its existence is identified. This once again confirms the main conclusion based on the results of the study of the state of shoe enterprises that their adaptation to the external environment, given the absolute importance of the internal environment, should become paramount and manifest in strategic forecasting and flexible development of the enterprise.

For shoe enterprises, it is important to be able to navigate in the use of the achievements of scientific and technological progress in order to timely identify new trends, work out the concept of developing these achievements for specific production conditions, prepare for their implementation and ensure implementation.

The flexibility of the enterprise is the ability of the enterprise to obtain the necessary result, which allows it, without a radical change in the basic production assets, to master within a certain period of time a regular (necessary) number of new models of footwear that can be demanded by the market and, in turn, allow in the future period to obtain the necessary result that ensures survival and enterprise development.

The structure of footwear production is quite complex and differs in a variety of assortment of raw materials and finished products. A feature of the shoe industry is the frequent change of production facilities (assortment). The design of new models of footwear provides for the development of technological processes for their manufacture. This work should be carried out in a short time and with minimal costs, and the optimal production option is selected, since at the design stage of the technological process, the intensity of the enterprise's functioning is set in advance, i.e. the possible level of technical and economic indicators of its work. At the design stage, the foundations of product quality are also laid, since its properties largely depend not only on the appearance, functionality, fashion compliance, etc., but also on the manufacturing process.

In this regard, it would be more correct to talk about the need to create a structural model of shoe production that would ensure the functioning of a flexible technological process with the obligatory implementation of the main requirement - ensuring the manufacture of shoes in an assortment that meets the needs of the market and realizes the requirements of competitiveness.

A generalized structural diagram of the flexible development of an enterprise is shown in Figure 6.

The structural model of production will be effective even if the behavior of the proposed range of

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products in its “life” is taken into account, i.e. all stages of the product life cycle (LLC) will be implemented:

- marketing and market research;
- design and development of technical requirements for the products being created;
- material and technical supply;
- preparation and development of technological processes;

- production;
- control, testing and inspection;
- packaging and storage;
- sale or distribution of products;
- installation, operation;
- technical assistance in maintenance (repair, etc.);
- disposal after the end of use of the product.



Figure 6. Generalized structural diagram of agile development shoe enterprise: Γ - mathematical dependence, providing a scheme for the development of a flexible technological process for manufacturing a range of products;

**Uob - stability (result) to renew in various cycles of development of this production;
Sob - the ability to update in different cycles of development of this production**

A distinctive feature of the light industry is a short product life cycle, since the clearly defined desire of people for individuality in clothing, footwear, and accessories necessitates the production of a wide range of products. This leads to frequent product model changes, reduced batch sizes, and increased launch frequency. Organization of a lot of assortment production of products with the maximum use of the capabilities of the equipment used, labor resources and production areas and the possibility of

periodic change and renewal of shoes with minimal expenditure of funds and time for organizing its production - these are the main requirements for modern production, the range of which is shown in the figures

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In the general case, the average production time of a unit of TEP production is determined by the average time of performing operations T , the average value of the preparation for the launch of the corresponding batch of TK, the average time of preparation for production according to the given TPP model, the average number of batches of manufactured products during the life cycle B , the average size of the batch A . Expression for definition of TEP has the following form:

$$T_{EP} = T + TK / A + TPP / AB. \quad (1)$$

The preparation time for the launch of a batch of TK includes labor costs for the selection of materials,

adjustment of equipment, planning the production of a batch of products, etc. and is calculated at a time for each batch. The production preparation time of the CCI includes: model selection, design, technological preparation, costing, pricing, production planning, which are calculated at the same time, but for the entire production program of a given model.

In the shoe industry, there is the concept of a basic model, for which the main design and technological developments are carried out, refined for working models, the so-called model features. In this regard, the concept of a conditional life cycle of the base model overlaps the life cycles of working models (Figure 7).

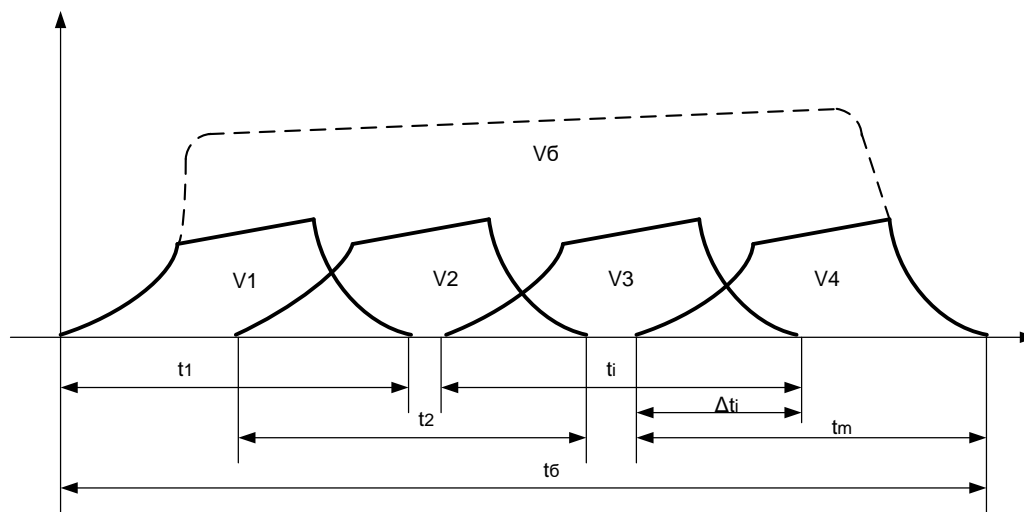


Figure 7 - Relationship of the life cycle of the base model with life cycle of working models

It is obvious that the total volume of production of products based on the basic model V_b will be determined:

$$V_b = \sum_{i=1}^m V_i, \quad (2)$$

where V_i is the production volume of the i -th working model;

m - the number of working models released on the basis of the base one.

In turn, you can write:

$$\sum_{i=1}^n T_{EP_i} = \sum_{i=1}^n T_i \cdot A_i \cdot B_i + \sum_{i=1}^n T_{3i} \cdot B_i + \sum_{j=1}^k (T_{III6_j} + \sum_{x=1}^l \Delta T_{IIIp_x}), \quad (4)$$

where T_{III6_j} - preparation time for production of the j -th basic model;

$$t_b = \sum_{i=1}^m t_i - \sum_{i=1}^m \Delta t_i, \quad (3)$$

where t_b - conditional life cycle of the base model;

t_i - life cycle of the i -th model;

Δt_i - time of alignment of life cycles of working models.

When launching n models per year based on k , the base total labor costs for the production of products will be:

ΔT_{IIIp_x} - change in the preparation time for the production of the x -th worker models based on the j -th base;

l - the number of working models released based on the j -th basic.

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The influence of the components of the TK and CCI on the total labor costs is determined by the level of seriality. With a small serial production, the value of total labor costs is significantly influenced by the second and third components of formula (4) for determining the average production time of a unit of TEP products. They become comparable in size to the first component, since they are one-time and are distributed over a small number of batches and products in each batch.

In this regard, the change in the average time of the main work operations performed cannot significantly affect the total labor costs. Hence, it becomes obvious that with a small serial production level of automation and specialization of equipment, it is impossible to significantly change labor costs. This is in line with the internal structure of a small business.

In mass and large-scale production, the change of models during the year is relatively small, i.e. products are produced in large batches and for a long time. Enterprises of this type mainly produce specialized footwear with practically no product variability (for military personnel, etc.). In this case, the second and third components do not have a significant effect on the total preparation time for the launch and the production preparation time is distributed over a large number of products. The determining influence on the total labor costs is the average time of operations. Based on this, the selection of equipment and the qualification of personnel should be carried out.

Realization of the concept of flexibility becomes possible with the rapid execution of various volumes of orders from small-scale, almost one-off, to orders with a large series, for example, with the level of medium series production. This entails the need not so much to reduce labor costs for preparing production and preparing the launch of batches, as in reducing the time of these preparatory work. Consequently, the technological process for the production of products should be easily reconfigurable. This implies the unconditional use of quickly adjusted and sufficiently specialized and automated equipment. The qualifications of operators and maintenance personnel must be comparatively high in order to ensure high performance for everyone in different workplaces. Flexibility should be provided for restructuring not only the technological process, but also the entire staff. In this case, all three components of the average production time of a unit of production become significant and manageable.

The characteristics of the requirements for increasing the flexibility of the functioning of production in the conditions of frequent changes in the assortment are shown in Figure 6.

Due to the large volume of products and the small number of manufactured models, the principles of flexibility when applied to mass and large-scale production are not significant. As for small-scale and individual production, it is already flexible in terms of its internal organization. Consequently, the concept of flexibility is important for medium-volume production, in which models of a wide range are produced at sufficiently large volumes. When developing an assortment of children's footwear, it is necessary to take into account the factors that shape consumer demand: compliance with the main fashion trends, economic, social and climatic specifics of the South and North Caucasian federal districts.

In terms of their natural and climatic conditions, the South and North Caucasian Federal Districts occupy a unique position in the Russian Federation. The geographical position, proximity to the three seas and varied relief with the presence of high mountains predetermine a significant diversity of the climate. In the eastern part, the continentality of the temperate climate is clearly manifested: the winter is cooler, the summer is hotter (the average temperature in July ranges from +25 to +28 ° C, in January - 4–8 ° C), the amount of precipitation is not large; The climate of humid subtropics with a large amount of precipitation prevails on the Black Sea coast; the average January temperature is + 2–5 0C.

Such mild climatic conditions in our region suggest a great demand for footwear in the spring-autumn and summer period socks (sandals, shoes, low shoes, autumn ankle boots and boots). Winter shoes are less in demand. In accordance with MGOST 26165–84 "Children's footwear. Technical conditions", the use of textile and artificial materials along with natural and in combination with them is the most relevant for such footwear, allows the most complete satisfaction of consumer demand for families with different income levels.

The assortment of children's shoes should focus on buyers with different income levels, for this, in the production of shoes, you can use leather of different quality: expensive, such as chevro or cheaper pigskin, shoes from which you can wear on the "exit", and when you come home, to take off, so that the child's legs are resting.

Also, when developing the assortment, it is necessary to take into account the fact that more girls are born in the Southern Federal District and the North Caucasus Federal District than boys, so shoes for girls should be produced in a larger volume than shoes for boys.

If manufacturers of footwear for children are guided by all of the above, then buyers will have the opportunity, depending on their financial situation, to give preference to products of a particular price category, made taking into account the climatic characteristics of the Southern Federal District and the

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North Caucasus Federal District and the generic characteristics of their population.

One of the most important requirements of Russians for purchased footwear in general and for children in particular is its compliance with the latest fashion trends. Moreover, recently it has begun to spread not only to models for schoolchildren, but also school and toddler children. And this applies to both the products of eminent foreign brands and domestic manufacturers. Of course, there are different price niches in all the shoe markets of the world, but also a feature of our Russian: a huge sector of cheap shoes, relatively small - of average cost and very small - expensive. The second, no less important feature: a large fork between cheap shoes (up to 9 euros per pair) and expensive ones (from 200 euros per pair).

The first sector employs not only firms from South-East Asia, but also Russian wholesalers placing their orders in China. In the second, middle, there are Russian factories, as well as enterprises in Eastern Europe and Turkey that produce footwear under their own or licensed brands. In the third, there are well-known world manufacturers and even fashion houses.

At the junction - collections of European production from natural materials, adapted to the Russian market, but also of moderate cost.

Representatives of the most extensive low-cost sector, where the level of competition is very high, strive in every possible way to reduce the cost of their products through production at cheaper factories, as well as the materials used.

It should be noted that now the parents' requirements for the hygienic properties of children's shoes, namely the naturalness of the upper material, have sharply increased, because many manufacturers from the inexpensive market segment, in an effort to reduce the price, make only an insert insole and lining from genuine leather. In order for a child's foot to remain healthy, in shoes for toddlers, everything must be thought out, down to the details.

If you just think that the growth of a foot is on average completed by about 18 years of age, then you can imagine how important it is to have shoes that are suitable and healthy for your health from the outset. In the process of leg growth, a transformation occurs: since at first the child begins to crawl, then he still has crooked legs in the shape of the letter O. With the disappearance of these crooked legs, which is due to growth, crooked legs appear in the form of the letter X, when the sides of the knees are on the inside touch each other. Until about 6 years of age, a small child's leg grows, retaining the X shape. Learning to walk, the child tries to align the body vertically, and the feet are subjected to great stress. Feet and legs begin to develop as they begin to have a functional load on muscles, ligaments and tendons, begin to adapt to each other. During the period when the child begins to spontaneously get up, the foot must necessarily be able to develop freely. This also applies to further

developmental stages and in older children. From a hygienic point of view, shoes should protect the body from cooling and overheating, protect the foot from mechanical damage, help muscles and ligaments to keep the arch of the foot in a normal position, provide a favorable microclimate around the foot, help maintain the required temperature and humidity conditions under any microclimatic conditions external environment. Shoes must meet hygienic requirements: be light, comfortable, do not restrict movement, match the shape and size of the foot. Then the toes are free and you can wiggle them.

Tight and short shoes make it difficult to gait, squeeze the leg, disrupt blood circulation, cause pain and, over time, change the shape of the foot, disrupt its normal growth, deforms the toes, contributes to the formation of difficult-to-heal ulcers, and in the cold season - frostbite, increases sweating. Shoes that are too loose are also harmful. Walking in it quickly gets tired, and abrasions can occur, especially in the area of the rise.

Support area and stability are sharply reduced. The torso leans back. Such a deviation at the age, when the pelvic bones have not yet healed, causes a change in its shape, changes the position of the pelvis, which in the future may adversely affect the birth function. In this case, a large lumbar bend is formed. The foot rolls forward, the toes are compressed in a narrow toe, the load on the forefoot increases, resulting in a flattening of the arch of the foot and deformation of the toes. In shoes with high heels, it is easier to tuck the leg at the ankle, it is easy to lose balance.

The outsole should bend well. A hard sole makes it difficult to walk (the bending angle is limited, the heel of the shoe is pulled from the heel), reduces the performance of the ankle muscles, increases the temperature of the skin of the legs and sweating.

As much as it is necessary to provide maximum mobility in the forefoot, it is also necessary to ensure maximum heel stability. The heel counter must be strong, not allowing the foot to slip. The back should protect, tightly cover the heel, prevent its deformation.

In winter, shoes must be warm. For this purpose, fur, felt, cloth, felt are used. On cold winter days, not lower than -10 °C, schoolchildren can wear boots and boots with foam rubber, insulated with synthetic fur (lavan with cotton) or woolen or felt lining. With chronic cooling of the legs, vascular spasms occur and serious nutritional disorders of the leg tissues develop due to the obstruction of blood flow. In the summer months, the most hygienic lightweight open shoes with a wide neckline are sandals, sandals, leather shoes or shoes with leather soles with a top made of textiles and other materials with a porous structure (matting, denim, etc.). Such shoes promote good ventilation and rapid evaporation of sweat due to air circulation around the foot (thanks to the selection of

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material, but more often to the openwork pattern of the shoe upper).

In wet rainy weather, rubber boots or shoes with soles made of waterproof materials, rubber, rubber, nylon, etc. are comfortable. woven straw or cardboard. Care must be taken to ensure that the lining does not get wet.

Shoes that meet hygiene requirements help to avoid unpleasant, sometimes painful, phenomena. Thus, the shoes should not squeeze the foot, disrupt blood lymphatic circulation, and impede the natural development of the foot. There should be a space of 0.5-1 cm in front of the thumb.

The hygienic requirements for shoes for children and adolescents consist of the requirements for the design of the shoes, due to the peculiarities of the structure of the foot during the growth period, and for the materials from which the shoes are made. The size, style and rigidity of the bottom of children's shoes should not hinder the development of the foot.

The foot of a child at an early age differs significantly from the foot of an adult in its anatomical and physiological structure. The children's foot is characterized by a radial shape, in which the greatest width is noted at the ends of the toes. The foot becomes fan-shaped. A different ratio of the heel to the forefoot: children have a relatively longer back (heel), which should be taken into account when designing shoes. The skeleton of the foot in childhood is formed by cartilage. Ossification is completed only with the end of growth (approximately 21 years), so the child's foot can easily deform under the influence of mechanical stress. In this regard, such qualities as the thickness, flexibility of the sole, the weight of the shoe, as well as heat-shielding properties are subject to hygienic regulation.

The main elements of the shoe's cut are the upper - this is the toe, heel, vamp, boot and bootleg, and the bottom is the sole, insole, heel. The toe part should be wider than the beam (part of the foot at the level of the metatarsophalangeal joints). The toe is the outer part of the upper of the shoe that covers the surface of the toes up to the level of the metatarsophalangeal joints. Toe - A piece of the top that is positioned between the lining and the top in the forefoot to maintain its shape. It protects the toes from injury, and its length should not exceed the area of the metatarsophalangeal joints. The back is a part of the upper of the shoe, located in the heel part to maintain its shape. The back should protect the heel, prevent its deformation, prevent the foot from sliding up and back. Thicker genuine leather is used for the production of the backdrop. The production of shoes without a backdrop is allowed for children over 11 years old. Vamp - leather patch on the toe and instep of the boot, as well as the front of the shoe blank. Shaft - the part of the boot that covers the lower leg.

The height of the shoe is normalized depending on its type and genus. The bottom of the shoe (insole,

sole, heel) should have optimal stiffness indicators: resistance (expressed in N / cm) to bending along the line of the connecting head and metatarsal bones up to an angle of 25 degrees. "The flexibility of footwear is regulated and should be 7 N / cm for gusarik shoes, 10 N / cm for preschool shoes, 9-13 N / cm for boys' school shoes, and 8-10 N / cm for girls' school shoes."

The sole is the main element of the bottom of the shoe. The outsole should have optimal flexibility, thickness, mass and thermal insulation properties. The heat-shielding properties of sole materials depend on their thermal conductivity. The lower the thermal conductivity, the higher their heat-shielding properties. In terms of heat-shielding properties, porous rubber is significantly superior to leather and monolithic rubber. At the same time, with an increase in the humidity of the environment, the heat loss of natural leather made of wool (felt boots) increases, and the heat-shielding properties of porous rubber do not change. This creates the advantage of using porous rubber soles in children's shoes, which can provide not only heat-shielding properties, but also thickness, flexibility and anti-slip properties of the shoe. In the summer, wearing shoes with rubber soles, including microporous ones, leads to increased sweating of the legs due to the complete lack of vapor and air permeability. For children's shoes, thread and combined fastening methods are allowed, which provide greater flexibility in the beam area, ease with the use of porous rubber, polyurethane and other materials, it is possible to use glue and injection methods of fastening, ensuring the waterproofness of the shoes, which is necessary in the autumn-spring and winter periods. The thickness of the sole is normalized depending on the materials and type of footwear. what is needed in the autumn-spring and winter periods. The thickness of the sole is normalized depending on the materials and type of footwear. what is needed in the autumn-spring and winter periods. The thickness of the sole is normalized depending on the materials and type of footwear.

The insole is an inner part of the shoe that has contact with the skin of the foot and contributes to the creation of a comfortable temperature and humidity regime in the inside of the shoe space. It must have high air and vapor permeability. It should be made only from genuine leather.

The heel artificially raises the arch of the foot, increasing its springiness, protects the heel from bruises on the ground, and also increases the durability of the shoe. When resting on a bare foot (without a heel), most of the load falls on the back of the foot. The absence of a heel is allowed only in shoes for young children (booties), while the child is not walking. In shoes with a heel of 2 cm, the load is distributed evenly between the forefoot and the hindfoot. In shoes with high heels, that is, above 4 cm, most of the load falls on the forefoot (with a heel height of 8-10 cm, the load on the forefoot is 7 times

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greater than on the back). Heel height: for preschoolers - 5-10 mm, for schoolchildren 8-10 years old - no more than 20 mm, for boys 13-17 years old - 30 mm, for girls 13-17 years old up to - 40 mm.

Children's shoes should have a secure and comfortable fit on the leg, which does not impede movement. For this, various types of fastening are used: lacing, Velcro, belts, zip fasteners, etc. Open shoes without fasteners (like "boats") are not acceptable for school shoes. The weight of the shoe depends on the materials used, construction and type of fastening. The norm of the weight of the shoes is normalized.

Genuine leather is recommended for the top of children's shoes for all-round seasonal use. It has high air and vapor permeability, softness, flexibility and heat-shielding properties. For summer footwear, along with leather, various textile materials or their combinations with leather are used: matting, denim, etc. cotton materials. For the manufacture of children's shoes, polymer materials or natural materials can be used with the attachment of chemical fibers, which are regulated by sanitary norms and rules. Shoes for everyday wear on the street or at school should be simple, comfortable in shape, with wide low heels (1–2 cm). Then walking will not be tiresome.

There are also specific requirements for the color of children's shoes, and they differ depending on the age of the child (models for babies are always brighter, more cheerful, and for older children they are darker, more practical). Our parents are not too fond of easily soiled light shades (they can only be in girls' summer shoes and sandals), as well as non-standard tones suitable for clothes of a strictly defined color. We especially dislike the yellow one, although according to all forecasts it will be relevant this season.

Boys' preferred colors include black, gray, dark blue and brown, as well as beige sand and marsh green. Do not like the traditionally boyish blue and bright green. A different, more radical color scheme, including red and orange, is popular among older boys, and the latter are increasingly used not only as bright finishing touches, but also as the main two. School-age children can be divided into two subgroups: primary school-age children and adolescent children.

To revive the production of children's shoes in the Southern Federal District and the North Caucasus Federal District, it is first of all necessary to create a number of shoe industry enterprises in the following constituent entities of the districts with a pronounced socio-demographic situation and employment of the population in the republics: Chechen, Dagestan, Ingush, Kalmyk.

Newly created enterprises need state support, because they do not have enough own funds, and borrowed funds are not available due to the high cost. It is necessary to solve at the enterprises the general

tasks of technological renewal of the industry, replenishment of working capital, increasing the efficiency of scientific and technical support of production for the manufacture of high-quality and affordable children's shoes.

It is necessary to intensify the work of regional and municipal bodies of social protection to organize targeted assistance to children and their parents, including large and single-parent families.

We believe that this is a problem not only of private business, but also of the state. The downward trend in oil prices is becoming persistent, which worsens the economy and, if no measures are taken in industry, can lead to a decrease in real annual GDP growth rates (due to a decrease in the level of profitability). This will lead to serious negative consequences for the economy. The positive development of the economy could be without a shock, if the state provided "start-up" assistance in the revival of light industry, since today the light industry remains in crisis, which explains the unemployment and low quality of life, especially in small towns, where until 1992 the city-forming sewing, shoe and other enterprises were necessarily functioning.

It is worth noting that in the volume of light industry products today, only a fifth is produced by small enterprises. Reasonable expectations are paradoxical here: according to the proposals of the Chamber of Commerce and Industry of the Russian Federation and the Russian Union of Industrial Enterprises, it is obvious that in 2022 the permissive scale of restrictions on the production volumes of small enterprises will significantly increase (!), After the introduction of which the volume of footwear production by small enterprises will grow no less than, than up to 60-70% of the total production.

And once again in development of the above. For what reason is this growth not systematic? After all, there is the main thing: an immense market (the taxable base for the import of goods and light industry products increased by \$ 746 million; loyal consumer; capacities; qualified personnel; competitive advantages (easing tariffs for electricity, water, land, etc.) According to the achieved production volumes and its dynamics, it is realistic to predict the successful completion of the industry in 2025, but ... everything is in the hands (minds) of the business community, since one cannot count on preferential conditions from the state.

I would like to believe that the order of the Prime Minister of the Russian Federation will be fulfilled at least in terms of reducing the volume of shadow (counterfeit, falsified and contraband) products on the market, and domestic footwear will find its consumer. The acute situation in the production of children's shoes at most Russian shoe enterprises, including in the Southern Federal District and the North Caucasus Federal District, is associated with the abolition of subsidies from the federal budget, with imperfect

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taxation of children's assortment and insufficient production of pads for its production. On the consumer market of the Southern Federal District and the North Caucasus Federal District of goods for children, domestic producers were ousted by foreign manufacturers who supply cheaper footwear from low-quality materials. However, this product, for the most part, does not have conformity and hygiene certificates.

Providing children with properly selected, physiologically sound footwear is one of the main tasks for domestic manufacturers. Domestic children's shoes are manufactured in accordance with strict standards. This is also ensured by the interstate standard MGOST 26165-2003 "Children's footwear. General technical conditions", which defines the general requirements for footwear manufacturers both in Russia and in the CIS countries.

Children's shoes are divided into groups by gender and age:

- 1) for toddlers;
- 2) little children;
- 3) preschool;
- 4) for school girls;
- 5) girlish;
- 6) for schoolchildren-boys;
- 7) boyish.

Age group (0-4 years old)

For toddlers, motor-tactile forms of cognition of the surrounding world come to the fore. Shoes for this age, first of all, should be easy to put on and fasten on the leg. The fittings will attract the attention of the child only by their functionality. Contrasts in the lines of articulations and color remain attractive for the attention of the baby.

Age group (5-9 years old)

In preschool and young children, perception becomes meaningful, purposeful, and analyzing.

The child's perception specially organized by the constructor will contribute to a better understanding of the phenomena of the surrounding world.

Therefore, in the shoes created for children, the maximum manifestation of the principles of harmony should be present.

Age group (10-14 years old)

The third age group of children - children of school age - can be divided into two subgroups: children of primary school age and children of adolescence.

It is advisable to use a stylized image of a shoe model for children of primary school age in order to promote the development of the child's thought process: to stylize the image of cars, plants, insects. The decorative finish becomes a compositional center, therefore various buckles, brooches and other accessories significantly "refresh" the model and make it unique. A buckle of a simple geometric shape (square or circle), but with a small intricate pattern, will make the child look at it, and, therefore,

concentrate his attention. Designers can use fittings that are complex in geometric shape, and by using different colors, they can help the child isolate simpler geometric bodies from the overall complex shape. Such developments in various versions will help train children's thinking to determine a complex shape.

