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**Age limit: 16+**
The Corruption in the Social Sphere and ‘Traps’ of New Technologies

The report was made public at the round table “Corruption as a threat to national security”, held on 29 September 2016 in The Free Economic Society Russia, Moscow

Key words: corruption, ‘traps’, change, new technologies.

One of the most influential contemporary philosophers Slavoj Zhizhek (Slovenia) said that we should not fall into the obvious trap and to blame the “bad guys”, which is, in his opinion, is ‘moralistic capitalism’. ‘Moralistic capitalism’ is accusation “bad corrupt bankers” during the financial crisis or accusation the other “bad guys” (bribe-givers and bribe-takers) in corruption. One can always find a factory that pollutes the environment, or a bank doing dishonest things. But you know what? The bad and corrupt people have always existed, says S. Zhizhek.

Contemporary scientists do not cease to investigate corruption [1–20]. We have beyond the scope a business corruption in the social sphere, although its examples are still in the memory. I mean the purchase of scanners (2009), the purchase of medicines, the IBM delivery to the Pension Fund of the Russian Federation (2008) and others. We will consider some of the specific features and problems of everyday corruption in social sphere and ‘traps’ associated with new technologies.

Indeed, some of the technological steps such as introduction of service of single reception and delivery of documents, the electronic queue, the electronic form of obtaining services, the photographic images of violations on the roads, were effective in reducing the risk of petty corruption. But it is not all. We will get a certain set of ‘traps’.

The first ‘trap’ is cognitive. We have to spend a great job to understand what is happening here and now.

The world is moving back from profit to rent. Italian left-wing economists believe that the welfare of people like Steve Jobs and Bill Gates does not fit into the classical notion of ‘profit’. Indeed, Microsoft occupied the dominant position in the market for some time and if we now need to create a text document, we use their products and pay the rent for it. If we want to use the Internet, we pay the rent to those who privatized this space.
The Transparency International notion of corruption includes the abuse of entrusted power for personal gain. In Russia, corruption is understood as illegal use by an individual of his official position to obtain benefits.

The economic rent in the classical sense is a payment for the use of resources which does not increase the amount of supply (volume of production). The rent does not require from the recipient business activities. Do not you think that some of the features of rent are similar to household corruption? We pay for the use of a resource that someone has ‘privatized’. We pay to a doctor because he is a doctor. We pay to an officer because he is an officer. We pay latently even to tax inspection. Have you tried to fill in the declaration? We pay for the norm.

It seems that today requires the definition of ‘corrupt rent’. Russian National Anticorruption Committee Director Kirill Kabanov believes that corruption can be viewed as a rental business based on the formation of redundant government functions, the creation of administrative barriers and burdensome procedures, in order to obtain rent from the budget process, legitimate businesses and citizens.

Mr. Kabanov does not mention new technologies as a reason of corruption as the rental criminal business, and he is wrong.

The market of corruption is closely related to the degree of awareness. The higher degree of awareness of the pricing on the corresponding ‘service’, the greater institutionalization is. On the other hand, the lower the degree of awareness and, consequently, the higher the likelihood of bargaining, the less institutionalized corruption is. The pertinent question is whether social networks affect on the degree of awareness? And what will happen when chat bots replace social networks and users do not even know that their interlocutor is not a person but a machine? Will virtual interlocutor give advice ‘in need’ of how to act? Will it be possible to create such an environment?

The main reasons for refusal to participate in everyday corruption are as follows:
(a) the ability to solve the problem without the corruption of the transaction;
(b) the rejection of corruption, based upon moral principles;
(c) the lack of financial opportunities.

The context which created today more by social networks than by media influences the first two factors. The model ‘a few for lot of people’ is changed to the model ‘many for a few’. Do we fall into the ‘trap’ of a change in information model?

The fields of professional corruption risk change today with changing technology. With the reduction of corruption risks in such areas as: of recruitment, applying to law enforcement, health care, obtaining the registration and identification documents, registration of real estate transactions, the risk of corruption in employment and careers significantly increases today as a result of increased competition for jobs. What do you think, will be in demand the services HR-managers who ‘closing their eyes’ on the traces of thoughtless posts and photos, once placed on the network? And whether will it be a ‘trap’ in your career?

The change of the nature of employment can be added. Today, even in Western Europe, a permanent job has become a luxury and a privilege. More and more people, including those in Russia, work on a contract, which means a constant uncertainty for them. Is there a source of corruption? One can include in the ecosystem those who can not find a permanent job. In fact, this sort of ‘invisible workers’ is perfectly embedded in the corrupt deals of the social sphere. The personal planner of pension plans will become a new and popular profession soon. I wonder will be ‘interested’ in proper planning such a personal planner?

Let us try to identify some ‘traps’ of the technological changes taking place in the social sector, which can create corruption risks in the future.

The first ‘trap’ is urbanization. Earth becomes a planet of cities. People leave the village and go to the big cities. Megacities in developing countries are growing faster. Consequently, the growth in developed countries, no matter how rough it was in the past, stopped. Where will
be more risk, where the life is full and, as a result, new technologies are emerging or where it vanishes? Where will be a lot of administrative barriers and burdensome procedures? Will be more risk in the city or in the countryside? Will be more risk in the southern or in the northern metropolitan areas? The sources of new risks are obvious.

Secondly, our environment is transformed into web. We do not need a full-fledged computer. We do need CloudBook for quick access to ‘the cloud’. The chips with useful material functions will be things that we use. Will be near the Internet of things any individuals using official position to obtain benefits and will it possible to use for these purposes cryptocurrency?

The ‘traps’ of Web and Cloud are associated with the trap of ‘big data’. Documenting and big data obviously will have a significant impact on the fight against corruption. Predictive safety technologies and algorithmic criminology are used already. Indeed, it seems that soon all of our actions will be transparent – any payment, any request, any movement, any action. We are probably one step behind the victory over win of corruption and even, as in the movie ‘Minority Report’, to prevent corrupt deals.

But there is another aspect. The privacy was important in the era of ‘small data’. The protection of freedom and the freedom of choice become problem in the era of ‘big data’. Will be we to pay for the protection of freedom and the freedom of choice? Will be we to pay for corruption rent in these cases?

The fourth ‘trap’ is a modification of genes. Humanity is just a few steps from the design of future species. I wonder will appear soon officials, who regulate issues in the field of personal modify human genes? Will be necessary to engage in corrupt deal to get permission for a modification?

The fifth ‘trap’ is hybrid thinking. After 5–10 years, search engines will be based not simply on the search for combinations of words and links, and understanding information on the reading and understanding of the billions of pages in the Internet and in books. Human-machine intelligence will be a qualitatively leap in technology, economy and culture. Imagine that one directly receives a message into the brain: “Remember, you were interested in such a question? You can solve it right now…”

Thus, there is the other side of technologies. Is it possible to use for their own benefit 3-D printer, internet access code to implanted insulin pumps, hearing aids, defibrillators or hacked DNA-code? We are at the start of an arms race between people using technology for the benefit, and those who use them to harm, – said Mark Goodman, author of ‘Future crime’. This is a serious threat of serious corruption risks and now is the time to get prepared for them.

In conclusion, I would like to point out that if we do not think about the risks and threats of the new technologies, that we will get at least two ‘traps’. It will be the trap of ‘passive complicity’ and the trap of ‘chameleon tactics’.

References
Inter-Ethnic Family As the Subject of Social Work

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Annotation: historically, Russia has come to be a multinational state with many ethnic groups. These groups interact on a daily basis, and one of the forms of this interaction is inter-ethnic marriage. Inter-ethnic families are a unique concept that reflects multicultural dynamics of a society as a whole. These families are most susceptible to inter-ethnic family conflicts and need social support from the Government. As of today, the sociology of the family lacks a well-defined field dedicated to the inter-ethnic family. This issue requires more research, as the idiosyncratic nature of the inter-ethnic family and its balanced development contribute to building a stable, tolerant and multinational society.

Key words: inter-ethnic marriages, multicultural interaction, nation, ethnic group, inter-ethnic families, social work.

1. Introduction

1.1. Topic description

The topic of intercultural interaction and, in particular, of the state and development of the inter-ethnic marriage as one of the forms of intercultural communication is highly relevant. Russia is a multiethnic and multi-religious society, so the research and analysis of inter-ethnic marriages poses a special interest. These marriages alter the ethnic composition of the Russian society, which calls for sociological research on the functioning of the modern inter-ethnic family. These families can be used to objectively describe the process of intercultural communication. The importance of studying modern inter-ethnic families and marriages as a form of intercultural interaction is very high.

The urgency of the problem is dictated by the revival of many national, cultural and religious traditions the modern society, which has an impact on intercultural relations, against the background of the rising the number of inter-ethnic families and marriages.

1.2. Current state of the problem in Russia

Russia is a multiethnic and multi-religious society, which makes the research on inter-ethnic marriages highly relevant. These marriages alter the ethnic composition of the Russian society, which calls for sociological research on the functioning of the modern inter-ethnic family.
As of right now, social work lacks a separate field for supporting and helping inter-ethnic families. However, this area of study carries high significance, since such families represent the entire scope of interaction in a multicultural society and has a number of unique characteristics. The concept of multinational families is still under researched in the Russian social work, but it does get Government support and enjoy higher popularity among sociologists, psychologists and social workers.

2. Methodology
The topic of intercultural interaction spans many disciplines. Many authors research inter-ethnic marriage and provide their own definitions for the term. For example, V. Galyapina views inter-ethnic marriage as a special family time as the spouses are from different ethnic groups. The encyclopedia by F. Brokgauza and I. Efron defines inter-ethnic marriage as a marriage entered into by persons of different religious beliefs, Christian or otherwise, thus emphasizing the religious aspect. G. Makharova understands inter-ethnic marriage as a marriage between persons of different nationalities. S. Korneeva writes that inter-ethnic marriage is a marriage between persons of different national groups. Despite the multitude of definitions for the terms “inter-ethnic marriage”, “cross-national marriage” and “multinational marriage”, this paper treats these definitions as synonyms. Based on the analysis of the different definitions, the author shall define inter-ethnic marriage as a marriage between a man and a woman of different nations, races, ethnic groups, and also of differing religious beliefs and moral standards, which brings together the diversity of cultures, traditions, languages and behaviors that lead to people developing different sets of values.

3. Results
3.1. Main theoretical approaches to studying the concept of inter-ethnic marriage
Family and marriage research is an interdisciplinary topic. Naturally, inter-ethnic marriage studies draw from a number of scientific fields such as sociology, ethnology, political science, psychology, etc. Renowned sociology and social psychology scientists (É. Durkheim, A. Comte, F. Le Play, K. Marx, M. Mead, P. Sorokin, F. Engels) and Russian researchers (M. Kovalevsky, K. Lewin, B. Malinowski) view family and marriage as the pillars of society.


A. Volkov, A. Dzutsev, L. Krylova, V. Levkovich, A. Ponomarev, S. Prozhogina devote their research to inter-ethnic marriage development trends. Scientists use national (O. Askolkova, V. Lukov, Z. Malkova, etc.), religious (I. Gerasimova, G. Zaikina, etc.) and language (G. Klimantova, M. Pankratov, A. Kharchev, etc.) differences between spouses to describe inter-ethnic marriage as wholly as possible. The accent is being made on the spouses’ differences, including cultural ones – worldview, values, standards, traditions and customs (V. Loseva, D. Myers, M. Mead, A. Maurois, G. Navaïtis, A. Pirogov, H. Ploss, T. Stefanenko, etc.). There are various points of view on spouse relationships in inter-ethnic marriages (A. Pint, H. Ploss, G. Riznichenko, etc.), on inter-ethnic marriage stability (R. Richardson, V. Rozin, R. Ryurikov, etc.), on determinism of both a happy (N. Koval, V. Satir, N. Sinyagna, etc.) and unhappy (V. Alexandrova, V. Sokolova, A. Spivakovskaya, etc.) inter-ethnic marriage. In addition, the family crises of inter-ethnic marriages are very closely studied by T. Razumovskaya, C. West, B. Shapiro, G. Sheehy and others.

3.1.2. Inter-ethnic marriage and its main characteristics
From a cultural perspective, inter-ethnic marriage may be viewed as a type of exogamy, which is a social arrangement where marriage is allowed only outside a social group. This term is used mainly in respect of ancient societies and primitive tribes to describe a system of kinship, tribe or clan wherein a set of individuals (relatives) was forbidden to marry [10].

From a sociological standpoint, inter-ethnic marriage can be considered heterogamous, because the partners differ from each other by socio-demographic attributes, namely – by nationality [21].
In researching inter-ethnic marriages, it is possible to see that among the Russian people many are in marriage with:

- Individuals from autonomous republics and regions of Russia;
- Individuals from the neighboring countries (Kazakhs, Armenians, Georgians, etc.);
- Individuals from a close Slavic group (Ukrainians and Belarusians) living in the former Soviet Union;
- Foreigners.

In our analysis, we will consider “nation” to be a type of an ethnic group, thus emphasizing the importance of culturological characteristics in exploring the social aspects of inter-ethnic marriages. Each partner of an inter-ethnic marriage is viewed as pertaining to a group that is unified by its history, culture and language, and to which he or she is closely tied based on the immediate interaction and communication.

The social character of inter-ethnic marriages has a multicomponent structure, with each element having its own purpose.

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<td>traditions</td>
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<td>spirituality, faith, etc.</td>
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<tr>
<td>customs</td>
<td>habits, etc.</td>
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<td>rituals, etc.</td>
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The cultural component of inter-ethnic marriages is manifested through interaction and interconnection of the two cultural backgrounds, as each party carries certain experiences that represent their society. Social characteristics of people from different cultures fuse together in a marriage and take form in actions, attitudes, etc. An individual, being an amalgamation of certain traditions, customs and adaptive habits, enters a marriage with another “cultural individual”. Thus, the cultural component deals with the concept of inheriting and passing down cultural and historical knowledge [18].

The state component is based on legal norms, ideology, political views, etc. (emphasis on citizenship, patriotism, territory). This component is especially prominent with marriages to individuals from within and beyond the former Soviet Union.

The religious component: up until 1917, religion had been an obstacle to creating inter-ethnic unions. It was especially relevant for marriages between orthodox Christians and members of any other religion (in particular Judaism and Islam). These restrictions were not only legalized, but also in opposition to the teachings of both Islam and Judaism.

These components of an inter-ethnic marriage structure demonstrate the multi-faceted nature of the concept and allow researchers to differentiate various marriage types. Based on this, we can now turn to types of inter-ethnic marriages. These are different typologies in literature. For example, L. Schneider singles out three types of inter-ethnic marriages [14]:

1. Marriages to partners who are ethnically and nationally close (same religion, similar lifestyle, customs, values);
2. Marriages to partners who are ethnically and nationally diverse (different religions, culture and values, differing backgrounds);
3. Marriages to partners who are culturally close (same religion, similar values), but nationally (ethnically) diverse [1].

In a multinational country, marriages with the members of the prevailing nationality are more widespread. Inter-ethnic marriages with a Russian spouse are the majority of such marriages in Russia (73% according to the microcensus of 1994).
A. Volkov put forward a very efficient typology consisting of five groups of inter-ethnic marriages with different ethnic combinations:

– marriages between a member of the titular ethnicity and a Russian;
– marriages between a member of the titular ethnicity and a member of any nationality except Russian;
– marriages between a Russian and a member of any other ethnicity except Ukrainians and non-representatives of the titular ethnicity;
– marriages between members of the titular ethnicity, Russians and Ukrainians;
– marriages between a Ukrainian and a Russian [21].

In another study, sociologist A. Topilin [18] only describes four types of inter-ethnic marriages:

– ethnically mixed (Russia-Ukrainian) marriages;
– ethnically mixed (Russians and members of foreign nations) marriages;
– ethnically mixed (Russians and members of titular nations) marriages;
– ethnically mixed (members autonomous ethnic groups and of any other nationality except Russian) marriages.

In our analysis of the social character of inter-ethnic marriages, we, as mentioned above, note the special importance of religion. The above typologies do not account for this factor. At the same time, the recent decades indicate the resurgence of religious identity across all denominations in the Russian society.

In this regard, the typology by Zh. Dyuldina and A. Kobzev [2] seems more relevant:

– inter-ethnic marriages between members of different nationalities but with the same religious beliefs;
– inter-ethnic marriages between members of different nationalities and with different religious beliefs.

We concur with the researchers’ assessment that Russian studies fail to include the concept of succession when dealing with the issue of inter-ethnic marriages. These authors [3] use the succession criterion to single out the following three inter-ethnic marriage types:

– first-generation inter-ethnic marriages;
– second-generation and beyond inter-ethnic marriages;
– inter-ethnic marriages with one first-generation spouse entering a multinational marriage, and the other being from a multinational family.

In summary, inter-ethnic marriage is a marriage between a man and a woman of different nations, races, and ethnicities, as well as of differing religious and moral beliefs. The structure if inter-ethnic marriage includes a cultural, religious and state component.

3.2. Inter-ethnic family in the modern Russian society

Inter-ethnic families have special attributes as opposed to mono-ethnic ones. The main feature of such families is the fact that the spouses are of different nationalities, which leads to differences in culture, standards, traditions, customs, lifestyles, languages, and ethnic identity. To quote A. Kharchev, “these families often contend with bigger differences in psychology, traditions and lifestyles” [4]. Inter-ethnic families include and fuse different national and ethnic features, which engenders intercultural interaction. They are subject of various ethnosocial, ethnicultural and ethnodemographic processes. The inner dynamics of such families, compared to mono-ethnic ones, foster better tolerance, internationalism, and respect for customs and traditions of other ethnicities. Inter-ethnic families are most widespread in the regions with mixed national composition, and are concentrated in cities as opposed to the countryside. In Russia, the territories with the most number of inter-ethnic families are cities, industrial centers, border zones, national communities, etc. In addition to large cities, such regions include the North Caucasus, Volga Region, Urals, Far East, etc.
The national and cultural characteristics of spouses change in an inter-ethnic family under the influence of objective and subjective factors, as it requires them to solve the ethnic identity problem by making concessions and concrete social gestures to ensure the viability of the marriage [5].

3.2.1. Typology of inter-ethnic families

It is possible to distinguish the following types of inter-ethnic families, based on the nature of inter-ethnic communication:

First type – mono-ethnic (homogeneous) family, which follows the traditional national rules and customs of marriage. These families exhibit certain national isolation.

Second type – inter-ethnic (heterogeneous) family, where the traditions of one nationality override the customs and traditions of the other.

Third type – a family with an urban, “neutral” lifestyle, which foregoes national family conventions and values for being archaic and obsolete. These families often do not foster a national identity of their or any other people, which also applies to national characteristics and standards, but rather they exhibit signs of indifference towards them.

Forth type – both mono-ethnic and inter-ethnic families. These families do not ignore the national traditions and features of its members, but rather pay attention to and foster respect for an individual, detached of his or her nationality. These families engender the most favorable inter-ethnic environment, selectively following the customs and traditions of the both partners.

Depending on the nature of intercultural communication in inter-ethnic families, two types of such communication are distinguished: democratic and authoritarian [17].

The first type is characterized by democratic family relations, when they are build on selective adoption of customs, traditions, standards and values of the partners. Mutual adaptation in such families is quicker and easier. This type of family prevails among spouses with higher or secondary education. More cultured families are more devoted to internationalism, mutual respect and tolerance. They are often bilingual. During communication, they exchange each ethnicity's cultural elements, such as social-normative culture (behavioral standards specific to each of the groups), certain elements of the material culture (food, clothes, etc.) spiritual culture (songs, dances). The children are often quick to adopt the values of both parents, further strengthening the cultures of the different ethnicities. At the same time, such inter-ethnic families engender completely new culture characteristics and sets of values that are based on the interaction of two different cultures.

The second type is authoritarian, which means that customs and traditions of one nationality are “absorbed” by the other. This “absorption” is often done by the dominating culture of one of the nationalities (usually the titular one). However, given the multiethnic environment, an inter-ethnic family does not often foster national exclusiveness.

Inter-ethnic families can be classified as follows based on the composition [8]:

1. Families where the partners’ ethnic and national characteristics are similar: same religion, similar lifestyles, customs, value systems (Russian-Ukrainian, Ingush-Chechen);
2. Families where the partners’ ethnic and national characteristics are different: different religions, different culture and value systems, different national characteristics (Ingush-Russian, Chechen-Ukrainian);
3. Families where the partners’ cultural characteristics are similar, but nationalities are different: same religion, similar value systems, different nationalities (Russian-Armenian).

A. Gorkin in his writing on inter-ethnic families distinguishes five ethnic combinations in Russia (in brackets – the% of all families, data as of 2004) [15]:

1. Families where one partner is of the region’s main nationality, and the other is Russian (26.6%);
2. One partner is of the region’s main nationality, and the other is any nationality except Russian (18.4%);
3. Ukrainian-Russian families, the most widespread (42.1%);
4. Families between a Russian and other nationality (9.7%);
5. Any combination of other nationalities (0.2%).

According to data by regions [3], the shares of inter-ethnic families differ significantly. This depends on the following factors:

- ethnic and national composition of the population;
- type of population (dispersed or дисперсного or ethnically homogeneous);
- culture, religions, traditions, customs, lifestyles, identity, psychology, etc.

Recently, a new type of an inter-ethnic family has emerged, one where one partner is a foreigner. It became widespread during sociocultural transformation, when the open borders increased the scale of intercultural interaction. Hence, individuals had more freedom, including freedom to choose any marriage partner [7].

Cross-border relationships today are quite frequent. Inter-ethnic families with foreigners are a relatively new social phenomenon in Russia, but one that is actively developing, and the number of such families, according to the Moscow Wedding Registration Office (the only office in Moscow registering marriages with foreign individuals), increased 37% during 1993–2002. These families became possible thanks to the transformations in the Russian society. Today, there are no legal, public or moral obstacles on the way to marrying a foreigner.

“Inter-ethnic families with foreigners are a form of marriage between a man and a woman where the partners have different citizenships, which have historically existed within the borders of two different state territories, and it presupposes certain responsibilities of the partners in respect of their ethnicity based on shared culture, religion and traditions of the social group that each spouse identifies with since birth and carries its characteristics, which later form the social basis for the family interaction” [6]. Inter-ethnic families with foreigners improve intercultural relations and social cooperation, etc. The different territories of origin make such unions hard for the partners, as their lifestyles are spread between two societies: Russian and the one of the partner’s country [9].