A teenager is an observer, contemplating the world from the outside, studying it as a complex phenomenon, perceiving not so much the diversity and presence of things as the relationship between them. He already clearly knows what kind of footwear is needed and for what purposes, and from the presented models for a certain purpose he chooses, in his opinion, the best one, thinking at the same time how it will look in the eyes of his comrades. In adolescence, the emotional background is uneven, unstable. A child strives for adulthood, claiming equal rights with elders, he considers himself a unique person, but at the same time does not want to differ from his peers in anything external. The new position manifests itself most often in the appearance, including shoes: the teenager likes adult models, but in brighter and bolder manifestations. That is why youth fashion is so specific.

Shoes for this group should be, on the one hand, beautiful, meet fashion trends, and on the other hand, comfortable, comfortable, taking into account the fact that they have not yet completed the formation of the foot and shoes should exclude the development of pathologies. It must necessarily have distinctive features, that is, it must be the shoes that their peers wear today, today. Shoes may differ in color, style of the sole, there may be differences in design features both when assembling the blank of the upper of the shoe and fixing it on the leg, that is, the shoe may have an individual distinctive feature. Teenagers are advised not to wear tight shoes. Wearing it often leads to curvature of the fingers, ingrown nails, the formation of calluses and contributes to the development of flat feet. Flat feet are also observed with prolonged walking in shoes without any heels,

Adolescents aged 15-17

A separate group is a group of adolescents aged 15-17 years, for which shoes are created as a separate group, in which designers must take into account the peculiarities of youth fashion, in some way repeating adult models, but without a high heel and a strongly tapered toe, so as not to damage almost formed foot. Very young children are becoming consumers of shoes for men and women. So, boys buy men's shoes from the age of 11 (9%), by the age of 13, from 40 to 60% use men's shoes, and from 15 years and older - almost 100% of adolescents. the situation with shoes for girls is even more difficult. Women's shoes are purchased by 40 to 70% of 10-year-old girls and almost all girls aged 13 and over. Shoes for this age group should not only correspond to fashion, but be produced in a wide range, so that a teenager with its help can emphasize his individuality. Shoes can vary

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both in color and in the shape of the sole, various design features of the upper of the shoe and methods of attaching it to the foot can be used.

The consumer always faces a choice, which is a priority for him - the level of comfort of the shoe, hygiene, durability, resistance to external influences or price. Currently, artificial membrane materials have been developed that successfully compete with natural ones. The main advantage of these materials lies in their multilayer structure. They provide the same moisture protection as real leather.

Children's shoes should have a secure, comfortable fit on the foot that does not impede movement. For these purposes, modern fashion uses different types of fasteners: belts, zippers, rubberized inserts that fasten quickly and look modern. However, doctors recommend using laces for school shoes. With their help, you can adjust the height of the rise, which means, provide more comfortable conditions for the foot.

Teenagers have their own requirements for the choice of shoes. They prefer what is fashionable in adults. Therefore, there is a demand for classic, sporty and extravagant footwear for "advanced" teenagers.

Teenagers prefer sports style low shoes. Modern models of sports shoes have a specially designed ventilation system: sometimes a mesh or valves built into the sole are used, sometimes the instep support of the model has holes that allow the foot to "breathe", so more and more sports shoes are offered as school and teenage shoes.

Currently, an important trend in children's footwear fashion remains - the desire for maximum comfort. Everything is involved: design solutions, modern materials, the latest technologies. High platform-like soles have gone out of fashion (which is very harmful for a fragile children's foot), the toes have rounded, acquiring comfortable outlines. Teenage fashion shoes have small but pronounced heels. Exquisite fittings, fancy materials, textured leather, metal spraying, etc. The tops of girls' winter boots, just like those of their mothers, are decorated with fluffy fur edges, mink fur appliques, buckles and chains with rhinestones.

In order to form an idea of the assortment of the footwear market in the Rostov region, we analyzed the assortment of children's footwear in the trading network in the city of Shakhty, which is shown in table .1.

Table 1 - Structure of the assortment of children's footwear by prices

Shoe manufacturing companies	Types of shoes	Price categories, rub.							
		up to 100	100-300	300-600	600-900	900-200	1200-1500	1500-1800	1800-2000
"Antelope", Moscow city	sandal-strap			NS					
	Boots					NS	NS		
	Sport shoes				NS				
"Kotofey", Yegoryevsk, Moscow region	shoes orthopedic				NS				
	Boots			NS	NS	NS			
	Boots							NS	
	Low shoes				NS	NS			
"Thomas", Moscow region	Shoes little children			NS					
	Boots little children			NS					
Bombini ", Moscow city	Shoes teenage			NS					
	Boots teenage						NS		
	Low shoes for teenagers					NS			
"Bagheera", Voronezh	Shoes						NS		
	Boots							NS	
	Boots								NS
RIL, Rostov-on-Don	Sandal-strap		NS						
	Czech women	NS							

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Based on the analysis of the assortment of children's footwear supplied to the retail network, it can be concluded that, in general, the demand for

footwear is satisfied at the expense of manufacturers from other regions (Figures 8).

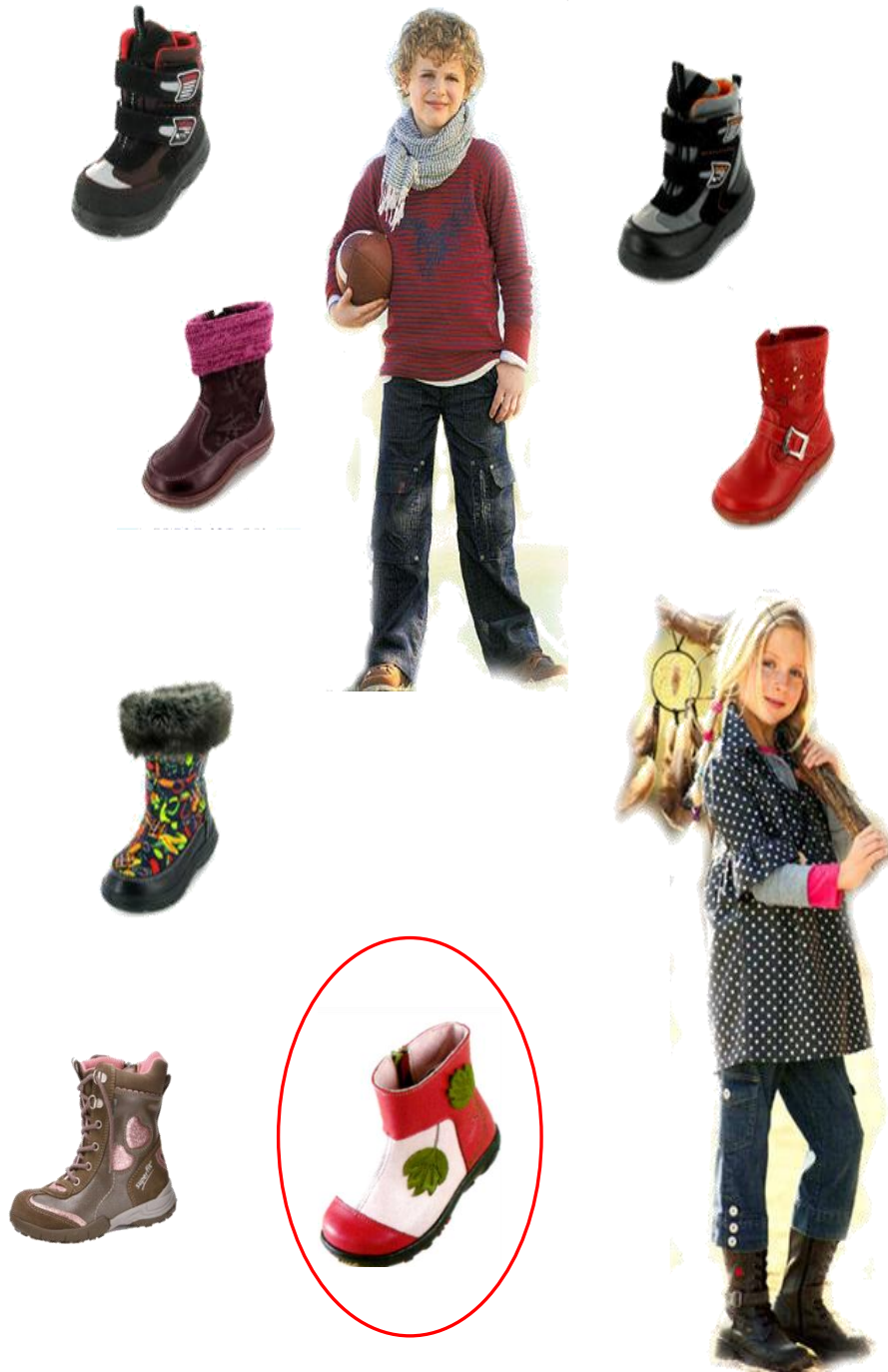


Figure 8 - Assortment of winter children's shoes

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Figure 9 - Assortment of spring children's shoes

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Figure 10 - Assortment of summer children's shoes

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Figure 11 - Assortment of autumn children's shoes
Features of the development of an assortment of women's shoes

Women's footwear is produced in accordance with the interstate standard GOST 19116-2005 "Model footwear. Technical conditions".

When compiling a new assortment, the company's management should remember that the product combines tangible and intangible parameters to meet consumer demand. A new product implies a modification to an existing product or innovation that the consumer considers significant. For a new product to succeed, it must have the parameters desired by consumers, be unique.

Such parameters for fashion shoes are the following features:

– beautiful appearance (namely: skorma (silhouette), material, color, decorations, design

(performance), interior decoration), grace, elegance, compliance with the fashion trend;

– plasticity, lightness, flexibility;
– the comfort of the shoe to wear, which is due to the conformity of the shape and size of the shoe to the shape and size of the foot;

– the ability of the manufactured footwear to maintain the outer and inner shape and dimensions during the entire service life.

Of particular importance in shoes for the buyer is the correspondence of the proposed models to the fashion direction, which now calls for moderation and restraint, the restoration of ties with nature.

From the 40s and 70s. XX century. platforms are back in fashion, combining contrasting colors or

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different shades of the same color. The footwear differs from the previous seasons mainly in the changes in cut and volume, it uses fewer accessories than in the previous periods. The shape of the toe becomes narrower, and the high heel strives more and more for stability. Classic stiletto heels, triangular and rectangular steady heels are in fashion. Many heels with inserts of mirrored materials in different sizes. Metal heels or half metal heels are still fashionable.

Velor and suede are the leading materials. It doesn't matter whether natural materials or artificial - the main thing is that the shoes look spectacular. Patent leather, which is extremely popular in shoe fashion today. Also, in new models, materials of different textures or high-quality natural materials are often combined with artificial ones.

Black returns to the color palette with the addition of red, white, silver, bronze decor or an unexpected explosion of pure gold. Black is followed by brown, beige, as well as caramel and cognac shades, which have acquired some depth and often tend to red and purple, dark red, mustard, wine, elegant dark blue. Often the palette consists of muted tones interspersed with bright purple and scarlet [40].

In the range of shoes for winter, classic boots with low heels with decorated multi-colored details or a freely draped bootleg are relevant. Over the knee boots with or without a high stable heel are also in vogue. Laces, straps, buckles, buttons, various metal fittings are welcome as decoration.

In the assortment of women's shoes for spring and autumn, ankle boots are the undisputed favorite. They can be very diverse: with fur trim, textile inserts, V-neck, all kinds of straps, buckles, decorative buttons and buttons ... They are usually ankle-high, and quite loose, with a narrow or brown-shaped nose. Variants in retro style with a slightly rounded and raised forefoot are possible.

Fashion for the summer provides a wider and more interesting opportunity for renewal. Models are based on open heel and alternating structures. Combinations of straps of various thicknesses, as well as criss-cross and T-shaped straps are widely used.

Special requirements apply to elegant women's shoes. Actual design solutions - boat shoes, low shoes. Modeling compositions of this style comes down to developing a purely constructive basis for the model, often with the rejection of excessive decorativeness and a return to strict and clear lines. The fittings are distinguished by the complexity of shapes and jewelry finishing using precious stones.

According to GOST 19116-2005, leather is used on the outer parts of the upper of shoes according to GOST 939-88: cowhide, outgrowth, chevro with a natural front surface, smooth, with a relief surface, with the finishes "nubuck", "velor", as well as according to GOST 9705- 78 patent leather.

For the inner parts of the top, in particular for the lining, leather is used for shoe lining in accordance

with GOST 940-81, a bike in accordance with GOST 29298-92, natural fur in accordance with GOST 4661-76. For winter footwear, insert insoles are used, consisting of two layers. In this case, the first layer is natural fur in accordance with GOST 4661-76, the second layer is cardboard in accordance with GOST 9542-89, which are glued and trimmed around the perimeter.

According to the interstate standard GOST 19118-2005 "Model footwear. General technical conditions "for the toe cap, thermoplastic materials according to TU 17-21-592-87 are used, which have good elasticity and rigidity. For backdrops, thermoplastic materials are also used according to TU 17-21-958-73.

For the details of the interlining, use thermal bond TU 17-21-92-76, bumazeya-cord according to GOST 19196-80.

For women's winter boots, molded soles based on thermoplastic elastomers are used according to TU 17-21-492-84, since this material is resistant to abrasion, highly elastic, frost-resistant, does not slip on snowy roads. For summer and autumn-spring footwear, leather fiber soles are used according to OST 17-92-71.

They use heels of various heights and shapes made of ABS plastic according to OST 17-331-80.

The main insoles are made of shoe cardboard of the SOM brand in accordance with GOST 9542-89. The main half-insoles are used to strengthen the heel-and-heel assembly in shoes with the adhesive fastening method on medium, high and extra high heels, which are made of PSM cardboard in accordance with GOST 9542-89.

For laying, use is made of cardboard of the PR brand in accordance with GOST 9542-89, which has a low rigidity, ie. resistant to repeated bending, stretching and compression.

Foam rubber is used as a soft heel pad in accordance with TU 06-1688-78.

For the shank, metal is used according to OST 17-24-83.

The assortment of women's fashion shoes that can be offered to shoe pre

As an example, consider the technical description of women's winter model boots (model B). Model B technical description:

- genus - women's shoes;
- view - boots;
- intended purpose - model;
- construction of the shoe upper blank - stitching detail of the vamp, decorative boot strap;
- difficulty category - the second;
- the nature of the processing of the visible edges of the outer parts of the top - in a fold;
- method of fastening on the foot - zipper;
- shoe style - 845281M:
- 8 - for women's shoes;
- 4 - for insulated shoes;

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5 - the height of the heel portion is 50 mm;
 2 - the shape of the toe is medium;
 81 - serial number of the block in the series;
 M - for fashion shoes.

Table 3 shows the assortment of shoes with the indication of the time of release of the models during the year (by month).

Table 3- Assortment of women's shoes

Genus, type, purpose of shoes	Symbol shoe models	Release time of the shoe model throughout the year
Womens summer shoes	figure 4.5 (model A)	April May
Women's autumn boots	figure 4.6 (model B)	June August
Women's winter boots	figure 4.7 (model B)	September - November
Womens spring shoes	figure 4.8 (model D)	December - February

From the presented assortment, the basic model B has been selected: socks model for the winter season, since it is the most time consuming.



Model A



Model B

Figure 12 - Assortment of women's summer shoes

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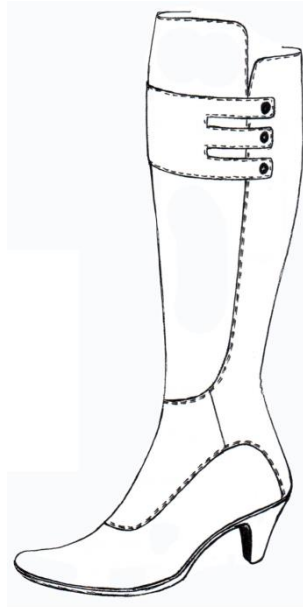
Figure 13 - Assortment of women's autumn shoes

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Model G



Model B



Figure 14 - Assortment of women's winter shoes

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Model D



Model G



Figure 15 - Assortment of women's spring shoes

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Figure 16- Office Shoes

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Figure 17 - Shoes for outdoor activities

Features of the development of the range of men's shoes

When developing a competitive assortment of men's footwear, manufacturers need to take into account many factors affecting consumer demand: compliance with the main fashion trends, economic, social and climatic characteristics of the subjects of the South and North Caucasus Federal Districts.

It is quite difficult to find differences in men's shoe fashion of individual seasons - the difference is barely noticeable. The most intense period in the development of men's fashion is the last 10 years. In connection with the ongoing changes in the habits of the new generation, "formal" men's shoes, just like

clothes, have gone beyond the usual "urban" and "fashionable" in the traditional sense of these words.

Major changes will take place in men's shoe fashion for the fall-winter 2021–2022 season. They will touch on the shape of the pads, materials, colors and decor. But the main changes will still affect the style of the collections: the slightly forgotten retro and newfangled techno-sport style will come to the fore.

Men's shoe fashion will continue to evolve in three stylistic directions: classic, comfortable and sporty, but next season the influence of retro will be very noticeable. Along with the "timeless" classics - the designs of oxfords, derbies and chelsea - such long-forgotten footwear details as leggings will return to fashion. two more novelties from the series "new is

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well forgotten old” - boots with a wide adjustable belt - an overlay fastened with two small buckles, as well as loafers. The latter - low shoes with an oval insert (most often imitated) - are sometimes decorated with an overhead strap or a lace with a tassel. However, retro will manifest itself not so much in the borrowing of old designs, as in the decor and finishes typical for this style, such as patterns from perforations and others.

Another contemporary style is techno sports, which is increasingly influencing urban fashion. Monochromatic sneakers of brown, gray and greenish-marsh shades, which may not be shiny, but made of smooth leather in combination with velor or nubuck, are relevant. Today it is customary to wear this very comfortable and practical type of footwear even with a classic suit.

Significant changes will also occur in the shape of the lasts of men's shoes. Perhaps, such a variety of their types and so many innovations have not been brought before by any season! All types of toes are relevant: rounded, pointed, bob-shaped, rounded-trapezoidal, rounded bob, etc. At the same time, many models have a stylish hump in the toe or vamp part of the shoes, so a pronounced bob with a hump in the vamp area or narrow noses with convex "nodule" at the very tip.

The bottom of the shoe will also change: the soles thicken, noticeable welts and corrugations appear on the running surface.

The range of materials used in the next season will also significantly expand. But genuine leather, both smooth and with all sorts of special effects, will remain the undisputed favorite. Along with metallization, toning, polishing, and non-paint are fashionable. Exotic leathers do not lose popularity: crocodile, snake, ostrich, kangaroo, fish, including tinted and patent leather. Pile materials are coming into fashion again: suede, velor and nubuck, but they are often used in combination with patent leather or smooth leather. There are laser-coated velor and vintage leather, as well as polished wrinkled and crinkled.

Short-cut natural fur is often used in winter shoes: ponies or cavallino. It is fashionable to cut it out with outlandish patterns.

Textiles and felt are relevant, which are used for the manufacture of ankle boots, bootlegs. Especially popular are fabrics in chunky plaid or embellished with logos.

But the decor of men's shoes does not shine with a wide variety and is generally modest: small metal buckles and bridles made of white metal or blackened are relevant. In the spirit of the fashionable retro style, perforation patterns combined with stitching and cut-out details are popular. Thin leather cords and hand seams with thick thread are common. These are, perhaps, all types of jewelry typical for classic and comfortable models. Sneakers are slightly richer:

logos, embroideries and applications in the form of numbers, letters, emblems, logos, as well as textile ribbons with various inscriptions, stripes, but they, as a rule, are made to match the main dark color of shoes.

The color scheme of men's shoes in the autumn-winter season is modest and rather monotonous. Dark and practical shades of black, brown and beige are popular. Against this gloomy background, shades of mocha and cocoa look very unusual [19].

In the spring-summer season of 2021, men's fashion will not undergo drastic changes. However, it is also impossible to say that absolutely no changes will take place. The men's wardrobe will noticeably expand at the expense of shoes, expensive sneakers and summer sandals, often reminiscent of women's models.

Along with classic lace-up low shoes, stylish shoes will also appear in summer men's fashion. These are moccasins and loafers with a low oval insert or tongue, noticeably lightweight, soft, comfortable, on a thin studded or leather sole with plastic breakouts.

Shoes are beautifully decorated with embroidery, including contrasting, and sometimes gold threads, mainly on heraldic or nautical themes, and moccasins are decorated with bridles, adjustable straps (made of contrasting material or striped rep ribbons), tassels, flags. In moccasin shoes, the oval insert is often made of exotic leather (especially fashionable hand-painted python) or leather with embroidery or embossing. Also popular are braids, both real and stamped on the leather, and frequent curly perforations.

It is always fashionable to be sporty. Equipment for different sports is being introduced into everyday life. And first of all, this applies to shoes. Sneakers, sneakers, sneakers, pantolettes are worn not only for training, but also in the office, school, institute, and, which is very important, they look stylish and trendy. The toes of sneakers, sneakers, sneakers are rounded, without a characteristic rise; Of the fastening elements, lacing dominates, as a rule, lowered, close to the toe. Low shoes and shoes are structurally relevant, with the exception of only some types of sneakers with high ankle boots. The assortment of footwear for outdoor activities uses a lot of fabrics: cotton, linen, blended with fashionable floral, abstract (pop art), animalistic (under the skins of wild animals) heels. Smart "sports" materials, nets, breathable climatic membranes, perforated imitation leather. For men, we offer textiles in a cage, stripes, pie-de-bullets, with graffiti-style drawings, etc.

Shoes, reminiscent of sports sneakers, are made of genuine leather, often with inserts of gold, bronze or silver metallized leather, which effectively contrasts with a matte toe or edging made of suede or velor. Typically sports elements or materials, nets, for example, or stitching decorative stripes are also made of leather. The solution to the bottom of the shoe is also interesting: along with the typical sneaker,

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massive sole, some models have a leather, opanny type, with plastic breakthroughs through the leather or a rubber sole, consisting only of toe and heel parts. Some sneakers resemble sneakers made of leather, including embossed varnish. In summer, white and beige models with inserts of gold, silver, black, blue, red or brown will be especially relevant.

Gradually they are being introduced into the conservative men's wardrobe and strappy sandals, which have significantly supplanted the position of

the sandal. Unlike the latter, sandals are noticeably more open and entirely consist of various weaves of belts. Particularly relevant are models with a strap that wraps around the thumb (the other holds the leg up), and sandals with an interdigital bridge, reminiscent of leather flip flops. True, their color scheme is still quite conservative: black, white, brown and various beige shades.

Assortment of men's shoes



Figure 18- Assortment of winter men's shoes

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Figure 19 - Assortment of autumn men's shoes

Men's lace-up shoes are noticeably lightened for the summer season. They are made of thin soft leather, sometimes without lining, and also have a thin sole, including leather with plastic islands. Both oxfords

(with topstitch ankle boots) and derby shoes (with topstitching toe) are relevant, finishing - frequent perforations that are very fashionable this season. But the main highlight is the bright, unusual for men's

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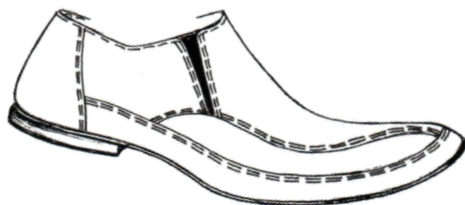
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classics, the color of low shoes, for example, pink, blue or purple. Two-tone models are also relevant, especially black and white, white-gray, gray-blue and beige-brown.

The range of men's footwear relevant in this region is shown in Figures 18–25. The offered range

of men's footwear is manufactured in accordance with GOST 26167-2005 "Casual footwear. General technical conditions "and in accordance with GOST 19116-2005" Model footwear. General specifications.



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Figure 20 - Assortment of men's spring shoes

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Figure 21 - Assortment of summer shoes

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Figure 22 - Range of footwear for outdoor activities

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Figure 23 - Assortment of men's work shoes and special shoes for the military

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Figure 24 - Assortment of men's strap-sandal shoes



Figure 25 - Office men's shoes

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The choice of basic materials for the range of shoes

According to GOST R 26167-2005 "Casual footwear. General technical conditions "on the outer parts of the upper of the shoe, leather according to GOST 939-88, leather from split leather according to GOST 1838-91 must be used. For the basic shoe model, we use chrome tanned half-leather leather in accordance with GOST 939-88. It has an average thickness, all the necessary requirements, and a low cost.

On the inner parts of the top, the following should be used: for lining - leather in accordance with GOST 940-81, fabrics for shoe lining - in accordance with GOST 19196-93, natural fur - in accordance with GOST 4661-76 "Dressed fur sheepskin. Specifications ", artificial fur according to GOST 28755-90" Fabric-stitched artificial fur. General technical conditions ", woolen fabrics according to normative and technical documentation. Lining materials for men's everyday low shoes should have higher vapor permeability, moisture permeability, hygroscopicity, moisture release than materials for the upper of shoes, high abrasion resistance and sweat resistance. Since the basic model is autumn men's low shoes, for the lining and insoles we use pork lining leather in accordance with GOST 940-81, which has good vapor permeability.

On the intermediate parts of the upper of the shoe should be used: for the interlining - coarse calico, bumazey-cord, teak-twill in accordance with GOST 19196-93, nonwovens in accordance with regulatory and technical documentation; thermoplastic material TU 17-21-447-82. For the basic shoe model, we use a thermoplastic material for the lining according to TU 17-21-186-77.

According to the interstate standard GOST R 26167-2005 "Casual footwear. General technical conditions "for a toe cap, leather according to GOST 29277-92, elastic and thermoplastic materials according to regulatory and technical documentation should be used. We use thermoplastic materials according to TU 17-21-592-87, which have good elasticity and rigidity.

For backdrops we also use elastic thermoplastic materials according to TU 17-06-19-77. According to the interstate standard GOST R 26167-2005 "Casual footwear. General specifications "for the outer details of the bottom of the footwear should be applied: for the sole - leather according to GOST 29277-92, rubber according to GOST 10124-76, GOST 12632-79, polyurethane, thermoplastic elastomers, leather fiber, rubber according to regulatory and technical documentation. For men's autumn low shoes we use soles molded on the basis of polyurethane according to TU 17-21-529-85, since this material is resistant to abrasion and highly elastic.

An insole unit is used as the inner parts of the

bottom, which consists of a main insole made of SOP cardboard in accordance with GOST 9542-89, a main half insole made of PSP cardboard in accordance with GOST 9542-89 and a metal shank in accordance with OST 17-24-83. For laying we use PR cardboard in accordance with GOST 9542-89, which has a low rigidity, that is, it is resistant to repeated bending, stretching and compression.

The method of fastening the bottom depends on the purpose and design of the shoe, the materials from which it is made. A wide variety of methods for attaching the bottom allows you to make shoes with different properties.

One of the main indicators characterizing the consumer properties of footwear is the strength of the attachment of the soles to the upper of the footwear. To ensure the established standards for the strength of the fastening of soles, it is necessary to select materials for shoe parts both in terms of properties and thickness. The flexibility of the shoe depends on the properties of the materials, the design of the parts and the method of their fastening, the higher the rigidity, the greater the effort of the foot to bend the shoe when walking, the longer the period of molding the shoe during the wear process. The greatest stiffness is for shoes of the nail method of fastening, the lowest for thread fastening methods, and the smallest for glue. This method is also the least material-consuming and labor-consuming (the average coefficient of labor intensity of making shoes with the glue method of fastening is 0.47, and for shoes made by the welded method - 1,

With the development of chemicalization of production, adhesive methods for fastening parts of the top and bottom of shoes have become widespread. Currently, the glue method has become the main one, it is produced up to 85% of all shoes.

Its advantages include:

- high labor productivity;
- simplicity of equipment;
- ample opportunities for mechanization and automation of production;
- product weight.

In addition, a distinctive feature of adhesive joints is their ability to highly elastic deformation while maintaining high strength throughout the entire service life.

The disadvantages of this method include the dependence of the strength of adhesive joints on low or high temperatures, as well as the need for occupational safety measures in production due to constant evaporation of solvent and other harmful substances from adhesive compositions, which requires significant material costs. But by choosing the right glue and gluing technology in accordance with the product design and the mechanical properties of the materials to be glued, the disadvantages of this fastening method can be minimized.

Taking into account the mild climatic features of

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the South and North Caucasian Federal Districts, the design features of the upper and lower parts of the shoe, the physical and mechanical properties and the thickness of the materials, it is proposed to use the glue method of attaching the sole to the blank of the shoe upper for the selected range of men's shoes. It is also advisable, since it does not require additional costs for the purchase of equipment for other fastening methods, but this does not exclude the possibility of using other fastening methods in the future, which will significantly increase the range and save materials. Therefore, it is worth including in the assortment the models of strap-sandal shoes of the welted and doppel method of fastening, presented in Figure 5.17. This is the distinctive feature of the presented assortment.

Due to the large number of employees on the territory of the Southern Federal District, men's wardrobe requires the presence of office shoes, which are noticeably lightweight, soft and comfortable (Fig. 5.18). This very comfortable and practical type of footwear can be worn today even with a classic suit.

It should be noted that the production of special footwear is one of those niches in the Russian economy where one can successfully compete with imported products, since there are potential large customers represented by various ministries and departments. But in this area, there is also fierce competition. For example, today small business shoe manufacturers offer an adhesive fastening method, which is applicable in the production of special shoes for officers. This not only does not contradict the harsh requirements of national GOSTs, but significantly increases the aesthetic and ergonomic properties of products. This is not only the internal affairs bodies, customs, departments and companies that require uniform ammunition, but also oil workers, miners, metallurgists, asphalt workers, as well as employees of numerous gas stations, forced to work in winter almost knee-deep in snow-salt,

For the top of special footwear, yuft or combined materials (leather with tarpaulin), tarpaulins with refractory impregnation (OP) for asphalt shoes, soles are oil and petrol resistant (MBS) and thermal oil and petrol resistant rubbers, leather, microporous rubber are used. Now, basically, special footwear for the military is produced by the injection method of

fastening, and only the glue method of fastening is used to produce special footwear for officers. The production of special shoes for law enforcement agencies is based on the conclusion of contracts between law enforcement agencies and shoe manufacturers, as well as on holding open tenders, therefore, if a tender for the production of special shoes is not received, it is possible to produce men's casual shoes with an adhesive fastening method.

Organization of a wide range of footwear production will make it possible to turn today's subsidized regions of the Southern Federal District and the North Caucasus Federal District into self-sustaining ones, thereby increasing the level of income of the population, provoking the creation of new jobs; will ensure the development of small business and support legal private entrepreneurial activity, as well as create the basis for getting out of the shadows of a significant part of the turnover of the real sector of the economy in order to form the regional budget, since the proposed project for developing a strategy for the development of the production of competitive leather goods in the Southern Federal District and the North Caucasus Federal District is to itself economic, political and social effects.

Figure 19 shows an assortment of fall shoes. We choose model B, which is a men's low shoes with a molded PU sole, an adhesive fastening method. The way of fixing on the foot is side elastic bands. The visible edges of the outer parts of the top are trimmed and folded.

This shoe can be made on the last style 913265, 275.6.

- 9 - type of footwear, man's;
- 1 - type of shoes, closed;
- 3 - the height of the heel elevation, 30 mm;
- 2 - the shape of the toe part of the shoe, medium;
- 65 - serial number in the series;
- 275 - the size of the shoe in the metric system;
- 6 - completeness.

The assortment of men's shoes with an indication of the time of release of models during the year (by months) is presented in table 4.

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Table 4 - Assortment of men's shoes

Genus, type, purpose of shoes	Footwear model conventions	Time of release of the shoe model in throughout the year
Men's summer clogs with a leather upper on a molded sole of the adhesive fastening method	figure 4.14, model G	January March
Men's winter boots with leather upper with molded TPE sole, adhesive fastening method	figure 4.11, model A	July - September
Men's autumn ankle boots with molded PU sole, adhesive fastening method	figure 4.12, model B	April June
Men's spring shoes with leather upper with side elastic and stitching vamp with molded PU sole, adhesive fastening method	figure 4.13, model B	October December

From the presented assortment, the basic model was chosen - men's everyday low shoes with molded soles for the autumn season of socks (model B), since it is the most time consuming, corresponds to the main fashion trends and the climatic conditions of our region. For the successful operation of enterprises, a high level of renewal of the range of footwear is required. The main objects of renewal are the means of labor (equipment, tools, objects of labor, basic and auxiliary materials, components), production technology, organization of production and labor, and, finally, the footwear itself. The renewal of the first three objects is directly reflected in the renewal of the shoe assortment. Socio-economic factors also play a significant role in updating the range of footwear: the level of income of the population, the degree of saturation of the market with footwear, consumer demand and fashion. Under the influence of fashion, not only the shape of the shoe, the number of parts and their arrangement changes, but also the nature and methods of processing parts and their connections, finishing, materials used, etc. The factors that

determine shoe renewal are shown in Figure 25.

The directions of renewal of the assortment of footwear are determined by various combinations of factors. So, under the influence of scientific and technical factors, the production of new shoes is possible using new technology on existing equipment using previously used or new materials, using existing technology on existing equipment using new materials, using new technology on new equipment, etc.

The production renewal is of a chain nature. So, a change in technology is usually accompanied by a complete or partial change in the design of shoes; the introduction of new equipment requires the improvement of technology, and the latter is associated with the design of the product.

The large variability of socio-economic factors of product renewal, as well as the influence of socio-economic factors, make it possible to distinguish three types of renewal of the range of products that are characteristic of shoe enterprises.

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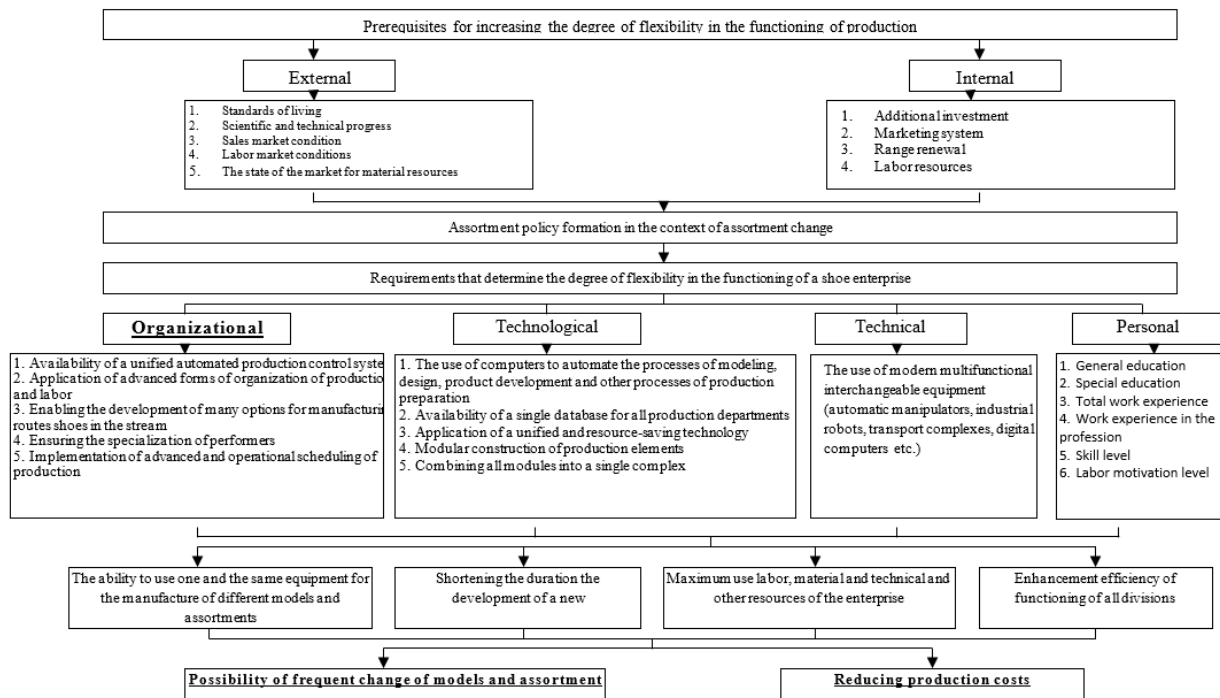


Figure 25 - Characterization of requirements for increasing the degree of flexibility of operation Production in conditions of multi-assortment production

The first type of renewal of light industry products is characterized by the introduction of products that are fundamentally new in terms of design and technology, which have not been previously produced at any enterprise and are the result of scientific research and design work. These products are distinguished by new consumer properties and technical and economic indicators, tk. are produced according to new technology using new materials based on nano technologies and on new equipment using innovative technologies.

The second type of renewal of the product range is characterized by the fact that the company creates modifications of previously produced products to extend the maturity phase of their life cycles.

The third type of renewal of the range of light industry products is characterized by the development of the production of fashionable novelties and high-quality products, fashionable structural elements, fashionable styles, new types of materials, and the release of especially elegant products in small batches. This type of renewal also includes the seasonal change of the product range. The third type of renewal of the product range is most closely related to the change in fashion, it contributes to the growth of the competitiveness of the enterprise and the formation of a positive innovative image.

Each of these types of renewal of the range of products is characterized by its own complex of works, organizational features, duration of development, etc. Each type of update is also characterized by its own time intervals, within which

the selected direction of the update is relevant. After a certain time, new, more progressive technological, technical and design solutions appear, therefore, the release of products based on previous solutions will lead to a decrease in the technical and aesthetic level and a deterioration in economic characteristics; such products of the enterprise will not be in demand among consumers.

To solve the problems of domestic light industry enterprises associated with updating and expanding the range of products, organizing the release of products that meet consumer requirements, research is needed in the field of managing the development process and launching a new range of products.

Product assortment management is the impact on the development processes, the formation of the composition and structure of the manufacture and sale of products in order to maximize the satisfaction of consumer demand with high technical and economic production indicators.

The development and implementation of control actions aimed at meeting consumer demand for products must be performed within the framework of a product range management system.

If we take into account that control actions are carried out through various kinds of activities, then the subsystem of product assortment management can be understood as a set of interrelated organizational, technical and social measures for the development, formation of the composition and structure, manufacture and sale of products in order to maximize the satisfaction of consumer demand.

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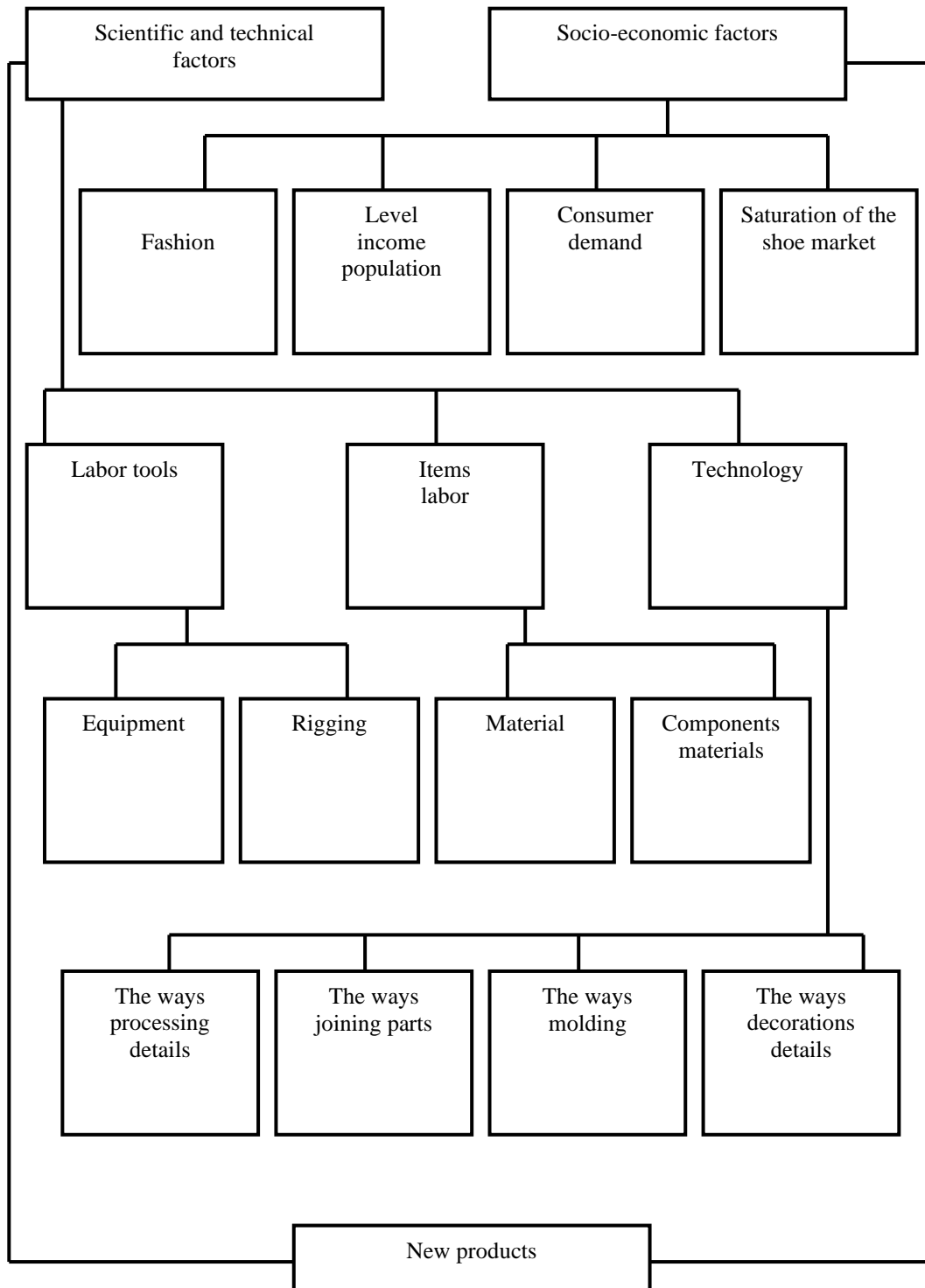


Figure 26. Factors determining the feasibility of product renewal

Among the main functions of the product range management system are the following:

- formation of the composition and structure of products;
- organization and operational regulation of production with the aim of the fastest possible

transition to new models and the development of the required production volumes;

- organization of product sales.
- In addition, the system performs the functions of collecting, processing and preparing information

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necessary for the implementation of basic functions. These include:

- analysis of manufactured types of products;
- analysis of the assortment policy of the main competitors;
- putting forward proposals on the feasibility of producing a new type of product and phasing out products that are not in demand;
- analysis of consumer attitudes towards new types of products.

An important criterion for the competitiveness of footwear on the market is its cost with the corresponding quality, as well as the purchasing power of the population. The instability and dynamism of the external environment force enterprises to abandon the method of long-term planning based on the extrapolation of existing conditions, and switch to management methods based on foreseeing changes, setting goals for enterprise development.

Despite the individual nature of market research conducted by a particular shoe company, in the process of a comprehensive market study, it is necessary to perform the following independent, but interrelated and complementary research:

- filling with goods;
- market and its segmentation;
- customer behavior and consumer demand;
- analysis of the conditions of competition;
- forms of sales activities and measures to generate demand and stimulate sales.

Market research is carried out using a rich arsenal of various analytical methods, including questionnaires, various surveys, methods for analyzing patent information, methods of system dynamics, correlation-regression analysis, etc.

The main task of developing a marketing (market) strategy is to ensure sustainable commercial success of the enterprise, effective sales of products over a long period of time.

The market strategy is determined by the factors of demand, the level of competition and the general market situation and should ensure that the existing and potential advantages of the shoe company can be realized.

The availability of high-quality, competitive goods is a prerequisite for the highly efficient functioning of an enterprise. From this point of view, marketing can be viewed as a system of measures for the mutual adjustment of the product and the market in order to achieve sustainable commercial success by the enterprise.

In marketing theory, a product is a means by which a certain need can be satisfied, i.e. a set of useful properties of a thing. Thus, F. Kotler, a well-known specialist in the field of marketing, distinguishes the following components of the product, grouping them into three levels.

The first level is the fundamental characteristic of the product - its functional purpose, i.e. idea or concept of the product. A product in real performance has a number of characteristics that form the second level of product characteristics. These are such characteristics as the level of quality, specific design, brand name, packaging. And, finally, the third level is a set of additional services offered along with the product: after-sales service, a guarantee system, terms of delivery and payment for the product, accompanying documentation and the so-called "image" of the product, i.e. the image of the product and the image of the manufacturer of this product from the consumer of the product.

The solution of problems associated with the development of new products causes, first of all, the need to clarify and clarify the economic meaning of the concept of "new products".

The art of planning a shoe assortment is the ability to translate existing and potential technical and material capabilities into products that bring profit to the manufacturer, have consumer value that satisfies the buyer.

Assortment planning begins either from the moment needs are identified, or from the moment when, as a result of market research or on the basis of other information, a basic idea of the product has been formed. Regardless of the source of origin of the idea of a new product, it is necessary to conduct market research sooner or later in order to find out whether the conceived product meets a conscious or not yet realized need.

When forming the assortment policy of footwear production, it is necessary to take into account the in-house capabilities, which make it possible to diversify the assortment, satisfy the consumer and take into account the risk of lack of demand for the goods.

The network schedules for assortment planning, which can be developed at enterprises, allow you to determine the time from the moment the product is conceived to the start of its implementation in the region, with broad observance of the sequence of stages included in the assortment planning. The duration of the entire cycle can be reduced, but subject to the attraction of additional resources and the application of additional efforts at critical stages.

Highlighting the main characteristics of a product is of fundamental importance, since it is they who determine the directions of the creation of the new. To make a new product, sometimes it is enough to change at least one characteristic. Here it is important to consider those characteristics of goods, the difference in which leads to differences in the marketing activities of enterprises.

The formation of an assortment policy based on product assortment planning is a continuous process that continues throughout the entire product life cycle, from the moment the idea of creating it was conceived

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and ending with the withdrawal from the product program.

The creation of a new product is a complex design task associated not only with achieving the required technical level of the product, but also with giving its design such properties that ensure the maximum possible reduction in labor costs of materials and other means for its manufacture, but at the same time meet the requirements of customers.

It should be borne in mind that all production areas are included in the work in a certain technological sequence, which depends on the technological complexity of the new product and the duration of certain operations, as a result of which a new procedure for performing operations is created. Due to the lack of production skills among workers when performing new operations, there is a decrease in labor productivity and the quality of work in the first days of production of new products, i.e. during the period of their development.

Designing a product to the proper level involves the need for criteria to evaluate its results. As such, indicators of the manufacturability of the design can act.

The development of principles and methods for performing design work, including a creative one, associated with the analysis of analogous models, the initial conditions for the formation of requirements for the product, the preparation of technical suggestions and selection of the best, assessment of the quality of the product.

Modern requirements for the organization of the process of developing new shoe models clearly show the shortcomings of methods of analysis, analysis and substantiation of decisions, inflexible and insufficiently coordinated with each other, based on the experience and intuition of the designer.

The design of footwear for various purposes is a traditional area of engineering, in which considerable development experience has been accumulated. Therefore, shoe design involves the use of previous experience, which is concentrated in recommendations for the selection of basic design solutions, descriptions of previously designed models, and typical design techniques. When analyzing analog models, it is necessary:

- study fashion trends in the development of footwear;
- to conduct a qualitative assessment of analog models - compliance with the specific purpose of the designed model, ergonomic compliance, perfection of the compositional solution.

Obtaining high-quality projects of shoe models largely depends on the quality of the analysis of possible options for solving the design problem, establishing the feasibility of designing a new model.

Many firms are striving to improve the efficiency of the new product development mechanism, realizing that there is a complete

relationship between the success of new products and the financial well-being of the enterprise.

The creation and introduction of new products into the market contains significant elements of risk. Research data show that out of 58 serious new product ideas, only four are fully developed, two are being introduced to the market, and only one is successful.

In addition, many new products fail already on the market: 40% for consumer products; 20% - for industrial goods; 18% - for various services, i.e. there is a high degree of market uncertainty.

The search for ideas about new products should be carried out systematically, and not on a case-by-case basis. The main sources of ideas for creating new products are:

1. Fundamental research (aimed at obtaining new knowledge and indirectly leading to the emergence of ideas for new products) and applied (purposefully using scientific methods to develop ideas about new products).
2. Observation of related products at exhibitions and fairs.
3. Reports and proposals of sales agents, sellers, dealers.
4. Trends in the development of new products by competing firms.
5. Supplier information.
6. Expert opinions.
7. Information in patents, catalogs, advertisements, etc.

Revealing the shortcomings of the manufactured products also allows the formation of new ideas for its improvement.

At the end of the development of a new product and the creation of prototypes, preparations begin for the final stage - production and sales. The most effective method by which you can assess the chances of success of a particular product is the trial (experimental) sale of small batches of a product in a controlled market in real competition. Test sales are designed to test in practice the demand for a new product for the market and to work out the technique of its marketing. This makes it possible to reduce the risk when organizing commercial production.

The positive results of testing new products on the market are the basis for the beginning of the final stage of the process of implementing the idea into a specific new product - the stage of its production development. A detailed plan for the production of a new product is being developed: sources of supply with materials, components, equipment are being investigated, working drawings are being prepared, products are being launched into production.

All stages of creating a new product must be carried out in a short time. Shorter development time increases competitiveness, because the cost of a new product must be recouped before it becomes obsolete and loses demand as new competing products enter the market.

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Any product, regardless of the degree of its novelty and quality, goes through a certain life cycle. Knowledge of the features of the product life cycle is a prerequisite when working with an assortment. The concept of the product life cycle can be briefly formulated as follows: any product lives - i.e. stays on the market for a limited time - maybe for many years, or maybe for several months or weeks. The volume of its sales and the amount of profit made during the life cycle change, and the nature of the change for different products is similar. Over time, the indicated values first slowly increase, then they grow rapidly, then their growth slows down, their value stays at a certain level and begins to fall, at first slowly, then rapidly.

The period from the appearance of a product on the market until the end of demand for it is called the life cycle of the product. Several stages can be distinguished in it:

- 1 - introduction of the product into the market;
- 2 - growth in sales volume and profit;
- 3 - product maturity;
- 4 - decline in sales and profit.

The life cycle of a product ends with its withdrawal from production due to the lack of demand

for it. The division of the life cycle curve into parts and the allocation of stages is conditional, therefore, in the special literature on marketing, there are descriptions of different options, but most often these four are distinguished.

Consideration of the classical curve of the product life cycle (LCT) is quite common in domestic and foreign methodological literature. The stages of the life cycle are analyzed in detail and a forecast of the stages is proposed based on the experimental data of similar goods and their extrapolation over a short period of time. The classic life cycle curve is the relationship between the volume of sales of goods and the corresponding periods of time, reflected in the classical two-dimensional coordinate system along the "x" axis, in which the current time is positively plotted, and on the "y" axis - the volume of sales. In the standard adopted in domestic and foreign literature, the product life cycle curve is divided into a number of intervals characterizing the product (usually there are 5 of them), which are assigned the appropriate names. In most cases, they are called "product origin", "market introduction",

The average life cycle of consumer products is shown in the graph in Figure 27 and in Table 5.