Inter-ethnic families, just as families in general, can be studied using two approaches: as a small social group and as a social institute.

When analyzing inter-ethnic families on a micro-level, it is necessary to study them “from the inside”: look at the family relationship, distribution of responsibilities, adherence to customs and traditions of each of the partners’ nations.

In macro-analysis, inter-ethnic families are viewed as an institute in the complex system of social processes. This approach better shows the development of inter-ethnic marriages, connection of this process to the general family development trends, the fuse of nations’ social structures, migration processes, etc. Inter-ethnic families reflects various ethno-social and ethno-demographic processes. Examining those helps better understand these processes, their inner dynamics and consequences. These two approaches (on the micro- and macro-levels) to family and inter-ethnic family studies complement each other. Any inter-ethnic family study includes the elements of both. In our research, the principal approach is micro-sociological, i.e. an inter-ethnic family is viewed as a small social group. This analysis helps to better describe the composition and structure of an inter-ethnic family, the dynamics of spouse and parent relations, development of family values, standards and behaviors, and interaction of an inter-ethnic family as a small social group with wider social systems in the society.

3.3. Social work with inter-ethnic families

Social work with both mono- and inter-ethnic families is a system of interconnected actions and measures that are aimed at supporting a family in a socially-precarious position. It means that the family cannot fulfill its social functions. This position covers drug use in the family, alcoholism, violence, conflicts. There are special methodologies and techniques in place to
help such families. These include: social adaptation, social rehabilitation, custody and social services.

Inter-ethnic families are susceptible to problem situations that lead to nationality-based conflicts and, possibly, to divorce. According to statistics, each second inter-ethnic marriage ends after five-six years. Social workers dealing with inter-ethnic families focus on providing psychological help and family advice to the partners of different nationalities. This help may include individual and group sessions with the members of an inter-ethnic family; identifying high-tension inter-ethnic families; teaching methods of self-control and self-regulation to inter-ethnic families. In order to organize efficient social work with inter-ethnic families, a special social and psychological examination is necessary. This examination needs to be carried out by professional, with considerations for the peculiarities of different ethnic groups. In addition, this examination requires the use of special methodologies dedicated to this kind of work and adapted to national characteristics.

This ethno-psychological examination of families can include several approaches. A multi-level approach unites different viewpoints into a single examination system. The focus here is on what kind of information about an inter-ethnic family needs to be obtained and in what sequence. The problem approach to examining inter-ethnic families identifies “weak spots” in family relations. Factor approach is based on examination systems that can be determined through factor analysis, by methods of mathematical statistics. This approach yields detailed information in the process of examining an inter-ethnic family.

4. Conclusion

Inter-ethnic families in the modern Russian society are a unique structure, building not only interpersonal, but also intercultural relations.

The author describes inter-ethnic marriage as a marriage between a man and a woman of different nations, races, ethnic groups, and of differing religious beliefs and moral standards, which brings together the diversity of cultures, traditions, languages and behaviors that lead to people developing different sets of values. The structure of inter-ethnic marriage includes a cultural, state and religious component. The paper also covered the typology of inter-ethnic families by various characteristics: the nature of intercultural communication in a family, nationalities of partners, similarity and differences between the partners’ national attributes. In respect of the social work with inter-ethnic families, the paper delved into ethno-psychological examination, which includes several approaches: multi-level, problem and factor approach.

In conclusion, the close examination of inter-ethnic families has proven that they contribute to a balanced society by maintaining its integrity and stability, while also establishing firmer ties between nationalities. At the current stage, inter-ethnic families are in need of efficient government social policies, because a crisis-free inter-ethnic family is the first step towards a crisis-free intercultural society.

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REFERENCE TO ARTICLE
Methodological Bases Gamification

**Annotation:** newfangled trend called gamification penetrates into all spheres of human activity. Various companies, enterprises and organizations are using gaming techniques to maintain customer loyalty, to increase the involvement of employees in work, in education, motivation and much more. Today, the labor market and consumption beyond the Y generation, these are people who were born after the 80-ies. They childhood immersed in information technology, in particular computer games. In working with this generation of new technologies should be used, including gamification. In this connection it is necessary to pay special attention to the study of the phenomenon of the game. The interest in the game process originated in ancient times, the study of the game has occupied many philosophers from Plato to Kant and Schiller, from Comenius to Huizinga and Bern. There are many definitions of the term “game” of today. A number of authors have highlighted the main features of the game, and identifies internal and external objectives of the gameplay.

**Key words:** gamification, game, gameplay, generation Y.

The game is accompanied by a person at all stages of its development and formation as an individual. Gameplay – this is one of the main tools of development and formation of personality. One of the pillars on which rests gamification is a “theory of generations”, which was established in 1991 by Neil Howe and William Strauss. In 2003–2004, this theory under the direction of Eugene Shamis was adapted for Russia. This theory considers the values of people from the middle class. Because it values and their similarity form a generation of people.

Y-Generation are people who were born after 1981, this generation is characterized by involvement in digital technology and the reluctance to grow up. From early childhood, in their homes had a computer and of course the game, they are now not only increased, but at the moment many of them are run by major companies. The motivation of these people from an early age was based not on duty, honor and correctness, but on passion and remuneration.

This generation is good, what levels of pumping, the job-quests, rewards, achievements. But with all this, they really do not understand what they were waiting for the chief (of Generation X). Generation Y instinctively pumped his level, develop skills, perform tasks and put records. And in this connection, comes into play gamification.

The term gamification (or in Russia also used the term “gamification”) appeared in 2003, but became widely used only in 2010. Gamification implies a use of game elements and game mechanics in the context of nonfiction. There is also a large number of other definitions of the term, both domestic and foreign, but they pay special attention to such concepts as “game”, “non-gaming situations or space.” However, the game in this context should not be perceived as “entertainment or recovery”, but rather as an “activity of the organism, aimed at modeling the conditional deployed operations.”
Based on the above, the game can be defined as theoretical modeling practices, presented in the conditional (game space) and bounded by certain pre-established game rules.

Gamification elements can be:

- **Points** – is a system that allows to track the behavior scoring and feedback.
- **Badges (achievements)** – it is the icon that marks the achievement of a specific goal. Various distinctions have always been popular, even before the advent of modern technology, military and scouts actively used this approach. All kinds of achievements, so attractive, because their preparation allows a person to feel successful and valid, and this in turn creates a point of interaction with the gamification system users, as a result, people experience again pulls a similar experience. Also one of the attractive aspects of using badges, is that they give people the opportunity to demonstrate to others their own achievements and track what others have achieved.

- **Levels** – a structured hierarchy of progress, as a rule, presented in ascending order of the number or value (e.g. “bronze”, “silver” and “gold”). This element of gamification gives the user a sense of satisfaction and advancement.

- **Leaderboards** are intended to demonstrate the results of users, sorted in descending order from highest score to lowest. They are already so ingrained in our culture that provides a clear and immediate understanding of the situation – and it can be a powerful incentive.

- **Awards** – one of the most important elements systems, in general they can be divided into two categories: internal and external, that is, created independently or externally provided [10].

The positive effect of the introduction of gamification is difficult to overestimate, to date, are a lot of positive examples of implementation systems in various spheres of human activity, it should be noted among these areas:

1. **Education.** Gamification is used to hold the attention of students. What is interesting is presented material, the higher the student’s ability to remember and assimilate the material. Through gamification can improve curriculum passage, as well as reduce the costs of education without losing the quality of education.

2. **Business, Marketing.** In this area, gamification helps attract and retain a customer. It includes the best ideas of loyalty programs, game mechanics and behavioral economics. Businessmen are constantly looking for new ways to attract customers.

3. **Human Resource Management.** Gamification is used in almost all areas in HR, such as career guidance, recruitment, training, motivation.

Due to the growing interest in gamification, you must go back to basics and consider the game as a philosophical and methodological basis for gamification. Games – it’s the greatest invention of people, many of them have a rich educational potential, are the quintessence of thousands of years of accumulated folk wisdom, the channel broadcast timeless spiritual values. It is no coincidence phenomenon of games throughout the history of human development to engage the attention of prominent thinkers. The game has been studied in various aspects: philosophical, pedagogical, psychological, sociological, etc...

Researchers of the game – from Plato to Kant and Schiller, from Comenius to Huizinga and Bern – emphasize its versatile aesthetic and moral education, the formation of collectivist personality traits, cognitive interests, the development of the will and character, intellectual, emotional, sensory and physical development, the development of creative thinking and imagination.

Although the representatives of different nationalities, races, populations from different continents of the game can vary depending on the climate area of residence, calendar cycles of traditions, celebrations and rituals, there is a certain number of types of games that are similar and of civilized nations, and those who are still in at lower levels of development. The explanation lies in the unified nature of the human psyche, which is the same in different parts of the world. Thus, the Australian researcher of children’s games Ben Kidd writes: “Nothing
makes so much sense the relationship between European and Kafr as monitoring children’s games. Almost every game as we know it in Europe, and the Kaffirs know. Whatever classified games and toys, the same group of games, toys types we encounter among the various peoples of the world” [9].

Another long-term “game” got into the field of philosophy, in Plato’s dialogue “Euthydemus” Socrates calls “cognitive game” tricks of the Sophists, who knocked the young people astray with their reasoning. According to Socrates, the Sophists, do not teach their students real knowledge of things, but only laugh at people.

Seriously philosophers began to study the phenomenon of the game much later. The founders of these studies considered Kant and Schiller, they drew attention to the similarity of games and artistic activities. And already in the XX century, these studies have reached its peak, one of the most famous scholars of the matter is considered by J. Huizinga (Huizinga), in his book “Man playing” (“Homo ludens”), published in 1938, he drew attention to that the different spheres of human culture, such as: military science, philosophy, politics, science, art, etc. firmly intertwined with the game forms. The author in his work argues that the ancient culture of the game, it in essence is not based on any rational foundation, and is not associated with certain stages of culture, as well as the outlook form. J. Huizinga of the opinion that culture precedes the game, she accompanies, it permeates throughout the development of culture. The author also notes that there is a culture in the form of games, “culture originally played.”

The famous German philosopher H. G. Gadamer (Gadamer) in his work “Truth and Method” has imposed the concept of “game” in the interpretive process, historical events and works of art, and as a result turned it on in the conceptual apparatus of hermeneutics.

A. Fink (Eugen Fink) – German philosopher, it was he who carried the game to the most important phenomena of human life, along with death, work, love, and identified it as the main way of relations of people with affordable and void.

The above judgments in many ways different, but agree on the most important: the game permeates the culture of the people and plays an essential role in its development and existence.

Turning to the features of the game, it should be noted that the authors differences there, and those that are in the arguments J. Huizinga, H.G. Gadamer and O. Fink is not opposed to each other, and complement the overall image. If we talk about the distinctive features of the game, part of the scientists approach to the definition of the game through its serious opposition, many referred to the opposition of the game – coercion and violence. But the definition by negation does not lead us to the essence, we are interested in the content of the concept. So what do we mean by the term “game”?

“The game is a voluntary action or activity committed within the established place of borders and time by voluntarily accepted, but absolutely mandatory rules for the purpose, enclosed in itself, accompanied by a sense of tension and joy, as well as the consciousness of “another life”, rather than “everyday life” it gives us a definition Johan Huizinga” [6].

Few other accents puts in his interpretation of the KB Whitefish “game – a form of free self-revelation of man, which involves real openness to the world of the possible and deployed either as a competition, either in the form of presentation (performance, representation) of any situations, meaning, states”.

In order to get a more complete picture, you need to consider the features of the game mentioned in the above definitions. Freedom to them meant in three ways: 1) as independence from the dictates of others. According to J. Huizinga “play by the order, is not a game.” 2) As a “nonartificial” conditioning the behavior of players. 3) As the independence of the utilitarian purposes. The game is the one without which you can do, it is not dictated by any responsibility.

This game can take people beyond the ordinary, she takes us on a magical dimension. It is certain – the time sphere, located in the midst of everyday life. But it should be noted that
these characteristics do not preclude a high level of severity of the mood count. All serious at this moment turns into a frivolous, but the game – to serious.

Speaking of space-time closure of the game, it should be noted that it exists within the boundaries of space and time, which is “game world” – this can be considered, another sign of her. All the games have both the beginning and the end; they are in a space that is defined in advance.

Then move on to the structural order of the game. In the gaming space has its own special rules. In an imperfect world, and your vain game gives an opportunity to establish a temporary and limited perfection. Any deviation from the established order of the game contributes to its destruction. It restricts willfulness game players, as it creates restrictions in the form of rules.

It is also a sign of the game is: repeatability and variability of the game. The presence of a clear structure gives the game variability, variability of action within certain limits and at the same time, repeatability, which is in several respects. 1) Almost all the developed forms of the game, we meet with the repeat components, interleaving, etc. 2) The presence of a stable structure makes it possible to repeat the entire game.

Based on the clear structure of the variation, gives the game, without which she was not herself, and would have become a routine and soulless work on the line – it’s free and creative spirit. In every game there is a genuine time and place for biodiversity, for example, when the musician will perform works strictly on the notes, it may to some extent deviate from the rigidly predetermined mechanically reproduction that makes music lovers feelings such as empathy, passion animate ripple sounds. Talent artist is manifested in relevant, not rough, rather delicate variation.

Experiences of stress and excitement in the game, too, are signs of the game. Johan Huizinga argues that the tension element has a special role that it is the uncertainty and instability, some unrealized opportunity for which, or against which efforts should be made, but success is not guaranteed. The strain has a desire for relaxation and detente. This can be seen in some individual games, designed for agility and intelligence, such as target shooting, puzzles, etc. When the game is still more like a competition, stress level rises, as in sports, gambling reaches the highest degree. Through hard game, a player is tested for speed and endurance, to perseverance and strength, Agility and courage. At the same time test run and spiritual qualities as regardless of the desire to win, the player must keep himself within certain limits. As a result, it is an element of tension gives the game a certain aesthetic value.

O. Fink noted that the game is different from the voltage of the hardships of everyday life, as in everyday life, each of us should strive to meet future no one, and no one unknown is not defined “happiness”, in this regard, we are in “exile” from this moment. Being in constant pursuit of “happiness”, in which we are all life, in the end we did not reach it. Despite the fact that the game encourages people to move to success, its “happiness” is in itself. This game gives people “enjoy the present.”

It should also be noted that the structural ordering of the game enable people to move along its current, which eliminates every person from all the excitement that characterized everyday, “disorganized” life. In this regard, the people there are sudden desire for repetition, renewal of the gameplay, which is fixed in its form.

In any game contains certain opportunities and risks, there is always a certain confrontation, even in the game that does not have a competitive character. H.G. Gadamer believes that eventually “alone” game, in principle, no. For the existence of the gameplay is not necessarily the “other” should take part in it, but certainly when it should be something with which this game is being responsible and that a return stroke on the players’ moves. For example, the cat chooses to play a ball of yarn, since it can not “solve”, and ball games, in turn, are based on its free mobility, as if he could make a spontaneous movement.

Games will not be, if the result of the efforts of certain precisely known in advance. It can only exist in the presence of risk. Gameplay is possible provided these certain chances and
opportunities as a favorable or an unfavorable outcome. It is in this risk is a certain charm of any game: the person has the opportunity to experience the pleasure of freedom of decision, which is associated with the risk of failure. Such feelings are familiar to those who “alone” play computer games, solve puzzles, paint pictures and poems, in all cases there is a risk that things can go wrong, as planned, and the person will not achieve the desired result, here and there is excitement, hope and passion.

Special attention should be given to the objectives of the game. The peculiarity of the gameplay is that it is not the satisfaction of biological needs (and work), but at the same time it gives a satisfaction in itself. O. Fink emphasizes that nothing is a game, has no “ultimate goal”, it is “for itself and in itself.” He argues even with those who see the value of the game only to prepare children for a “serious” adult activity. The game belongs to adults, no less than the children.

Features goals O. Fink game reveals compared it with difficulty. Labour action generally serves the purposes that go beyond it, it is woven into the broader context of meaning of life. GAME same peculiar immanent goal action. The game is self-sufficient, it is in itself gives satisfaction to man – in contrast to this work, which is aimed only at obtaining funds for life. Under certain circumstances, work, too, is attractive in itself. Marx believed even that in a society which will replace the capitalist, labor will become the prime vital need of people. He meant labor “universal”, creativity (scientific, artistic), which, like the game, has value in itself. This work brings satisfaction, not because it is light (on the contrary, creative effort requires great effort and self-sacrifice), but because it becomes a “free play” of spiritual and physical strength of man.

As a result, we conclude that the game carries its purpose in itself, does not contradict the fact that the entire game as a whole, together with its immanent goals can serve some purposes non-gamebal.

Looking at the game as a means non-gamebal goal, it should be noted that although the game is, as already mentioned, contains its goal within itself, however, all of it as a whole (with its internal goals) can be used as a means to achieve some non-gamebal purposes.

External objectives of the game are: 1) the rate, 2) the prestige, honor, and 3) education, 4) identification of fate, the will of the gods, 5) mystical forces, 6) leisure activities, 7) assertiveness. Most of these goals mentioned above. And we pay attention to goals such as honor and bid.

People play for something. First of all, they strive for success in the course of the game and the enjoyment of triumph. But in addition, the winner can get a bid to acquire fame as a result of winning when the game itself has been completed, i.e. rate and honor are outside the game.

Bids are quite different: something symbolic (diploma, kiss the princess), utilitarian (money, valuables), life or death, freedom or slavery, the winner of the fulfillment of desires and so on. The rate is different from the remuneration or income: for the latter do not play, and work. But then sometimes difficult to draw a clear boundary: in certain types of business, in exchange games for example, have the same elements of risk, luck, power, common to all the games. The resulting income is thus akin to winning. Pure greed is not at risk and does not play.

When competitive game one of the players reaches the excellence, the winners can be a tendency to fall into the illusion of their superiority in general, and the significance of the victory goes beyond the game. Winner is the honor, glory. This honor can be easily transferred from the individual to the group, which is the winner. Thus, the success of both the internal goal of the game emerge as an external objective respect, honor, prestige.

Based on the foregoing, we conclude that gamification is a very promising direction in working with people, because Modern Generation Y is very easy to perceive the information presented to them in the “digital” language. Despite its apparent novelty, this technology carries with it a large “cargo” of knowledge and research in the study of the game. People have long been interested in the question of involving the people and especially of human behavior
in the gameplay, as well as directly to the phenomenon of the game, its features and objects. Through this research, this technology as gamification is under a significant philosophical and methodological basis.

References

REFERENCE TO ARTICLE
The Specificity of Development of Tourism in Modern Russia

Annotation: currently, the tourism industry is one of the largest revenue-generating sectors of the world economy. The purpose of this article is to identify and analyze the characteristics of tourism, potential development of the tourism industry in Russia, the value of the tourism sector in the economic development of the country and the negative factors in the tourism industry of Russia. As the theoretical-Methodological Base of a Research the next methods are used: the analytic-synthetic method; methods of system approach; expert assessment methods; methods of statistical analysis; comparison; analyzing Primary Source Documents; secondary data analysis, etc. On the basis of the conducted scientific research the most common problems of the development of the tourism industry in present-day Russia are reflected, the importance and necessity of an active state policy in the sphere of tourism is shown.

Key words: tourism, the essence of tourism industry, development of tourism, the sphere of tourism in the Russian Federation.

1. Introduction
At present, the tourism industry is one of the dynamically developing branches of the global economy. In many countries the tourism sector plays an important role in the formation of gross domestic product, promotes the expansion of international contacts and creation of new jobs, it is a source of financial income [8, p. 151].

According to the criteria for the efficiency of investments by the beginning of the XXI century the tourism industry has become an efficient and highly profitable industry. The concerns of economy and culture, security and international relations, environment and employment, hospitality and transport, etc are closely linked in the tourism industry [13, p. 45].

According to The United Nations World Tourism Organization (UNWTO) for the period of 1990–2014 years the revenues in the tourism sector have grown from $264 billion to $852 billion. Tourism accounts for 3.2% of the gross world product and 7.6% of the working population of our planet.

In the Russian Federation in the conditions of transition to the innovation economy the development of the tourism industry is recognized a promising area by the state. According to the forecast of The United Nations World Tourism Organization (UNWTO), Russia has a high tourism potential and with the appropriate level of development of the tourism infrastructure our country is able to host up to 40 million foreign tourists per year.

However, the tourism potential of Russia is not used to the full. In the competitiveness of the tourism sector of the economy the Russian Federation took the 59th place among 133 countries in 2014.

Also, the improvement of the socio-economic importance of the tourism industry creates the necessity to find new opportunities for the development of this sector [16, p. 274].
It should be noted that countries that do not belong to the most economically developed countries, but possessing a rich cultural and natural heritage are quite capable to win the top positions in the international tourism industry. The main requirement for the realization of this possibility is conducting a targeted and active government policy in the sphere of tourism. The Hague Declaration on Tourism adopted on 14 April 1989 stated that “Tourism should be planned on an integrated and coherent basis by public authorities, taking into consideration all aspects of this complex phenomenon” [17, p. 288].

In this regard, in each country, including Russia, there is a need for active measures by the state aimed at creating conditions for sustainable development of the tourism industry in the country.

Thus, in modern conditions, the development of tourism in Russia is an urgent problem and an important task of the government.

2. Nature and characteristics of tourism

Currently, the tourism industry is one of the largest, highly profitable and dynamically developing branches of the global economy, which generates about 10% of the gross world product. The tourism sector in the economy of the world countries manifests itself in many forms and aspects, in connection with this there existing various definitions of this sector in science.

In “Encyclopedia of tourism” by the authors I.V. Zorina and V.A. Kvartalny tourism is defined as the collection of all types of scientific and practical activities for the organization and implementation of tourism, hotel and resort industries [20, p. 28].

V.N. Sharafutdinov considers tourism as an area of the economy which includes a very wide range of services and products including cultural tourism, resort, sports, environmental, scientific, business, exhibition, extreme, religious and other modern types and forms of tourism [12, p. 36].