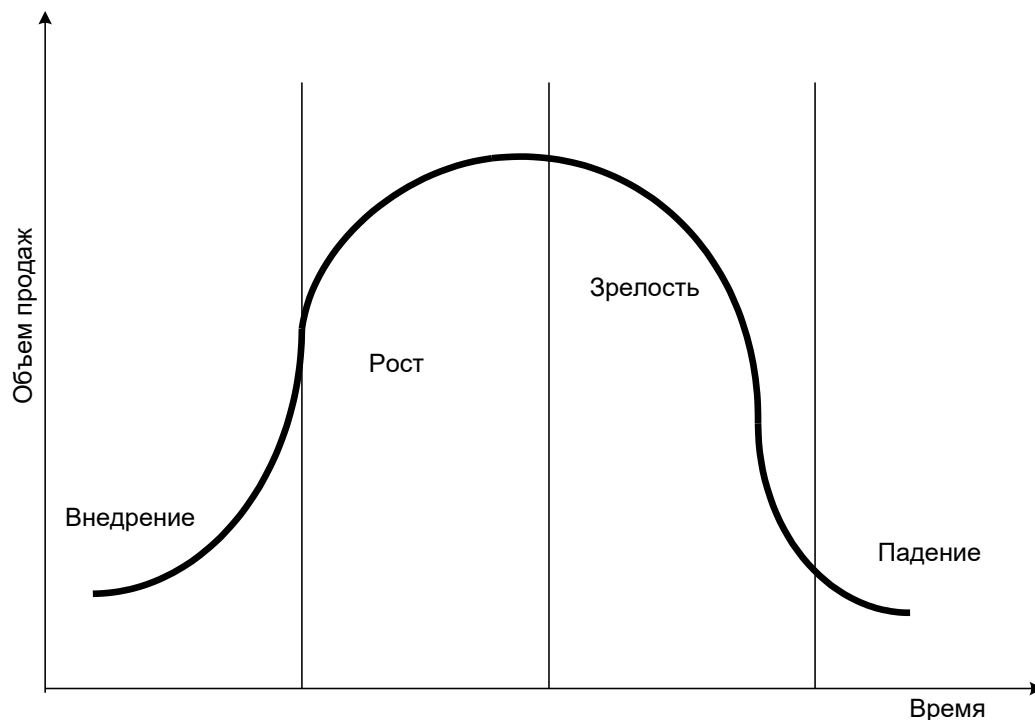


Figure 27 - Average life cycle product range

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Table 5 - Average life cycle of the manufactured product range

Phase	Phase description in terms of agile development
1. Implementation	From production start to breakeven
2. Height	From the break-even point to the middle of the life cycle
3. Maturity	From the middle of the life cycle to the beginning of the development of a new product range
4. Fall	From the start of production of a new range of products to the end of production of a given range of products

The life cycle of a product in a real situation may not be expressed on the graph of the traditional classical curve, in which the periods of publication introduction into the market, growth, maturity, saturation and decline are clearly defined. Depending on the specifics of individual goods and the characteristics of demand for them, there are different types of life cycle, differing both in duration and in the form of manifestation of individual phases.

In addition to the classical form of the product life cycle (Figure 28), the practice of various

enterprises gives examples of its specific modifications.

Effective marketing allows you to achieve high sales and profit growth at the first stage, and in the subsequent stages - to maintain a significant volume of sales (curve called "boom"). The boom curve (Figure 29) describes a very popular product with stable sales over time. In the case of such a product life cycle curve, the firm produces the product and makes a profit for a long time.

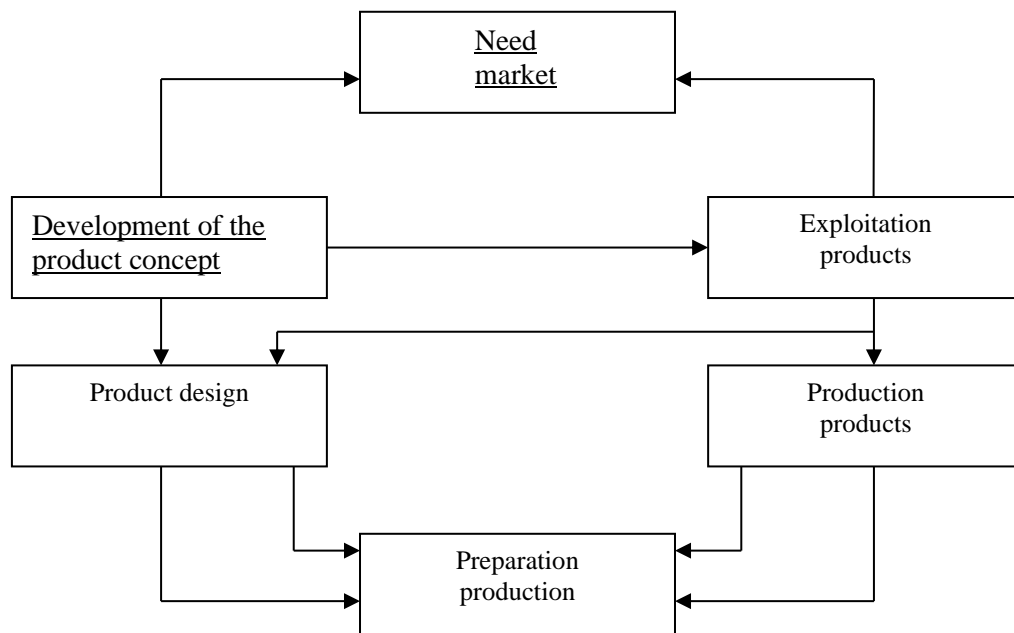


Figure 28 - Stages of the product life cycle

The life cycle of a publication can be expressed as a “craze” curve, where sales of a publication rise sharply and then plummet.

The entrainment curve (Figure 30) describes a product with a rapid rise and fall in sales. Often a trendy, popular product has such a curve.

Continuous craze implies a rapid increase in product sales, then a rapid decline, but with a residual average level of sales. The continuous entrainment

curve (Figure 31) also describes a popular product, but this product is still preferred by some consumers.

The fashion curve, or seasonal curve, refers to the life cycle of publications experiencing periodic, varying in time, repeated ups and downs in demand, etc. The curve of such a product that sells well over certain periods of time is shown in Figure 32.

The curve of a new start or nostalgia (Figure 33). The demand for this product falls, but after a while it

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resumes. An example would be the return to women's platform shoes that were popular in the 70s.

Failure curve (Figure 34). It characterizes a product that almost immediately ceases to be in demand among buyers.

Curve of new rises (Figure 35). Such a curve is characteristic of products whose sales cease to grow, but after a slight improvement and the appearance of additional useful properties, the enterprise manages to increase sales again.

Failed withdrawal curve (Figure 36). Such a curve is characteristic of products that were unsuccessfully planned and carried out to be launched on the market, but with a repeated attempt to introduce them, they received great success.

In the theory of agile enterprise development, interest in the concept of the product life cycle lies in the replacement of goods in a recession phase with new ones.



Figure 29 - Boom Curve



Figure 30 - Entrainment curve



Figure 31 - Curve long-term passion

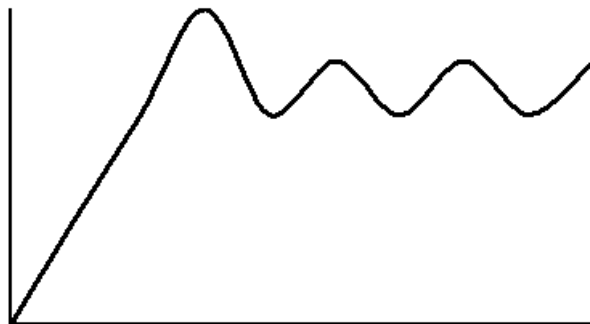


Figure 32 - Curve seasonality

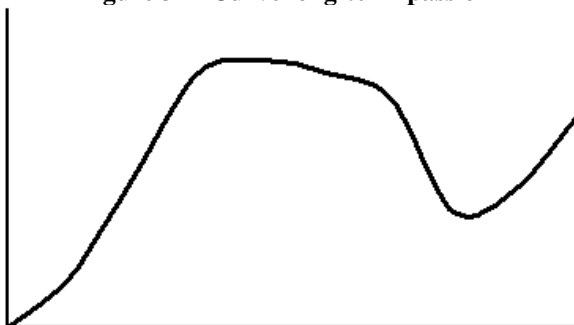


Figure 33 - New start curve or nostalgia

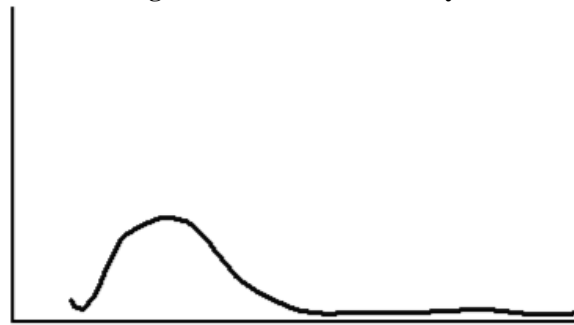


Figure 34 - Failure curve

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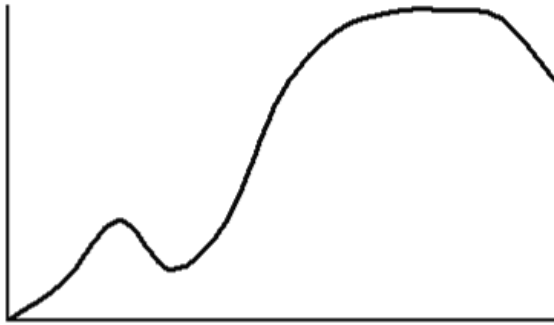


Figure 35 - Curve of new ups

All other things being equal, a change in the production time (duration of the product life cycle) will affect the value of the optimal number of shoe models under development. At the same time, the longer the life cycle, the less the number of products needs to be developed by the enterprise and, conversely, the shorter the life cycle, the greater the number of such products.

Assessment of the phases of the life cycle allows you to plan the cyclicity of their turnover, the timeliness of replacement of products and the development of analogs, thereby reducing the degree of risk and, ultimately, providing flexibility in the development of the enterprise.

The experience of leading foreign firms shows that the economic efficiency of their activities is largely determined by innovation activity, i.e. creation and implementation of new products that provide profit on average 28% higher than traditional ones. According to the definition given by F. Kotler, new products include products that have undergone any changes in form, content or packaging that may be important for the consumer and serve as the basis for the formation of his preferred attitude towards the products of this company. When introducing new products, firms try to find the optimal solution that meets both the market requirements and the available equipment and technology capabilities.

Thus, the study and consideration of the stages of the life cycle of products allows you to appropriately optimize the structure of the product range. A prerequisite for the effective operation of the enterprise is the rational planning of production that meets the needs of the market. The formation of the assortment of light industry enterprises should be based on representative information about the existing requirements, their possible dynamics and customer preferences. Marketing research is used to improve the efficiency of the existing management system at enterprises, adjust production and implementation programs to respond to changes in the market. Marketing research is the main regulator of the company's product policy when choosing directions for development.

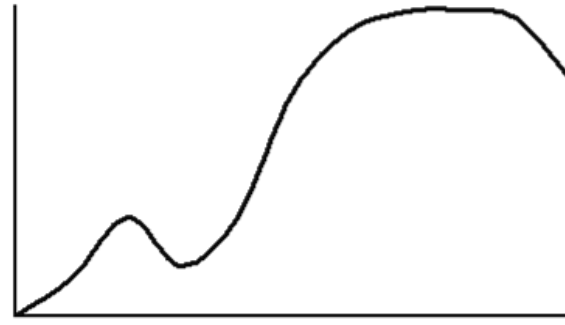


Figure 36 - The curve is not successful excretion

A survey was chosen as a method of marketing research. The survey, used most often in various types of research, is a universal method of conducting marketing research. It has a high degree of objectivity, high accuracy of the data obtained, and a relatively low cost. The most accurate data has a mass survey, i.e. polling a large number of respondents. One of the most important stages of planning a mass survey is sampling. An individual representative of a certain population group acts as a unit.

When determining the sample size, it should be borne in mind that the purpose of the survey is to obtain data characterizing the so-called general population, i.e. all carriers of any important trait.

The main idea of the sample is to judge the general in part, so the sample size should be such that it is representative of the sample. Questioning is a variation of the survey method. The study involved one hundred randomly selected men aged 18 to 55 years, the survey was conducted in the shops of Shakhty and Rostov-on-Don.

The purpose of the survey is to identify preferences in men's shoes for further research of the technological processes of its production for the population of the South - North - Caucasian federal districts and, in particular, the Rostov region. Shoes should be in real demand, and its design and aesthetic characteristics most fully correspond to the consumer preferences of this population group. Based on the results of the study of consumer preferences, an assortment of shoe models was proposed that meets the requirements of consumers.

Models on a single base differ in the materials used for the top and bottom of the shoe and in the degree of processing of parts and assemblies. In addition, a change in the color scheme of each of the presented models will allow you to transform the presented assortment endlessly, instantly reacting to market requirements, and correspond to the fashion trend.

Thus, seemingly similar models are manufactured according to various technological processes, which has a significant impact on their cost. As a result, the price of manufactured models varies

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in a wide range, which allows the company to respond more quickly to fluctuations in demand and increase its market share, and, consequently, improve its economic performance. The shoe market of the South and North Caucasian Federal Districts is oversaturated with types of footwear for the same purpose. Therefore, the head of the enterprise needs to know exactly what will be in demand on the market and how it should be implemented so that the developed range of footwear is chosen by the buyer, withstanding the fiercest competition that generates new proposals.

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

The most important task of building the elements of the operational management system for the assortment of a shoe enterprise is the choice of technology that can effectively implement the intended goals in a complex multi-level hierarchical management system. The use of mathematical methods and optimization theory makes it possible to effectively make decisions not only in those conditions when the system parameters are known, or they can be represented as fixed values.

New approaches to determining the total number of footwear produced, depending on the market situation, prevailing prices and demand, and developing an optimal plan for the production of footwear models are proposed.

To determine the total number of shoes produced, depending on the market situation, prevailing prices and demand, it is proposed to apply elements of the theory of fuzzy sets. The theory of fuzzy sets has long been applied, mainly for use in systems that imitate human behavior, such as pattern recognition systems, linguistic analysis, search for solutions and others, in which there is no access to the complex mathematical apparatus necessary to describe complex industrial control systems and were highly specialized systems. This approach allows in each case to agree on the requirements of the problem and the required degree of accuracy of its solution.

Techniques based on the theory of fuzzy sets make it possible to use approximate, but at the same time, methods of describing non-deterministic systems that are sufficiently effective, for the analysis of which it is impossible to use standard quantitative mathematical methods. At the same time, all theoretical substantiations of this approach are quite accurate and are not in themselves a source of uncertainty (fuzzy logic and IS).

Unlike traditional mathematics, which requires precise and unambiguous formulations of patterns at each step of modeling, fuzzy logic offers a completely different level of thinking, thanks to which the creative process of modeling occurs at the highest level of abstraction, at which only a minimal set of patterns is postulated.

The basic idea behind fuzzy logic is that you cannot define rules for all occasions. These rules are discrete points in a continuum of possible situations and decisions are made by approximating them. For each case, the known rules for similar situations are combined. This approximation is possible only in cases where there is flexibility or blurring in the words with which these rules are defined. To use the capabilities of human logic in production processes, a mathematical model is needed. To implement such a model, fuzzy logic was developed, which allows describing the decision-making process and its search in an algorithmic form.

When solving problems that contain fuzziness in their formulation and have ambiguity of goals (multicriteria) "maximum income with minimum costs", it is possible to operate with fuzzy input data, namely:

- values continuously changing in time (dynamic tasks);
- values that cannot be set unambiguously (results of statistical surveys, advertising campaigns, etc.).

There is a possibility of a vague formalization of the evaluation and comparison criteria: operating with the criteria "majority", "possibly", "predominantly", etc.; the ability to quickly simulate complex dynamic systems and their comparative analysis with a given degree of accuracy. Using the principles of system behavior described by fuzzy methods, it does not take a lot of time to find out the exact values of variables, draw up describing equations and evaluate different variants of output values.

The developed system makes it possible to build a control model with an unlimited number of input parameters and control blocks and thereby describe the behavior of rather complex control objects. etc.

Conclusion

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

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 areas of the state's economic policy.

The problems of improving the quality and competitiveness of materials and products at the present stage of development of the Russian economy are becoming increasingly important. As the experience of advanced countries that at one time emerged from such crises (the United States in the 30s, Japan, Germany in the postwar period, and later South Korea and some other countries) shows, in all cases, the basis of industrial policy and recovery

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economy, a strategy was put in place to improve the quality and competitiveness of products, which would be able to conquer both domestic and foreign sales markets. All the other components of the reform - economic, financial, credit, administrative - were subordinated to this main goal.

The developed software for the formation of the technological process for the production of import-substituted products and the determination of specific reduced costs, which are the sum of current costs (prime cost) and capital investments, commensurate with the standard efficiency factor, taking into account the production program, makes it possible to calculate the static parameters of the technological process of production of import-substituted products when various forms of organization of production. The developed software for calculating cash flows from the operating activities of light industry enterprises based on assessing the degree of implementation and dynamics of production and sales of products, determining the influence of factors on the change in the value of these indicators, identifying on-farm reserves and developing measures for their development, which are aimed at accelerating turnover production and reduction of losses, which guarantees light industry enterprises to obtain stable TPE and prevents them from bankruptcy.

Models of product sales within a month at 100%, 80%, 50% are proposed. Calculations indicate that with 100% of the sale of shoes, compensation is provided for the costs not only for the production and sale of shoes, but also a net profit of 1,900.54 thousand rubles remains, which indicates the effective operation of the enterprise, as well as the correct marketing assortment. enterprise policy. Also, profit is obtained from the sale of 80% of men's, women's and children's shoes. If less than 50% of footwear is sold from the production volume, the enterprise will incur losses. To solve this problem, the conditions for the sale of shoes in a specified period of time and the volume of sales of at least 50% are necessary.

Based on the current situation in the economy of our country, in our opinion, no less 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 consumer market in the regions. Based on this, it is the state and regional intervention that should correct the situation on the market of domestic products of light industry enterprises in the regions, and thus there will be an opportunity for the development of production of competitive and import-substituting products.

The implementation of the planned measures will lead to covering the deficit for all types of products, will ensure an increase in labor mobility in the Southern Federal District and the North Caucasus Federal District and a reduction in negative processes in the labor market, as well as a stable balance of

interests of consumers, employers and bodies of municipal, regional and federal branches of government. For the successful implementation of all of the above measures, the interest of the regional authorities in the development of production of competitive and import-substituting products, reduction in prices for components and energy costs and benefits for the transportation of goods produced by enterprises in the regions of the Southern Federal District and the North Caucasus Federal District is most necessary.

Therefore, only a stake on innovation, quality, and competitiveness of products and services should be the basis of the industrial policy pursued at all levels yesterday, today, and even more so tomorrow.

Other economic effect of work results is limiting, which consists in increasing labor productivity, the level of mechanization of production, lowering the indicators of work in progress and the cost of digital production. An accessible tool for digital production technologists is proposed to rationalize the design of technological processes, which allows an enterprise to form a competitive assortment and predict the maximum income from the production of import-substituting products.

An assortment policy has been developed for the formation of competitive products, taking into account factors affecting consumer demand: compliance with the main fashion trends, taking into account the economic, social and climatic characteristics of the regions of the Southern Federal District and the North Caucasus Federal District, the production of which using modern innovative technological processes, as well as to meet the demand of an elite consumer, with the use of manual labor create the basis for satisfying the demand for footwear for buyers in these regions.

Innovative technological processes have been developed for the production of import-substituting products using modern technological equipment with advanced nanotechnologies, which form the basis for reducing the costs of import-substituting products and ensuring their competitiveness with the products of leading foreign companies, with the possibility of a wide-range production of products not only by type, but also by sex and age. groups, which guarantees her demand in full.

The layouts of technological equipment are proposed, on the basis of which it is possible to form a technological process for the production of import-substituting products with an optimal volume of output, taking into account the production area and the form of organization of digital production.

Software has been developed for calculating cash flows from the operating activities of light industry enterprises based on assessing the degree of implementation and dynamics of production and sales of products, determining the influence of factors on the change in the value of these indicators, identifying

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on-farm reserves and developing measures for their development, which are aimed at accelerating turnover production and reduction of losses, which guarantees enterprises to obtain stable TEP and prevents them from bankruptcy.

Software has been developed for the formation of the technological process of digital production and the determination of the cost of production of import-substituting products. A computer simulation model has been implemented that describes the dynamics of the process of manufacturing import-substituting products. The proposed methodology and software implemented on this basis can reduce the duration of technological preparation of production and increase, due to the rationalization of the technological process, the specific consumer effect of import-substituted products.

Comprehensive indicators of the effectiveness of innovative technological processes for the manufacture of footwear, similar to other types of import-substituting products, have been calculated. Taking into account the production program, promising options for technology and equipment have been formed, the most effective has been selected; the possibilities of streamlining the flow are identified, allowing to exclude bottlenecks, to minimize equipment downtime, which is one of the conditions for designing innovative technological processes. The reliability of the calculations for assessing the efficiency of technological processes by methods of target programming for various technological and organizational solutions is confirmed by calculations

of indicators of economic efficiency: cost, profit and profitability and other indicators.

The proposed methodology allows to reduce the duration of technological preparation of digital production and reduce the time of expert work while maintaining the required depth and validity of engineering conclusions. The economic effect of the research is expressed in the intellectualization of the technologist's labor with a reduction in time spent on developing the range of manufactured import-substituting products and assessing the efficiency of technological processes in comparison with a typical economic calculation of the total cost of manufacturing such products.

The analysis of the influence of the forms of organization of digital production and manufacturing technology on the cost of import-substituting products is carried out using the example of the technological process of manufacturing children's, women's and men's shoes, taking into account the shift program. Theoretical dependencies have been obtained to assess the influence of the factor "organization of production" on individual calculation items as a whole and other technical and economic indicators in order to prevent enterprises from bankruptcy.

Thus, all this in aggregate will provide the enterprises of light industry in the regions of the Southern Federal District and the North Caucasus Federal District with a stable position both in the domestic and in the markets of the near and far abroad. All that is needed is the goodwill and interest of all participants in this process.

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PROBLEMS OF MODERN ABSORTION COLUMN CONTROL SYSTEM

Abstract: mathematical modeling of technological processes has become an integral part of the solution of scientific and technical problems aimed at building automated control systems of technological processes.

We will consider the possibility of simulating the properties of the absorption column and controlling the process through it, using a radial base function and directly connected neural networks. The input and output results for the training of neural networks are derived from the absorption column model. The results obtained using neural network models are mainly compared with the results obtained from simulation calculations. The result obtained suggests that relatively simple neural network models can be used to model the steady state of the absorption column. The neural network type used in modeling allows the use of modern methods of control.

Key words: Intelligent control systems, neural network, system logic window, schematic diagram, MATLAB, Simulink.

Language: English

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Introduction

The absorption column is one of the most important and basic devices of the nitric acid production process. In modern industrial plants producing nitric acid, it consists mainly of sieve mesh plates, Fig. 1.

The diameter of the absorption column device used in modern production processes is more than 6 m, and the height of the device is more than 80 m. It

is important to create a clear mathematical model of the process in terms of the fact that the maintenance of this device requires large capital expenditures, as well as environmental legislation. It can be used in the operation of the device through a model that predicts changes in the mass flow rate in the device, as well as changes in temperature and pressure. Even in the early stages of the development of nitric acid production technology, the design of the absorption column was

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carried out using experimental data obtained from industrial enterprises.

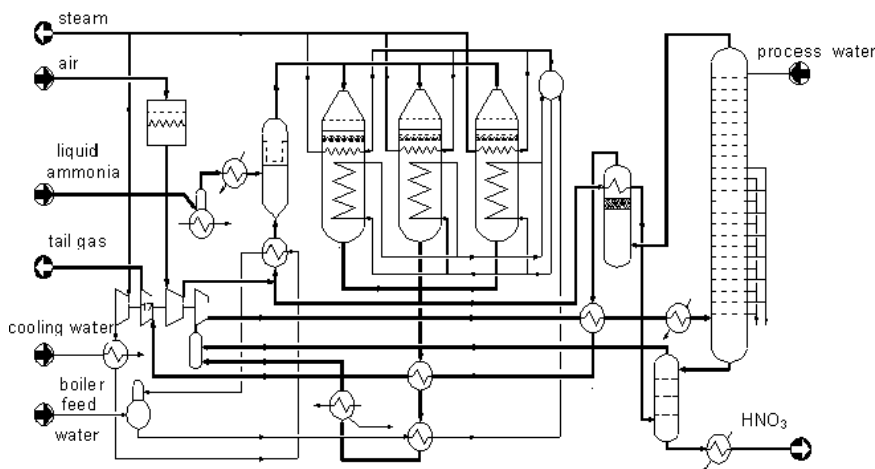


Figure 1. Nitric acid production process device diagram.

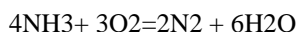
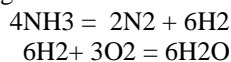
As the process of nitric acid production has been mastered, in some literature the process parameters are expressed by the method of graphs. In modern modeling, the possibility of more accurate and faster study of the model of the absorption process by computer is being developed.

MAIN PART

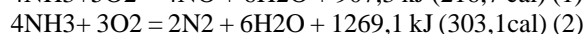
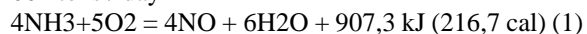
The main stages of the process of obtaining nitric acid without concentration:

- air purification;
- air compression and energy recovery;
- preparation of gaseous ammonia;
- purification of air-ammonia mixture (PAM);
- oxidation of ammonia (contact)
- heat cooling and use of nitrogen gases
- absorption of nitric oxides (production of nitric acid)
- storage and delivery of nitric acid

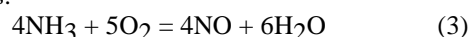
Thermal decomposition of excess ammonia, transfer for selective purification, formation of elemental nitrogen is formed in the universal combustion chamber of the turbine and in the heat part of the gas channel to the turbine according to the following reactions:



In the contact device, ammonia oxidation reaction occurs in the catalyst cells made of platinum alloys in the temperature range 890-910 °S, pressure 0.617 MPa (6.3 kgf / cm²), production capacity 13, 661 tons / day



When a mixture of ammonia and air passes through a catalyst plate in a nitric acid production unit, many reactions take place, the most basic of which is as follows:



A mathematical model of the absorption column was developed using the following parameter changes:

- Ideal mixing of gas and liquid phases on the plate;
- Absence of fluid gradients associated with temperature and concentration in the plate pool;
- Gas and liquid phases have sliding properties;
- Low heat loss to the environment;
- To the heat reaction transmitted by the heat exchanger;
- That the temperature of the gas is the same as the liquid coming out of the plate pool;
- The occurrence of chemical reactions in the bushings of the device without heat exchange with the environment;
- HNO₂ to HNO₃, with the decomposition of NO and H₂O by the liquid in the plate pool;

The amount of nitric acid formed in the plate depends on the efficiency of the plate, the theoretical ratio of the NO_x reaction and the amount of NO_x fall on the plate:

$$X_{\text{HNO}_3} = \eta y \sum_{j=\text{NO}}^{\text{N}_2\text{O}_4} G_j^{i-1} \quad (4)$$

$$\eta = 1 - \exp\left(A \frac{C_{\text{HNO}_3}^i}{100} \right)^{1.49} \left(\frac{w_g^i}{(w_g^i)^{0.546} (p_{\text{NO}}^{i-1})^{0.0483} (T^i)^{1.248}} \right) \quad (5)$$

The composition of the nitric acid solution flowing through the i-plate can be described by the following relations:

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$$L_{HNO_3}^i = L_{HNO_3}^{i+1} + X_{HNO_3} \quad (6)$$

$$L_{H_2O}^i = L_{H_2O}^{i+1} + y_{H_2O} - 0.5X_{HNO_3} \quad (7)$$

$$y_{H_2O} = G_{H_2O}^{i-1} - \frac{p_{H_2O}^i \left(\sum_{j=NO}^{N_2, O_4} G_j^i + \sum_{j=O_2}^{Ar} G_j^i \right)}{p^i - p_{H_2O}^i} \quad (8)$$

The composition of the condensate solution flowing between the plates can be calculated on the basis of the following values:

$$L_{HNO_3}^i = L_{HNO_3}^{i+1} + X_{HNO_3} + L_{HNO_3}^k \quad (9)$$

$$L_{H_2O}^i = L_{H_2O}^{i+1} + L_{H_2O}^k + y_{H_2O} - 0.5X_{HNO_3} \quad (10)$$

Classical mathematical models assume the existence of a definite (analytical) mathematical model. However, the technological process is influenced by uncertain parameters that cannot be taken into account in the developed models. The method using a neural network does not limit the linearity of the system, it is effective in noisy conditions, and provides real-time control after training is completed. Neural network control systems (NNCT) are adapted to real conditions, allowing the

formation of models that are fully compatible with the task set without the constraints associated with the construction of real systems [1-4].

Figure 2 below shows a neural network adjustment system used to control the technological processes used in the management of inorganic substances [5-6].

The system consists of: T₁₂₃₄-temperature, R₁₂₃₄-pressure, F₁₂₃₄-consumption, L₁₂₃₄-level measurements (where analog 0-4 mA, 4-20 mA current signals or 0/1 digital signals), N₁, N₂, N₃ number of trainings, out1, out2, out3, out4, output signals indicating the results obtained in measurements, label5- weights trained on each row, In5-calculation of results obtained on each row, out5-results calculation window.

The method of operation of the system is as follows: each row value is equal to max = 1 (where the purpose of neuro-adjustment systems is to reduce the error by maintaining the measured parameter at a certain value). the values of the label5 will be 0.5 each if the measurements are performed twice, and the value of each of the label5s will be 0.3 if the measurements are performed three times, this sequence will be performed in the same order [7-8].

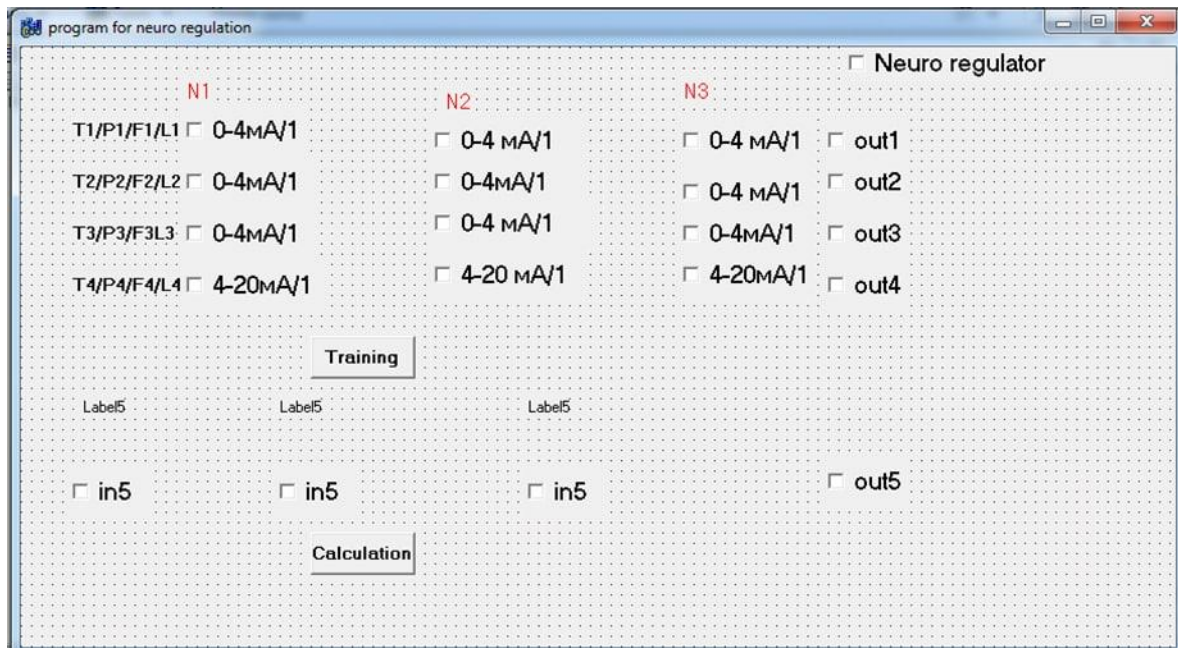


Figure 2. Neuroregulator training.

Analysis of existing neural networks shows that their application provides a positive solution to existing problems in various fields. The use of neural network devices to predict the system poses a number of problems:

- Uncertainty of the number and layers of neurons in the neural network;

- search for the minimum value of the RMS error is associated with the random selection of weight functions of the neural network;
- gradient method cannot determine which internal minimum value is global;
- the gradient method takes a lot of time in selecting the continuous learning phase

The article proposes its model for the development of an intelligent control system of the

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absorption column, one of the important objects in the production of nitric acid, and on this basis a modern control system, which affects the change in product quality. A point logic method can be used to solve this problem. The task is performed in the following order. Determining the change in time of known values of the coefficients of sustainability. The task is to determine the change in the values of the stagnation coefficient taking into account the initially given data. The following prediction techniques are suggested to solve the problem:

1. Determine the structure of the initial data

2. To determine the linguistic values of this variable for a simple (qualitative) human description of the values of the coefficient of sustainability-linguistic variable.

3. Describe the expert-linguistic laws through the observed changes in the graph of changes in the coefficient of sustainability.

4. Determine the functional relationships between the values of the sustainability coefficient.

5. Formation of expert-linguistic legislation using the function of reliability.

6. Defasitization of the obtained results to convert the reliability functions to exact values.

Table 1. shows the values of the change in the sustainability coefficients per unit of time.

Unit time	Value of sustainability coefficient	Change (difference) value
t_1	1,9781	
t_2	2,0036	+0,0255
t_3	1,9592	-0,0189
t_4	1,9492	-0,0289
t_5	1,9722	-0,0059
t_6	2,0594	+0,0813
t_7	2,0030	+0,0249
t_8	1,9623	-0,0158
t_9	2,0030	+0,0249
t_{10}	2,0375	+0,0894
t_{11}	1,8903	-0,0878
t_{12}	1,8890	-0,0891

The dynamics of change of the obtained results is given in the graph below. In developing a model that predicts changes in the stagnation coefficient based on the point logic method, the concept of “stagnation coefficient value” of the linguistic model change is defined. Based on the results obtained 12 times, the

result of the change in the value of the stagnation coefficient allows to obtain 3 insights. High value, medium value and small values. The more change values are obtained, the more accurate the result will be.

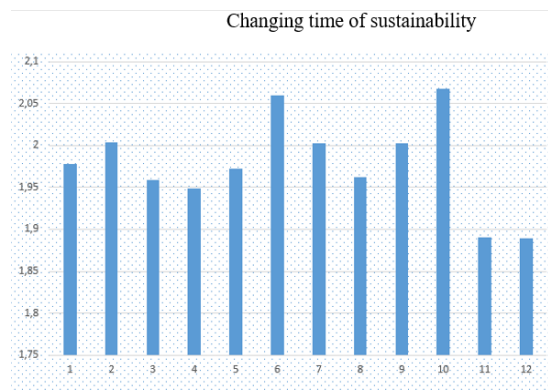


Figure 3. Graph of stagnation change over time.

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From the obtained results we can determine the expert-linguistic regularity of the predicted model, which shows that the increase points are 2, the

decrease points are 3, and the relatively close values of one point are 3.

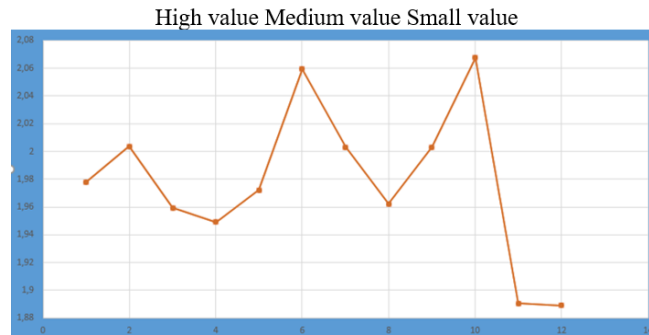


Figure 4.

The change values of the results obtained in Figure 4.

where -8 is the number of cycles, - are the values of the stagnation coefficient corresponding to the cycle. Summarizing the results from Figure 4 above, we write the system window logical sequence of rules.

In this information we can obtain the following law:

$$\dots x_7^{i-1}, x_8^{i-1} \{ x_1^i, x_2^i, x_3^i, x_4^i, x_5^i, x_6^i, x_7^i, x_8^i \} \{ x_1^{i+1}, x_2^{i+1} \} \dots$$

Table 2. Values of measured parameters

Neuro	Label5 (N1)	Label5 (N2)	Label5 (N3)	max	in5(1/2/3)	out (1/2/3/4)	Out
If T1/P1/F1/L1	0-4 mA/1	0	0	1	1/0/0	1/0/0/0 Else	1 0
If T1/P1/F1/L1	0-4 mA/1	0-4 mA/1	0	0.5	1/1/0	1/1/0/0 Else	1 0
If T1/P1/F1/L1	0-4 mA/1	0-4 mA/1	0-4 mA/1	0.3	1/1/1 1/1/0 0/1/1 1/0/1	1/1/1 1/1/0 0/1/1 1/0/1 Else	1 1 1 1 0
If T2/P2/F2/L2	0-4 mA/1	0	0	1	1/0/0	1/0/0/0 Else	1 0
If T2/P2/F2/L2	0-4 mA/1	0-4 mA/1	0	0.5	1/1/0	1/1/0/0 Else	1 0
If T2/P2/F2/L2	0-4 mA/1	0-4 mA/1	0-4 mA/1	0.3	1/1/1 1/1/0 0/1/1 1/0/1	1/1/1 1/1/0 0/1/1 1/0/1 Else	1 1 1 1 0
If T3/P3/F3/L3	0-4 mA/1	0	0	1	1/0/0	1/0/0/0 Else	1 0
If T3/P3/F3/L3	0-4 mA/1	0-4 mA/1	0	0.5	1/1/0	1/1/0/0 Else	1 0
If T3/P3/F3/L3	0-4 mA/1	0-4 mA/1	0-4 mA/1	0.3	1/1/1 1/1/0 0/1/1 1/0/1	1/1/1 1/1/0 0/1/1 1/0/1 Else	1 1 1 1 0

Graphs of pressure adjustment by means of PID-regulator and graphs of interdependence of

system of adjustment by means of neuro-regulator are shown in diagrams in the following figure 5.

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Figure 5a. Adjusting the pressure during the the NR regulator.

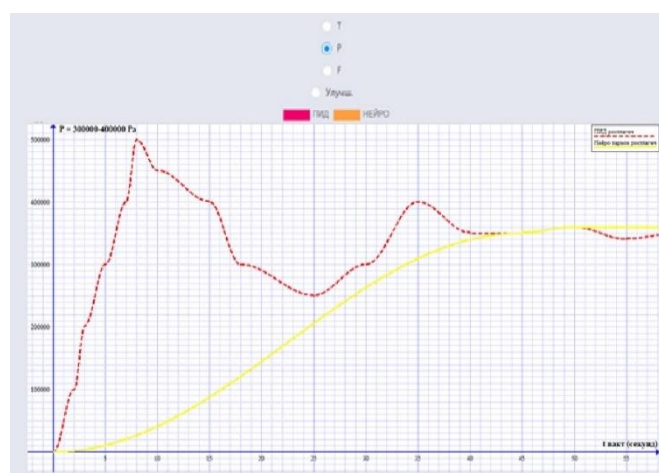


Figure 5b. Adjust the pressure via AK process through the PID regulator and the NR regulator.

The pressure value in these graphs is obtained relative to the pressure of 0.615-0.617 MPa, which is shown in the technological regulation in the production of nitric acid.

The graph of the interaction between the PID regulator and the neuroregulator shows that the PID regulator adjusts to the specified (trained) value of 0.617 MPa in 6 seconds at 0.617 MPa in 6 seconds and the neurostabilizer in 42 seconds.

Based on the research conducted on the system of intelligent control of complex technological processes, a neurostimulatory control system is proposed. In the Neuroband Regulator control system, the adjustment time is longer than in the linear PID-adjuster, but the advantage of the NR control system is the low error of the measured values in the control. Reducing the error serves to improve the quality of the product.

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LEXICO – SEMANTIC FEATURES OF THE PROVERBS BY THE NAMES OF BEVERAGES AND VEGETABLES IN ENGLISH, RUSSIAN AND UZBEK LANGUAGES

Abstract: This article examines the extent to which English, Russian, and Uzbek proverbs have been studied by scholars and the lexico – semantics of proverbs related to beverages and vegetables in English, Russian and Uzbek on the basis of reliable linguistic facts, reveals the similarities and differences of the thematic group paremas analyzed. The lexical semantics of proverbs related to beverages and vegetables in English, Russian and Uzbek are analyzed in detail.

Key words: lexico-semantic group, paremas, saying, folklore, drink, water, tea, vegetables, English, Uzbek, Russian, proverbs.

Language: English

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Introduction

A **proverb** (from Latin: *proverbium*) is a simple and insightful, traditional saying that expresses a perceived truth based on common sense or experience. Proverbs are often metaphorical and use formulaic language. Collectively, they form a genre of folklore.

Some proverbs exist in more than one language because people borrow them from languages and cultures with which they are in contact. In the West, the Bible (including, but not limited to the Book of Proverbs) and medieval Latin (aided by the work of Erasmus) have played a considerable role in distributing proverbs. Not all Biblical proverbs, however, were distributed to the same extent: one scholar has gathered evidence to show that cultures in which the Bible is the major spiritual book contain "between three hundred and five hundred proverbs that stem from the Bible," whereas another shows that, of the 106 most common and widespread proverbs across Europe, 11 are from the Bible. However, almost every culture has its own unique proverbs [1].

Language is a whole world with its own structure, a system of values, problems and experiences. Proverbs and sayings, phraseological units, neologisms, winged expressions and other means make the speech brighter, more imaginative, and thus stimulates communicative, cognitive and aesthetic motivation to master language. Proverbs and sayings are an element of folk art that allows you to express and express people's wisdom in a concise and figurative way, to reflect the history and world outlook of the people, their customs, traditions, customs and values. They have common sense and humor, emotional expressiveness and the ability to express feelings and mood, national identity and depth of culture of the people - the bearer of the language.

Proverbs and sayings provide an excellent opportunity to get acquainted with the life and culture of the people for whom this language is native, convince us that different peoples may have the same views and moral values. The study of proverbs and sayings promotes an understanding of the mentality and national character of the speakers of this language.

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Proverbs and sayings, as a whole, cover most of human experience [3].

Analysis of Subject Matters

In English, Russian and Uzbek, there are hundreds of proverbs and sayings. They were created by many generations of people, developed and perfected over the centuries. Questions of the origin of proverbs and sayings were studied by Russian, English and Uzbek linguists. The greatest contribution to the study of the theory of the origin and classification of proverbs and sayings was introduced by Zhukov V.P., Kunin A.V., Sokolov Y.M., Sviridov L.F., Rybnikov M.A. The problems of learning English proverbs are devoted to the work of English and American linguists, among them Reidaut R., Whitting K., Meader U., Taylor A. and others. The founder of studying the proverbs of the Turkic (Uzbek) language is Mahmud Kashgari.

Under the lexico-semantic group (LSG) we mean a lexical union in which words are grouped on the basis of an integral scheme, a set of differential scheme can be the same type and specific for each LSG. The historical process of word movement from concreteness to abstractness, from the preservation of the original lexical meaning to its weakening, extinction and transformation into a new, phraseological code - the semantics of the pares is traced and argued [5].

The ability of proverbs and sayings to accumulate and translate cultural experience of the people allows us to trace the ways of distribution of various food products, their value-appraisal interpretation, the development of certain rules for food consumption and the emergence of moral and ethical ideas and norms that were formalized in the form of proverbs, Laws and regulations. Comparison of proverbs and sayings of different peoples shows how much these peoples have in common, which, in turn, contributes to their better understanding and rapprochement. It should be noted that many English, Russian and Uzbek proverbs and sayings are multi-valued, which makes them difficult to interpret and compare. When selecting Russian and Uzbek correspondences of the English proverb, the obligatory criterion was the coincidence of one of the meanings (as a rule, the main one). Nevertheless, it is important to remember that, developing in different historical conditions, English, Russian and Uzbek proverbs often used different images to express the same or similar thought, which, in turn, reflect the different social structure and way of life of the three peoples and Often are not absolute equivalents.

The collected material can be divided into the following LSG. They provide an opportunity to consider proverbs of English, Russian and Uzbek languages in comparative-comparative terms.

The combination of lexical units with the meaning of "drinks" includes generic "*drink* /

напиток / *Ichimlik*" and species "*water* / *вода* / *suv*", "*wine* / *wine*", "*beer* / *beer*", "*tea* / *чай* / *choy*", "*kvass*", "*Vodka* / *aroq*", "*kissel*", "*sharbat*", "*champagne*".

In English, in proverbs and sayings, we identified the components of *wine* and *beer*: *You drink vinegar when you have wine at your elbow; He that drinks is not wine after salad is in danger to be sick.* Beer church ale was an indispensable attribute of parish holidays (this explains its name: *church* in English means "*church*"). It was made by English landladies, and money from the sale of beer went to the maintenance of churches and monasteries: *Bread is the staff of life, but beer's life itself; Good ale is meat, drink, and cloth.*

In Russia, **water** has always been treated with special reverence. People understood the importance of water quality, welled healing properties were attributed to well water, and around the wells there was always a special mystical atmosphere, since wells have always been a place of special solitude, spiritual tranquility and unity with nature: *Drink water, water will not confuse the mind; Peace drinks water, but restlessness honey; It is better to drink water in joy than honey in the steep.*

Research Methodology

Since the 10th century, the **wine** imported from Vizantium was also known in Russia and, of course, it formed the basis of proverbs and sayings: *Чужое вино и пил бы, и лил бы, и скупаться попросил бы* (Alien wine would drink and pour, and would ask for money); *Поздно Пей воду, вода не смутит ума; Покой пьет воду, а беспокойство мед; Лучшие воду пить в радости, чем мед в кручине. беречь вино, когда бочка пуста* (Late to save wine when the barrel is empty).

No less popular among the Russian people is **beer**. In villages beer was brewed usually 1-2 times a year. Most often they brewed beer on the day of St. Nicholas the Miracle-Worker, especially revered in Russia: *Мужик лишь пиво заварил, уж черт с ведром* (The man made beer only with the bucket); *He богатый пиво варит, тороватый* (Not rich beer is brewed, cheated).

Traditionally in Russia **vodka** is an indispensable element of any cheerful feast, but few people today know that in ancient Russia this drink was, first of all, treated as a medicine. The first mention of vodka in the annals of Ancient Rus is found in the 15th century. Then a strong alcoholic beverage was called "wine bread". In the history of Russia there were even times when a bottle of vodka became a kind of national currency, which was paid for various kinds of small services, preferring a similar type of settlements to cash transactions. Vodka in Russia is truly a unique cultural phenomenon, deserving not only respect, but also a careful scientific study: *На хлеб займы не найдешь, а на водку – дают* (You can not lend bread to bread, but give it to

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vodka); *Сколько вина ни пей, а водкой похмеляться* (How much wine you drink, and drink vodka).

It should be noted that Russian proverbs severely condemn drunkenness, as evidenced by specific examples: *Вино – друг, обойдет вокруг. Вино уму не товарищ. Водочка да лодочка – ненадежные друзья. Вино работе не товарищ. Вешний путь – не дорога, пьяного речь – не беседа. Вино уму не товарищ. Напьюсь пьяным – потеряешь разум. Вино с разумом не ладит. Вино с разумом в ладу не живут. Вино с разумом не ходят: хмель шумит – ум молчит. Чарка вина не прибавит ума. Пьяный и дурак – родные братья.* (Wine - a friend, will go around. Wine is not a friend to the mind. Vodka and the boat are unreliable friends. Wine work is not a companion. The road ahead is not a road, drunk speech is not a conversation. Wine is not a friend to the mind. Drink yourself drunk - you lose your mind. Wine with reason does not get along. Wine with intelligence does not live in harmony. Wine with reason does not go: hops make noise - the mind is silent. Charka wine will not add to the mind. Drunk and fool are siblings) [8].

Wine brings many troubles to people, this is confirmed in proverbs: Wine creates guilt. *Вино вину творит. Вино сперва веселит, а потом без ума творит. Зелено вино на пагубу дано. В стакане больше тонет людей, чем в море. Где водка, там и сатана рядом. Много вина пить – беде быть. Пить до дна – не видать добра. Не вино виновато, а пьянство* (The wine at first cheers, and then does without a mind. Green wine is given for perdition. In a glass more people drown than in the sea. Where there is vodka, there's Satan nearby. It is a lot of wine to drink - to be trouble. Drink to the bottom - do not see the good. It's not wine that's to blame, but drunkenness).

Drunkenness leads to disastrous consequences and new troubles: *Нынче гули, завтра гули: эти гули в лапти обули. Подружишься с вином – останешься нагишком. Стаканчики да рюмочки доведут до сумочки (до нищенства). Работа денежки копит, а вино топит* (Today's ghouls, tomorrow's ghouls: these ghouls have been shod in bast shoes. Make friends with wine - you will remain naked. Glasses and glasses will bring to your handbag (to beggary). Work saves money, and wine drowns).

Russian **kvass** is one of the best non-alcoholic beverages, in taste and nutritional quality, unparalleled. Invented more than a thousand years ago, kvass enjoys well-deserved popularity even now. The presence of kvass pointed to the well-being in the house, the fortress and the stability of everyday life: *Часом с квасом, а порою с водою; Пью квас и квас хлебаю. И плохой квас лучше хорошей воды* (Hour with kvass, and sometimes with water; I drink kvass and eat kvass. And bad kvass is better than good water).

Kissel in Russia is famous for a long time: the chronicler Nestor in the "Tale of Bygone Years" told us the story of how oat jelly saved the city of Belgorod. When the Pechenegs besieged him, the inhabitants suffered a terrible famine and decided to surrender to their enemies, but the old man alone had to boil the jelly from the last remnants of oats and honey and put it down in the well. Fruit and berry sweet jelly appeared at us relatively recently, at the beginning of the XIX century, after the spread of potatoes and the beginning of starch production[7].

Kissels almost did not change in two centuries, only became more liquid: *Где кисель, тут и сел, где пирог, тут и лег; То и благо, у кого есть кисель да брага; И то зубы, что кисель едят* (Where the kissel, here and sat down, where the pie, then lay down; That's good, who has kissel and braga; And then the teeth that kissel eat). In Russia consumed are also such drinks as **champagne** and **cognac**. Russian people perceive champagne and cognac as a drink for a friendly feast: *Нам все равно, что коньяк, что вино; Пьет шампанское, а на спичках экономит* (We do not care what brandy, that wine; He drinks champagne and saves on matches).

The life and life of the people impose an imprint on the semantics of proverbs. So, the huge role of **water** in the life of the Uzbek people and its relatively limited reserves determine the most careful attitude to water, reflected in many proverbs. For example: *Сув – ёруклик; Сувлик – бойлик; Сувсиз ер – мозор, сувли ер – гулзор.*

In the proverbial expressions of the Uzbek language there is a component of the **sharob** (wine, spirit drink): *Шароб текин бўлса, ҳамма ичар, текинхўр виждонидан кечар Шароб узумдан ранг олар, одам одамдан ранг олар. Сумбуланинг суви – шароб*[11].