O.N. Vikulova notes that there are many definitions of the concept of “tourism” that can be divided into two groups. Some of them are economic in nature, others are legal, that is expressed and enshrined in various international legal documents [15, p. 2].

Today, tourism is one of the most important spheres of the modern economy which aims at creating material and spiritual goods, meeting needs of people and improving their quality of life. Unlike many other industries, tourism does not lead to the depletion of natural resources [19, p. 91].

Tourism is a significant area of international cooperation, cultural exchanges and specific means of public diplomacy. Globally, tourism forms tolerance and complex view of the world, contributes to the improvement of international contacts, respect for the peculiarities of national cultures [7, p. 134].

According to the forecast of The United Nations World Tourism Organization (UNWTO) by the late 20-ies of the XXI century the number of international tourist arrivals in the world will exceed one billion units [5, p. 19]. It should be noted that at the present time in the world more than two billion people travel within their own countries engaged in domestic tourism, every 16th worker works in the tourism industry or in one of its related industries. This data show that today half of humanity is somehow involved in the sphere of tourism [18, p. 26].

Nowadays tourism has become one of the most significant characteristics of a globalizing society and it exerts significant influence over major spheres of social life. This industry is no longer a local industry. The tourism industry indirectly engages a large number of people through different processes, both on domestic and international levels [14, p. 119].

First of all, the increase in the tourism sphere was influenced by the changes in the non-manufacturing sector of the economy, institutional, ethno-cultural and socio-demographic changes, a relative increase of free time, the transformation of meaningful use of leisure time [11, p. 85].
There are various classifications of forms of tourism, which differ in accordance with the distinguished characteristics of the classification:

- geographic principle – domestic and international;
- directions of flows of tourist traffic – incoming and outgoing;
- purpose – wellness tourism, educational recreation, sports tourism, business tourism, religious tourism, adventure tourism, exotic tourism, etc.;
- source of funding – social and commercial;
- transportation mode – by river, sea, air, railway, car, bicycle, on foot, mixed;
- number of participants – individual, mass, family tourism;
- form of organization – organized, unorganized [3, p. 57].

Currently, the most promising types of tourism are:

- cultural and cognitive tourism which cover more than 10% of the total number of international tourists and have a high average rate of tourism expenditure;
- active forms of tourism, such as adventure and sports tourism, are becoming increasingly popular in the world;
- special forms of tourism, for example, medical and health tourism, event tourism, ecotourism, educational tourism and scientific tourism;
- river tourism;
- business tourism which can include business meetings, conferences and various events.

The attractiveness of the country for tourists is largely determined by the existing tourism and recreation potential and a set of tourism resources.

The tourism and recreation potential is considered to be the totality of the natural, social, environmental, historical and cultural prerequisites for the organization of tourist activity in a particular area [10, p. 218].

Tourism resources are historical, natural, social and cultural facilities, which include tourist attractions, as well as other objects which can meet spiritual and other needs of tourists, support their life activities, the restoration and training of their physical strength [9, p. 30].

3. The potential for the development of tourism in Russia

At the beginning of 2013 in the Russian Federation there are 1250 sanatoria and holiday houses with medical treatment with a total capacity of 342 thousand persons.

The number of hotels and similar accommodation facilities in the country has increased by 10.8% in 2012, which amounts 9316 units with a total capacity of 617.8 thousand people.

The turnover of public catering enterprises is growing annually by approximately 6%, in 2012 this figure reached 1 019.3 billion rubles.

Institutions of culture also display a positive trend. In Russia there are totally 2631 museums, including 108 Museum-Reserves. The number of visits to museums had fallen drastically in 2009, and since 2012 has been increasing annually by about 4%.

Every year the number of tourists visiting specially protected natural territories of federal significance which include the most valuable natural complexes and sites of the country grows. They include 102 state natural reserves, 47 national parks and 69 state natural sanctuaries of federal significance.

According to the Federal State Statistics Service 10 773 travel agencies are operated in Russia in 2014, 4685 of which are on the federal register of tour operators. Most tour operators (59%) work in the outbound tourism market, 40% with domestic tourism and 12% – with inbound tourism.

Today, Russia occupies a stable position in the international tourism market. In 2012 the country joined the 10 leading countries by the number of inbound tourists. According to The United Nations World Tourism Organization (UNWTO) in Russia the rate of inbound tourists in 2010 was 4.4%, in 2011 – 11.9%, in 2012 – 13%. The tourism revenue was $8.83 billion in 2010, $11.328 billion in 2011 and $10.759 billion in 2012.
In 2012 the Russian Federation’s share in the world tourism flow was 4.8%. In 2013 the largest number of inbound tourists comprised tourists from China.

Geographically the most popular foreign tourist attractions are traditional tourist centers of the country: Moscow, St. Petersburg, Kazan and the cities of the Golden Ring. Also, foreign tourists are interested in natural attractions of Siberia, Lake Baikal and the Far East [6, p. 189].

It should be noted that a positive impact on the development of tourism in Russia had been made by the recent major sports events, such as the XXII Olympic Winter Games and XI Paralympic Winter Games of 2014 in Sochi, the XXVII World Summer Universiade of 2013 in Kazan. Also, Russia will hold the 2017 FIFA Confederations Cup, the 2018 FIFA World Cup and XXIX World Winter Universiade of 2019 in Krasnoyarsk.

Over the past 16 years the Russian tourism market has had a certain development. By the present time inbound and domestic tourism in the country are represented by a wide variety of tourist destinations. The fastest growing types of tourism are cultural and educational, sports, business, environmental, rural, medical and health, fishing and hunting, cruise, event tourism, in the future mountain skiing and science tourism will be developed.

The study of the current state of tourism in Russia allows to identify the following positive trends in the development of the industry:

• increase of the number of objects of tourism infrastructure, total spent money and the number of people who visited the objects;
• increase of the number of recreational facilities and tourist attractions by means of the Republic of Crimea and the city of Sevastopol;
• presence of the domestic demand potential for cultural and educational travel programs in the country;
• increase of patriotism, among young people too;
• availability of labor resources to replace job positions in the tourism industry of the Russian regions;
• the existing system of vocational and higher education for tourism;
• positive experience in applying the federal target programs for the development of tourism;
• tendency for the development of the innovation economy of Russia on a federal level, etc.

The development outcomes of the tourist industry in the Russian Federation for the year 2015 allow to conclude that tourism has strengthened its position as a significant sector of the Russian economy and begun to play an important role in socio-economic development of the regions of the country. According to the Federal Agency for Tourism, by the results of 2015 the domestic tourist flow in Russia has increased by 20% in comparison with the year 2014.

While domestic and inbound tourist flows have grown in numbers, there is a falling demand for outbound tourism. According to the Federal State Statistics Service, the number of Russians traveling abroad has decreased by 19% in 2015, compared with the year 2014, while during all the previous years since 2011 this figure had been continuously growing by 10–20% annually.

4. The significance of the tourism industry in the development of the state economy

With positive relative changes of the socio-economic situation in the Russian Federation the tourism industry has begun to act as an important factor in the stabilization of the entire socio-economic development of the country. By providing financial income at the regional level, new jobs for local population are created, tourism stimulates the production of goods and services, develops social infrastructure and means of communication, makes an actual contribution to improving the balance of payments of the state as a whole [1, p. 81].

The researches conducted by The United Nations World Tourism Organization (UNWTO) show that the tourism sector provides a huge impact on the economy and social sphere of the state and promotes:

• creation and development of hotel, transport and service tourism infrastructure;
• development of the recreational potential of the state;
• preservation of the traditions and development of folk crafts, cultural and historic monuments;
• improvement of the image of the state, which has a positive effect on its investment attractiveness;
• international tourism brings huge revenue to the state economy;
• tourism industry has a positive effect on the employment by creating new jobs. This industry provides jobs for more than 100 million people in the world, at the same time, the growth of employment in the tourism sector is 1.5 times higher than in the manufacturing sector;
• tourism sector can create business opportunities in the countryside.

It becomes obvious that for the development of the tourism sector in Russia as a means of replenishment of the state budget, it is necessary to solve several major problems, including: the revival of cultural and natural heritage, improvement of recreational resources, expansion of the social sphere of tourism, raising public and private investments for the development of tourism infrastructure, modernization of the existing infrastructure of the social sphere. It should be noted that the country needs to create the conditions for the functioning of organizations and enterprises of the tourism industry to the Russian tourist market has become more attractive to them than foreign. (It is worth noting that the country needs to create conditions for the functioning of organizations and enterprises in the field of tourism, the Russian tourism market has become more attractive than foreign ones.)

5. Negative factors in the tourism sector

At the present time the main problems of the Russian tourism industry are incomplete development of the objects of the tourist infrastructure and lack of practice in creating favorable conditions for raising investments in tourism at the regional level [2, p. 105].

It is worth noting that the development of tourist infrastructure includes not only the construction of new facilities for the accommodation of tourists, but also the associated infrastructure – entertainment industry, tourist attractions, catering enterprises, transport, etc. [4, p. 169].

Considering the problem of attracting investment in the tourism sector the following main components of this negative factor can be identified: lack of necessary investment ready areas for business, unfavorable conditions for land lease and the presence of administrative barriers created by public authorities. So, for example, registration of a land plot for construction of a hotel often requires a huge number of approvals, which sometimes takes several years.

The following negative trends in the Russian tourism industry can be highlighted:
• outdated and inefficient resource base in medical and recreational tourism, lack of facilities for children and youth tourism;
• bad environment and contamination of coastal areas and coastal areas in the sites of active tourism development;
• negative experiences of a number of serious bankruptcies of the leading tour operators of the country;
• need to improve the services provided by the cultural institutions with a focus on tourists, etc.

The above conducted competitive analysis of the strengths and weaknesses of the Russian tourism market highlights the need for action by the state to create the necessary conditions for sustainable development of the tourism industry in the country. To ensure the implementation of these measures the following tasks can be performed:
• improvement of the legal regulatory system in the tourism industry;
• formation of comfortable and high-quality tourism environment;
• improvement of the competitiveness and quality of the Russian tourism product on the domestic and international tourism markets;
• increase of the social role of tourism through the development of children, youth, recreational and eco-tourism;
• enhancing the role of tourism as a factor of the development of the economy of the regions of the country;
• improving the system of public administration in the sphere of tourism;
• advertising and promoting information about Russia's image as a country favorable for tourism in the domestic and international tourism markets;
• improving visa policy in order to facilitate the process of gaining permission to enter the country by incoming tourists;
• organization of integrated security in the tourism industry.

6. Conclusion
Thus, in the modern world the importance of the tourism industry constantly grows, it is caused by the increase of influence of the sphere on the economy. Tourism is an important socio-economic phenomenon, which has a positive impact on the cultural, educational, social spheres; is a means of the emergence of new sources of funding, the creation of new jobs and growth of the rate of employment; it promotes preservation of natural, cultural and historical potential of the country.

The tourism sector contributes to the expansion of the economy by creating new service industries. In addition, tourism is a special factor in the implementation of the state foreign policy, it influences the alignment of economic development of the regions and the difference in the standard of living and income of citizens of the country.

The advantages of the Russian tourism product on the international tourism market are, above all, rich cultural, historical and natural heritage of the country, combined with an element of freshness that is of particular interest for international tourists. The emergence within recent years of new tourism products in the regions of the North, Siberia and the Urals increases competitive advantages of the tourism industry in Russia. Tendencies in the development of tourism in the world show that as the world becomes more explored and new tourism centers appear less frequently, the tendency of travelling to more distant, unknown and inaccessible areas will grow.

It is worth to emphasize that the potential resources of tourism in the Russian Federation, on the condition that the tourism infrastructure is well developed can increase the number of inbound international tourists several times.

Over the last decade in the Russian Federation a common sense approach to understanding the tourism industry as a sector of the economy with significant benefits for the socio-economic development of the regions and municipalities of the country has been formed.

Currently Russia's authorities are pursuing the policy of comprehensive development of domestic and inbound tourism considering the growth of economic and social progress at the regional level. Now the country faces the problem of preservation of the reached results in the tourism sector, of improvement of the quality of the organization of tourist programs and creation of the conditions for maximum positive social impact from the development of tourism in the country.

In recent years promotion of the Russian tourism product on domestic and international tourism markets improved the image of Russia as a country with developing tourism.

At the present time, in foreign countries which form the main flows of international tourists measures are being taken to improve Russia's reputation as a country favorable for tourism. The existence of these activities including cultural and tourism forums indicates that this is a highly effective form of cooperation. Firstly, they unite principal key members of tourism on one platform. Secondly, the events in the tourism sector are always of great interest to the media and considered to be large-scale and high-profile events for attracting attention. The main objectives of these activities are such powerful impulses as the development of tourism
exchanges, access to new opportunities through mutual presentations of tourism potential, tourism products, services, as well as the conditions for mutual business investments into the tourism industry.

Today it is necessary to maintain and develop this kind of activity using a wide range of means of communication, including various events and meetings, intercultural means of communication, advertising and notification.

It is necessary to more actively use the tools of Internet for the promotion of the Russian tourism product on the domestic and international tourism markets. It is necessary to make particular efforts to attract domestic tourists into the tourism centers of the country.

In recent years in Russia the main emphasis has been given to the beach and wellness tourism, in the long term it is advisable to promote cultural, cognitive, recreation and ecological forms of tourism.

Also, today, a strategic challenge for the tourism sector is to create and maintain a positive image of Russia as an affordable, interesting, safe and fashionable tourist destination.

In addition, it is necessary to be aware of the importance of establishing domestic tourism priorities among citizens of the country. Such kind of work should be carried out through campaigning; creating a positive tourism image of the state; providing relevant information on existing tours and services tailored to the needs of potential tourists; arranging integration of the existing tourism products into the educational process at all levels of education.

The current dynamics of the development of the tourism market raises the need for timely improvement of the legal regulatory system in the tourism sector, as well as monitoring related legislation that affects functioning of the tourism industry.

One of the main aspects of improvement of legal regulation in the sphere of tourism should be the development of legislation relating to all sectors of the tourism industry. It includes issues of the improvement of federal and regional legislation in the sphere of tourism, stimulation of investing activities, improvement of the quality of tourism services, state support of domestic tourism, development of mechanisms to support Small and medium-sized travel companies, development of public-private partnership, etc.

Also, the improvement of state regulation of tourism development should be carried out in the following areas: improving the efficiency of interregional cooperation in the organization of tourism; achieving mutual agreement in the implementation of development plans of related industries, ensuring the creation of favorable conditions for the development of the tourism sector; improving the statistical system in the industry of tourism. It is necessary to monitor and evaluate both positive and negative results from the development of tourism in the regions, to study the changes in the population quality of life indicators depending on the growth of tourist flows.

It is necessary to take measures aimed at improving the safety culture of tourism, measures involving the formation of conscious attitude to personal security, as well as to environmental protection, natural and cultural-historical heritage.

In the Russian Federation, to raise awareness on the sustainability of the tourism industry measures to encourage the use of resource-saving and environmental technology on the tourism infrastructure facilities should be taken. These principles should be applied in the implementation of regional development strategies for tourism.

References

REFERENCE TO ARTICLE
Social Phenomenon of Consumer Behavior in Contemporary Russia

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Annotation: article is devoted to consideration of a problem of consumption in contemporary Russia. Studying of a problem of consumption is actual both for Russia, and for the international community. Economic, political and sociocultural factors of consumption act as the main indicators defining consumption tendencies in contemporary Russia. At the same time the main prerequisite for emergence and development of consumption in contemporary Russia are economic factors which promote institutional instability of the Russian society in general. Purpose of this publication: to analyze key factors of consumption, significant for functioning of process of consumption of the Russian society.

Key words: social phenomenon, consumer behavior, consumption, consumer society, contemporary Russia.

1. Introduction

1.1. Problem definition

The perspective of consumption becomes the integral element of society as reflection of its political, economic and cultural structure. The importance of consideration of consumer behavior as a social phenomenon is caused by a current state of the Russian society in which sociocultural processes of formation of “consumer society” are obviously traced. Valuable orientations of “consumer ideology” become defining. Consumption turns into the dominating social process, “stops being way of fight for a physical survival and turns into the instrument of designing of social identity, sociocultural integration into society” [4].

Consumer behavior – the multidimensional, difficult process happening in structure of society. The phenomenon of consumer behavior is connected with such phenomena as “consumption”, “identity of the consumer”, social stratification (need for accessory and recognition consumer level), valuable orientations, social action, etc., also he is indirectly connected with such concepts as a standard of living, quality of life and many others [7].

1.2. A problem level of development in Russia

The main valuable and world outlook reference point in contemporary Russia is the ideology of consumption [10]. Consumption is the important social mechanism and acts as the valuable and organizing environment in relation to culture elements. Among problems of development of contemporary society, the important place is allocated to expansion of mass culture in which to consumption the role of basic value is defined. In consumer behavior the tendency is traced:
from consumption of goods, as products – to consumption of symbols of success and the power. Installations of consumers predominate over other components of his identity [14].

Analyzing consumer behavior as a social phenomenon, we will address, first of all, the term “consumer behavior”, we will analyze a phenomenon of consumer behavior in all variety of his parameters and we will consider the factors exerting impact on consumer behavior in contemporary Russia.

Studying of the theoretical base of consumer behavior as a social phenomenon is also essential condition for full-fledged management of this process.

2. Methodology

There are various approaches to consumption studying allocated in classical sociological concepts with M. Weber, G. Zimmel, T. Veblen, K. Marx, V. Zombart, F. Kotler, M. Fezerstoun, Zh. Bodriyar, S. Miles, M. Miller, V. Frezer, R. Layermans, R. Bokokka, S. Bauman, I. Hoffman, F. Dzheymsion, E. Toffler, A. Smith, U. Dzhevons, L. Valras and K. Menger. However, in the context of consideration of process of consumption it is expedient to analyze tendencies of consumption and consumer behavior from the point of view of the factors defining consumption in contemporary Russia. During the work on this research techniques of the analysis of documents were applied: traditional (primary) analysis of documents, and also secondary, comparative analysis. Were practically approved during the work on this project specialized quantitative content analytical techniques.

3. Results

3.1. Main theoretical approaches to studying of consumer behavior

The concept “consumer behavior” has interdisciplinary character and its various aspects, are studied in a perspective of such sciences as economy, sociology, cultural science, social psychology, marketing.

Economic approach considers consumer behavior as satisfaction of the maximum quantity of requirements at the minimum expenses, operating with the concepts “cost”, “usefulness”, “benefit”, “expenses”. Economic definition of consumer behavior – “is the process of use of useful properties of this or that benefit interfaced with satisfaction personal needs of the person and an expenditure of cost of this benefit” [18].

Sociological approach considers consumer behavior as a social phenomenon in aspect of formation of social norms and values. The sociology studies impact of social groups on consumer behavior, classifies the social actions connected with consumption. The consumer behavior in a sociological key of perception is a chain of social acts [5]. In sociology consumption and consumer behavior is inseparably linked with concepts of value, valuable orientations, “vital style of the consumer” which define motivational installations are an important factor of social regulation of the human relations [17].

The social psychology considers psychological features of consumption, through the relation to goods and services. The consumer behavior in social psychology is the social activity connected with acquisition, use of products, services. Consumption is studied as social process [13].

Cultural approach to consumer behavior and consumption is an interpretation of sign and symbolical aspects. Consumption is considered as a complex of the cultural archetypes having the symbolical nature. Value-oriented action which is directed to satisfaction of the requirements formed as a result of cultural socialization is the cornerstone of cultural approach [12].

Within marketing approach, the model consumer behavior consists of incentive factors: goods, price, methods of distribution and stimulation, “a black box” of consciousness of the buyer, responses [8].

Theoretical justification of a phenomenon of consumption has been given by M. Weber, G. Zimmel, T. Veblen, K. Marx, V. Zombart in concepts of “demonstrative consumption”, “an idle class”, “commodity fetishism”, “the concept of luxury”. 
Within sociology of culture, daily occurrence sociology the consumer behavior was studied by M. Fezerstoun, Zh. Bodriyar, S. Miles, M. Miller, V. Frezer, R. Layermans, S. Bauman. Sign and symbolical aspects of consumption were investigated by R. Bokokka, S. Bauman, I. Hoffman, F. Dzheymsmon, E. Toffler.


We will consider in more detail the defining concepts and theories which became the main for contemporary understanding of science about consumer behavior, have laid the foundation of sociology of consumption, psychology of consumer behavior, marketing.

3.1.1 Main theories of consumption

The foundation of studying of consumer behavior has been laid by A. Smith at the end of the XVIII century. In “the theory of the economic person”, he has allocated the consumer as front view of the person economic. In the seventies the XIX century U. Dzhevons, L. Valras and K. Menger have developed “the theory of extreme usefulness” or “the marginalist theory” in which major importance was given to a usefulness perspective, rational value of limit advantage of a product for the consumer was distinguished. The theory of marginalist determined the subjective value of the consumed benefits for the individual. The concept of “commodity fetishism”, has been entered into economic science by K. Marx. The commodity fetishism is a process of objectification social the relations, investment of any goods with supernatural properties and meanings. Goods, according to K. Marx, represent the predominating form of communications in capitalist society [13].

T.B. Veblen in the “theory of an idle class” has entered concept of “demonstrative consumption” which I connected with development of an idle class – a class of the owners who aren’t earning means of livelihood a hard work and getting the consumer goods inaccessible for other classes, and making it is demonstrative, for show. For belonging to a certain group, it is necessary to consume a row of status goods, consumption process in this way turns into competition of the income (Veblen, 1984). The harmonious system of the differentiated consumption, on Veblen, is developed at some point economic development.

V. Zombart has offered “the concept of luxury”, has comprehensively considered a luxury phenomenon; he defined luxury as expenditure which goes beyond necessary. I allocated luxury objective – directed to satisfaction of physiological requirements, and subjective, determined by valuable installations. He considered that the social action connected with luxury can have altruistic and egoistical motive [20].

G. Zimmel in “fashion philosophy” considers fashion as the socialization mechanism where the role of excess consumption is guarantee of healthy development of society.