Calling the tea table the soul of the family, the Uzbeks emphasize its importance in the tableau ritual. Uzbek green and black tea is very hot and strong in taste. There is a salty tea in Uzbeks, diluted with milk, of course, for Europeans such tea is unusual, but it does not surprise Uzbeks. It is called shirchoy. In Uzbek there is a term and **chamma choy**. *Чойнинг сўнгини дўстинга бер. Ширин чойнинг бўлмаса, ширин тилинг бўлсин. Ҳамма чой – бир ёқ, шамма чой – бир ёқ. Пишмаган этни егали бўлмас, қайнамаган чойни – ичгани. Ёғи йўқ, қаймоғи йўқ, чойи курсин, хайри йўқ, эҳсони йўқ бойи курсин*[4].

In LSG "Vegetables" the generic seed is «cabbage /капуста/карам», «carrot/морковь/сабзи», «garlic /чеснок /саримсоқ пиёз», «potato/картофель (картошка)/картошка», «onion/лук/пиёз». In Russian proverbs and sayings, the species "beet /lavlage", "cucumber / bodring" and "turnip /sholom" were identified. In proverbs and sayings of

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the English language there is such a lexeme as "gourd / tavern".

In English: *It's no use boiling your cabbage twice. If there's no apple one eats a little carrot. He holds out a carrot to somebody. Garlic is as good as ten mothers. The mortal always smells of garlic. The Potato grows in silence, the iron corrodes in silence. It's easy to halve the potato. A cat has nine lives, as the onion seven skins. If there is only bread and onions, still have a happy face. Keep your secret in your own gourd. The gourd that never leaves the boozing center attains cracks.*

In Russian: *Вырастишь капусту – в закромах не будет пусто. Капуста не пуста, сама летит в уста. Съешь и морковку, если яблочка нет. Огуречек в кадке, а морковь – на грядке. Лук с чесноком – родные братья. Год за годом жую чеснок, ежегодно дерёт мне горло. Картофель – второй хлеб. Картошку копать – не руками махать. Лук семь недугов лечит. Лук да баня все правят. Без свёкли борща не ищи. Красна свёкла, хоть и в черной земле растёт. Чем не молодец, коли нос с огурец. Рена брюху не укрепя.*

Analysis and results

In the Uzbek language: *Каромат билан карам пишмас, қаноат билан қорин тўймас. Пиёзни мард артсин, сабзини – номард. Ёмоннинг дўсти кўп, пиёзнинг – нусти. Топган гул келтирар, топмаган – бир бог пиёз. Топган ниёз, топмаган ниёз. Пишмаган ошдан хом ошқовоқ яхши. Бой бўлсанг, шолгом е, камбагал бўлсанг – палов.* Proverbs exist for centuries, thousands of years. The inquisitive human mind observes the phenomena of the surrounding world, learns the laws of its development, comprehends social and economic relations. The results of this creative activity of the mind are often clothed in brief, accurate, capacious phrases called proverbs. Proverbs are not acquired by individuals, but by all native speakers [14].

Proverbs and sayings, being a part of the culture of this people, always remained and will remain relevant, despite the development of economics and technology, on progress, etc. At any time proverbs and sayings will be a characteristic feature of this people, the object of attention and research [14].

An analysis of the collected material showed that some proverbial and preconceived formations, traditionally represented in dictionaries and reference books as variants of larger units, are in fact completely independent utterances. The use of proverbs and sayings in English, Russian and Uzbek classes contributes to better mastery of these subjects, expanding knowledge of a particular language and the features of its functioning. Accession to the culture of the country of the studied language through elements of folklore gives students a sense of belonging to another people.

Thus, it can be concluded that English is the language of expressions. In the Russian language, many synonyms and colorful words, according to the richness and diversity of expressions, are among the first places among all the languages of the world. The Uzbek language has been known for centuries on various topics by proverbs. Proverbs, sayings and expressions are very imaginative, and when they are literally translated, it often turns out to be a complete nonsense (something like: it's raining cats and dogs, it's raining hard.) - It rains cats and dogs. , The mushrooms would grow in their mouths - If ifs and ands were pots and pans, literally in Russian it means: If the unions ifs and ands were pots and pans, it's funny, is not it? But on the other hand, without such translations We will not appreciate their stunning imagery and the wit of those who composed them. Without proverbs, sayings and expressions, one can not understand what real conversational English is, its history and roots. Sometimes in some separate phrase one can hear the echo of what happened centuries ago. The conquest of the seas by brave English navigators, cowboy romance and Victorian ideals - all this was reflected in proverbs, sayings and idioms.

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CHINGIZ AYTMATOV AND UZBEK LITERATURE

Abstract: The article deals with the literary heritage of Chingiz Aitmatov, a famous representative of Kyrgyz literature, a great writer, publicist, statesman and public figure, and as well as his influence to the Uzbek literature and literary traditions.

Chingiz Aytmatov synthesized Eastern and Western cultures in his works. He creatively used folk legends and myths. In his works, he raised universal human problems.

Chingiz Aytmatov had many friends from among Uzbek writers. Constant friendship and literary ties were strong between them. Positive reviews of works published in Uzbek literature were published in the press of that time. In particular, after his close friend Odil Yakubov published the novel "Ulug`bek xazinasi" ("Ulugbek's Treasure"), Chingiz Aytmatov highly appreciated the work and sent a letter to the author.

The given article examines in detail the issues of respect for the work of Aytmatov in Uzbekistan and the influence of Uzbek writers on his work.

Key words: Chingiz Aytmatov, Uzbek literature, Kyrgyz, literary influence, tradition, image, social environment.

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ЧИНГИЗ АЙТМАТОВ И УЗБЕКСКАЯ ЛИТЕРАТУРА

Аннотация: В статье рассматривается влияние Чингиза Айтматова, известного представителя кыргызской литературы, великого писателя, публициста, государственного и общественного деятеля, а также влияние узбекской литературы и литературных традиций.

В своем творчестве Чингиз Айтматов синтезировал восточную и западную культуры. Он творчески использовал народные легенды и мифы. В своих произведениях он поднимал общечеловеческие проблемы.

У Чингиза Айтматова было много друзей из числа узбекских художников. Между ними были крепки постоянные дружеские и литературные связи. Положительные отзывы о произведениях, опубликованных в узбекской литературе, публиковались в прессе того времени. В частности, после публикации его близким другом Одилом Якубовым романа «Сокровище Улугбека» Чингиз Айтматов высоко оценил произведение и направил автору письмо.

В статье подробно изучены вопросы уважения к творчеству Айтматова в Узбекистане и влияния узбекских писателей на его творчество.

Ключевые слова: Чингиз Айтматов, узбекская литература, киргизы, литературное влияние, традиция, образ, социальная среда.

Введение

Несомненно, кыргызский писатель Чингиз Айтматов - один из величайших писателей мировой литературы. Имя Чингиза Айтматова,

пополнившего сокровищницу художественной литературы своими шедеврами, известно и популярно на всех континентах мира. Читая их, представитель каждой нации может найти то, что

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касается его самого, своего народа и своей родины.

Без преувеличения можно сказать, что творчество Чингиза Айтматова широко распространено и изучается в Узбекистане. Значительную роль в этом сыграли такие опытные переводчики, как Асиль Рашидов, Ибрагим Гафуров, Суюн Караев, Махаммат Махмудов, Абдураим Огаматов, известные ученые, такие как Гайбулла Саломов, Акмал Саидов, Сайди Умиров, Ахмаджон Мелибоев, Париза Мухаммаджанова.

«Творчество Айтматова - это школа, которая может нас многому научить», - писал народный поэт Узбекистана Абдулла Арипов. - Один из уроков Айтматова для меня таков: Чингиз ага своим невероятно смелым талантом доказал, что может говорить правду в любой ограниченной и сложной ситуации. Вспомните авторское произведение «Прощай, Гульсар!» и главный герой Танабой, и его верный товарищ Гульсар, лошадь, провели свою юность на государственной службе. Однако, когда они стали старше, их стали игнорировать. Писатель с большим мастерством в сложных условиях превратил эту идею в произведение искусства. Этот вопрос сегодня не утратил своей актуальности и жизненного значения. Конечно, у каждого великого писателя есть свой стиль и тон. Как можно отличить гениальность Толстого от Достоевского, так и при взгляде на творчество Айтматова сразу обнаруживаются только его уникальные качества. Это глубокая человеческая философия и прекрасный поэтический дух» [1].

Анализ предметных вопросов

Чингиз Айтматов ценил узбекскую землю как свою родину, а свой народ как своих братьев. Миртемир, Зульфия, Одил Якубов, Пиримкул Кадыров, Шукрулло, Эркин Вахидов, Абдулла Арипов, Максуд Кориёв, Зиед Эсенбоев, Ботир Зокиров, Асиль Рашидов, Анвар Джурабоев, Суюн Караев, Париза Мухаммад подружались с ними и со многими другими художниками стали близкими друзьями. душевный разговор.

Автор очень интересуется своим творчеством в Узбекистане, некоторые из его работ издаются тиражом больше, чем на кыргызском языке, студенты любят их читать, «Сарвкомат дилбарим», «Момо Ер», «Ок кема», «Альвидо. Гульсар!», «Соҳил бўйлаб чопаетган Олапар», ставился на узбекских сценариста, переводчики, режиссеры и актеры использовали свое мастерство, чтобы донести его мысли до читателя и зрителей, а конференции, посвященные его творчеству, регулярно проводились в высших учебных заведениях страны. «Я хотел бы поблагодарить своих друзей, которые искренне перевели мои книги на узбекский язык, особенно Асиля Рашидова, литературного критика и

переводчика», - сказал Чингиз Ага. «Потому что Асилджон смог перевести некоторые из моих рассказов, такие как «Белый корабль», «Джамиля», «Прощай, Гульсар!», на узбекский язык так же резонансно, как и я на кыргызском» [2].

Суюн Караев, кандидат филологических наук, доктор географических наук, член Международной академии Чингиза Айтматова, один из самых активных ученых в изучении и продвижении творчества Чингиза Айтматова. Адиб Суюн Караев оценивает свою работу следующим образом: «Хотя у меня в жизни разные профессии, я горжусь тем, что общаюсь со многими единомышленниками, честными и правдивыми людьми, я их уважаю, ценю, рад их достижениям. Один из таких людей - Суюн Караев, ребенок узбекско-киргизского народа и трудолюбивый ученый. Он перевел на узбекский язык ряд моих работ и опубликовал много статей в прессе. Научная деятельность трудолюбивого ученого не ограничивается моим творчеством. Суюн Караев способствует дальнейшему укреплению братских связей между узбекским и кыргызским народами, продвижению истинных духовных ценностей двух народов, поднимая их на более высокий уровень.

Его замечательные идеи в его научных и публицистических статьях о былинах «Манас» и «Алпомиш», некоторых проблемах узбекского и киргизского языков не оставляют равнодушными читателей. Для нашего общества было бы очень ценно, если бы какой-нибудь художник так же искренне служил двум народам, как Суюн Караев» [2].

Обратим внимание на следующие мысли великого ученого Наджмиддина Камилова: В повести «Олапар, бегущий по берегу» наподобие «Белого корабля» смешан образ мифа и реальной жизни. Мифы и мечты, примитивные представления о силах природы не только помогают создавать персонажей патриархальных сообществ, отражать образ жизни людей, которые видят себя частью природы, поклоняются ей, получают от нее помощь и постоянно борются с природой, но также переосмыслить отношения между природой и человеком. Произведение, поднявшееся благодаря такому методу до уровня повествования, тоже является сюжетно-эпическим. Даже если это эпос, это драматический эпос, написанный прозой, с правильным и устойчивым внутренним ритмом, с внутренней лирико-публицистической интонацией. Такой ритм придавал истории особый дух. Музыка Серехтироса сначала звучит спокойно и величественно, затем постепенно усиливается, усиливается и начинает сопровождаться громкими мрачными мелодиями, разжигающими душевные муки и страдания, а затем в конце

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звучит как счастливая мелодия, несущая свет и свет. к сердцу [3].

Творчество Чингиза Айтматова оказало большое влияние на литературу братских народов, в частности, на узбекскую литературу. Представители трех поколений, от Одила Якубова, вошедшего в сферу узбекской литературы в 1960-е годы, до Эркина Азамова, позже появившегося в литературе, приобщились к живым традициям Чингиза Айтматова, использовали «айтматовский» синтез и анализ в своих произведениях и создали высокохудожественные произведения.

Методология исследования

Известно, что Чингиз Айтматов и его современники работали в советское время. Основная цель существующей политической системы состояла в том, чтобы превратить человека в послушный, немой объект безоговорочного подчинения ему. Немой человек не требует своих прав. Безоговорочно выполняет все поставленные выше задачи. В таком обществе человек постепенно забывает свою личность. Интеллигенция, особенно творцы, стала выражать свое отношение к человеку, осознавая трагические последствия немоты, укоренившейся в сознании и психике человека. Эта проблема стала ведущей в произведениях узбекской прозы 70-80-х годов.

В 70-80-е годы в советской литературе был создан ряд произведений, раскрывающих сущность зависимости, немоты и ее последствия. В частности, одним из таких произведений стал рассказ известного кыргызского писателя Чингиза Айтматова «Белый корабль». Это произведение также повлияло на творчество узбекских писателей Эркина Азама. Первоначально автор создал повесть «Пришел из города человек» под влиянием этого рассказа. Позже главный герой повести «Ответ» Эльчиев имеет много общего с образом героя «Белого корабля» Момина Чола.

В описании образа старообрядца («Белый Корабль»), как у Эльчиева, скромный человек, несмотря на преклонный возраст, проявляет гордость за все службы на свадьбах и торжествах своих односельчан. Она работает прислугой у своего зятя, лесничего Уразкула. В лесничестве живут старый Момин с женой, дочерью Бекей, ее мужем Уразкулом, слугой Сеидахмадом и его женой Гульджамол. Судьба верующего старца подвергается множеству испытаний. Обе его дочери недовольны. Старшая дочь Бекей бездетна. Младшая дочь развелась с мужем и уехала в город, а ее ребенок был у старообрядца. Первая жена старика, мать его дочерей, умерла, и он женился во второй раз. Оразкул пришел выпить и избил Бека, сказав, что он не будет рожать. Даже если он увидит это собственными глазами, старик, верующий по натуре, не сможет ему

противостоять. Оразкул его тоже оскорбляет. Верующий привык к такой судьбе. Даже если Уразкул оскорбляет или унижает его, он склонит голову.

Но старообрядец только один раз идет против Уразкула и не подчиняется ему. Это был бунт старообрядцев. Впервые старик и Оразкул отказываются от привычки вытаскивать из реки древесину, которую тайно привозят из леса, или приносить внука из школы. Писатель так описывает состояние старика: «Старик не оглядывался. Он пошел, сел на платформу перед «спящим верблюдом», надел сапоги и поспешил домой. Ничего не останавливая, он пошел прямо в конюшню. Оттуда он повел Оразкула, серого коня Уразкула, нетронутого, верхом на гостях, скачками, и никто не осмеливался оседлать. Словно в огне, верующий выгнал его со двора без седла и стремени. Когда он проезжал мимо окон, мимо еще кипящего самовара, выскочившие - жена Момина, дочь Бекей и юная Гулямол - сразу поняли, что что-то случилось. Он никогда не ехал в Олабош и никогда так не спешил со двора. Они еще не знали, что это восстание верующего. Он не знал, что случится с ним в старости».

Смирный и сострадательный мужчина, как верующий старик, не кланяется зятю Уразкулу, даже когда жестоко избивает и унижает себя. Но чтобы вернуть внука из школы, он не слушается Уразкула. Оразкул прекрасно знает, что это неповиновение не останется безнаказанным, что ждет его и его дочь.

Счастье и несчастье всегда идут рука об руку. Фактически, бунт является результатом нарушения границы между счастьем и несчастьем. Все хотят жить счастливо. Но судьба человека, его образ жизни запутан и сложен. Невозможно знать, что его ждет впереди. Верующий старец всю жизнь прожил скромную жизнь, но в конце концов достиг ли он полного счастья? Он никогда в жизни никому не причинял вреда, не ревновал, воспитывал семью честным трудом. В результате были достигнуты только унижение и несчастье. Единственная опора верующего старика - его внук. Она хочет, чтобы внук учился в будущем. Поскольку школа находится дальше, старику требуется особое время, чтобы подобрать ее и уйти один. Цель вернуть внука из школы заставляет его бунтовать. Ради счастливого будущего преемника своего поколения он даже откажется от своей веры. «Старообрядец посмотрел на лысину своего внука, его тонкую шею, его уши и всю работу, которую он проделал в своей жизни, и из всей своей тяжелой работы, забот и горестей он подумал, что он единственный беспомощный ребенок левый. Было бы хорошо, если бы дед смог снова поставить его на ноги. Но если его оставить в покое - будет тяжело. Он был

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как кулак, но у него был хороший характер. Хорошо, что он был просто верующим ...

Ведь такие люди, как Уразкул, ненавидят его до смерти и разрывают на куски, как оленя, преследуемого волком ... » [4,265].

Следует отметить, что старообрядец хочет, чтобы его внук был таким же верующим, как и он сам. По его мнению, упрямые, воинственные люди преследуются тиранами вроде Уразкула. Если вы помните, упрямый характер сына Эльчиева Камолитдина присутствует и в внуке старого Мумина. И Эльчиев, и старообрядец не осознавали, что их потомки - люди другой, новой эпохи, что формируется совсем другое поколение, и мерили мир своим возрастом. Это была его философия, его мировоззрение. И это тоже была трагедия старообрядца.

Анализ и результаты

Чингиз Айтматов был ближайшим другом Узбекистана, узбекской литературы. Его заслуги получили признание и в Узбекистане, писатель награжден Орденами Дружбы и Заслуги.

Постановление Президента Республики Узбекистан Шавката Мирзиёева от 2 апреля 2018 года «О широком праздновании 90-летия великого писателя и общественного деятеля Чингиза Айтматова» основано на взаимном уважении двух народов, в частности имидж и творчество Чингиза Айтматова. «Великий писатель и общественный деятель Чингиз Айтматов был дорогим другом не только кыргызского народа, но и всех тюркских стран, в том числе узбекского народа, большим другом Узбекистана», - говорится в постановлении.

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THE INFLUENCE OF THE PHENOMENA OF BEING ON THE DEVELOPMENT OF THE SPIRITUALITY OF THE INDIVIDUAL

Abstract: The article provides a philosophical analysis of the phenomena of social reality that affect spirituality, consciousness and human behavior. The author investigates the structure of the phenomenon of «reading», its functions and ways of influencing the development of a person's spiritual life. The essence of the relationship between the socio-philosophical phenomenon of «reading culture» and the surrounding natural and social environment, its place in the scheme "man - society - nature" is considered. The conclusion about the relevance of the culture of reading in modern society is formulated.

Key words: being, philosophical understanding of society, culture, phenomenon of reading, spirituality, morality, socio-philosophical analysis, social philosophy.

Language: Russian

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ВЛИЯНИЕ ФЕНОМЕНОВ БЫТИЯ НА РАЗВИТИЕ ДУХОВНОСТИ ЛИЧНОСТИ

Аннотация: В статье проводится философский анализ феноменов социальной реальности, воздействующие на духовность, сознание и поведение человека. Автором исследуется структура феномена «чтения», его функции и способы влияния на развитие духовной жизни человека. Рассматривается сущность связей социально-философского феномена «культуры чтения» с окружающей природной и социальной средой, его место в схеме «человек – общество – природа». Сформулирован вывод о востребованности культуры чтения в современном обществе.

Ключевые слова: бытие, философское осмысление общества, культура, феномен чтения, духовность, нравственность, социально-философский анализ, социальная философия.

Введение

Философское осмысление общества и его отдельных сфер впервые была поставлена еще в Античные времена Сократом и Платоном. Именно они впервые описали общество, его законы, исторические формы и общественные процессы с позиции философии [1, с.624]. Согласно Платону, участие человека во всяческих мероприятиях и событиях общества означало важнейшую составляющую самораскрытия индивида. Платон считал, что государством

должны управлять философы, так именно философы обладают настоящими знаниями о жизненных нормах и из-за отсутствия этих знаний у многих государств появляются проблемы управления народом [2, с.36].

Аристотель тоже считал человека общественным существом и вне общества не представлял его. Человека, живущего вне государства, изолированного от общества Аристотель называл «изолированной пешкой на игральной доске» [3, с.444].

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Хорошо уже сформировавшиеся в Средневековье мировые религии только способствовали процессу развития философских представлений о нравственной и духовной жизни человека. Допускалась идея о том, что абсолютная, предельная характеристика бытия может совместно сосуществовать с исторической и культурной эволюцией общества.

В период Возрождения философия была направлена на познание законов окружающей реальности, на исследование «природы» человека.

Новое время для философии превратилось в комплекс научных дисциплин о бытии, познании и логике. Интенсивное увеличение естественного и общественного познания привело к тому, что философия, как наука, включающая в себя изучение бытия, мыслительных процессов, познания, законов логики, природы и социальных феноменов – оказалась неспособной отвечать требованиям и запросам общества и получать конкретные результаты, подобно другим научным дисциплинам. Казалось, что «Философия, как система, обобщающая знание человека о мире, утратила научную перспективу» [4, с.591]. Так ли это на самом деле?

Основная часть.

На наш взгляд философия, как одна из древних (первых) и основных дисциплин, не является неподвижной и неразвивающейся. Наоборот, время показало, что философия развивается и «вглубь», и «вширь». Она находится «в постоянной потребности к изменению».[5, с.16] Современная философия, включающая в себя такие базисные отрасли, как онтология (учение о бытии), гносеология (учение о познании), этика (наука о поведении людей), логика (наука о законах мышления), философия культуры, так и новые, молодые подразделы: социальная философия (наука об обществе, его генезисе), эпистемология (учение о знании), науковедение (дисциплина, изучающая теоретические проблемы развития науки) – только доказывает, что она (философия) находится в постоянном развитии. И развивается она параллельно с развитием общества. Общество, в свою очередь, постоянно развивается – появляются новые социальные явления, процессы, феномены. Человек, являясь единицей общества, развивается вместе с обществом.

Одной из сравнительно молодых наук, отраслей философии, изучающих человека в структуре общества и природы, является социальная философия.

Как отдельная отрасль, социальная философия сформировалась к середине 19 века. В то время она лишь дополняла гносеологию, антропологию, этику, онтологию [6, с. 340; 7. с.420]. Объектом социальной философии

являются социальная жизнь и социальные процессы. Социальная психология изучает общество «с высоты птичьего полета». Ее предметом является общественная жизнь. Социальная философия постоянно показывает возможности бесконечного развития самого бытия людей. Социальная философия в этом смысле предлагает взглянуть людям на свое мышление как бы со стороны [8, с.7].

Важнейшей задачей социальной философии является выявление явлений (феноменов) и методов познания действительности. На всех этапах своего развития философия предлагала немало разных подходов в познании мира, в том числе в познании человека и общества. Однако более основательные подходы в познании собственно социальных явлений были разработаны философией постепенно, шаг за шагом. Одним из таких социальных феноменов, одновременно способствующее нахождению и развитию новых принципов познания социальной реальности и, одновременно объединяющих человека и общество – является феномен культуры чтения.

Социально-философскому исследованию феномена культуры чтения способствуют общественно-исторические особенности его существования. Феномен чтения это культурный процесс, с одной стороны и с другой стороны, чтение – явление, способствующее развитию и повышению культуры человека и, соответственно, общества. Чтение, являясь частью культуры общества, играет огромную роль в становлении личности, культуры человека, внутреннего мира и его духовного взросления. Культура чтения – часть общей культуры, которая включает в себя мировоззрение, установки, интеллект, знания, умения и чувства читателя, обеспечивающие глубокое восприятие произведения.

В философском контексте культура чтения – особый способ формирования и расширения общечеловеческой культурной деятельности, проявленный в результатах духовной и материальной практики, в структуре общественных норм, отношений и организаций, духовных ценностях, в комплексе отношений людей к окружающему миру, к другим и самому себе.

Культуру чтения следует понимать как «составную часть общей культуры личности, характеризующую степень развития и реализации сущностных сил человека, его способностей и дарований по освоению культурного потенциала письменных текстов на основе традиционных и инновационных информационных технологий и определяющую эффективность социокультурного взаимодействия личности в современной информационной среде» [9, с.37].

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Объединяющим признаком трактовок культуры чтения является то, что культура чтения зависит от уровня знаний, культуры и воспитанности самого индивида. Потребность в регулярном чтении, проработка, анализ и оценка прочитанной информации, эстетическое и эмоциональное отношение к прочитанному произведению – неизменно важные компоненты читательской культуры читателя, имеет ли он дело он с книжной продукцией или электронным носителем. Перечисленные качества читательской деятельности говорят о зрелом, сформированном, грамотном и самостоятельном читателе.

Культура чтения – это важнейшая перспектива нравственности, духовности, интеллекта, творческая жизнестойкости и самореализация человека. В своем замечательном произведении «Рождение гражданина» В. Сухомлинский подметил, что настоящее чтение – это чтение, увлекающее ум и сердце. Что книга «исцеляет душу и тело», радуется, открывает красоту мира, обучает [10, с.32].

Нравственность и духовность неразделимы. Как заметила В. Безрукова: «Нравственность правит человеком, а духовность – нравственностью. Духовность позволяет отличить добро от зла и определить достоинства каждого личностного качества – нравственно оно ли безнравственно. Духовность – это то, благодаря чему мы становимся людьми, а нравственность – это то, как мы живем. Смысл жизни задает духовность, а способы жизнедеятельности – нравственность» [11, с.14].