In M. Weber’s works provisions of “the theory of status groups and Protestant ethics” and “the theory of social action”, are built in system of the sociological categories of economic action which have had significant effect on development of studying of consumer behavior. And, in “the theory of status groups”, the consumer behavior is considered, it is rather from the point of view of economic approach. Weber has allocated the concept “social status” as criterion of a way of consumption, a way of communication, a marriage. In “the theory of social action”, the valuable and rational type of social action, the understanding of behavior for which is based on moral and religious ethical standards, has been defined [15].

In the XX century huge influence on understanding of consumer behavior as a sociocultural phenomenon, was rendered by P. Bourdieu, Zh. Bodriyar and E. Goffman’s works.

P. Bourdieu studied differences of tastes of consumers from the point of view of stratification structure of society. He considered that consumption – the act of decoding, interpretations. Consumption of high art is of interest only for this purpose that is competent, i.e. is familiar with a code. Cultural requirements, according to Bourdieu – result of education and education [5].
P. Bourdieu has entered such concepts as “the social agent” – the concept opposite to “individual”, “social space” – the abstract space designed by system of fields (the intellectual field, the economic field) [16]. “Gabitus” – the system generating and actions of agents and their representation, functioning as a matrix of perception, statement of the purposes, solutions of tasks, actions. In him ways of estimation and thinking, esthetic taste, a manner of behavior and the speech, characteristic style and a way of life which distinguish the representative of one class, a profession, a nationality from others are presented. Gabitus allows the agent to be guided in social space and adequately to react to events and situations.

Zh. Bodriyar in the work “System of things” – writes that consumption can be considered characteristic feature of our civilization. “Consumption is not a passive condition of absorption and assignment which is opposed to an active condition of production to counterbalance thus two naive schemes of human behavior (and alienations). It is necessary to declare from the very beginning that consumption is an active mode of the relation – not only to things, but also to collective and to the whole world – that in him systematic activity and a universal response to external influences is carried out that all system of our culture is based on him” [2]. Consumption is considered by Zh. Bodriyar as system of a manipulation signs. To become object of consumption, the thing has to become a sign, receive the status of a sign. Bodriyar considers social system as derivative of sign system, and a consumer society as society in which there is no place to the real feelings, culture, and even the surplus of goods is the masked deficiency.

E. Goffman investigated ways by means of which people make impression at each other and on themselves. At the same time they are not only slaves to various structures of thinking imprinted in culture but also their creators, and these structures are rather set of the means of expression used when developing strategy of interaction than relentless norms which need to be followed [3].

The big contribution to studying of valuable components of consumer behavior was made by M. Rokich. In the work “The nature of human values”, he has made classification of valuable orientations, has described structure of systems of values, has developed an empirical technique of measurement of values – Rokich’s scale, has shown the importance of influence of systems of values on behavior.

3.2. The socio-cultural factors influencing consumer behavior

The factors exerting impact on consumer behavior can be divided into two parts. External – cultural and social factors and internal – personal and psychological factors.

Cultural factors exert impact, both on behavior of an individual, and on structure of consumption in society. The prime cause of requirements and behavior of the person, the culture is. In the new philosophical encyclopedia such definition of the concept “culture” is given: “Culture – (cultura – cultivation, education, education, development) – system of the programs of human activity (activity, behavior and communication) providing reproduction and change of social life in all her main manifestations which are historically developing the over biological. Programs of activity, behavior and communication are submitted by variety of knowledge, norms, skills, ideals, models of activity and behavior, ideas, hypotheses, beliefs, is more whole, valuable than orientation, etc. In the set and dynamics they form historically saved up social experience. The culture stores, broadcasts this experience (transfers it from generation to generation). She also generates new programs of activity, behavior and communication which, being realized in the corresponding types and forms of human activity, generate real changes in life of society” [9].

The main structural components of culture are:

1. Values – socially approved vectors, the behavior purposes defining behavior of people. The consumer behavior is influenced by the following cultural values – an individualism/collectivism; hierarchy/network; submission/partnership; discipline/independence, romantic orientation; masculism/feminism; youth/old age; purity, execution/status; tradition/change, etc.; Culture values – the defining component of the relation to a product, goods are also
actively used in marketing for creation of advertisements. Values divide on focused on another –
defining the society relation to actions of the individual; focused on Wednesday – reflecting
the society relation on relationship with environment and focused on themselves – reflecting
the relation to the vital purposes approved by society;
2. Norms – are based on cultural values and represent the set of rules, allowing or forbidding
any actions. Morals, the right, religion, customs belong to the main cultural norms;
3. Language – the system of signs created by mankind and which is used for communication;
Sanctions are subdivided on positively and negatively influencing consumer behavior. Sanctions
can render both the stimulating action on consumption and braking.
The main impact of mechanisms of culture on consumer behavior is shown in socialization –
process of acquisition of examples of behavior, assimilation of the social norms and values,
skills necessary for the individual for successful interaction in society [1]. It is difficult to
overestimate the importance of culture in consumption and impact on consumer behavior.
Specifics of consumption are more caused by cultural factors.
It is possible to distinguish from the social factors exerting impact on consumer behavior – a
social status, a family and a household and reference groups.
The social status is considered through a prism of concepts of a level, a class (social
stratification) and the status. The social status is defining in behavior of the individual, and
also is caused by behavior. Social stratification is the principle of stratification of structure
of society on groups which are called – classes, layers or striations showing various position
of individuals in society relatively each other. The status – the set of expectations, roles, the
rights and duties defining the place of the individual in social space. Expression of the status
in social action is defined by the role determined by behavior model. The role is designated
by the secret arrangement between individuals as the certain behavior model corresponding
to the developed social situation.
The consumer behavior is considered as a number of roles:
1. The role of the initiator – influences identification of degree of importance of requirement
and the decision on purchase;
2. The factor role – consists in operation, demonstrations, the description of consumer
goods which brings closer the individual directly to the act of purchase;
3. The role of the buyer – consists directly in process of barter, purchase;
4. The role of the consumer – consists directly in consumption, use of a product [1].
Allocate the following main criteria defining social roles: motivation, formalization, scale,
emotionality, way of receiving.
When studying consumer behavior the following indicators of a social class are used:
1. The profession (occupation) – is the defining indicator of style of consumption, a prestige
indicator assessment basis;
2. The personal status – shows progress of the individual in group by the nature of
employment, level in a profession;
3. Interaktion (interaction) – displays social interactions of individuals, belonging to a
certain group;
4. Possession – an indicator of belonging to any class through visible consumption, contacts
wealth;
5. Valuable orientations – the certain opinions, judgments shared by a certain group of
individuals, identifying a class association;
6. The class consciousness – displays political and economic interests of group of
individuals;
7. The power and mobility – ability of the individual to impose the will and movements in
stratification structure.
It should be noted that within studying of consumer behavior rather a term “status range” (occupation, age, the income) which displays a social status of the individual, than a social class more capaciously is used [6].

3.2.1. Family and reference groups as factor of influence on consumer behavior

Considerable impact on consumer behavior is exerted by a family and a way of housekeeping. A family – the main agent of consumer socialization of the individual who imposes a certain character on installations, expectation and behavior of the person. In the course of socialization of people receives from parents of lecture about religion, honor, self-esteem, love that leaves a mark and on behavior of the individual as consumer. Consumer socialization consists of several stages. A preoperational stage – children at the age of 3–7 years. The speech isn’t developed, the structure of knowledge of the world still small is organized. Parents provide the limited choice of products for purchase. The concrete and operational stage – children at the age of 8–11 years, occurs formation of abilities of application of logical thinking. At this stage children begin to develop methods of belief of parents for purchase of the desirable. And the formal and operational stage which is characterized by full formation of abstract thinking in 11–15 years and ability to make decisions practically on all range of consumption. The opinion of groups of peers, and also information sources (Internet) has significant effect on consumer socialization [1].

Eventually the structure of a family changes, the family passes through a certain sequence of the stages rendering fundamental value on consumer behavior (the marketing concept of life cycle of a family):

1. The bachelorhood stage is characterized by a free financial condition, consumption of fashionable goods and tourist services;
2. Newlyweds without children, it is characterized by the highest intensity of consumption;
3. A family with the child till 6 years, unsatisfactory financial position, peak of purchase of housing;
4. A family with the child after 6 years, a stable financial position, consumption at a low level;
5. Spouses with adult children, a good financial position, intensive consumption of durable goods;
6. Elderly spouses on pensions, sharp reduction of the income, purchase of medical goods [8].

Reference groups – the groups defining formation of norms and values which are the major factors causing thinking and behavior of the person. The reference group and group of accessory of the person can not coincide and make impact on behavior of the person as consumer in various directions. More obviously expressed impact on consumer behavior is exerted by primary groups, (e.g. a family) – the social communities of the small size influencing the individual directly face to face. Secondary groups (e.g. professional), also exert impact on consumer behavior and his thinking, but in less comprehensive form.

There are several types of influence of reference groups on consumer behavior defining degree and nature of such influence:

- information influence – granting by a reference group of information exerting impact on consumer behavior;
- standard influence is expressed in impact on the individual through compliance to norms of group. Force of standard pressure is various in relation to different situations and individuals;
- valuable or identification influence – acceptance of group norms and values for the purpose of image improvement. Identification influence applies aspiration of consumers to identification with the organizations, the countries, persons for whom have respect and admiration [6].

Distinguish personal factors which are in turn subdivided on from the internal factors influencing consumer behavior:
1. Factors of life cycle of a family and age;
2. Economic factors, factors of an image and lifestyle;
3. Factors like personality.

The major psychological factor of consumer behavior is the motivation. The new philosophical encyclopedia defines concept of motivation as follows: “Motivation – the internal motivation to action causing subjective and personal interest of the individual in his fulfillment. The motivation is characterized by a difficult set of components: a type of requirement which it meets, a form which she takes (concept, an image, thought, dream), extent of updating, scale (width or narrowness), content of the realized activity” [9].

3.3. Consumerism and social policy

The consumerism is the social movement on protection of the rights and interests of consumers which is based on ensuring the right of the consumer for qualitative goods, services and advertising which doesn’t mislead consumers (the term “consumerism” is used also in consumerism value in a context “consumer society”). In general, the consumerism is directed to a moral ethical aspect of relationship between producers of goods and consumers and to formation of social responsibility of the companies [1].

Origin of consumerism in Russia is connected with formation of a consumer society. Zh. Bodriyar in the book “Consumer society” devoted to this phenomenon has marked out the main lines of formation of culture of a consumer society from which it is possible to distinguish: consumption as way of creation of social identity; consumption as a method of a sociocultural inclusiveness in social life; consumption of things as distinction symbols. With the advent of a consumer society there was a cultural revolution, S. Miles calls contemporary consumerism (in a context “consumer society”) – “religion of the end of the 20th century” [4].

In Russia it is possible to allocate such directions of development of consumerism: regulation at the level of the state and local self-government institutions, social movements (e.g. “Society of consumer protection”), the business operating within interests of consumers via mechanisms of competitive self-regulation.


Control on quality and safety of production is made by government bodies of certification, sanitary and epidemiological surveillance, environmental protection. “Society of consumer protection” and the numerous organizations “green”, supporting preservation of natural balance and ecology of production are ranked as social movements, within consumerism.

Now in Russia a certain social orientation of society in which a measure of vital success is material benefits was created. The power – the significant value in itself, became the instrument of personal enrichment. The elite have shown the principles of contemporary liberal culture: unlimited individualism; enrichment as meaning of life; a justification from the point of view of morals of the acts leading to success. Researches of valuable orientations of young people, show strengthening of the importance of “wellbeing”; a condition of good and happy life, “prosperity” is considered [4]. Thus, in mass consciousness cultural shift towards a consumer society is accurately traced. Insufficient efficiency of elevators of social mobility, poorly developed mechanisms of market distribution, existence of such dominating elite, – all this couldn’t but exert impact on a culture kernel – valuable and standard system of contemporary Russian society.

4. Discussion

Consumption factors in contemporary Russia have various forms and manifestations. At the same time, the leading positions are taken by the economic factors caused by influence of the
state in the context of one-dimensionality of perception of social processes. The integrated approach to development of infrastructure of all social institutes is necessary for perspective development of society. Prospects of development of Russia directly depend on successful development of all palette of factors of consumption. First of all, the social structure of society and stratification processes happening in her exert impact on process of consumption in contemporary Russia. Property stratification generates differentiation. State regulation in the sphere of consumption is an important factor, especially, concerning the social and unprotected segments of the population. For development of healthy society, comprehensive study of processes of consumption is the necessary and defining condition.

5. Conclusion

In contemporary Russia lines of the “consumer society” which is characterized by formation of a certain social orientation of society and new social institute of consumption in which a measure of vital success are material values and money are traced.

We define consumer behavior as sequence of the interconnected social acts directed to social interaction; we consider conditionality of specifics of consumer behavior sociocultural factors from which it is possible to distinguish as having paramount value: social status, family and way of housekeeping, and also reference groups. We focus attention that the consumer behavior represents a number of the roles corresponding to the developed social situation, we define influence of processes of consumer socialization of the individual on his behavior as consumer, and also influence of the reference groups influencing consumer behavior in various directions.

Having considered the sociocultural factors exerting impact on consumer behavior it is possible to draw a conclusion on need of consumption for everyday life and in the course of reproduction of social structures. Consumption is comprehended by us in the context of the dominating social process, the instrument of designing of social identity of the individual, a basis of sociocultural integration into society.

References


REFERENCE TO ARTICLE
The Recognition of Foreign Education:  
Three Years After Adoption of Federal Law  
“On Education in the Russian Federation”

Annotation: the article considers the features of labor and education migration to Russia in the context of issues relating to the adaptation and integration of immigrants into the accepting society. The article describes the role of the process of recognition of diplomas of foreign citizens as a factor of their adaptation to the Russian labor market. The authors present a detailed analysis of the dynamics of the foreign education recognition in Russia for the period from 2013 to 2015.

Key words: immigration, labor migrants, educational migrants, recognition of diplomas.

Nowadays the recognition of the foreign education and (or) foreign qualification in the Russian Federation is carried out on the basis of article 107 of the Federal law No. 273 from 29.12.2013 “On Education in the Russian Federation” (hereinafter – the Federal Law on education in the Russian Federation) [16].

The earlier existing legal rules relied only on the recognition of documents of the foreign states on education level and (or) qualification on the territory of the Russian Federation (article 27.2 of the Law on education No. 3266-1 from 10.07.1992). The comparative analysis of standards of educational laws allows to draw following conclusions.

First, the Federal law on education in the Russian Federation defines new approaches to the recognition process of foreign education and (or) foreign qualification in the Russian Federation, having excluded the definition “document” from the formulation.
Secondly, article 107 of the Federal law on education in the Russian Federation provides insight into the concept and legal aspects of recognition of education and (or) qualification received in the foreign state [10; 15].

First of all, the definition “recognition” is specified and understood as an official confirmation of the importance (level) of education and (or) qualification received in the foreign state for the purposes of:

– ensuring access to their holder to education and (or) professional activity in the Russian Federation;
– granting to its holder academic, professional and other rights that are provided by international treaties on mutual recognition and the legislation of the Russian Federation.

One of the bases of recognition of education and qualification received in the foreign state (further – foreign education) are the existing international treaties of the Russian Federation on mutual recognition that are described in the Federal law on education in the Russian Federation (part 3 of Art. 107). In this case the foreign education is recognized by the law and there is no need to carry out a special procedure.

The constitution of the Russian Federation (part 4 of Art. 15) has formalized a priority of conventional principles and rules of the international law. These norms and principles, as well as international treaties of the Russian Federation are components of its legal system. If the international treaty of the Russian Federation has determined other rules than provided by the law, then the rules of the international treaty are applied.

Russia is a participant of many international treaties on mutual recognition. However, a significant amount of such treaties has become morally out of date since they are distanced from the present time period and the concrete documents on education specified in them formally come within the provisions of the law, although they actually confirm the education level corresponding to the sense of the treaty.

In this regard the changes in the approach to the recognition procedure of foreign education in the Russian Federation determined by the Federal Law No. 273 are considered appropriate. As was said the word “document” was excluded from the concept “recognition”. This fact meets the international standards in the field of recognition in a greater degree and makes the procedure more flexible, and also gives an opportunity to use a more conceptual, contextual approach, and not a simple mechanical comparison of the document submitted for recognition and the text of the treaty.

At the same time, during the recognition process of foreign education it is necessary to consider the existence of international treaties and other acts, which raise the key questions concerning the general direction of the principles and approaches to the recognition process of foreign education.

The main international document in the sphere of recognition of foreign education is the Joint Convention of the Council of Europe and the UNESCO “On the Recognition of Qualifications concerning Higher Education in the European Region” (No. 165 ETS) from April 11, 1997 – the Lisbon Convention [4–5].

According to the international act the recognition of foreign qualifications is based on criteria of quality of education (assessment of higher education institutions and their programs by organizations, which are responsible for quality of education), the principle of determination of “substantial differences” in the described foreign qualifications in comparison with similar national qualifications (they are recognized, if substantial differences with comparable national qualification were not revealed).

The Lisbon Convention is a form of codification and creative reconsideration of nine previous various international legal acts (protocols, declarations and conventions), which were earlier applied in the European region.
Furthermore, according to the Government Order of the Russian Federation from 27.02.2014 No. 272-p the creation of the National information center on the basis of the Federal State Budgetary Institute “Main State Expert Centre for Education Evaluation” (hereinafter – “Glavexpertcentre”), which provides information on foreign education degrees and titles recognition in the Russian Federation, actually is the implementation of provisions of the Convention on information concerning questions of recognition.

The Federal Law No. 273 has formalized a tendency on decentralization of the recognition procedure, granting the right to independently carry out the recognition process of foreign education and (or) qualification to the educational organizations. These organizations have the right to independently develop and approve educational standards on all levels of higher education.

Nowadays the recognition procedure besides the Federal Service for Supervision in the Sphere of Education and Science (hereinafter – Rosobrnadzor) can be also carried out by educational organizations of higher education, specified in part 10 of article 11 of the Federal Law on education in the Russian Federation. This concerns such educational organizations as the Lomonosov Moscow State University, the St. Petersburg State University, and other educational organizations of higher education, which have the right to independently develop and approve educational standards on all levels of higher education.

Figure 1. The Categories of Russian Educational Organizations, Which Have Acquired the Right to Independently Recognize Foreign Education and (or) Qualification since September 1, 2013

The full list of Russian educational organizations, which have acquired the right to independently recognize foreign education and (or) qualification as in picture 1, looks as follows:

a) Leading universities
   1) Lomonosov Moscow State University
   2) St. Petersburg State University
b) Federal universities
| 3) Immanuel Kant Baltic Federal University |
| 4) Far Eastern Federal University |
| 5) Kazan (Volga Region) Federal University |
| 6) Northern (Arctic) Federal University |
| 7) North-Eastern Federal University |
| 8) North-Caucasus Federal University |
| 9) Siberian Federal University |
| 10) Ural Federal University |
| 11) Southern Federal University |
| 12) V.I. Vernadsky Crimean Federal University |
| c) National research universities |
| 13) Belgorod State National Research University |
| 14) Kazan National Research Technological University |
| 15) Kazan National Research Technical University |
| 16) National Research University “Moscow Aviation Institute” |
| 17) National Research University “Moscow Institute of Electronic Technology” (Technical University) |
| 18) Moscow State University of Civil Engineering (MGSU) |
| 19) Bauman Moscow State Technical University |
| 20) Moscow Institute of Physics and Technology (State University) |
| 21) National Research Irkutsk State Technical University |
| 22) Ogarev Mordovia State University |
| 23) National Research Saratov State University |
| 24) National University of Science and Technology “MISIS” |
| 25) National Research Tomsk State University |
| 26) National Research University “Higher school of economics” |
| 27) National Research University “Moscow Power Engineering Institute” |
| 28) National Research Nuclear University (NRNU MEPhI) |
| 29) National Mineral Resources University (University of Mines) |
| 30) National Research University “Lobachevsky State University of Nizhni Novgorod” |
| 31) Novosibirsk State University |
| 32) Perm State University |
| 33) Perm National Research Polytechnic University |
| 34) Gubkin Russian State University of Oil and Gas |
| 35) Pirogov Russian National Research Medical University (RNRMU) |
| 36) Samara State Aerospace University |
| 37) St. Petersburg Academic University – Nanotechnology Research and Education Centre of the Russian Academy of Sciences |
| 38) National Research University “St. Petersburg State Polytechnical University” |
| 39) St. Petersburg National Research University of Information Technologies, Mechanics and Optics |
| d) Educational organizations of higher education, which independently develop and approve educational standards |
| 40) National Research Tomsk Polytechnic University |
| 41) South Ural State University (National Research University) |
| 42) State Marine Technical University of St. Petersburg (MTU) |
| 43) Federal state budgetary educational institution of higher professional education “Russian Presidential Academy of National Economy and Public Administration (RANEPA)” |
| 44) Federal state budgetary educational institution of higher professional education Peoples’ Friendship University of Russia |
In other cases, the recognition of foreign education and (or) qualification is based on the expert evaluation that is carried out by the “Glavexpertcentre”. The expert evaluation itself includes the assessment of the level of education and (or) qualification, the determination of the equivalence of academic and (or) professional rights granted to the holder in a foreign country, in which the education and (or) the qualifications were obtained, and the rights granted to the holders of the relevant education and (or) the qualifications obtained in the Russian Federation [7].

The results of the expert evaluation are considered to be the basis for recognition of foreign education and (or) qualification by Rosobrnadzor, including the recognition of foreign education as the period of study on an educational program of a certain level with the right for continuing the training on this educational program in the Russian Federation or for refusal in recognition of foreign education and (or) qualification.

Nowadays the information support of the recognition procedure of foreign documents on education level and (or) foreign qualification on the territory of the Russian Federation is carried out by the National information center, which:

1. provides free counseling of individuals and organizations for recognition of foreign education and (or) a foreign qualification;
2. places on its web-site in the “Internet”:
   - information about the types of education, education levels, lists of professions, specialties and directions of preparation determined in the Russian Federation and also information concerning the qualification assigned by the corresponding professions, specialties and directions of preparation;
   - information about documents on education and (or) qualification of the established sample, issued or being issued according to the legislation of the Russian Federation, the RSFSR or the USSR;
   - information about the international treaties on mutual recognition, including the list and samples of documents on foreign education and (or) qualification recognized in the Russian Federation;
   - the list of foreign educational organizations and also the list and samples of documents on foreign education and (or) qualification, issued by the specified foreign educational organizations, which are recognized in the Russian Federation;
   - information about the recognition procedure of foreign education and (or) qualification carried out by the educational organizations of higher education, which have the right to independently develop and approve educational standards on all levels of higher education.

The next three years after the entry of the Federal Law No. 273 from December 29th, 2012 “On Education in the Russian Federation” into force, which determined new significant approaches to the recognition of foreign education in Russia, were meaningful and dynamic.

For the first time in the history of the institution of the presidency in the Russian Federation in his annual strategic speech on December 12, 2013, President Vladimir Putin drew attention to the importance of the export of educational services, conditions for education in Russian universities for foreign citizens and our compatriots, especially from the CIS. “This is a very serious instrument for strengthening the cultural and intellectual influence of Russia in the world”, – said Vladimir Putin, adding “in the near future there is a necessity to ensure mutual recognition of school education with all the countries of the Commonwealth …” [17].

Therefore, the work of the Federal State Budgetary Institute “Glavexpertcentre” during the handling with foreign documents according to the updated legislation is based on the following approaches:

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45) Federal state budgetary educational institution of higher professional education Moscow State Institute of International Relations (MGIMO-University)

46) Financial University under the Government of the Russian Federation
recognition of the applicant’s education (document, set of documents);
-proof of the importance of education is to determine the level of education in the state-recognized educational institution;
-transparency, clarity and accessibility of the process;
-mapping the entire body of knowledge of the applicant in terms of its capacity to master the program of the next cycle/level on the basis of prior learning and not identifying proximity/differences in the lists of disciplines (contents) of compared educational programs;
-the maximum information support of educational organizations, experts on the recognition of the national information center;
-regular seminars (webinars) for experts in the field of recognition, executive secretary of admissions and others.

The recognition of foreign education and (or) qualification are closely linked to migration, public policy in the field of migration [2; 8; 14]. Despite the ambiguous attitude to the migration processes in the Russian society, we must recognize the fact that the role of migration in shaping the socio-economic and demographic potential of Russia in this century is very high. Moreover, we can say that owing to a separate migration flows (for example, training or educational migration, migration of highly qualified specialists) Russia replenish its human capital, which will contribute to the state economic development in the near future. The dynamics of applications for recognition of foreign education reflects the official statistics of migration processes in Russia, which is presented in Table 1 [18].

<table>
<thead>
<tr>
<th>Migration Dynamic to the Russian Federation</th>
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<tr>
<td>Migrated to Russia (total amount):</td>
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<tr>
<td>Including from CIS</td>
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<tr>
<td>Including from other countries of the world</td>
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**The number of international students, trained in Russia in 2005 - 2015**

<table>
<thead>
<tr>
<th>82 250</th>
<th>87 145</th>
<th>93 742</th>
<th>100 497</th>
<th>109 363</th>
<th>118 807</th>
<th>129 577</th>
<th>135 560</th>
<th>156 211</th>
<th>180 608</th>
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<tbody>
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<td>Bachelor</td>
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<th>24601</th>
<th>31465</th>
<th>31574</th>
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<th>40623</th>
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<td>3163</td>
<td>3367</td>
<td>4000</td>
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<td>21023</td>
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Figure 2. EMBED Excel.Chart.8
The top five countries – suppliers of migrants in 2014 – consists of China (10561 people), Georgia (7716), the DPR of Korea (6308), Vietnam (3853), Germany (3727). Similar trends we can see in the educational migration process. Changes in the number of foreign students in the last 10 years demonstrate their interest to the Russian education, which contributes to the political decisions of the Russian Government to increase the quota of budget places [1; 9].

As we see from the chart, in 2014–2015 academic year the number of foreign students increased by 14.1% and reached 186 606 people, the number of foreign enrollees increased by 9.8% (59 300 people), of whom one in five (11 090) applied by State quota [11].

Here is another example of the increasing international cooperation in the field of education – on the 9th of October 2015 the sixteenth session of the Russian-Chinese Commission for Humanitarian Cooperation was held in Xi’an (China). During this event it was agreed to increase student exchanges and to intent by joint efforts to increase the volume of bilateral academic mobility up to 100 thousand people by 2020.

Therefore, each year the Federal State Budgetary Institute “Glavexpertcentre” and the National Information Centre faces the challenges of increasing the number of applicants, the increasing demand for consulting services, working with refugees, people, who have received a temporary residence permit, compatriots.

Thus, the number of applications over the past 2.5 years was over 34 thousands, almost equally in applicant’s need is the academic or professional recognition.

Our immediate goal is the significant improvement of public services delivery concerning the recognition process:

- Implementation of tools for express assessment of foreign education;
- Provision of access to employers and educational institutions to the register of certificates;
- Implementation of on-line payment mechanism of the state fee;
- Creation of a registry of educational institutions of higher education of the Russian Federation in the English language, including information about licensing and accreditation [12].

The current website of the National Information Center has interactive forms of interaction through forums, private office and conference.

The National Information Centre is actively involved in international activities of the European Network of National Information Centers ENIC-NARIC, interacts with colleagues, and responds quickly to changes in society and geopolitical challenges [5].
In 2014, Russia resumed its active participation in the Bologna process and representation in its working bodies, the delegation of the Russian Federation headed by the Minister of Education and Science Livanov D.V. participated in the Ministerial Conference on 14–15 May 2015 in Yerevan and signed a communiqué, and has undertaken certain obligations. Most of the Communiqué points are somehow connected with the processes of recognition of foreign education or qualifications, as the mutual recognition of education – an integral factor that characterizes confidence in the system of education, and quality assurance, are the criteria of the real functioning of the single educational space.

For example, in the communiqué of the Yerevan meeting following points were mentioned:
➢ to include short cycle qualifications in the overarching qualification frameworks for the European Higher Education Area (QF-EHEA), based on the Dublin descriptors for short cycle qualifications and quality assured according to the ESG, so as to make provision for the recognition of short cycle qualifications in their own systems, also where these do not comprise such qualifications;
➢ to ensure that competence requirements for public employment allow fair access to holders of first cycle degrees, and encourage employers to make appropriate use of all higher education qualifications, including those of the first cycle;
➢ to review national legislations with a view to fully comply with the Lisbon Recognition Convention, reporting to the Bologna Secretariat by the end of 2016, and asking the Convention Committee, in cooperation with the ENIC-NARIC Networks, to prepare an analysis of the reports by the end of 2017, taking due account of the monitoring of the Convention carried out by the Convention Committee;
➢ to remove obstacles to the recognition of prior learning for the purposes of providing access to higher education programs and facilitating the award of qualifications on the basis of prior learning, as well as encouraging higher education institutions to improve their capacity to recognize prior learning;
➢ to review national qualifications frameworks, with a view to ensuring that learning paths within the framework provide adequately for the recognition of prior learning;
➢ to ensure that qualifications from other EHEA countries are automatically recognized at the same level as relevant domestic qualifications;
➢ to enable our higher education institutions to use a suitable EQAR registered agency for their external quality assurance process, respecting the national arrangements for the decision making on QA outcomes [20].

Our task on the way to the automatic recognition consists of maximum transparency of our institutions, access to the information about the Apostille, issued diplomas and certificates, licensed and accredited educational institutions, including the historical aspect. The National Information Centre in close cooperation with the executive authorities, with the colleagues from the European network of national information centers, partners – educational organizations – solves this problem through seminars, workshops and conferences.

Priority areas identified in the regulatory documents of the Russian Federation and international solutions:
• improvement of public service for the recognition of foreign education and (or) qualifications;
• maximum implementation of the tools of the Bologna process, such as the National Qualifications Framework, the European Diploma Supplement; Revised standards and guidelines for quality assurance in the European Higher Education Area (ESG), the European approach to quality assurance of joint programs, Revised User Manuals ECTS;
• further implementation of the Lisbon Convention in recognition processes, provisions of the European recognition manual;
• facilitating access to the market of educational services of foreign students;
usage of flexible, accessible and transparent mechanisms in the process of recognition of foreign education and (or) qualification, as well as the establishment of the responsibility of employees of educational institutions, engaged in the recognition process of foreign education and (or) qualifications [6; 13].

It should be noted that the recognition process of foreign education and (or) qualification reflects the trend of migration of cooperation between Russia and other states, which is one of the indicators of successful adaptation on the Russian labor market of foreign experts. The recognition system of foreign education is an important part of not only the academic mobility; it is also a tool that enhances the efficiency of the educational institutions and is a factor of creating a favorable image of the country for the export of educational services.

Since “Glavexpertcentre” is a National Information Centre, it takes active part in the development of international aspects in the sphere of education.

In the past three years “Glavexpertcentre” organized three annual international conferences, in which international experts from different countries of the world, members of the ENIC-NARIC network and leading universities of Russia took part in the discussion of the best recognition practices worldwide, modern tendencies and current issues in the education sphere. Each year the number of conference participants gradually increases: in 2015 representatives of 18 countries of the world and 25 leading educational organizations of higher education of Russia took part in the conference.

The last annual conference “Fair recognition: best practices and innovative approaches” was held in Russia on the 16–17th October 2015. For the first time the President of the European ENIC-NARIC network Claudia Gelleni took part in the work of this conference. She shared experience about the work of the network, the globalization processes of education and noted the importance of increase of the academic mobility and stated “the daily work of recognition centers consists in dealing with this matter in an efficient, reliable and transparent way, in order to make mobility a smoother reality and give every individual the opportunity to have his/her credential recognized.” [3].

The following conference was also designed to discuss the development and challenges of international and cross-border education and new trends as automatic recognition and innovative models of educational process. The conference participants shared experience in realization of joint programs, implementation of Bologna process tools and agreed on the development of unified concepts and approaches to the automatic or simplified recognition during the panel discussion “On the way to Automatic Recognition”.

The next conference with its important issues on education is already planned for October 2016. This next conference should not only be a platform for opinion exchange, but a real forum of professionals in the sphere of international education and a bright event in the life of the international educational community and will be related new approaches educational cooperation between Asia and Europe.

In conclusion it is worth mentioning that only through international cooperation it is possible to:

- form a unified educational area, drawing together different positions of the recognition procedure of foreign education and (or) qualification;
- facilitate academic and labor mobility;
- develop universal approaches for quality assessment of education and fight against plagiarism taking into account best practices.

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Public-Private Partnership in Pharmaceutical Industry

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Annotation: the most important element in mechanism’s strategies of the country and its regions social-economic development realization is the economic policy of public authorities, which is based on a strategic planning system of separate branches economy development, industries and territories and the making of operational management decisions.

One of the most effective and fundamental tool of achieving the strategic objectives today is the use of public-private partnership. Building a balanced partnership between the government and private enterprise is especially current for our country.

In this regard, a huge role at the present stage of development of public-private enterprise (PPP) in Russia acquires the state support mechanism of its projects implementation.

Currently, the Russian Federation’s Ministry of economic development represents itself as a responsible structure for the implementation of public-private partnership in Russia. The implementation of many PPP projects is now designed until 2020. In the Ministry of Finance structure there is also formed a Department for PPP.

Despite the determination of authorities, the PPP development still faces many problems.

Key words: import substitution, public-private partnership, pharmaceutical industry, “FARMA-2020”, medicinal preparations, investments; legal entity; risk profile, industrial localization, legislation development.

The need for new medicines and medical products constantly grows in the modern world therefore the pharmaceutical and medical industries are one of the most investments attractive and dynamically growing.

One of the main strategies for development of chemical industry, specifically pharmaceutical branch, in modern Russia is import substitution. Import substitution is applicable to pharmaceutical branch not only from economic and technological development points of view, but also as important element of a national security and solution of social problems. It is known that import substitution has the difficult character having both, negative and positive sides.

In pharmaceutical industry the policy of import substitution has its own specifics connected with a large part of import production at the country’s market (for 2011 the part of import production made 78% in value).
The key element of import substitution policy in pharmaceutical branch is caused by specificity of production – it is medicines and pharmaceutical substances. Where pharmaceutical substance is the medicines which are used in the form of active ingredients for production of medicines, and medicines mean the dosage forms created for treatment, prevention, etc., Dosage forms, in other words the condition of medicine.

It should be noted that such import substitution type is not only the production created by domestic producers, but also is a production made by the foreign companies in country’s territory and it surpasses analog which is developed abroad.

It is necessary to consider that working on creation of new medicines requires big capital investments, research and development, many years of researches, and also introductions and approbations of the created medicinal preparations are required. Therefore generally only economically developed states (about 75% of production of all medicines) have a large-scaled pharmaceutical industry.

The European Federation of Pharmaceutical Industry Associations (EFPIA) had set the following objects, for functional improvement of the European pharmaceutical market:

1) Increase in financing of population’s medicine provision requirements;
2) More effective usage of funds provided for preservation of population’s health;
3) Acceleration of receipting new medicinal preparations on the market; informing patients on their diseases therapy and possibility of obtaining necessary data; cancellation of all barriers at the admission of medicinal preparations to the market.

It is possible to note that the pharmaceutical market structure of EU countries, including large producers of medicinal preparations, in the ratio import exceeds the volume of internal production. The percentage of internal production in the pharmaceutical market of Germany makes 44%, in France – 18%, and Great Britain – 31%. Besides that Germany, France and Great Britain enter in “top-10” the largest exporters of medicines. It shows that most of the made production is sent for export. It shows a priority of market mechanisms within which “the pharmaceutical companies made a choice for reduction in cost of production due to increase in scales of production and optimal use of the available resources” [16].

Further the implementation of the “FARMA-2020” project will be considered, experience of carrying out Public-private partnership in the western countries, and comparison of the aPPpared Federal law on PPP with policy of import substitution of “FARMA-2020” will also be carried out.

The first stage of development of pharmaceutical industry provided by the “FARMA-2020” program regarding technological development and rearmament of productions was realized in 2014. The volume of the state investments exceeded 60 billion rub (1 billion dollars). It already allowed to carry out tasks of import substitution on a considerable share – in Russia more than 60% of the medicines entering the List of vital and essential medicines (VEM) are being produced. In branch more than 130 state projects are realized, actively invests in it and private business.

Also, in special economic zone “Novoorlovskaya” there is an industrial platform under construction right now where in the future will settle down the universal equipment for chemical synthesis of active pharmaceutical substances and intermediates. The Existence of processing lines will allow to develop and produce pharmaceutical substances of the most different nature. This enterprise will not become outdated in the next 30 years by estimates of experts. But production of substances and ready dosage forms are different industries. Production of substances is an absolutely separate production with its own processing cycle, requirements (including ecological), market, separate license and conditions. The Russian Federation market for the majority of substances does not pay back production placement here. Large volumes are required for paying back, which are the markets of several countries, and even the global markets. Therefore in the Russian Federation synthesis of substances can be organized point
wise, for certain molecules. This isn’t a biological product by any means, where both substance synthesis and production of the ready preparation are combined in one cycle.

The Production of medicines in 2015 made about 230 billion rubles, but if to take 2011, the sum was about 140 billion. Now in government procurements domestic preparations percentage counts 28%, against 21% which were in 2011. Because of the state program, it succeeded to attract a large number of Russian and foreign investors and their investments in the branch, more than 10 modern plants are constructed for only the last three years in Russia and the volume of investments calculated more than 120 billion rubles. Russia managed to make breaks on some of separate segments. In 2011 the percentage of the Russian preparations was about 4,5% (If we’ll look at the “7 Nozologic” program) [20; 23], and now in 2015 it is already more than 35%. These are the hi-tech medicines, and on some positions we can already mention two or more medicinal producers. It should be noted, that not that many producers in the country possess competences for production of substances, but it is certainly important to make them. As more technical stages the company carries out, the stronger and more independent it is. Also, at a large volume of production prime cost significantly decreases.

It should be mentioned that in generally segment of researches in Russia is undeveloped, but there are several Soviet laboratories which remain their potential. It is possible to buy up their patents and it is also possible – to finance for creation of new ones. Improvement of regulatory system will be the main reserve of process in import substitution and access of new drugs to the market in the next 3–5 years.

If legislations and regulations will create comfortable conditions for launching new medicines and medical products to the market, it will not only help domestic producers to bring the production to the market quicker and to compete with foreign producers, but also will create conditions for substantial saving of budgetary funds when purchasing medicines and medical equipment.

Opportunities for industrial localization by the leading pharmaceutical companies of the world were created by The “Farma-2020” program, and conditions for obtaining new competences for our domestic enterprises. And today it is in their power to make new medicinal preparations of any complexity degree.

Many can tell that the Russian pharmaceutical companies only produce tracing-papers of the western drugs and by that they try to achieve import substitution. It would be desirable to object it: in world pharmaceutical practice not that many original molecules are invented yearly, counting 20–25 only. Generally original molecules are created in the field of genetically engineered products. In “chemical” pharmaceutics industry, in other words in production of basic medicines which we see on shelves of drugstores there are practically no inventions. All leading companies produce generics. Therefore it is impossible to claim that the Russian pharmaceutical companies make only tracing-papers. They use the conventional rod method of medicines production. For example, at the Novartis Company, production of generics makes about 80% of all production.

Also, it is necessary to understand that generics have a long-term history of the proved medicinal properties. Long ago invented medicine – does not mean outdated. It is necessary to own new technologies to make quality generics. “To make medicine, even connected several ready substances, at all haPPPns hardly”, – Oleg Zherebtsov says – “For example, 99% of hormones which are used by Russian patients are made outside of the border because their production is difficult. In particular, it is necessary to isolate in a special way shop as components of these preparations get through ventilation”.

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1 7 rare diseases included in program: 1. hemophilia; 2. cystic fibrosis; 3. pituitary dwarfism; 4. Gaucher disease; 5. myeloleukemia; 6. multiple sclerosis; 7. the people needing immune depressants after an organ transplantation.

2 Oleg Zherebtsov, CEO of Solopharm.
It is also worth noting that growth of exchange rates is favorable only to the export-oriented companies today, but it becomes unprofitable to be engaged in production of medicinal preparations from the List of VED, the price for which is recorded.

Also the Association of International Pharmaceutical Producers (AIPP) declared that over the past few years the foreign pharmaceutical companies invested more than 2 billion euro’s (2.3 billion dollars) in Russia, these are real investments, these are workplaces, these are new productions created, transferring the Russian colleagues modern technologies, participating in preparation and retraining of personnel. Creation of manufacturing lines, taxes.

Summing up the result on realization of “FARMA-2020” it is possible to notice that private pharmaceutical companies invest in researches more effectively, than the state does.

Also it would be desirable to finish with the statement of the executive vice-president of RUIE (Russian Union of Industrialists and Entrepreneurs), the chairman of pharmaceutical and medical industry investors club – Victor Cherepov: “The main problem consists in that the developer of the draft bill does not coordinate amendments to legislations with professionals or when coordinates, then changes without having notified the last ones mentioned and it becomes unclear that occurred”. He insists that discussion of amendments should take part up to the third reading of the representative assembly.

The draft bill on the Public-Private Partnership (PPP) throughout long time was discussed even including its pharmaceutical branch. And on July 14, 2015 FL-No. 224 “About state private partnership in the Russian Federation and modification of separate acts of the Russian Federation” it was signed by the Russian President and came into force since 01.01.2016.

Before passing to Realization of PPP in pharmaceutical industry it is necessary to consider what PPP and its types are.

Public-private partnership for Russia is rather new form of interaction of the state and business on mutually advantageous conditions. Even in Great Britain which is considered to be the ancestor of this investment projects form the first steps on formalization of PPP were accepted not so long ago in 1981. In the Russian Federation this concept of narrow sense has appeared for the first time in 2006 in St. Petersburg (not limited by the concept “about concession agreements”).

Traditional spheres of public-private partnership in all countries are objects of a transport and social infrastructure, and a driving force of process was the tendency to reduce the state’s participation in economy. About PPP the theory of mixed economy is the cornerstone of idea, however, it is impossible to consider that all types of interaction between the private capital and the state are a PPP. Part of functions by business which are usually carried out by the state can be the criteria of performance. Development and maintenance of infrastructure is a classic example.

In the world there is no uniform idea of which legislative form public-private partnership has to be issued in. In some countries which are recognized leaders in extent of development of public-private partnership there is no uniform law, and the basic principles are underlain in various acts and norms of civil law. England, France, Wales, Australia, Japan can be examples. In other countries separate laws on public-private partnership are created and adopted. Such situation is developed in Germany, Greece, Brazil, Egypt, Angola and a number of countries of Eastern Europe.

The reason of such division consists in that the first group of the countries public-private partnership has developed naturally, that is the relevant amendments were made gradually to already current laws. The countries in which separate laws on PPP are adopted are included into group of the countries with the catching-up economy type (except Germany), therefore development of public-private partnership came to them from active participation of the state. Russia, as well as the countries of the former Soviet Union, treats group of the countries with the catching-up economy.
From the countries of the former Soviet Union laws on PPP were adopted in the following countries in Moldova, in Ukraine, in Kyrgyzstan, since 2016 and also in the Russian Federation. In other CIS countries there are separate acts regulating the PPP different forms.

Now the legislation on PPP is accepted in 69 regions of Russia, however their most part is declarative documents. Besides regional acts, Federal laws of 21.07.05 with No. 115-FL “About concession agreements” and of 21.07.05 No. 94-FL “About placing orders for the supply of goods, works and services for state and municipal needs” also work in Russia. It became invalid in 2013, it was connected with adoption of the Federal law of 05.04.2013 No. 44-FL “About contract system in the sphere of purchases of goods, works, services for ensuring the state and municipal needs” which also stipulate options of implementation of the PPP projects. To some extent regulates PPP and the Federal Law of 22.07.05 No. 116-FL “About special economic zones in the Russian Federation” (as granting privileges to business in a certain territory – too PPP option in a broad sense).