Читательская тематика в социально-гуманитарных науках существует со времен их возникновения: в средневековой Европе – с периода ранних христиан и споров о священных книгах, в России – с эпохи Просвещения восемнадцатого века, когда началось формирование книжной культуры. В Средней Азии началом появления первой письменности, а значит и чтения, являются пророческие писания Заратуштры (вдохновитель Ахура-Мазды) в Авесте в седьмых-восьмых веках до нашей эры и в дальнейшем, в седьмом веке нашей эры, основной книгой для чтения всех мусульман становится святая, рукописная книга на арабском языке – Коран.

Заключение

Чтение как средство познания нового и тем самым позволяющим быстро адаптироваться молодежи в окружающем социуме является важным инструментом изменения мировоззрения человека. Чтение меняет человека, делает его

добрым, понимающим, сочувствующим, человечным. Очень важно обратить внимание на сложные социальные и нравственные отношения молодежи между собой, с самим собой и к обществу. Для молодежи важно повысить культуру грамотности, достичь совершенства, стремиться к знаниям.

Как пишет М. Хайруллаев: «В трактате «О достоинствах наук и искусств» Аль-Фараби подчеркивает бесконечность процесса познания природы, понимая ход познания как восхождение от незнания к знанию, от познания следствия к познанию причины [12, с.35] Еще Пророк Мухаммад говорил: «Стремление к знанию есть обязанность каждого мусульманина и мусульманки» [13].

Концепция культуры чтения заключается в том, что развитие гармоничной личности происходит посредством получения образования и самостоятельной работы над собой, что невозможно без процесса чтения. С другой стороны, сам феномен культуры чтения формируется благодаря развитию процесса чтения и прямо пропорциональна состоянию самого общества. «Нет сомнения в том, – отмечает С. Н. Плотников, – что чтение является очень чутким, надежным и, в определенном смысле, даже универсальным показателем состояния общества в целом. Поэтому, изучая чтение, мы как бы ощущаем атмосферу, слышим тональность, настрой духовной жизни общества и, наоборот, анализируя общественные процессы, мы тем самым рисуем фон, на котором разворачивается драматургия чтения. Важно учитывать влияние системы ценностей современного общества на динамику процессов в сфере образования в целом, и чтения в частности» [14].

Таким образом, каждая культура, каждая эпоха создавала свое отношение к читательской культуре. Развивались общественные отношения, преобразовывалась культура, менялось представление науки о мире, совершенствовались духовные и нравственные ценности, появлялись новые философские направления, но одно оставалось неизменным – культура чтения всегда была основой развития человека и общества, основным средством обучения и воспитания, движущей силой эволюции и прогресса любой цивилизации. Меняется лишь конкретизация функций, характера и его содержания.

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THE ROLE OF THE EUROPEAN UNION AND INTERNATIONAL ORGANIZATIONS IN THE DECISION ON THE ARAL PROBLEM

Abstract: In this article, the author, using diverse, scientific and scientific-journalistic materials, sheds light on the history of solving the Aral problem. Based on the analysis of historical data, the role and place of the European Union and international organizations in the Republic of Karakalpakstan are identified, their characteristics are presented. The ecological and socio-economic situation of the Karakalpak people is reflected in the context of the activities of the European Union, the World Bank, UNDP, and UNEP. The article contains interesting fragments that are rarely found in archival materials.

Key words: Aral problem, ecology, Karakalpakstan, Central Asia, European Union, international organization, cooperation.

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Introduction

Uzbekistan is unable to bear the burden of its heavy inheritance – the Aral catastrophe. For this reason, the government of the Republic of Uzbekistan set this catastrophe as the prime task on its agenda in terms of uniting the efforts of all the Central Asian republics. As a result of the efforts of a large group of experts and scientists, on February 18, 1992, in the city of Alma-Ata, the Ministers of Water Resources of the above republics signed an agreement on behalf of their republics, on the establishment of an inter-republic commission for the coordination of water management, cooperation in the use and protection of shared water resources, and the adoption of collegial decisions on the issues of general water management. Besides, Central Asian states made joint decision about restoration of a watershed that operated of the sea basin before. These solutions are very important for providing with water to prevent final desiccation of Aral Sea coast.

In August 1992, in the city of Nukus, an international scientific conference on the Aral problem was held, the resolution of which was very important for the people of the region. Based on the decision of this conference on September 2, 1992, the

Cabinet of Ministers under the President of the Republic of Uzbekistan adopted Resolution No. 405 "On accelerating global efforts to eliminate the consequences of natural disasters and social environmental problems." To implement this resolution, the government of Uzbekistan has made great efforts. Most of the measures specified in the resolution were implemented. Karakalpakstan and the Khorezm region received a large amount of humanitarian assistance during this period, including supplies of necessary devices and medicines.

With the active participation of the first president of Uzbekistan, the level of attention of the international community to the environmental problems in the Aral Sea area has increased. The World Bank, UNDP and UNEP are actively involved in the implementation of the Aral Sea program. A number of meetings, seminars and conferences devoted to the Aral problem were held in the Republic. Through the years of independence, a lot of work has been done under the program, such as planting trees to protect the Aral coast. Work on planting *saksaul* on an area of 1.5 million hectares, owned by Uzbekistan, began to yield good results. Particularly productive were the practical activities to

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create an action program and strategy for water resource management, increasing the responsibility of the population in protecting the environment, and restoring saline soils on the territory.

Due to independent development, Uzbekistan itself predetermined the further development of the scientific institutions of the republic. There was formed bio ecological research institute within Karakalpak branch of the Academy of the sciences of Uzbekistan..

The environmental disaster in the Aral Sea region places agriculture in a more difficult situation. In these conditions, the right decision was to form a branch of the Agricultural Academy of Uzbekistan in Karakalpakstan. Informed scientific

recommendations on agriculture and animal husbandry are of great benefit in the selection of the best varieties of agricultural crops and the improvement of species and livestock.

Cooperation was established with scientific centers in Australia, the USA, Germany, South Korea, Malaysia, the Russian Federation, Kazakhstan, Turkey, Turkmenistan, France, China, Japan and India, and the volume of joint scientific research is gradually expanding [1].

The first President of the Republic of Uzbekistan, Islam Karimov, noted that the Aral ecological catastrophe has been viewed with alarm as a tragedy of global scale [2]. It is also natural that its fate is closely connected with the fate of all the independent states of Central Asia. "All in all, we must deal with the fate of the Aral Sea together," said Islam Karimov. "To this end, Uzbekistan, Kazakhstan, Turkmenistan, Kyrgyzstan and Tajikistan ought to create a strong, single interstate organization. I believe that this new international organization should be located in the city of Nukus, which will create conditions for the effective accomplishment of the tasks "[2].

From September 18 to September 20, 1995, the International Conference on Sustainable Development of the Aral Sea Basin States was held in Nukus. The forum was attended by representatives of the United States, Australia, Austria, France, Japan, India and other countries, as well as experts from authoritative international organizations, foreign experts, and representatives of Central Asian republics.

Participants of the conference, who arrived in the capital of Karakalpakstan, circled over the Aral Sea water area on September 17, and also visited the capital's exhibition of science and technology achievements in the field of environmental protection.

The Chairman of the Jokargi Kenes (Supreme Soviet) of the Republic of Karakalpakstan, Ubbiniaz Ashirbekov, the Deputy Director of the Office of the United Nations Development Program for Europe and the CIS (Common wealth of Independent States), Elizabeth Fong, and Chairman of the UN Commission, Ambassador Bo Kuelen, spoke about

the work carried out by Central Asian countries and the world community as a whole to eliminate the consequences of the environmental disaster that arose as a result of the desiccation of the Aral Sea.

Deputy Chairman of the Executive Committee of the Interstate Council for the Aral Sea Problems, Director of the Environment Department of the World Bank, Minister of the Environment and the Environment of the World Bank, minister of environment of the Republic of Turkey, representative of the United Nations Development Program Nakamura Tekohira and others had made presentations and projects on integrated environmental management, sustainable development and economic transformations.

On September 20, the President of the Republic of Uzbekistan, Islam Karimov, President of the Republic of Kazakhstan, Nursultan Nazarbayev, President of the Republic of Kyrgyzstan, Askar Akayev, and the President of the Republic of Tajikistan, Imomali Rakhmonov arrived in the capital of the Republic of Karakalpakstan to participate in the final day of the International Conference on Sustainable Development of the Aral Sea Basin. A delegation from Turkmenistan, headed by Deputy Prime Minister Mr. Razhabov, also participated in the conference. Following the meeting, the presidents signed the "Nukus Declaration" of Central Asian states and international organizations on the problems of the sustainable development of the Aral Sea.

In the preamble to the Nukus Declaration, a historical digression into the past is made, and the efforts of the peoples of the Central Asian region to create oases in the deserts are paid tribute to. It is noted that the Aral crisis is the result of an ill-considered policy towards the environment and the use of natural resources. The aggravation of the ecological situation has a direct and indirect negative impact on the living conditions of 35 million inhabitants of the Aral Sea area. It emphasizes that regional bodies have been created and plans for concrete actions have been developed. Coordination of the cooperation is carried out by the World Bank, UNDP and UNEP.

The Heads of State of Central Asia reaffirmed their commitment to full cooperation on the regional level, on a basis of mutual respect, good-neighborliness and determination to work further in the name of overcoming the consequences of the ecological crisis in the Aral Sea area and its impact on the environment and human beings.

These commitments are contained in four important sections: adherence to the principles of sustainable development; accession to international conventions and agreements; adherence to the principles of human development; promotion of the development of regional institutions [3].

In 1997, the permanent Executive Committee of the International Fund for Saving the Aral Sea was established, a branch of which continues to work

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fruitfully to this day. In 2000-2001, scientific work was carried out on the topic of "The Organization of Plasma Production in Nukus" costing USD 3 million. In 2001, the Center for Dental Treatment and Prosthetics in Nukus was built, for which USD 350,000 was allocated.

There was an opportunity to attract foreign investment for the exploration of mineral deposits in the Ustyurt Plateau, in the Aral Sea and their development for the benefit of the people in the area.

Together with the Russian company Lukoil and the joint-stock company Gazprom, Petronas Charigali (Malaysia), the South Korean companies KNOC, KOGAS, DAEWOO conduct jointly work on finding of the gas, oil and restoration of the functioning oil wells.

As a result of the modernization of the processing enterprises of the region on the basis of high technologies, the production of the new type's products that fully comply with international standards is being widely established. In particular, during 1991-2010, the production of gas and gas condensate, glassware, sunflower oil, soda ash, vermiculite concentrate, talc magnetite and glycerin was mastered. The joint ventures Turtkul Textile, Nukus Textile, Asia Silk, Orient Technology and Lanextract put in order the production of cotton, cocoons, leather, and licorice after modernization and production of export-oriented products [4].

Through the commissioning of the joint production of Lanextrat in the Chimbay region, the total volume of exports in 2010 increased by USD 2.4 million. It is expected that this year the figure will exceed USD 4 million. In the Nukus textile tried enterprise the production of 25 kinds of children's knitted clothes. For the first year the enterprise produced goods over 750 million sums (Uzbek currency) and exported USD 256,000 worth of products.

Under the leadership of the first President of the country, the active development of chemical industry began in the Aral Sea area. The commissioning of the Kungrad Soda Plant helped to strengthen the economic potential of the Republic of Karakalpakstan, increase the volume of exports and employ thousands of people. The enterprise, with a production capacity of 100,000 tons of soda ash per year, is already operating at full capacity. Last year, the plant produced 903,000 tons of product, most of which was exported. This year, on the basis of the enterprise, joint ventures for the production of mineral powders, silicate bricks and detergents are planned to be put into operation, creating extra jobs.

As a result of economic growth, the region is financially stable. In 2001 year the volume of subsidy consisted of 62 presents. As of January 1, 2007, the budget of Karakalpakstan as a whole is no longer

subsidized [5]. This has been achieved due to a steady increase in the volume of industrial products and the development of production infrastructure.

Year on year, foreign economic relations are developing. Whereas in 2001 there were 28 enterprises in the region receiving foreign investment, now there are 48. The volume of production of these enterprises has doubled; in 2010, it amounted to 58.2 billion soums (Uzbek currency).

One result of such cooperation is the joint Uzbek-Cyprian venture Orient Technologies for the production of leather based on modern technologies, which began operating in Nukus. At the enterprise, where 300,000 cattle skins are processed annually and 4,800 tons of products are produced, production of goods worth USD 500,000 has been established in a short period of time. This is exported to Russia, Turkey and Italy. In the long term, it is planned to process goatskin and sheepskin and create an additional almost one hundred new jobs.

The Ustyurt gas and chemical complex is one of the world's largest oil and gas projects. In 2012, the international edition of Project Finance International recognized the project and the financial agreement for it as the best in the petrochemical and gas chemical sector. This project was also awarded the international awards "The best deal of 2012" by the publications "Trade Finance Magazine" and "Global Trade Review."

On March 13, 2014, another authoritative international publication, "Infrastructure Journal" gave a prestigious purse "Global Trade 2014 in Oil and Gas spheres in 2014 year".

This project is financed by direct investment from the founders of the joint venture – the South Korean companies Kogas, Lotte Chemical, STX Energy and the National Holding Company Uzbekneftegaz of USD 1.4 billion, as well as credit resources to a total of more than USD 2.5 billion.

Such authoritative financial institutions as the Asian Development Bank, Korea Development Bank, Korea Finance Corporation (Republic of Korea), China Development Bank (China), ING (Netherlands), Hermes, KFW, Bayern LB, Siemens Bank (Germany), Credit Suisse (Switzerland), EKN, Nordea and SEC (Sweden) as well as export-import agencies of South Korea, Germany and Sweden provided coverage for participating banks in the project, which gives an indication of its prospects and reliability.

Thus, it should be pointed out that the great role belong to the international organizations, especially UNDP, European Union, UNEP, World Bank and others contribute a great effort on Aral Sea crisis easing. Particularly thanks to them, there is improving social and ecological infrastructure.

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RELEVANCE OF TRANSPORT RESEARCH IN THE SPECIFICITY OF ITS SOCIAL STATUS

Abstract: *The theoretical, philosophical and scientific novelty of the article is due to the consideration of social transport not as a unique state of the reality of transport, but as a concrete reality formed in the process of the development of a universal phenomenon in the structure of the movement of matter. Social transport has a conditional beginning of history and, theoretically, an end is not excluded. Development in nature also combines progressive changes with cataclysms. The improvement of social transport and its perspective are conditioned by the natural status - the integration into the natural system of relations, part of which is a person with a social form of life. The future of mankind, as well as the past and the present, is naturally connected with the history of the movement of nature, therefore, the main path to the future is paved and equipped by people who have realized the universality of transport. Public transport is a part of the world transport, formed together with the social form of the movement of matter, ensuring the progressiveness of its changes. The structure of the essence of the content of the concept of "social transport" is similar to the structure of the concept that reflects the natural form of transport, it is determined by the presence of three key elements: means, ways and forces, which are complemented by management. The worldview format for studying transport as a tool for the movement of matter made it possible to reveal its dual function, which was absent in all studies of the past. Transport serves not only, and what is especially significant, not so much a means of movement of material phenomena in space - time, as an instrument for the implementation of regular transformations of certain objects. If the position of the constituent elements changes, their definite set in a specific space are preconditions for maintaining the state of an object, then the creation by means of transport of a set of sufficient conditions for the stability of its changes, we have the right to qualify as the main function of its participation in the process of objective reproduction. The revealed functions are shown on the example of the work of social transport.*

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The verbal change in the results obtained in the study is illustrated in diagrams that give the content a greater clarity and show both strong and not fully reasoned conclusions of the versions, suggesting the continuation of the discourse. The analysis of the status of transport and its "social" form of manifestation was carried out by a combination of a philosophical and scientific format. The first provided the worldview and methodological aspects of assessing the phenomenon, the second - opened the door to practical assessments in a wide social range from socio-economic, political and socio-cultural to environmental. Special attention is paid to the status of transport science, the reasons for the inconsistency of its assessments are explained.

Key words: transport, social transport, movement, functions, social significance, personal value, transport science, transport policy.

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Introduction

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The study of the social relevance of a phenomenon about which a stable idea has already taken shape in the public consciousness, as a rule, is preceded by a "starting situation". When the main problems caused by the need to cognize the subject seem to have been removed, the sought-after phenomenon is defined, in order to initiate a renewed interest in what is accepted as satisfying knowledge by the professional community and is "agreed" at the level of the element of "common sense", a strong stimulus to intellectual reflection is needed, or a practical request for a global format.

Realizing the responsibility of their position, the authors of the analysis of social transport built on top of their developed concept of transport as a universal tool of material movement, combining in its actions changes in traffic conditions in a broad sense - to be a means of changing the position of a phenomenon in space - time and to be a means of changing the substrate of movement. The concept is built on the basis of concretizing the dialectical method of research in a systematic approach to the subject. This article is a continuation of previous research.

The understanding of transport was formed, it would seem, finally, under the influence of the modernization of society as a consequence of the Industrial Revolution. The scientific discovery of the possibility of producing the amount of energy "according to needs" and the creation of technical means capable of consuming it in the interests of man became a turning point in the historical development of both the personality and the social scale of its activity. Steam locomotives and steamers first carried dozens of people and accompanying cargo, and after that, social progress, becoming over-technical and over-production tools. A new history of public transport began with steam locomotives and steamers - the era of the mass form of social transport began.

Before the Industrial Revolution, public transport provided political advantages to many states

in Europe and Asia, but the very functioning of vehicles was dependent on natural factors. Hence the instability of political victories. Animals and the wind have long served people, however, like the seas and rivers, they were distinguished by their predestination, which forced a person to act in conditions of limited freedom.

The mass production caused by the industrial revolution presupposed an equally massive nature of the provision of production with labor, raw materials, changes in consumption and the intensification of relations across the entire industrial spectrum; construction, mining and metallurgical industries developed. Seasonal fairs have been replaced by a stable and year-round market. Mass character has become a brand in almost all expressions of society and a trend of social progress.

The theoretical understanding of social progress began to gently shift towards a society of mass consumption, coupled with the quality of life. After the unhurried course of Medieval history, social life, which had come into vigorous movement, inevitably closed itself on the development of transport. Social transport has pushed national borders and has successfully earned itself as an instrument of international relations. If in the past very few could discover the world for themselves, then already in modern times the world opened in fact for the majority of the population of developed countries.

In order for social transport to function in accordance with the needs of social development, it itself had to be diverse and highly organized, meet all the basic requirements: to be safe, accessible, varied, comfortable; be distinguished by high service, deliver goods on demand. Freedom is not only a condition of human life, it is also a factor in the operation of transport. The improvement of social transport, as well as social progress in general, requires freedom of action, and the freedom of action of transport is a significant criterion of its quality.

The first step towards freedom was taken by social transport when the technical means were completed with technically produced energy. Thanks

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to this, social transport has acquired an almost complete technical form. There was a lack of technically organized traffic control of vehicles that would guarantee the quality of their work. It appeared during the scientific and technological revolution in the middle of the twentieth century.

Main part

By the second half of the last century, the basic prerequisites for the emergence of transport science had developed: a detailed subject, history of problems, methodological experience, need for society. The relevance of transport science increased even more when it was discovered that social progress is overly reliant on the development of natural factors. Social egoism risks not only harming the natural movement, it is also dangerous to humanity itself, because, along with the growing signs of extreme stress in the natural environment, dangerous contradictions within the social movement itself are intensifying.

The new scale of problems of social development has also changed the format of understanding the problems of improving social transport that have become traditional. Previously, the solution of many of them did not go beyond the capabilities of structural mechanics, technical sciences, consumer and commercial calculations in economic analysis according to the "here and now" formula.

The new reality of the relationship between social and natural development has revealed the inconsistency of the previous limits limiting human activity, makes it necessary to significantly revise the previously established practice of transport management. From the dominance in transport policy of a tactical approach oriented towards the "here and now" adjusted for the nearest perspective, politicians, management, financiers have to reorient themselves to the principles of strategic analysis, the basis of which is not Aristotelian logic of consistency of thinking, but Hegelian, taking into account the methodological significance of contradictions thinking and opening the intellectual mechanism of the possibility of their resolution.

Strategic planning should be ahead of the conceptual design. The very same strategic planning requires systemic reflection. Not so long ago, by the standards of history, railway designers feared that the combination of a smooth rail and a polished steam locomotive wheel, which should pull a loaded train, would turn out to be an insurmountable obstacle to movement and went for an answer to mechanics and mathematicians.

Academic scientists - specialists far from transport affairs had to solve transport problems unusual for them. And they coped with their tasks perfectly, it was worse when it was not scientists who got down to business.

At the beginning of the active construction of railways in Russia, the construction of bridge crossings was consulted by American specialists. The own school of bridge builders in Russia was only being formed by the efforts of D.I. Zhuravsky and S.V. Kerbedza.

US engineers used a proven "scientific" design. They adjusted and strengthened the implemented structures to the conditions of new construction, without attaching the necessary importance to the specifics of movement on a steam locomotive traction. The trains looked smoothly moving only from the side and from afar. In reality, their movement was fractional and was determined by the power of the locomotive, the state of the moving part and tracks. A century and a half ago, steam locomotives were not yet powerful enough, their movement was determined by the amount of steam generated, which, in turn, depended on the skill of the stoker and the quality of the coal. Bridges not adapted to the specifics of railway traffic naturally collapsed. In the United States itself, in just two decades, one after another, large bridges collapsed near Philadelphia (1811) and in Brighton (1833), moreover, the rebuilt Philadelphia lasted five years and collapsed again. The fate of the bridge in Brighton was the same. A bridge in Scotland has collapsed twice, the first time during construction, and the second during operation, when a train was moving across it. There were many casualties. Around the same time, in England, he almost fell victim to the collapse of a bridge under the train of Charles Dickens. The great writer was a little lucky, his carriage hung on a support, which saved C. Dickens and his fellow travelers. Bridges not adapted to the movement of trains also fell in the continental part of Europe - in Germany, in France. The priests refused to consecrate the bridges, passengers were dropped off, and they crossed the bridges individually. The problem was the design approach. Its solution was found by D.I. Zhuravsky. The fate of the bridge in Brighton was the same. A bridge in Scotland has collapsed twice, the first time during construction, and the second during operation, when a train was moving across it. There were many casualties. Around the same time, in England, he almost fell victim to the collapse of a bridge under the train of Charles Dickens. The great writer was a little lucky, his carriage hung on a support, which saved C. Dickens and his fellow travelers. Bridges not adapted to the movement of trains also fell in the continental part of Europe - in Germany, in France. The priests refused to consecrate the bridges, passengers were dropped off, and they crossed the bridges individually. The problem was the design approach. Its solution was found by D.I. Zhuravsky. The fate of the bridge in Brighton was the same. A bridge in Scotland has collapsed twice, the first time during construction, and the second during operation, when a train was moving across it. There were many casualties. Around the

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An interesting technique of scientific explanation developed by D.I. Zhuravsky during a discussion with the American consultant Whistler, who objected to S.V. Kerbedz and D.I. Zhuravsky to use metal lattice girders with various sections in the design of railway bridges. A Russian specialist built a working model of a bridge truss by replacing the bolts with wire of the same thickness. Having loaded the model, Zhuravsky began to lead the violin bow along the wire, and it became clear to the participants in the dispute in terms of the pitch of the sound that the domestic engineers were right in their calculations. We deliberately lingered on rethinking the experience of building bridge crossings along the route of railway traffic in order to draw attention to the emerging rigid dependence of practical affairs on theoretical support.

The growing need for transport science is one of the modern laws of transport construction in its broadest sense, that is, interpretation as systemically organized relations of all components: the design of vehicles and technologies; improvement of traffic routes, including the design of space routes; development of infrastructure to ensure the calculated operation of vehicles; determination of safety

measures for humans, natural environment and social development; management techniques.

Unfortunately, the dominance in the thinking of most political regulators of the idea of commercialization as a methodological basis distorts the systemic understanding of planning. The economic factor cannot be systemically important when it comes to strategies for managing social progress. The essence of the error lies in the absolutization of the significance of the economic factor; methodological inconsistency - in the homogeneity of thinking, incompatible with the system approach, which is a feature of the methodology of the post-non-classical stage in the history of science.

Integration in scientific knowledge has become a condition for the development of sciences. The construction of transport science is really an urgent task, but it should be a modern science, integrating scientific theory in a wide range of interaction of technical sciences; political science; sociology; ecology; philosophical anthropology; political economy; geography. In our opinion, the development of transport science is hindered by the absence of a special engineering science. What is today called engineering remains the body of knowledge that distinguished science in classical times for it. They look like a combination of sciences to solve the problems of engineering creativity. Engineering science will take shape, a modern "transport science" will appear as a separate science, which, over time, may assimilate "engineering" as well.

K.E. At first Tsiolkovsky was engaged in general theoretical and applied research, often "discovering" what was already known, but as soon as he grasped the sought-after secrets of the sciences, gained research experience, he switched to research and design of modern vehicles. He was very successful in the development of space transport topics, after which he entered the open space of worldview problems. His philosophical works became a reality precisely as a continuation and development of transport research.

The dependence of ideological reflection on the understanding of the special mission of transport for humanity is clearly visible. Example with K.E. Tsiolkovsky is indicative, but it must be evaluated in the context of the entire cultural history of a person. Topics: transport - the power of the gods, transport - a saving mission for a person and a way to cleanse him from bad sins - go into mythology and religion.

The main conditions for the reality of a particular science are considered to be the definition of the subject and the development of a methodology for its research, which is directly dependent on the specificity of the subject under study.