<table>
<thead>
<tr>
<th>No.</th>
<th>Abbreviation</th>
<th>Definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BOT</td>
<td>Build, Operate, Transfer</td>
<td>Concession mechanism: creation, a right of use (without ownership right) during the term of the agreement and transfer to the state</td>
</tr>
<tr>
<td>2</td>
<td>BOOT</td>
<td>Build, Own, Operate, Transfer</td>
<td>Similar to the aforesaid, but the ownership right for the period of operation of the contract belongs to the private partner</td>
</tr>
<tr>
<td>3</td>
<td>BTO</td>
<td>Build, Transfer, Operate</td>
<td>Similar to item 1, only the object is transferred to the state right after construction. The private partner serves object during period of the agreement validity, and public compensates expenses by regular payments (the contract of life cycle)</td>
</tr>
<tr>
<td>4</td>
<td>BOO</td>
<td>Build, Own, Control</td>
<td>Similar to item 2, but after agreement term the object remains in property of the private partner</td>
</tr>
<tr>
<td>5</td>
<td>BCMT</td>
<td>Build, Control, Maintain, Transfer</td>
<td>Emphasis on support of viability and service of object. The ownership right remains at the public partner</td>
</tr>
<tr>
<td>6</td>
<td>DBOCT</td>
<td>Design, Build, Own, Control, Transfer</td>
<td>Similar to item 2, but designing of the agreement’s object also belongs to private partner’s duties</td>
</tr>
<tr>
<td>7</td>
<td>DBFC</td>
<td>Design, Build, Finance, Control</td>
<td>Emphasis on a duty of the private partner to finance construction and actions for service. The public partner compensates expenses by regular payments</td>
</tr>
</tbody>
</table>

Nevertheless, these draft bills describe not all of the state and private investor cooperation forms that seriously limits application of these regulations as a legal basis of PPP.

The St. Petersburg Law of 25.12.06 No. 627-100 “About participation of St. Petersburg in public-private partnerships” is the most worked from all regional laws. In the same time, if all seven types of PPP (Tab. 1) allocate in the world, then this law describes, only three of them. The main advantages of this law are flexible formulations and conditions of the conclusion of contracts which allow to avoid excessive regulation of all nuances which can be parties negotiation subjects. Also norms of protection of the private investor against possible changes in the legislation are described in the law. Following the international practice for successful development of PPP across the nation it is necessary to issue a significant amount of other principles of law legislatively.
**Table 2**

<table>
<thead>
<tr>
<th>Place</th>
<th>Region</th>
<th>Rating, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Saint-Petersburg</td>
<td>69,2</td>
</tr>
<tr>
<td>2</td>
<td>Republic of Tatarstan</td>
<td>66,7</td>
</tr>
<tr>
<td>3</td>
<td>Moscow</td>
<td>63,8</td>
</tr>
<tr>
<td>4</td>
<td>Novosibirsk region</td>
<td>61,9</td>
</tr>
<tr>
<td>5</td>
<td>Nizhni Novgorod region</td>
<td>61,5</td>
</tr>
<tr>
<td>6</td>
<td>Leningrad region</td>
<td>60,2</td>
</tr>
<tr>
<td>7</td>
<td>Samara region</td>
<td>59,6</td>
</tr>
<tr>
<td>8</td>
<td>Sverdlovsk region</td>
<td>59,6</td>
</tr>
<tr>
<td>9</td>
<td>Moscow region</td>
<td>56,6</td>
</tr>
<tr>
<td>10</td>
<td>Voronezh region</td>
<td>54,4</td>
</tr>
</tbody>
</table>

*Source: Ministry of Economic Development of the Russian Federation [13]*

In discussion of PPP in the sphere of pharmaceutics considering specifics of this branch in the created law are often expressed.

However specifics of many branches including pharmaceutical were not considered. It should be noted that the Law on PPP extends on construction and reconstruction of object. In that case beyond the scope of the law there were other models of possible cooperation of the state with the private sector.

What will become if amendments to the law on PPP in the sphere of pharmaceutics and health care are going to be made, generally it can become the excellent instrument for attraction of additional financial means and optimization of expenses.

For your information pharmaceutical branch of a national economy of the USSR should be mentioned. It was the balanced system which was based on planned labor dividing between the countries of Council for Mutual Economic Assistance. Production of medicines was carried out mostly in countries of Eastern Europe, and in RSFSR (Russian Soviet Federative Socialist Republic) large-capacity production was made. Such production was connected with a huge energy potential of RSFSR.

After USSR collapse Russia’s transition to import substitution policy in pharmaceutical branch was impossible since it would be necessary to carry out expensive realignment of the whole branch.

The technology of maintenance of medicinal preparation is complete right now and used by western pharmaceutical producers. But it couldn’t always be carried out by national producers since it demands additional massive financial expenses.

Therefore, it is offered that the state would undertake part of expenses which include the following forms:
1) Increase in access to medical preparations;
2) Increase in coverage of patients;
3) Efficiency of new preparation’s introduction;
4) Providing the prices predictability;
5) Publication of articles about treatment by new preparation in magazines;
6) Organization of lectures and refreshing courses and advanced professional doctors’ trainings;
7) Organization of conferences;
8) Organization of advertising performances;
9) Transferring innovative technologies in national productions.
Financial conditionality of PPP is the simplest for projects administration. At the same time in the project there is additional condition connected with development of a local pharmaceutical industry may be realized (a transfer of technologies, NOUHAU).

Offset transactions can include:
1. Direct investments;
2. Investments in research and advanced technological development
3. Industrial localization (in other words the enterprises for production of preparations for foreign licenses are created).

Such agreements give guarantees that expenses will not exceed limits; also restrictions of preparations in the absence of base on therapy duration are used.

For example how it is in Novartis and Great Britain Health Care Department agreement on a medicinal preparation “Lucentis” (treatment of an age-related retinal macular degeneration of 14 injections). The producer pays the 15th injection and the subsequent (if are required) or the agreement of the Rosh company in the USA for a medicinal preparation “Avastin” (a breast cancer, a colorectal cancer, etc.). The first year of treatment pays the state; the 2nd year of treatment is at the expense of the Rosh Company.

Also in USA the project about cooperation between state universities is approved, non-profit organizations, scientific funds and the large pharmaceutical companies, for overcoming a gap in technologies of tomography and other medical researches and diagnostics, and also development of new medicinal preparations which are necessary for fighting against 2 type diabetes, by Alzheimer’s disease, lupus, and rheumatoid arthritis. The success of this project requires system approaching and collaboration of the government, scientists, the industry and patients.

Coming back to the Federal Law on PPP, that despite aspiration of the state to decrease in a share of foreign Medical Preparations, the pharmaceutical industry is interested in attracting foreign investments. So, Strategy of development of pharmaceutical industry for the period until 2020 contains the provision on foreign scientific and technical and production and technological potential need of use by attraction of direct foreign investments in production and development of HP.

However the PPP limits possibilities of foreign investors in this sphere. So, according to article 3 of the Federal Law on PPP the private partner – the Russian legal entity with which according to the present Federal law the agreement is unlike to the Law on concession agreements which allows foreign legal entities to act as the private partner is concluded. On the one hand, such restriction seems unreasonable, considering potential usefulness of foreign investments in socially important projects. At the same time insurmountable this ban is not. The law on PPP does not limit the participation in PPP agreements of the legal entities with foreign participation created within the Russian legislation. Besides, other options of indirect participation in PPP – projects, for example, within enterprise associations with the Russian legal entities (holdings, consortium, etc.) are not excluded. And, respectively, the third way consists in use of earlier existing mechanisms, namely concession agreements, the legislation on which contains less strict requirements to subject structure of the agreement.

Also it would be desirable to consider a question of distribution of risks. One of the PPP principles enshrined in the law is equitable distribution of risks. Realization of this principle is reflected that the criterion of distribution of risks is used for a project assessment, and

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1 The foreign companies use such strategy of localization as:
1. construction of plants with a phased transition to a full cycle of production of preparations;
2. purchase and re-equipment of plants, on the basis of transfer of the technologies;
3. transfer of rights of intellectual property and technologies of a full cycle;
An increasing number of pharmaceutical producers make the investments in purchase of domestic production capacities with full modernization or construction of new plants.
CONTEMPORARY PROBLEMS OF SOCIAL WORK

discrepancy to the principles of PPP can become the basis for refusal in implementation of the project.

Speaking about an assessment, it would be desirable note that one of parameters of comparative advantage of the project is the volume of the obligations of the public partner arising in case of risks. In other words, the state chooses the safest for itself projects, disregarding at the same time needs of private investors.

If to explain the concept “equitable profiling of risks”, then it is subjective and leaves opportunities for abuses of the public partner. At once it is noticeable that government bodies will try to give preference to projects with the minimum degree of riskiness for themselves. Though it is represented that in the relations between the public and private partner the parity on this matter has to remain. But a lot of things will depend on a way of determination of comparative advantage which has to be approved by authorized body.

Also there was a wish to note that private partners have no possibility of attraction of a banking capital for implementation of projects, and institutional investors do not participate in the PPP projects because there are no business assessment mechanisms. In the conclusion it would be desirable to tell that the Federal Law on PPP has some advantages over the existing mechanisms of interaction of the state and private sector (in particular, concession model). At the same time from the point of view of pharmaceutical branch the Law on PPP does not create new models of interaction, in addition, in some cases limits participation of investors (the foreign companies). Thus, further development of the legislation on PPP of emergency in pharmaceutical branch which would consider specifics of this branch is necessary.

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REFERENCE TO ARTICLE
The Digital Model of the Formation of Human Capital As Part of the Socioeconomic and Spatial Reactive Projects

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Annotation: this article analyses the problems and proposals of human capital development in the implementation of major inter dimensional and social projects. Approaches to the management of large spatial projects proposed classification and the principles of their development. Formation of human capital
is the basis for the stability of any socio-economic system. But in the absence of well-established information flows and lack of understanding of the importance of digital models with the efficiency of management positions in the implementation of the projects will not.

**Key words:** interdimensional projects, digital models, human capital, educational technology, project of educational campus.

**Introduction**

Currently, related to investments in human capital development in most companies, more than enough. This is largely due to objective reasons. Russian education system is going through hard times: a never-ending education reform, the economic crisis in the country, the disappearance from the educational market by way of reorganization or merger of educational institutions, a significant reduction in funding, the demographic “pit”– all these problems put a society faced with the need to find new ways of development of the educational system. To provide movement strategy is necessary to understand the cause-effect relationships of current problems [2; 5; 14; 17].

In January 2016 Gaidar Forum Chairman of Sberbank German Gref has raised the question of the need to find new models of projects that are able to ensure the competitiveness of Russian projects. The main criterion for the competitiveness of German Gref called speed. The world standard in digital technology worldwide steel flexible Agile-methodologies based on the following principles:

- Persons and communication between them instead of building super stiff processes;
- The concentration on the product and not on the design documentation;
- The priority of the partnership contract in place;
- Constant willingness is to change.

These principles allow in a reactive mode to develop design strategies focused on technological leadership. The implementation of complex and inter-dimensional socio-economic projects in the field of digital technologies is impossible without a major driving force – an innovative human capital [23; 24].

**Methods**

In the context of the implementation of competitive projects training system must adequately respond to regional labor market demands, to produce qualified professionals able to work effectively in such projects to ensure long-term needs of the digital economy in the professional qualification renewal and replenishment of staff [5; 8; 16; 22].

Here is revealed the main contradiction between the state of vocational education systems and digital economy need in qualified personnel. This contradiction is expressed as follows:

- Vocational education varies spontaneously due to the opening of private educational institutions, representative offices and branches of the capital’s universities, focused not on the needs of the economy and the labor market implementing complex inter-dimensional or social projects, but only to meet the effective demand for educational services from the public and improve thus, their own financial situation;
- There are no scientifically based approaches to rational allocation of professional education of different levels of the network of institutions and the direction that leads to an excess of (or lack of) qualified personnel in certain areas and in the whole region;
- Does not meet modern labor market needs of special structures, training that is conducted in educational institutions in the region, under the direction of many of the necessary training of qualified personnel are not represented in principle;
- The ratio of the number of graduates of educational institutions of higher, secondary and elementary education does not match the structure of the economy needs for specialists with a certain level of education;
There is no scientific justification for the principles of formation of state order for training of qualified personnel [7; 10; 13; 14; 17; 20–22].

Development of long-term human resource balance based on the methodology of forecasting of demand and supply in the implementation of projects between the space market, taking into account regional peculiarities and possibilities of the regional system of vocational education should be the basis of the mechanism of regulation of the regional vocational training system based on the needs of the region.

The economic crisis and complicated international political situation has put forward as the primary, task of developing national industry and business, which is associated with the formation, strengthening and development of the capacity of enterprises. One of the fundamental laws of the organization, the law of self-organization, says that the organization is not only to survive but also to develop, it must have the capacity that exceeds the sum of external and internal influences on it.

This law is also valid for projects. Other things being equal, effectively implemented only those projects which, in spite of the challenging external factors, will be able to form and strengthen their “immunity”, a significant proportion of which people make. This is project customers, and is the project team, and, of course, consumers, satisfaction with the implemented project which is the key criterion for success of the project [23; 24].

If we look at industrial enterprises, businesses and educational institutions from this perspective, it becomes clear that the objectives of all the participants in these groups are the same. The industrial companies as project participants are, interested in innovation-driven professional personnel to efficiently and effectively carry out government orders. Business – structures involved in projects that are interested in the training of staff in order to effectively and efficiently carry out their business processes, extending the base satisfied with the quality of loyal customers, resulting in the increase of competitiveness, market expansion, entering new markets and winning the leading position. With regard to educational institutions, their survival and development depends directly on the demand for professionals in the labor market.

The implementation of major cross-sectorial and inter-territorial projects, usually involves more than one region and entails a significant change in the territorial infrastructure. Space-sectorial projects with a “blurred” territorial borders, using a variety of industry technology, those involving the resources of different regions united us in the category Spatial reactive projects (SRP). Methodological principles of such projects are [23]:

- Innovative orientation;
- Speed and flexibility;
- Dynamism and customer focus;
- The balance of effects and interests of participants;
- Cooperation and mutual assistance are.

These principles should be the base and the formation of an infrastructure component of the SRP implementation of projects. One of the most important components of the infrastructure to ensure the successful implementation of space-industry projects, of course, is the formation of human capital in project engineering.

One of the basic principles that we have defined for the SRP projects, is the speed and flexibility, so focus on the existing training system as a mid-level staff, and administrative personnel, there is no possibility.

The main problem areas in the education system are the following:

- Unstable political and economic situation does not allow the industrial enterprises and business entities to develop long-term strategies;
- Lack of scientific approach in determining the forecast needed to state the number of jobs and the list of professions even though in the long run for a few years;
Lack of motivation in the rapid response of educational institutions on the orders of society and the dynamic changes in the labor market;

- Inconsistency (disunity) educational programs and methodical support of various levels of education;

- The absence of the necessary level of funding in educational institutions are for the timely update of methodological and information support, infrastructure upgrades.

These effects lead to the fact that the rapidly changing labor market demands for complex SRP projects existing educational system cannot always meet the [23; 24].

Since the problems relate to all the participants: the state as a whole, region, large industrial companies, small and medium-sized businesses, vocational training institutions, and in the search for solutions must take active participation of all the structures. No single solution for the whole complex of problems is not present and cannot be. We are dealing with the system and, therefore, the output can only be a creation of another system, bridging the existing problem areas. It is the formation of a unified business-education system at the regional level, providing the solutions and motivating their implementation at different levels and in different ways will be way out of the impasse.

We offer a digital model of the educational project of the cluster integrating based on public-private partnership projects SRP-objectives, financial contribution to project participants, the potential of educational institutions and individual teachers, the legal and image support territorial authorities. Such symbiosis potential project participants will solve the issues of the rapid reaction of the education system to the needs of businesses in the necessary personnel as working skills and engineering, and controlling.

But if all parties interested in the implementation of projects and, consequently, in the formation of human capital, why this problem can not be solved over the years? Why the inconsistency of targets educational institutions and regional labor market still has a place to be? The answer is not as simple as it seems, as the decision depends on a huge number of criteria, limitations and human factors. According to human resources professionals in the market, each employee of middle management should receive additional training at least once a year. In reality, corporations solve problems, based on their own needs. For example, one employee sent for training due to lack of his professional knowledge, and the second – as a motivational factor. And, at first glance, like right when the company is interested in the development of its employees when investing in "human capital", but those who are directly involved in the conduct and organization of seminars and trainings think differently. Most often, businesses have two diametrically opposed objectives: first – to demonstrate their interest in improving the quality of the knowledge worker, and the second – the dismissal of an employee.

But, more importantly, what converge leading seminars and trainings, internal corporate education does not affect the career and does not guarantee higher wages employee. Companies prefer to train personnel in their professions, and not to guarantee career.

The main advantage of the educational project of the cluster – is the possibility of practical application of knowledge, which is realized through cooperation of industry, science, business and education projects through the creation of a closed loop, which brings together the interests of the customers of educational services, consumers and artists.

The foundation of the digital model of the formation of human capital under the SRP-class projects is the interaction of motivations, the interests of all participants in the project. For production companies interested in the project's success, in the long-term effectiveness of the enterprise in the future long-term cooperation with other project-participating companies, the motivation of investing in human capital is to match the professionalism of project tasks. For enterprise employees with the opportunity to participate in the project, the motivation is primarily to obtain additional income opportunities and professional growth. The acquisition of new skills and competencies are to increase the competitiveness of the employee in the
labor market, which gives him confidence in the future. Also, incentive schemes for workers on training in new qualifications competencies can be assistance in obtaining preferential loans, housing, medical services, etc.

Interest in educational institutions in the development of the project under the program should be an opportunity to attract extra-budgetary funds and additional professors’ salary.

The motivation for the insurance companies, banks, medical companies, recruitment agencies, construction companies and other organizations involved in the formation of personnel potential of the project is to attract new customers, image and profit.

The implementation of social policy, formation of orders for specific jobs, guaranteed employment, financial support for private capital development of material and methodical base of educational institutions, of course, should be the motivational lever for territorial authorities.

Once determined the dominant vector of interests of each participant of the project, the main task is to develop a digital model, forming a single vector of interest, the movement by which provide a synergistic effect for all participants. The process of implementing a digital model of the formation of human capital under the SRP projects includes the steps of evaluating the objectives of the project, selection of potential participants, and their potential implementation of educational programs, continuous quality monitoring and process control.

A possible mechanism for the implementation of human capital formation for the tasks SRP project is a public-private partnership (PPP), just taking into account the interests and territorial governments, and businesses. PPP implementation can be carried out the following options:
- Formation of the Fund “endowment” a non-profit organization;
- Cooperation agreement / protocol of intentions;
- Contracts of simple association;
- The establishment of a non-profit organization;
- The establishment of a commercial organization is.

Another mechanism in the formation and development of human capital under the SRP project is the design and implementation of individual educational trajectories of student's mechanisms under the order of business structures [19; 22; 23]. This tool requires the following tasks:
- Identification of the needs of employers in the required professional competencies for the company;
- On the basis of the needs of employers forming applications for training under the order;
- An agreement with companies of choice of educational institutions and educational programs;
- Formation together with an educational institution under the individual program of the enterprise order;
- Agreement with the educational institution and the business structure of the educational process;
- Support the educational process from the perspective of contractual terms; – cooperation with the educational institution on the methodological support of the educational process;
- Obtained legal registration agreement and support of the educational process from the perspective of contractual terms;
- Development and the formation of schemes of individual educational trajectories implementations are.

Among the most important tasks of the implementation of SRP projects include the development of motivational and incentive schemes effective interaction between business and educational systems, as well as the formation of a database of personnel reserve system based on professional, business and psychological portfolio of students, which includes:
- Evaluation of the professional capacity of students;
– Development of professional, business and psychological portfolio;
– Organization of the system of personnel reserve on issues relevant to the region’s professional qualifications.

A huge role in creating a project cluster management depends on the maturity of leaders at all levels and of all the structures. A lack of understanding the importance of human resource capacity, the need for inserting investment in professionalism, flawed on all sides by the phrase “no one is irreplaceable”, in the absence of systemic vision of the internal and external problems is a significant obstacle to the implementation of any educational projects.

An effective leader today is a person who is aware of the need of systemic and strategic thinking, understanding that the professionalism of personnel and employees – is the key to the success and competitiveness. The rapid development of market economy laws in Russia led to the fact that many managers, entrepreneurs and business leaders learned the laws of self-management, in extreme conditions, from their own mistakes. Perhaps that is why they understand the importance of professionalism, not in words, and how ready to invest in training their employees, and to share lessons learned.

Learning, the constant search for new, trivial approach is quality SRP project manager. A corporate educational project of the campus, exchange of experience, the search for optimal solutions by “brainstorming” will give the same synergistic effect, which will result in efficiency and effectiveness. Naturally, the implementation of such a project without the direct leadership, participation and commitment of all parties can be held.

The advantages of the educational project of the campus as a unified educational environment are:
– The ability to self-organization and self-development;
– Flexibility and the ability to timely and adequate respond to emerging conditions in the implementation of the objectives of the project;
– In real time to analyse and synthesize emerging issues and challenges, offering science-based solutions to them;
– The possibility to train specialists under the orders of potential projects for production and business, are able to solve them effectively.

Creation of educational and professional environment will integrate existing knowledge and practical skills in the common understanding.

Education through practice, mentoring will enable students to engage in real-world problem situations, to use the methods and achievements of the world of work. Implementation of the project, team work and forms of “learning in an informal atmosphere” (informal learning) to help students of different educational levels and different specialties in constant contact with each other, share their experience and findings and business experiences.

The effect of the project can be direct or indirect.

Direct is to improve the quality of education services in their orientation on the formation of the specific skills required for practical problems in the formation of orders for jobs in the implementation of training under orders and as a result, to ensure the employment of students. The effect is manifested even when education makes students’ mobile and professionally and socially. The indirect effect is to increase the output and improve its quality in the sphere of material production by implementing competitive projects in the field of digital technologies.

**Discussion**

Discussion questions about the quality of training for different tasks of society, including for major inter dimensional and social projects at the time stimulated the Bologna process, and already years, representatives of the educational systems debating the need to work under the orders of enterprises and businesses, as well as educational services. During these debates sometimes leaves the main goal, which is formulated Berlin Communiqu, 2003: “... on the European level, Ministers call upon the European Network for Quality Assurance in
Higher Education ENQA... to develop agreed standards, procedures and guidelines for quality assurance...", and “responsible for quality assurance higher education is primarily the responsibility of the educational institutions themselves...

That is, first of all, we are talking about the need to establish a system that ensures the quality and relevance of educational services and the mechanism for implementing such a system, the educational institution should define itself.

But when it comes to creating a system to ensure the quality and relevance of educational services, it is necessary to determine that under such a system is understood, above all, a complex of factors, parameters and measures of educational technologies and programs implemented in the educational project cluster, and showing how the system complies with the European standards. educational services in the educational system of the campus project is a closed control loop, in which the demand for the quality of education plays a role of a regulator of educational activities and the introduction of innovative educational technologies. This situation defines two main areas of activity of the educational project of the campus: on the one hand, meeting the demand for professionals required profile, on the other hand – the formation of proposals for the implementation of projects at various levels. It is necessary to carry out training and “custom” and “narrow” specialization, taking into account industry-specific SRP projects. The total infrastructures of educational services in the formation of human capital under the SRP projects are include projects consumer markets, educational institutions, and, accordingly, demand and supply of educational services. It is for this chain, in collaboration of these markets, there is the identification of needs, demand and transformation in managing the impact of human capital development proposals. The whole control system of the formation and development of human capital should carry out supply and demand balance and to promote the effective implementation of the competitiveness and the major Russian projects.

**Conclusion**

The result of the policy of integration of interests of participants of large inter-dimensional and socially relevant innovation, based on digital models, the projects may address educational project business campuses, combining educational institutions with different levels of education, started with the financial participation and the problem of one or more SRP projects and integrate the principles of public-private partnerships into a single education, innovation and information complex series of production facilities, institutes, institutions of higher, secondary vocational and general education. The main advantage of this integration is the possibility of practical application of the knowledge acquired, implemented through cooperation of industry, science, business and education projects. Principles of corporate systems and mechanisms of state-private partnership will allow:

- To resolve issues with updating the material and methodical base of educational institutions;
- Create a unified education (performance support) the quality support system, providing its participants (both students and teachers) different levels of access to the information when it is needed;
- Use of new technologies, including digital models.

In the area of human development, such a system implements the demanded labor market competencies required for the implementation of SRP projects. Education through practice, mentoring will enable students to engage in real-world problem situations, to use the methods and achievements of the world of work. Implementation of the project, the team forms of work and “learning in an informal atmosphere” (informal learning) will help students design the campus at various levels of education and different specialties in constant contact with each other, share their experience and findings and business experiences, which certainly cannot impact on the competitiveness and efficiency of major inter dimensional and social projects.
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REFERENCE TO ARTICLE

The Labor Market 2016: Reality and Expectations

Annotation: this article discusses the main problems that arise in the domestic labour market for several years in the dynamics. In particular, we consider such factors as the economic crisis that has a direct impact on the labour market. Methodological basis of research are statistical data and modern analytical articles by specialists in the field of HR. Results are shown in the form of a forecast of development of the labour market in 2016.

Key words: labor market, wages, job candidates, job seekers, crisis.

The leading part of any economic system as a key element of social and economic policy of the state was listed the labor market.

At the moment, the current literature has not developed a permanent term for the definition of “labor market”. Variously interpreted the term “labor market” in the scientific literature by various authors. In order to study the labor market is required to define the concept in detail.

According to G.S. Vechkanova, the labor market – a set of economic relations over the sale of a specific product – the labor market, which is made of labor exchange for wages [17].

Labor market – a system of socio-economic relations between the free holders of workforce in need of the employment, and the natural and legal owners of the means of production, makes the demand for hired labor, about the distribution, redistribution, recruitment and inclusion of labor in the process of social production [15].

I.M. Lemeshevsky noted that the labor market is a system of supply and demand interaction [6].

Also in modern literature is impossible to find an unequivocal interpretation of the concept of “labor market”. For example, the D.N. Kurbyshev says that the labor market – a mechanism (Institute) that unites, brings together sellers of goods “labor force” (employees) and this product buyers (employers) [5].

S.S. Zmiyak said that the labor market is a mechanism for coordination of interests of employers and the employed labor force [21].

The writings of A.K. Tascheva indicated that the labor market – a specific type of commodity market, the content of which is the sale of goods of a special kind-labor or a person’s ability to work [14].

Based on the above, the labor market is a mechanism for coordination of interests of individuals who are employed and their employers. In addition, the labor market and demonstrates the interests of the state, due to the need to control social relations in society [3].

International Labour Organization, gives the following interpretation, which hold the majority of foreign trade unions and experts on labor, “labor market – is an area where employers and workers jointly negotiate, collective or individual, with respect to wages and working conditions”. [23, p. 201].
Summarizing the listed interpretations of the concept, it is possible to make a generalized definition of the labor market / labor force – it is significant polyhedral sphere of economic and political life of the entire society. Assessment of the labor market subject to the following indicators:

- The cost of labor;
- Are determined by the conditions of employment of labor;
- The value of wages;
- Working conditions;
- Job security;
- Access to education;
- Professional development.

In the labor market there are also some features that are determined by the role of labor in society in a single country. If you look at the work from an economic point of view, it will be the most important productive resource. In accordance with this isolate 2 major features of the labor market:

1. The economic function – the labor market is rational involvement, distribution, management and use of labor.
2. The social function – is to ensure normal levels of income and human well-being, a normal level of production capacity of reproduction of workers [2].

The role of the labor market in the economy is reflected in the efficient use of the country's labor potential [23].

Unfortunately, in Russia there is no consensus on the mechanism of regulation of the labor market, as well as the supply and demand for it. There is debate about the concept of the market (labor, labor, employment), the product on it (labor/labor).

There are two approaches for the assessment of the labor market:

- Wide, which examines the entire spectrum of market relations employee and employer. Falling growth and jobs in the spheres of activity are determined by analysis of the labor market. For example, in 2012, Russia was possible to observe the increase of students jobs, experts nonprofit organizations, automotive, banking and insurance business. The fall happened in the fields of science, employees, education, sports clubs and beauty salons. The highest demand was for vacancies lawyer, driver and accountant. Seller Jobs, Sales Manager and Secretary prevailed in the area of the proposal;
- Narrow, which limits the relationship between employers and the able-bodied unemployed.

The Ministry of Economy said that in 2015–2018 demand will grow in the areas of trade and services, agriculture, and in particular for professions in the builders merchants, transport workers and the mining industry. At the end of this period is expected to increase the demand for highly skilled mathematicians, physicists, experts in computer science fields, engineering sciences, telecommunications workers, metallurgists and mechanical engineering.

On the employment rate in the market is significantly affected by the age of the employee. The biggest problems faced by young people (unemployed for more than 30% are young people under 25 years). The level of employment is characterized by the tension in the labor market, coefficients exceeding the average unemployment rate for the age group of young people, the number of unemployed who have received vocational guidance in the training centers, the level of demand for workers, and other measures [16].

The Russian economy has changed significantly, and is very much in recent years. The changes affect all segments of the economy, so the labor market and employment is no exception. Stage of development of the Russian economy in 2014–2015 was characterized by the aggravation of problems in the labor market, which were directly related to the influence of political events and economic events.

In the overall picture of the labor market had the effect of the following events:
– The sanctions of the West;
– Events in the Ukraine;
– The rise in prices;
– The continuing inflation;
– Low standard of living of the majority of the population;
– Accession of the Crimea;
– Stagnation of the economy;
– The high unemployment rate of the population and government corruption.

Consider that in recent years the situation on the labor market was a rainbow, or at least a stable, absolutely wrong. Many fear that the crisis of 2008 could be repeated. But, nevertheless, the crisis in 2014–2015 years is called a temporary stagnation. We can not say that the demand for labor has changed dramatically. In turn, the number of offered vacancies declined, but this decline has been gradual. But these changes do not carry positive consequences, as Russia’s economy has remained stagnant state, without changes in a positive way, so seriously reduce the amount of vacancies and mass lay-offs, we have not seen.

The following areas of activity have been changes:
– Banking and investment sector;
– Tourism;
– Business related to the provision of hotel services;
– Insurance;
– Building;
– Fashion industry;
– Production and engineering;
– Transport and logistic.

Many companies had to reduce its headquarters staff, and mainly affected middle managers and line employees. Reducing the level of salaries has also been carried out [4].

For example, the results of analysis of the market in 2014 suggest that became more like a job and resume. Increase the number of vacancies was particularly noticeable at the end of 2014 (22% more than in December 2013), and it is in times of crisis. Although the increase in the number of CV was even more impressive – in 1,5 times in comparison with data for December 2013. But experts clarify that this increase does not necessarily entail the recovery in the labor market, but at the same time affects the relative indicators such as the ratio of vacancies and summaries. This just confirms the fact that the ratio of supply and demand has changed in the direction of the employer. In the “white-collar” reflected most strongly crisis tendencies in the economy. The market situation has changed insignificantly leaders, but among specialists with higher education employees in December 2014, the competition was almost 1/3 higher in comparison with the data for the year 2013. Significant difficulties were with the vacancies in the profession, such as the superintendent, economist, engineer, accountant. Harder than it was in 2013, waiters, drivers, system administrators. Only sellers and cashiers increased demand during this period.

In 2015, the number of officially registered unemployed amounted to between 4 and 7.5 million. People (10% of the total working-age population). According to a survey conducted by the Fund “Public opinion”, almost 20% of working citizens of Russia said that their organizations were already redundancy procedures; one in five respondents said that among his acquaintances were cases of forced departure on leave or move to part-time, about a quarter of reported cases of reduction or delay of salaries to their relatives, friends and acquaintances [15].

If we look at the labor market in 2015, the worst predictions, fortunately, did not materialize. Most of the companies for 2015 occupied the position of “waiting”: long-term plans, no sudden movements, rapidly adjust to the current situation. Only a few spoke about the business development and expansion of the state. Basically, it is the production companies that focus
on import substitution, IT and pharmaceutical companies, where the fight for talent going on regardless of the crisis.

A significant decline was observed in the number of vacancies offered by employers since January 2015. Basically, this is due to the completion of a difficult 2014, the uncertain future of the economic situation in the country and the geopolitical situation in the world. Stability came in mid-March, as many business players began to gradually adapt to the new realities of the market.

Compared with the end of 2014 – the beginning of summer 2015 there was a significant recovery by employers. The holiday period did not affect the applicants; they were active in the search for a new job. The gap between supply and demand has decreased significantly by the end of September 2015.

In Moscow, the labor market appears more and more interesting for the competitors offers, including in the areas of business, where earlier this year the selection of specialists has been suspended: HR, logistics, accounting and finance, administrative personnel [7].

Analyzing the graphs, you can see that there is a number of resume growth. This shows as well as negative: there are still a number of unemployed people who have not been able to find a job after the cuts in the spring of 2015, and a positive trend, when applicants do not experience fear in search of work. Therefore, applicants are kept for the current job and do not rush to change it before the New Year holidays, a more balanced approach to employment issues.

The level of competition has increased significantly; “hh.indeks” – the ratio of the number of resume to the position – was 10.7 against 9.8 the previous month. This is comparable with the level of April this year, when the market turned out a large number of acronyms.
Autumn leave a negative mark on the labor market dynamics. The number of jobs in industries producing areas of accounting and public service for several months did not undergo changes. Leading position on the number of published vacancies took companies from IT, in November, the retail sphere, as well as companies that produce non-food consumer goods.

Figure 3. **HH Index As a Whole in Moscow in 2014–2015**

(1) The ratio of the number of resumes to the position

![Graph showing HH Index As a Whole in Moscow in 2014–2015](image)

*Figure 3. HH Index As a Whole in Moscow in 2014–2015*

Dynamics resume professional spheres in Moscow

(November 2015 % by 2014)

- working staff: 52%
- administrative staff: 50%
- security: 44%
- fitness, beauty salons: 42%
- medicine: 36%
- the science: 35%
- building: 34%
- students: 33%
- public service: 30%
- production: 30%
- logistics: 29%
- information technology: 28%
- the sale: 28%
- service: 27%
- accounting: 26%
- law: 22%
- art: 22%
- banks: 22%
- top management: 22%
- domestic staff: 22%
- counseling: 20%
- tourism: 20%
- marketing: 19%
- personnel management: 19%
- car business: 18%
- raw material extraction: 17%
- purchase: 14%
- insurance: 9%

*Figure 4. Dynamics Resume Professional Spheres in Moscow*
Figure 5. Job Structure for the Professional Field in Moscow’s top 10

TOP 2015 traditional leaders salespeople. According to opinion HH.ru, vacancy “salespeople” for the entire 2015 grew insignificantly; by the middle of the fall was 39%, followed by IT-specialists and 15.4% of vacancies for “beginners” 13.4% [1].

In such a complex environment, companies have to work on efficiency and try to divide their business processes into components. The strategic objectives of all organizations are aimed at reducing the number of costly high-quality staff, replacing them with the “cheap” students for routine work.

According to the expert, the structure of demand for professionals in the agency differs from the human data portals. Employers now prefer simple job to close on their own, and the agency treated the selection of key specialists, for whom they really are willing to pay. The demand for sales managers remained high, as evidenced by the multiple forecasts.

“Many understand that now is the time to try to get around opponents. And those who have the opportunity, try to do so, including, at the expense of strengthening the sales block. Increased competition requires enterprises to thoroughly analyze the competence of the candidates and select candidates with a similar market for the industry”, – says Olga Goryunova [1].

Reduced vacancy rate was also observed in the area of administrative staff. Employers show interest in the manifestation of pent-up demand. Companies in a moment of great stress in late 2014 and early 2015 slightly reduced the job, then do not hire a replacement and just waited.

However, the demand for IT-specialists preserved. “The industry felt quite confident, even in early 2015. And now, against the background of recovery, employers from this sector account for 15% of our agency customers pool. Among them, the majority of companies-developers participating in state programs of any departments,” – says Alexander Shakhov, Head of IT / Telecom SC Unity. The Program of import substitution in the field of IT, as well as the authorities
acted on the demand in this segment of the market next year, despite forecasts to reduce the budgets of public procurement [1].

Also, an improvement in the financial climate in the country. Accordingly, the demand for IT-companies from the increased business that caused the increase in the deficit data specialists.

Due to accountants and financial directors formed the demand for financiers. He survived, and in 2016. Unfortunately, there was a demand for specialists of the banking and insurance industry. The overall decline in revenue of both companies and individuals, as well as the reform has led to stagnation in the banking sector. The change in market conditions business in these areas is very quick to respond. In 2016, employers have been actively recruiting the staff as soon as they saw the positive dynamics of the markets. After the crisis of the public sector become more attractive employers for job seekers. The state sector is less affected by the rest of the crisis and did not stop on the selection of projects.

“In people’s minds it is associated with stability, which in the current situation is more important than income growth. Now the competition has risen sharply among the candidates for the job of state corporations. In the future, this trend will continue”, – says Liudmila Chernyakova [1].

“Compared to the heavy spring unexpectedly stable fall in the labor market”, – said Maria Ignatova, Head of Head Hunter Research Service [15].

Employers feel calmer and began to act confidently in the labor market, although the number of jobs did not quite live up to pre-crisis levels. But the applicants was not easy, as they had to lower their expectations for salary and accept less favourable terms. But in times of crisis, when employers are forced to experiment, hiring a personnel functionality 2 workers take less skilled workers with lower demands for payment on a more responsible positions, then there is a chance for applicants to prove their professionalism, to acquire new skills.

According to statements by the Ministry of Labour, the number of unemployed in Russia, registered in the employment offices decreased by 12,507 people and made 904,371 people. At the same time (according to Mosgorstat) in Moscow, the number of unemployed increased by about 2% in the preceding month. At the moment about 110 thousand unemployed officially registered in Moscow. In addition, about 45 thousand people still refuse from the state employment service registration [7; 12; 18; 19].

Reduction of staff, who have been part of a little saturated market candidates with good knowledge and experience. But the tendency to poach candidates, because everyone knows that in the employers there is an opinion, “the best candidate – a candidate who continues to work.”

When hiring a new employee situation in the market forced employers to minimize the risks, more attentive to the choice of candidate for the firm. All the skills and quality of applicants were evaluated in a double format. By conducting additional testing and interviews (both personal and professional), the selection of the term increases, and even going to the recommendations. Trying to find the ideal candidate, employers are not in a hurry to make their choice in favour of a competitor. The trend of using social networks will be strengthened, because it has become an indispensable tool for recruiters in search of the candidates, and for candidates for a new job.

The International Labour Organization (ILO) is the most important organ for the protection of the interests of labor and the regulation of the labor market. In the form of conventions and recommendations it develops international labor standards, while establishing minimum standards on fundamental labor rights. The main aims and objectives of the ILO at the present stage are focused on the analysis of the problems of post-industrial society, the disclosure of globalization. Structural changes in the labor market are the result of the transformation processes. There is a sharpening of the contradictions between capital and labor, expressed in constant decrease in the share of wages in GDP. For organizations improve qualifications and training of manpower for the upcoming economic recovery in the subsequent period, the ILO draws attention to the need for a more intensive use of the economic downturn is advisable to combine and complement the growth of investment in the development of professional skills of
reduction of working hours. Even the International Labour Organization recommends that the State to focus on measures to maintain employment levels, to ensure access to the labor market of those who are unemployed to facilitate the transition from one job to another. To this end, the following activities are offered:

- Build and strengthen effective public employment services and other labor market institutions;
- Increase the volume of investment resources in upgrading the skills of workers;
- Ensure equal access to further education, quality training and education to prepare for the economic recovery [4].

The importance of vocational education and the need to continuously improve the spoken and performed in European countries calculations. According to these calculations, the increase in the number of training days by 1,0% leads to an increase in productivity of 3,0%, with the expense of training is provided approximately 16,0% increase in productivity [14; 15].

In addition, get the skills and experience of workers can fairly common ways: it can be free internship or volunteering, various trainings. Determination of promising labor market acts as a source requirements for the implementation of employment policy.

Especially important is the prediction of the future demand for skills. However, it is obvious that the situation on the labor market changes and demands from employers [4].

If we analyze the 2015–2016 winter period, the annual dynamics, repeats. Since mid-December, business activity in the labor market begins to “slow down”. “Revival” appears only at the beginning of February. A considerable amount of weekends and holidays, holiday parties, who decide on the hiring, reducing the activity of applicants express themselves both in December and in January.”

The labor market each year starts a little “wake up” closer to February.

According to many experts, it is not necessary to start the search was worth working for such vacancies, as an economist, Tourism manager, surveyor, gardener, staff to run in families, as well as builders.

Construction companies are suffering on a traditional seasonal decline. The absence of a plurality of positions by March-April 2016 can be observed in the sphere of B2B companies (supply of raw materials / materials, delivery and service of the equipment / technology) was not observed a large number of vacancies. It appears only a single demand for some jobs that were caused by the departure of relevant experts.

That is why managers recruiting during winter, because it is relatively quiet time.

During hibernation in the period 2015–2016 years could easily find a job seekers in the services sector. In the field of catering – a bartenders, cooks, janitors, waiters and cleaners, kitchen workers, etc.

The field of trade in constant need of promoters, cashiers, consultants, merchandisers in the “high season sales.” Most retailers at this time take additional workers.

In winter 2015–2016 years of the organization are always ready to accept the will of programmers, fitters, turners, millers, machine operators, developers. Now become very popular specialists of military-industrial complex in relation to the world situation.

For example, regardless of the time of year consistently continue its development of IT-company. Despite the winter, the programmers of different skills can successfully be employed. Companies operating in the defence industry, and actively develop. The structure of the data on a regular basis are required professionals such as software engineer, engineer, design engineer, head of the technical department.

Most of the candidates stopped thinking about what to look for work in the first week of January as pointless as before the new year. Therefore, the search for work carried over to February. It turns out the recession on the market competitors, which has a positive effect on those candidates who have not abandoned the search at this time.
According to our long-standing practice, the chances of finding a job, including winter, from high qualified professionals with an active lifestyle, self-esteem and reasonable requirements of the prospective employer”.

So if you need a job urgently, if you have a high motivation to successfully find a job, you should not relax even in these “sleepy” months. It is possible that this is just your chance. In addition, if desired job still is not present, it is possible, while continuing to search until find a temporary job that does not require special training. Easily in the upcoming December and January you can find a job as a merchandiser, Shop, supermarket worker, janitor, cleaner, dishwasher, porter, packer [7].

Expect higher wages is not necessary in 2016.

For example, the level of salaries in 2015 and offers slightly decreased by about 5–6%. But there is such a tendency that the applicant seeking to take on less money, the firm significantly increased demands on experience and expand the duties of the future employee.

The first opportunity to save on employee wages, offer lower wages candidate prevails in those areas where high competition among candidates. TOP-managers often faced with the situation. But with scarce specialists fails to agree. This applies to developers (Java, JavaScript). In the transition to a new job data experts expect to increase salaries. Organizations have to buy these developers on their own terms, because the need for them is always high.

Little has changed salary fork in 2016 within companies. With the expansion of professional duties often associated increase in his salary. For example, through the redistribution of tasks or responsibilities sacked colleagues. Handing the employee half of the work or other specialist, compensation increases by only 15–20%, is actively trying to save.

Revise parallel to the many organizations and a system of incentives, trying every possible way to save the wage fund.

“Salaries are trying not to reduce, but adjusted and tightened KPI. Plans for the indexation of salaries voiced units, but more often they apply only to key employees or carriers the unique competence”, – says Olga Goryunova.

Increasingly, companies continue the trend of transition from white to gray salaries. White remains fixed part. Variable bonus or part paid in envelopes.

The main projections for 2016 are as follows:

Growth of salaries until occur. But it is likely that the increased burden on the employees while maintaining the same level of salary or a slight increase;

The volume of vacancies in the labor market will gradually increase. Sharp jumps will not.

Applicants will pay more attention to public sector companies, considering them more stable.

In TOP-first row vacancies will hold programmers and developers. It is also not in demand in the spring of large volumes of administrative staff, employees of banks, etc.

Increase interest in outsourcing (transfer of non-core functions to third-party companies performers) [20].

Analyzing the above, it can be concluded that many organizations will review the wages of its employees in 2016.