According to the logic of the process, the subject of transport science should be transport in the concreteness of a general form, reflecting its qualitative feature. This requirement is defined by

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philosophy by science as the starting point of knowledge. Development follows. The definition of the subject is loaded with the concreteness of features, the systemic position. G. Hegel two hundred years ago named the signs of a concept, warning that their absence leaves knowledge in the form of a general idea. The general idea is also included in a specific area of scientific knowledge, but, as a representation, it belongs to the level of "direct knowledge" and is not capable of being a support for building a scientific system of knowledge, especially the formation of a new science.

The founder of the modern interpretation of the dialectical methodology of cognition revealed the epistemological reason for the erroneous reduction of a concept to a general idea. The substitution - spontaneous or conscious - of a concept by a general idea is a consequence of the absolutization of rational logic: "In rational logic, Hegel wrote, a concept is usually considered only as a simple form of thinking and, more precisely, as a general idea."

Dialectical reflection, called by Hegel "speculative thinking", characterizes the activity of the mind as a contradictory process, not just allowing contradictions of thoughts, but considering the unity of opposites in thinking as a condition for the ascent to true knowledge and, which is especially important for understanding the route of movement of the concept itself: "Movement concepts are development, through which only that which is already in itself is posited."

The concept, according to Hegel, is distinguished by two special features. Firstly, it must be a universal characteristic for a given set of phenomena, and secondly, it must have, thanks to universality, a reserve of development. It's about development, not growth. These features made the concept a specific form of scientific knowledge, linking scientific thinking with philosophy, which is responsible for the study of the laws of knowledge.

In the specifics of the concept, two factors regulating cognition were combined: the need to immerse in the essence of objective reality - this is the only way to make the knowledge enshrined in the concept universal, and to get the prospect of improving knowledge by reflecting new horizons of the essence of the subject and their systemic position. It is no coincidence that the very essence of the dialectical method is defined as the achievement of the most profound and comprehensive consideration of the development and universal connection of the phenomena of the world. The specifics of the concept, and not the professional ambitions of philosophers, force a scientist to turn to the results of a philosophical study of knowledge.

The history of the formation of the postclassical (non-classical) stage of the evolution of science has clearly demonstrated the danger for scientific knowledge itself to become a platform for solving

"purely" epistemological and methodological problems, in particular, the definition of truth, the nature of the subject of scientific knowledge, the ratio of mass and energy, a qualitative assessment of the movement of scientific knowledge, - analysis of experience, etc. Taking the opportunity on a specific example of a delusion caused by a violation of the requirements of logic to the conceptual form of cognition, we want to focus on the specifics of the relationship between philosophy and science. Both ways of cognition are independent, thanks to the originality of the subject and tasks, but they are objectively interdependent. Since, ultimately, they reflect the knowledge of a common subject - an objectively existing and regularly changing material reality.

The quality of defining the subject of science is a key position. The concepts expressing this quality, like any scientific or philosophical concepts, are not dead, they develop, starting from their abstract content, to the concrete knowledge of what is determined by them. The development path of the concept is not easy. The content of the concept is concretized by means of clarification and increment of definitions. The ultimate goal is to give the content of the concept of universality, by clarifying the systemic position of the subject. Each next step on the way to a qualitative definition of the subject of science is significant in itself, as the development of knowledge, and in the general context. The quality of the definition of the subject of science is an indicator of its existing status.

What is called transport science is not a phantom, but it is not a reality that allows transport science to be included in the appropriate classifier. In its present form, it can only satisfy the professional ambitions of those researchers, whose status is directly related to the transport branch of social production, and the transport bureaucracy.

There are no unitary publications on social transport. The same interesting historical sketches, which recreate the history of certain types of public transport, unfortunately, do not even touch on the logic of the process. Historical analysis in the absence of logical support is far from not only the real essence of transport progress, but also does not lay the prerequisites for understanding the further development of knowledge of the subject. Development is that resolution of contradictions. Not narrowly - technical and technological, which modern transport science is really rich in - contradictions of development in the system of transport relations that are real, significantly different from the one around which the current definition is built, which did not go beyond the generalizing concept.

The reasons for the limited definition of the specificity of the content and scope of the concept are different. The most common causes of epistemological nature, for example, when cognition

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is stopped not at the main essential level of the phenomenon under study. The immersion of knowledge does not reach the required depth. The knowledge gained does not reveal the leading features of the content of the concept, which make the concept universally, nevertheless, they are passed off as knowledge of the quality of the object. The concept is replaced by the idea of a certain level of reality of the object.

This delusion can be a consequence of the historical immaturity of knowledge itself, that is, it is due to objective circumstances. The famous American historian of science A. Azimov described the emergence of the concept of "electricity". The initial understanding of electricity - in fact, the concept of electricity, formalized in a specific term, arose during the reign of the British Queen Elizabeth I. Queen's doctor W. Hilbert, who studied the magnetic force of some objects, in particular, amber, suggested calling it electricity. Electricity was "tied" to a real object and was considered a stationary phenomenon of natural origin. Many years passed before researchers became convinced of the limitations of the idea of electricity stationarity. What took an important scientific discovery made by the Irish physicist J. J. Stoney. The scientist developed the concept of "electron", defining it as the amount of electricity in one particle of the electric field. Subsequently, the term "electron" was extended to the very elementary particle of the electric field, and the electric field opened the way to understanding the definition of electricity as motion. The modern understanding of electricity has gone the way of immersion in the essence of the phenomenon under study, which required consistently using the knowledge of local potential - representations. Only after passing the main part of the path to true knowledge, it became possible to leave the idea of electricity in the past, rising to the top of the conceptual form of scientific knowledge. The concept of "electricity" reflected the universality of the attributes of the subject. Local restrictions were removed during the ascent. The content of the concept has acquired both systemic features:

Less common are examples of logical inconsistency, a kind of "childhood mistakes", when the content of the definition requires a different name, but they do not want to react to it. A particular variant in determining the content of knowledge is absolutized and presented as universal knowledge. This is exactly what happened with the definition of transport, entrenched in professional thinking.

In 2004. Publishing House "Book World" LLC translated and published a 3-volume "encyclopedia of technology", originally published in Spain by Parramon Ediciones Publishing House, SA Barcelona, Espana World right reserved. The authors of the section "Road transport" have defined transport as "a special branch of material production, carrying out the transportation of people and goods."

The definition appears to have been heavily influenced by both public opinion and what the authors might find from their predecessor colleagues. It not only combines scientific understanding with knowledge in the form of an opinion, but within itself logically looks raw. To this we add that practically most of the definitions of transport in publications of other states, transnational sources are quite comparable with the opinion of Spanish specialists.

Standing apart is the point of view of what transport is especially, of British authors called "Britannik (oh)". They are convinced of the biochemical nature of transport. British experts call transport transport, which ensures the functioning of a living cell. There is no fundamental contradiction between what transport is in the thinking of Spanish researchers and scientists from the shores of "Foggy Albion". Both approaches interpret transport as a local implementation of the movement of goods in space - time, without attaching importance, or simply not noticing that they determine not transport, but its particular manifestation. In the first case, public (social, - more precisely) transport is determined, in the second, its biochemical expression.

From a logical point of view, in both cases an idea of transport is given, which, by the way, is not perfectly executed. The authors of such serious sources of scientific enlightenment of the mass consumer of scientific products and a significant number of non-core specialists should be more correct in agreeing the name of the phenomenon being determined and the text of the definition. The idea of creating a language exclusive to science for the representatives of the "Vienna Circle" is not relevant to us. They gave birth to the idea and quietly buried it themselves, but the logical requirement for a scientific text to be strictly consistent, to name the subject in accordance with how you define it, is a sign not only of the truth of the path to the goal, but also of the correctness of actions.

We built our understanding of transport, first of all, on the basis of the implementation of consistency in the advancement of existing knowledge. "Cargo" is a concept dependent on a systemic understanding. For a locomotive and an aircraft, the calculation of "cargo" begins with the fact that they are themselves. And this is a very important indicator. Designers strive to minimize the weight of the vehicle, of course, while maintaining its functionality. Everyone who designs public transport does not like to carry air, realizing, however, that this burden is a "tax" imposed by nature. You can't fool nature.

The "zero" state of transport - that is where its history began and begins - "two in one". Transport and cargo act as parties inextricably linked by physical laws. The concept of "cargo" is conditionally separable from the vehicle due to the general physical nature. The derivative concept of "payload" emphasizes the absolute fact that transport is always

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associated with cargo, one part of which is determined by nature, the other - by the cunning of designers, their ability to "deceive nature." The Irish say: "The body is the baggage that you carry your whole life. The heavier it is, the shorter the journey through life. "

The ancient Greeks believed that the task of those who come up with various technical inventions was to "deceive nature." However, some of our ancestors, already in ancient times, were convinced: nature cannot be deceived, but something can be done with the maximum benefit for humans. Engineers were given places in the shadow of warriors, they were not heroes in the Antique era.

The definition of transport as a carrier of goods is conditionally permissible. It shows one of its basic functions - to move cargo in space - time. At the same time, one must clearly realize that the transportation of goods is not the only task of transport. Moreover, this function is not the most important one. It is obvious due to its external immediacy.

British experts have shown well that the transfer function of transport is relatively finite, and its purpose is oversimplified when the definition of the role of transport ends in the carriage of goods.

Already on the horizon of cellular metabolism, it becomes clear: transport is not so much carrying a certain load, but rather, by moving the load, forms enough - the necessary conditions for the functioning of the cell, including the built-in process of its reproduction.

Transport is undoubtedly a carrier - an instrument of movement in space - time, but it is no less a builder. With the help of transport, nature, man and society create the conditions for their development. In the definition of transport as a transit country, its final purpose is absent - to form, due to the movement in space-time of specific cargoes, the conditions for development.

In nature, transport promotes evolution;
in human life - helps to build favorable conditions for development;

in society - serves as a locomotive of social progress, reduces the time for social subjects to achieve the result, develops the social space of the individual's life, ensures his right to freedom of action in space.

The existing definition of transport is one-sided, reflects its external functioning, in a word, it does not correspond to the level of the content of a scientific concept. It does not reveal universality, systemic significance, and does not show the reserves for the development of understanding.

It will not be possible to build science on general concepts. It is necessary to overcome the prevailing empiricism and present the definition of transport to be symmetrical to its objectively determined functions. The process of overcoming the limitations of cognitive empiricism is contradictory.

The empirical approach in scientific knowledge is still necessary, but the conditions for its application have changed due to the fact that scientific knowledge, assimilating the achievements of previous historical stages, has castled the empirical part of the methodology with the rational one. If in the days of Leonardo da Vinci and G. Galileo everything in science, as a rule, began with experience, today the empirical cognition itself is made dependent on theoretical constructions. By the method of "trial and error" in our time they work "under the supervision" of the developed versions, that is, they do not act blindly. K. Popper wrote back in the 1960s: "We do not suddenly bump into our perceptions and do not float passively in their stream. We are active - we 'make' our experience. "

The power of experienced knowledge is concentrated in the effects of immediacy and the ability to verify the result. Reflection of sensory experience forms in thinking the power of conviction in the correctness of the knowledge obtained, but this is the conviction of empirical thinking, reflecting the particular, in the first approximation to it. Outside of the theoretical context, systematically built, such a belief can also be a private representation. Only one thing can be said to justify it: it is not useless. Delusion often contributes to the transfer of the "arrow" of knowledge to the path of the right direction of movement towards true knowledge.

The history of the Earth and terrestrial transport began with the natural originality of the planet. The reserves for the development of the Earth's potential turned out to be so capacious that the Earth finally appeared in its modern, qualitatively expanded form. Nature is perfect in all its stable manifestations, its designs have been tested and polished by billions of years of space tests, their strength and reliability have been proven, provided by the regularity of motion. Including due to the systemic status of the Earth in Space.

Natural development prompted the very systemic understanding of perfection. "Perfection" is the best correspondence of a phenomenon to the conditions of a changing nature. Conformity of form to content is one of the requirements for achieving excellence.

Is it possible to create an equally perfect person, socially organized, reasonably thinking? Yes, if he develops his rationality into rationality, using the potential of culture. Culture is not only opposed to "uncultured" organization. Nature as a product of the peculiarity of human reality, it genetically links the history of man with the natural history of Nature.

Culture orients a person to systemic knowledge and delicacy - culture - activities in the natural basis of the human world. There would be no vector of production in the movement of Nature that we define as perfect forms of manifestation of systemic interaction, there would be no cultural dependence of

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Man. Anyone who wants to understand phenomena of a universal scale and a diverse way of expression should start looking for a solution to the problem by analyzing what is happening in Nature.

Taking the concept of "transport", "movement" as the basis for the content, which actually shows one of the manifestations of movement, it is necessary to keep in the "mind" the systemic structure of the concept of "movement". Then there will be no contradiction between the sought-for concept of "transport" and what is proposed as its content. On the contrary, it will become clear that the transport industry is responsible for a technical form of transport that can only be thought of in the context of the overall concept of movement.

Bread is baked by people, nature does not produce it, it only offers material and suggests a way of making it. Transport is not bread, it should not be defined by the branch of material production. Transport is a natural phenomenon that professionally trained people are trying to monopolize, to make their exclusive creation. What a person does is not transport, but his "humanized" reality, which is derived from the original natural reality.

Such transport can be called in different ways, reflecting belonging to the form of movement of matter, demonstrating the total participation of people in the production of transport, the specifics of the material structure. All possible variants of the name: "social", "social", "technical", we add "human" to them, are acceptable with the most important restriction - we define not "transport", but its concretely - the historical product of development associated with the social form of material movement.

It looks professionally incorrect in popular science literature, replicating the substitution of the concept of "transport": dictionaries, encyclopedias, the interpretation of the linguistic history of the term "transport". It is used at the wrong address. The term "transport" - the Latin basis "transport tare", was originally collective, was a verbal expression of the general idea of a person's movement of cargo into space using various methods. In the epistemological aspect, this is an example of the birth of a general idea, which was loaded with the concreteness of how this was possible.

As a general idea, of course, it was not universal and did not pretend to cover everything in reality. But there were prerequisites for such an action, the development, apparently, shifted away from the universality of "displacement" due to the enthusiasm for adapting displacement to the practical life of a person. "Transport" was "humanized" in relation to a mature form of social development, and it was considered irrelevant to return to the beginnings of human life and conduct research on transport in the context of its universality. Even going out into space has left transport a significant phenomenon within the limits of private use. Political history did not change

the situation, which clearly showed how, with the help of transport, states became the main ones on the political map of the world, empires were created.

In modern times, in a practical aspect, the restoration of the definition of the content of the concept of "transport" adequate to the actual status may not be as relevant as the solution of many problems of social transport. Nevertheless, cognition has its own degree of freedom. The Romans believed that "the law is the law", it is necessary to fulfill it. Developing the logic of the reasoning of the Romans, let's say: the rationality of a person obliges him to seek the truth always. There should be no alternative to this conclusion. The practical part of life does not reveal its meaning; it is intended to serve as the basis of human activity.

Following the logic of the objective course of development from nature to man, from man to nature, one must recognize the need for a double in alienation according to the law of denial of negation. Alienating nature in order to obtain maximum freedom for social creativity without regard to the reaction of nature, man could not help but come into conflict with reason with the natural movement of nature. It is possible to overcome the contradiction that has arisen, but it is difficult. Reserves of rationality are significant enough to give rationality a vector of prudence and return to nature by alienating social egoism.

Unfortunately, the implementation of this program is impeded by two extremes of thinking: the one-sidedness of rationalism, the absolute consistency of reflection, on the one hand, and the fascination with the empirical advantages of thinking, on the other. "Speculative" (according to Hegel) and "dialectical" (according to Marx) methodology did not become common property because of its complexity and non-obviousness. The tendency towards simplification of thinking, standardization, arrangement of everything "on the shelves" leads actions away from meaningful analysis to formal ones. The dialectics of nature is not revealed, the advantages of natural development are not involved in the understanding of human activity itself.

Instead of learning from nature, looking for the roots of what is happening in society there, people oppose society to nature. Social reality is qualitatively unique, it develops according to its own laws, only its development remains within nature and, as a particular, belongs to the general.

The path to an adequate definition of social transport begins with an analysis of its natural reality. "Social transport" is a mechanism prepared by natural history, inherited and specifically transformed by human activity. Even in a simplified sense as a carrier, transport can be easily found everywhere. The Big Bang, which preceded the emergence of the Universe, began with transport. The energy of the explosion was formed due to the compaction of the "primary matter", that is, through the "development" of the inner space

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of our "black hole" or something similar with the help of transport. It is not known what this transport was, but the shrinking process took place according to the idea of the presence of transport. Something pressed and forced matter to move within the existing space.

When the "explosion" happened, particles were formed, the energy of which did not allow them to have mass in its existing understanding. The particles scattered in space, carrying charges. The charges were their load before they passed the Higgs fields and gained mass. The construction of matter began, it continued already in the form of construction of the matter of planets, planetary systems. The continuation of these changes was the history of the planets themselves. And in all the described time, all changes in space and time took place in motion - displacement, which was possible only thanks to transport.

The genesis of the Universe also reveals to us the second function of transport, which manifested itself initially. Transport moved, transported is not indifferent to the result. From the very beginning he was "charged" for construction by changing the position of the material in space. Transport has always "worked" as a builder, at least, of the conditions for creating new realities.

Transport has shown its creative function in detail as a tool necessary for the implementation of physiological transformations that ensure the reproduction of a living cell through the transport of molecules and particles through cell membranes, whose task is to control the selection of the material entering the cells, the cell selectively receives the necessary and sufficient conditions for functioning. Membranes interact with transport, allowing individual small molecules and fat-soluble molecules delivered by the transport to pass through. Transport is specialized, which confirms the conclusion about its design function, but its specialization in conditions of systemic subordination does not allow it to deeply differentiate up to the absolutization of its special tasks in the form of a separate mode of transport. Transport is synthesized at the level of the general cellular structure. Further, the forces of the cell itself come into play, extracting with the help of various technologies from the materials delivered by the transport - a kind of semi-finished products - that the cell must assimilate in the process of exchange. Participation in the provision of cellular metabolism is a condition for the reproduction of a normally functioning cell; it includes transport into the systemic reality of the organism. At the cell level, transport demonstrates its flexibility and extraordinary potential for interaction with an object. includes transport into the systemic reality of the organism. At the cell level, transport demonstrates its flexibility and extraordinary potential for interaction with an object. includes transport into the systemic reality of the organism. At the cell level, transport demonstrates its

flexibility and extraordinary potential for interaction with an object.

The transport of substances vital for the cell occurs in a variety of ways, various transmission systems operate. Biochemists distinguish "passive transport" and several forms of "active transport". "Passive transport" moves ions through membrane "holes" unchanged, ion diffusion occurs. But not all ion channels provide passage without prior conversion. Some of these involve chemical treatment as a transportation option. The chemical attack facilitates the passage of ions during transport. The cellular transport system includes "pumps" that force solutes to pass through membrane barriers. In "active transport" two forms are distinguished: "primary active transport" and "secondary active transport". The first of them directly uses the energy generated during cellular metabolism. The second is built into the process of molecular interaction and enjoys emerging privileges. There are two types of it: "coupled transport" and "oncoming coupled". Such a differentiated organization of cell transport in itself serves as evidence that transport is not a simple means of movement, but a deeply specialized tool for overcoming various obstacles in order to create the necessary - sufficient conditions for the functioning of a particular reality, one of the builders of which it serves.

The simplification of the action in the characterization of the transport must be a unique assumption. It is applicable to transport at the level of elementary particles, and then, if their motion is considered outside the system. A particle is a vehicle for charging. When the "free" moving particles are captured by the system, then they manifest the main function of Transport - to participate in the formation of a stable reality.

We realize that after the centuries-old concepts of transport as a simple carrier of cargo, from the definition of which, moreover, the cargo of the vehicle itself is excluded, in order to emphasize that cargo is a separate concept from transport, it is difficult to reorganize into the construction function of transport. But this is the real fate of transport and it is universal. Transport works as a carrier to serve as a builder.

There has always been a connection between these two functions. It developed by improving transport. The history of transport looks like the history of the interaction of its moving and constructive action. The river seems to the observer just a transport route and he can use it in this capacity. The forest on the river bank and the animals living in it "perceives" the river in a completely different way. For them, she is the builder of the conditions of a normal life at home.

Transport, as a universal tool for the movement of matter, occupies one of 12 positions in the characteristics of movement.

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Initially, the very universal structure of transport was formed (Figure 1).



Figure 1. The structure of the content of the concept of transport.

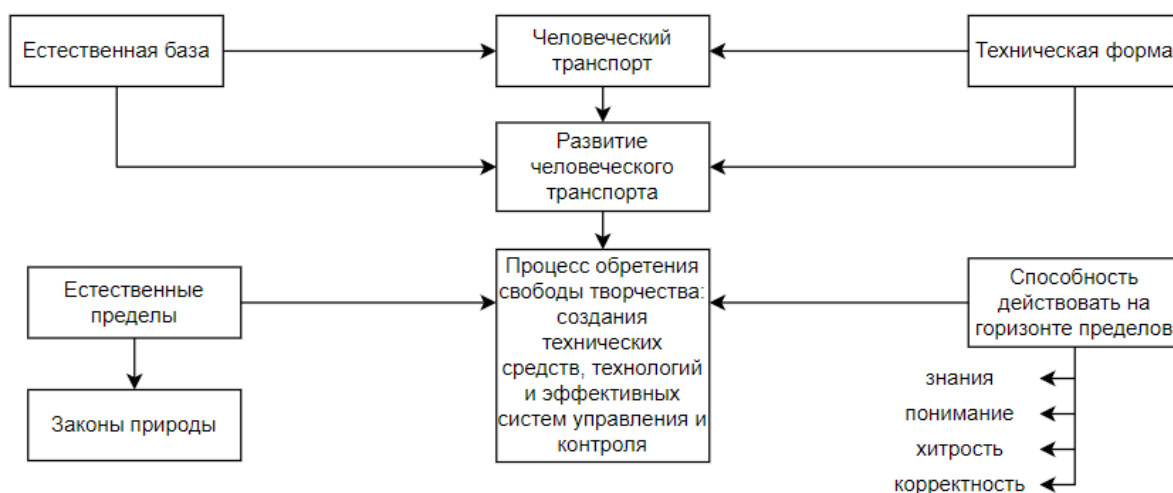


Figure 2. System characteristics of the content of the concept of "social" transport.

Social transport is a complex synthesis of a natural (natural) component and its transformation by man - a technical component. Taking into account the special role in the creation of social transport - specific for the social form of movement of matter - man, it can quite correctly be called "human" (Figure 2).

The progress of "social", "human", "technical", "public" transport can be presented as a way to increase the degree of man's mastery of the freedom of technical creativity. Man has already passed a significant part of the path to freedom of creative creation of transport. It seems to us that the "roadmap" for the progress of "human" transport is as follows:

- alienation of transport from the primary connection with man ("dehumanization" of transport);
- achieving dominance in transport construction of technical means and technologies;
- combining the technical component of vehicles with technically received energy;
- transport automation, including management;
- ensuring system security for all subjects of transport functioning: man, society, natural environment;
- creation of universal vehicles capable of operating in qualitatively different environments;

- development of space transport capable of trans-space movement, creation of intermediate space bases.

As transport progress increases, the importance of the second, final function of transport, its direct participation in the construction of conditions for social creativity, increases. The prevailing understanding of transport did not incorporate its creative purpose on a real scale, limiting itself to describing participation only in the movement of the spatial position of cargo.

The transition from the concept of transport, identifying it with a social form and sequestering the functions of transport to the implementation of the movement of goods and people in space - the time of social development, to the understanding of transport as a universal mechanism for the movement of matter in all forms, creating the necessary conditions for changes through the organization of spatio-temporal interactions within a specific form and between forms will require a methodological reorientation of thinking from a description within the limits of formal - logical consistency to a dialectical analysis of the contradictions of the nature of transport. In order to conveniently arrange something strictly on the shelves, you need to be sure that all this is identified

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and defined, firstly, and, secondly, to have an appropriate design for the shelves, that is, to build a systemic understanding of the subject,

- a) the universality of the design;
- b) the presence in it of sufficient reserves for improving the design.

If the term "construction" is replaced by the "form" of knowledge, then we get the advance in the article transition from the signs of the concept-consistency, locality and limitedness in change, to the signs that distinguish the concept, highlighted by Hegel in his "Science of Logic".

Conclusion

It is naive to expect the practical application of the new interpretation of transport by philosophical thinking. On the way to reboot the political understanding of transport and its social significance, there is a moderator - political science, designed to adapt the philosophical specifics to the objectivity of political actions. It remains for us to focus political science thinking on the following most important methodological messages:

- the nature of transport is unitary, it is conditioned by place and functionality. One can write about "social", "natural" transport only as a qualitative manifestation of unitarity, like a fan gathered and opened;

- the social form of manifestation of transport, despite all its originality, remains a transformed part of natural transport and remains dependent on the natural laws of education. Consequently, a transport strategy designed to express social orders must chart its course taking into account the dominance of natural conditions that transform human activity into factors of development. Factors will either help or hinder the implementation of construction plans;

- transport is a natural platform on which the history of man has been formed from the very beginning. Man owes his evolution to transport; moreover, he was the first means of social manifestation of transport. The concreteness of the spatio-temporal conditions of a person's life is a frame of reference for his active participation in the construction of social space. Hence the value of transport for a person;

- relying on the transport dominant in politics, states became empires, occupied a leading position in the world political hierarchy;

- Constitutional guarantees of the right to work do not mean that you will find a job, they protect your right to work. Freedom as the basic value of the development of the individual and society requires, first of all, like the right to work, the provision of free maneuvering in space at a given time, so as not to be late. Transport organizes space - the time of freedom for human development.

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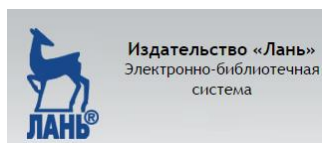
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