According to a survey conducted earlier, about 52% of employers are willing to raise wages to their employees, and 11% will go to reducing the wage fund, and the rest of the company does not plan to make any changes. Big companies, employing between 100 and 500 people often talked about increasing the salaries to their employees. But in the survey is reported no reduction of payroll.

Employer market will continue in 2016. The high will be competition between the candidates. Applicants, who have a stable current employer, will be less likely to consider transitions to other companies because of the risks that may arise in the current economic conditions. Employees, who for some reason have lost their jobs, are more loyal to approach the discussion of job, while less critical of the proposed compensation package and salary.
Increase the demand for highly qualified professionals in the pharmaceutical, industry, agriculture, information technology, as well as in sales of all sectors of the economy.

Period of crisis – it is the time in which you need to use the changes in the market in its favor. Most importantly – do not forget the thoughtful planning and a deliberate decision.

References

REFERENCE TO ARTICLE
Teacher’s Role in Formation of the Didactic Situations in the Robotics Course

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Annotation: the article provides analysis of studies on teacher’s professional development in educational robotics, and states the lack of focus on teacher’s role in provided papers. Then the conclusions of TERECoP project about teacher’s role in constructionist approach are provided, together with examples from real practice, proving those conclusions.

Key words: robotics, constructionism, teacher’s role, problem approach, didactical situation, motivation.

It’s not a secret that nowadays we live in a rapidly changing world. 80-ies were marked by the transition from “industrial society” to “information society”, while in the decade of ‘90-ies we began to talk for the transition to a “knowledge society”, claiming that the information is useful only when it is transformed into knowledge. The realities of today show that success in solving problems is not only based on the amount of knowledge, but also on the ability to think and act creatively in new and unexpected situations. Thus, it is a fact that today we live in a “creative society” [14].

New technologies play a key role in the development of “creative society”. The development of the educational sphere is not an exception in this process, and new training tools and methods, mainly based on the use of information technologies, have appeared in the last 20 years, and they allow raising a generation ready for the realities of modern society of knowledge and creativity. One of these tools is robotics, which has attracted during the last years the interest of the whole educational community, from kindergartens to universities. Educational Robotics
is a unique learning tool that helps to create an attractive learning environment for children with practically meaningful and entertaining activities, reinforcing the interest of students to the subject [2].

Over the past decade a lot of robotics sets with an improved and more user-friendly design (LEGO Mindstorms NXT, Arduino, Crickets and other) have been created and released, which paved the way for the promotion of robotics among the students of all ages. The experience of introduction of robotics in school curricula over the last decade has shown [1; 3–6; 9; 16] that the children were engaged with enthusiasm in robotics projects and have acquired new skills.

The successful introduction of new technologies in the educational process is not only a matter of the availability of these technologies. By itself, the technology cannot influence the minds of students; this requires appropriate methodological programs, educational environment, a philosophy of education. Before teachers start to use robotics in education, the appropriate teaching methods should be developed and integrated into the curriculum, and it's often difficult in the conditions of a lack of teachers' experience in the field of robotics, as well as hard-mandated educational standards. Classical training programs in this area are irrelevant. Therefore, robotics is mainly popular in the extracurricular education, which often doesn't require a strictly prescribed learning plan, and is weakly formalized methodologically [2; 3; 9].

The works of Seymour Papert [10; 11] had a great influence on modern concepts of knowledge and experience, and many educational programs are built on their basis. The researches of Papert and his collaborators showed that attending programs featuring robots, students learn a lot of important skills, particularly in the field of creative and critical thinking and “learning to learn” – acquire so-called “metacognitive skills”. Such necessary qualities of a modern specialist as the ability to communicate and co-operation are also formed.

This form of training is indicated by experts as “constructionism”. According to this concept, children learn not when the information is “put” in their heads, but when they actively construct knowledge themselves. And this process is particularly effective when something meaningful for them is constructed: children don't receive ideas from the outside, but create them.

Accepting the active role of the student leads to a change in our understanding of the process of interaction between students and the teacher and classmates. Education is no longer seen as a mere transmission of knowledge from teacher to student, but converts into cooperation – a joint effort of the teacher and students in the mastery of knowledge and problem-solving. The sole teacher's leadership in this cooperation is replaced by the active participation of students in the choice of content and teaching methods. By Vygotsky's expression, “teacher-rickshaw” that pulls the entire educational process itself, must become a “teacher-motorman”, which only controls the learning process [19].

Of course, high-quality teacher training plays a key role in the solving of the problem of an effective transition to the new educational technologies. The work on teachers' training in the use of innovative technologies is already actively underway all over the world. There are special training programs for teachers in Europe and the United States, which are based on constructionist approach to education [1]. Also thematic seminars (for example, “Teaching robotics, teaching using robotics”), regional conferences (for example, “Robotics in Education” [15]), regional or national competitions, training courses for teachers, such as TERECoP [17] are gaining great popularity. Russian pedagogy also has achieved some positive experience in developing training courses on robotics both using Lego Education localized materials and based on personal developments.

It's no doubt that a lot of work on the development and integration in the educational process of educational robotics techniques has been made by today, but in practice the situation is not so positive. Most of the publications dedicated to this topic describe only some examples of the successful implementation of robotics courses in extracurricular hours. These are unique courses, whose success is largely due to a personal experience of teachers in the field of robotics,
and other teachers who do not have such experience, would face difficulties achieving the same results. In most cases, the actual practice of organizing such courses shows positive progress only with individual students with a special predisposition to Lego-robotics.

This problem is also reflected in publications. As noted in [7], despite all the advantages of educational robotics as a tool for learning, educational robotics as pedagogical science is still only at the beginning of its development.

Robotics, in most cases, is used as a tool for teaching children the basics of computer science and algorithmic. There is a significant research [8], whose goal was to study the effect of the use of Lego Mindstorms technology in education on motivation to learn computer science. Hypothesis of the research, according to the common expectations and conclusions of authors of the curriculum, on which the course was based, was that the group of students, who performed tasks with robotics kits in the classroom, will demonstrate an increased level of motivation compared to the group, where a similar course was conducted only on the traditional technique.

The study showed a lack of significant differences in the two groups, or completely the opposite effect in some cases. Of course, it was noted that all students attended with great pleasure the classes in which they could perform creative tasks using Lego sets. However, the interest in the study of algorithmic and programming was very little affected. In contrast, the traditional grading system with a reluctance to get a bad evaluation has demonstrated a much greater impact on the motivation of the students in this area.

This problem is also noted in the later works of S. Papert [12]. Students, when they are given all the opportunities for creativity and design knowledge, after some progress come to a kind of “plateau”, reach a certain level in their projects, after which they cannot build anything new.

What is the cause of these contradictory results? It seems that the constructionist approach is everywhere at the heart of the educational process, children are emotionally involved in the process of working on their own artifacts, but in some cases, the results are really complex and interesting models, and students master the full basic course of algorithmics and programming constructing them, and in others – the children simply build toys that perfectly function in their imagination, without any programming.

The work of the project TERECoP [2] provides an analysis of a large number of studies devoted to constructionism and the introduction of robotics in the education process. The majority of these works are focused on the process of obtaining knowledge by students; the leading role is given to the student there. This process must be an active, problem-oriented, meaningful to the student. The topic of learning tools themselves – Lego Mindstorms kits – is also fully revealed, there are many manuals and reference materials about various aspects of the work with these sets. Even the Lego Company, in addition to the sets themselves, offers reference materials for teachers, workbooks, manuals and software. Thus, supporting the released sets of this series, a significant number of related training materials have been produced. Among them are materials, oriented on completing tasks for robotics competitions. There is a variety of events and Robotics Olympiads nowadays, so many short-term courses and seminars for the training of teachers focus on how to prepare children to this kind of competition, how to deal with specific olympiad tasks.

The only thing that is given undeservedly little attention in the publications is a process of teaching and the actual role of teachers in it. It’s classically noted that the role of the teacher is changing in the constructionist approach, and the teacher is shown often in the role of consultant, coordinator, expert and relations “teacher-student” are more a matter of business cooperation [18; 20]. It is the underestimation of the role of teaching and teachers that plays a key role in the effectiveness of the robotics course [2]. Training courses for teachers [1] allow teachers to improve their knowledge in the field of robotics and become good counselors for their wards. But the role of the teacher in the constructionist approach is not limited by that.
The activity of students working with the construction sets is for them a solution of a certain problem. And the educational environment that encourages them to this activity is a necessary condition for such activity. So the main task of the teacher appears to be the formation of “didactic situation” – combination of the environment and a problem associated to it. This task of developing appropriate didactic situations for each stage of the educational process is often underestimated, and the effectiveness of the course largely depends on its implementation. This is confirmed by the following common observations, noted during the testing of a pilot course of robotics in supplementary education:

The group of students, who did not have much experience in working with robotic Lego kits, gets the task of preparing projects for the robotic competition. Children are given a technical description of the task that the robot has to perform, and are provided with all available means – sets, computers, programming models, and the teacher acts only as a consultant, to whom they could contact for help in case of questions. This scenario is widely spread when the teacher does not have extensive experience in working with the robotic kits. The most likely outcome of this scenario is the following: students will be working on the construction of their models, and won’t begin programming it until the last moment. In this case, the children begin to see their problem exclusively in the construction of models, they see too much novelty and high complexity in programming. Their task is to program only the final behavior, and finding their own solutions for that task is unavailable for children. Studying the basics is not their assigned problem for students.

Thus, the teacher must provide a balanced didactic situation for students from the first lesson, which, on the one hand, would contain an element of novelty to present really a problem to solve, and, on the other hand, would rely to an already well-known by children things (following Vygotsky [19], would be in the “zone of proximal development”). In particular, this requires the active participation of the teacher in the process of problem solving with children. Perhaps, in the initial stages of the project, the main task should be executed mostly by teacher himself, and students should receive some simple subtasks. Then, with the acquisition of new knowledge by children, they begin to perform more complex tasks, while the teacher continues acting as a helper.

Another approach to forming didactic situations is pre-built models, made by the teacher in advance. In Alimisis D. it is stated that such approach is often completely ignored due to the fact that the main emphasis in the paradigm of constructionism is on the children’s opportunity to build their own artifacts “from scratch” [2]. The project TERECoP, on the contrary, sees the control of the existing robot an important part of constructionism. In this case, it is important to organize the process of controlling and configuration of that robot as interesting as the process of building it from scratch, so that children could also “to love and to assign” it as if they built their own model. In particular, a complex-arranged robot can be assembled in the class by the teacher in the presence of children, and grab their attention by that.

Pre-built robot or the basic model, quickly built with the children, can provide a transition to the tasks at algorythmics and programming from the first classes. This will help to dispel children’s prejudice about programming as a complex process, as well as mark in the children’s minds the task of controlling the future model as equivalent task to its construction. It will be much more difficult in the final stages of the project to do this, in particular, if the children get a lot of freedom in the construction of their models.

Practice shows that students often do not know all the possibilities of the construction set. Being left to themselves, children will build a simple model based only on assembly principles, familiar to them, and their own imagination. The result of this work will be, in most cases, the constructions which, even containing motors and functionality, will not be supposed to be equipped with programmable modules. The simplest example is the model of the car, moving through the motor and controlled by remote control. Children often will not see the motivation to equip such a machine with a programmable unit, as the car without it works fine with the remote. Even if they wish to add such functionality to the model, the cases may appear where
it would not be possible to do without a complete overhaul of the model. For example, the model does not have enough space for the programmable unit, motors or transmission, or it's impossible to transmit rotation from the motor to the wheels or just the total weight of the structure is too large for the movement, using the existing gear. Rebuilding the model takes away precious study time, as well as the destruction of the assembled student's “artifact” causes a negative impact on further motivation.

Joint work with the children on their buildings can help to achieve another important task: to teach children from the very beginning to safety and habit of construction of reliable models. Lego parts are of high quality and reliability, but they are still made of ordinary plastic, and so are subject to various breakdowns. Engineering errors in the models can appear to be very expensive, because even one mistake in the design may result in a serious load increase in the model's functional units, which can lead breakage of fasteners, shafts, gears, and at worst – the destruction of complex elements and electronic fault. Sometimes it is not easy to explain children that the power of the engines is enough to break the axis or the gear teeth, and mechanical damage inside the motor is also not uncommon. The habit to perform any task qualitatively is easier to develop in the course of the activity that is most interesting for children, so teachers need to pay special attention to the children’s completion of engineering tasks.

The effective implementation of programming in robotics course also requires an appropriate didactic situation. The process of controlling robot with a remote is obvious for most children, and writing instructions on the algorithmic language without executing them in real time is a completely new stage for them. Didactic situation should require them to step on the stage. One approach to the formation of such a situation could be as follows: During the construction of the model the mechanisms should appear with a certain algorithm of work, requiring high precision of control, impossible to achieve manually with remote control. For example, it may be the manipulator, or function switch, where the motor requires a certain predetermined angle of rotation. This limitation can be solved only by programmable control.

It can be concluded from the above that it is imperative to participate together with the children in activities that are most interesting to them, only then the interaction between the teacher and the student will be effective. Classic “instructionist approach”, applied to robotics, leads to the fact that it becomes a natural situation for children when they build models only themselves alone or with their peers and adults show little interest in Lego creations. If such a mistake is committed, robotics course will not bring positive results.

It is obvious that the organization of the engineering component of this course is a very complex task, especially for a teacher without much experience with Lego technology. This topic is not currently well studied, and existing materials on it are mostly the references than manuals. At the same time it is exactly the engineering part that plays a key role in maintaining the motivation of students.

Similar conclusions already have been made by the authors of teacher training programs in the US and Europe [1; 2]. That is why a lot of attention there is paid to the practical work of teachers with the Lego sets. It's the personal teacher's experience in performing the tasks with the robotics kits that allows the teacher to take part in the work on the project together with the students, to control the construction process, to prompt more successful implementations of nodes, timely notice and point out errors or defects in the structure. With such a close interaction of students and teachers when children see that their work is interesting to their mentor, it improves mutual understanding between them, and any interaction becomes more efficient.

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The Competence Approach in Education

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Annotation: the article is devoted to consideration of the content of education, corresponding to modern requirements. This issue is relevant globally, as many countries have undertaken reforms of education, with the aim of updating the content of education by choosing the competence-based approach as fundamental.

In the system of Russian education the competence approach was also elected as one of the main directions of updating the content of education. Analysis of numerous publications shows that competence-based approach due to the need to strike a balance between professional education and labour market needs, thus, competency approach in education is the implementation of the order on employers of a competent professional.

This article gives the analysis of such concepts as “Competence”, “Competency”, shows the origins of the competence approach in education, reveals the essence and content of the competence approach, and highlights the problems arising during the implementation of this approach.

Key words: competence, competency, competence approach in education, educational curriculum.

Introduction
1. Problem definition

Improving the quality of education today is an important problem in General all over the world and in Russia in particular.

Orientation on formation of professional competences and competence is today the main purpose of the higher school and permeates all the documents that determine its development.

In the materials of modernization of Russian education the competence approach, was elected as one of the main directions of updating the content of education. Analysis of numerous publications shows that the competence approach is an attempt to strike a balance between professional education and labor market needs, i.e. the competence approach is the execution of the order on employers of a competent professional.

From the standpoint of the competence approach the level of education in modern conditions is determined not so much by knowledge as the ability to solve professional problems of different complexity levels on the basis of existing knowledge.

Research opportunities, patterns, types of competence-based approach, many of its components are devoted to research and practical work. Interest in the study and practical application of the competency approach due to society’s need for significant modernization of the education system for effective development of economy and the entire socio-political situation in the country.

The need for new approaches to the process and results of training of graduates of universities and schools due to increasing isolation of educational attainment, from the pressing needs of society in the solution of existing problems in different fields of science and production.

2. The origins of the competence approach in education
Improving the quality of education is today one of the urgent problems not only in Russia but throughout the world.

Focus on the development of professional competence is today the main purpose of the higher school and permeates all the documents that determine its development.

In the materials of modernization of Russian education competence-based approach proclaimed as one of the important directions of updating the content of education.

In the competence-based approach there are two main basic concepts: “competence” and “competency”.

First, consider the definition of competence.

In scientific writings the last decade a common understanding of basic concepts “competence” and “competency” did not work, so this is the optimal number of concepts from several authors.

Competence (from the Latin word “competere” – to meet, come) includes knowledge, abilities, skills, ways of working, processes in relation to them.

Competence indicates sufficient availability of knowledge and skills that include the ability to act in different situations, because each person has an individual level of readiness to fulfill the requirements and can have different effects in different situations.

I.A. Zymniya gives the following concept: “Competence – these are some internal, potential, hidden psychological new formation: knowledge, performances, programs (algorithms) of actions, system of values and relations which then are identified in the competency of man”.

And she interprets competence “as knowledge-based, intellectually and personally determined socio-professional activity of the person”.

A.G. Sergeev: “Competence is understood as a set of interrelated qualities of the person specified in relation to a certain circle of objects or processes necessary to qualitatively and productively operate in relation to them.

Competence is defined as the possession of a person competent to do, including their personal attitude towards it and the subject activity.

Thus, the competencies serve as the goals of the educational process and competence – as a result, the combination of personal qualities of a specialist”.

A.V. Hutorskoy, distinguishing between the concepts of “competence” and “competency”, provides the following definitions:

“Competence” – a set of interrelated personal qualities (knowledge, abilities, skills, ways of activity), asked in relation to a certain circle of subjects and processes necessary for quality productive activity in relation to them.

“Competence” – ownership, possession by a person of appropriate competence, including their personal attitude towards it and the subject activity.

According to A.G. Bermus: “Competence” is a “system of unity, integrating personal, substantive and instrumental features and components”.

In the business dictionary, competence is defined as “a group of related abilities, commitments, knowledge and skills that enable a person to act effectively at work in the changing situation. By competency is understood as a set of skills related to skills in a specific field of activity”.

M.A. Choshanov believes that competence is “not simply the possession of knowledge, and constant desire to update and use in specific circumstances”.

O.E. Lebedev defines competence as “the ability to act in situations of uncertainty”.

“Competence is an integral quality of personality that characterizes the ability to solve problems and typical problems arising in real life situations, using knowledge, training and life experience, values and inclinations. “Freedom” in this case is not as “predisposition” and “skill”. “Capable”, i.e. can do (the team of researchers under the leadership of A.P. Tryapitsyna) [18].

Competence – a set of competencies.

Competency formed in the education system:
– competence in cognitive activity;
– expertise in employment;
– competence in practice-oriented training;
– in a communicative environment.

Currently one of the major objectives of education were to develop the students’ abilities to act in different situations, formation of such qualities as the ability to change the scope of activities, modes of activity with maximum efficiency.

In our time for the specialist demanded qualities such as decisiveness, mobility, responsibility, ability to learn and apply knowledge in unknown situations, the ability to successfully interact with other people.

The main result of the activities of educational institutions should be not a system of knowledge, abilities and skills, and the ability of a person to act in a particular situation.

Thus “competence-based approach can be seen as an update of the content of education in response to changing socio-economic reality” (I.D. Frumin).

In the works of V.A. Barannikova, M.A. Aronov, A.G. Bermus, I.A. Winter, V.A. Bolotov, G.B. Golub, O.E. Lebedeva, V.V. Kraevsky, A.V. Hutorskoy, O.V. Churakova, etc are discussed the ideas of the competence approach as a basic principle of education.

All researchers, who have studied the nature of competence, indicate it’s multifaceted, multidimensional and systemic in nature.

The essential characteristics of the notion of competence [18]:
– “mastered the modes of activity or experience” (T. A. Stepanova);
– “the most General (universal) skills and abilities” (K. G. Mitrofanov);
– “the measure of involvement of the person in society (social cut)” (D. B. Elkonin);
– “ability to activity” (G.B. Golub, O.V. Churakova);
– “the capacity (ability) to act on the basis of the knowledge, allowing to solve effectively the problems and common tasks” (S.E. Shishov, V.A. Kalnej, I.D. Frumin, G.B. Golub, and O.V. Churakov, L.M. Dolgova, L.M. Mitina, etc.).

J. Raven: “…a competency is a specific ability to effectively implement the specific actions in a specific subject area, including highly specialized knowledge, a special kind of subject skills, ways of thinking”.

3. The nature and content of the competence approach in education

The essential characteristics of competence are:
– Competencies constantly changing (along with changing the world, together with the changing requirements of the labour market today);
– Competencies are future-oriented (they are manifested in abilities to organize their education thus to consider the requirements of the future).

Essential features of the learning process, is built in with the main ideas of the competence approach are:
– Reliance on the subjective experience of students in choosing jobs;
– The use of practice-oriented situations for the formulation of the problem for its immediate and successful implementation;
– An appeal to the redundancy of information to develop skills of working in conditions of uncertainty;
– The importance of independent cognitive activity of pupils;
– The use of individual, group and collective cognitive activities in different combinations;

The main ideas of the competence approach was formulated by L.O. Filatova. In summary form they are as follows:
– Competencies combines skill plus the intellectual components of education;
– The concept of competence includes not only cognitive and operational-technological components, but also motivational, behavioral, social and ethical;
Competence includes learning outcomes such as knowledge and skills, the system of value orientations, etc.;
Competence is the ability to mobilize acquired knowledge, skills, experience and ways of behavior in specific situations, and specific activities;
In the concept of competence laid down the interpretation of the content of education, which forms the orientation to the “result” (“standard output”);
Competence-based approach includes identification of core skills;
Competence formed in the process of learning not only in educational institutions but also under the influence of the environment, i.e., in formal, informal, and non-formal education;
The concept of “competence” is a procedural notion, i.e., how competences are shown, and are formed in different activities;
Competency-based approach emerged from the need in human ability to change in a certain situation by keeping some of the core education, holistic worldview, basic values of life.
To modern specialists imposed new demands, which were not in the old program for the training of specialists, these requirements are not connected rigidly with any particular subject discipline.
Requirements for modern competence-based specialist have versatility, like “interdisciplinary” character of all obtained skills and knowledge. Such requirements in some sources are referred to as key competencies, and other sources as “professional”, the basic qualifications.
Key competences can be very different, because they make life. These may include: skills of computer work, ability to search information, possession of the basic concepts of economics and business, understanding the environment, mastery of foreign languages, mastering the basics of legal knowledge and marketing skills. This could include basic skills in commerce and business, a basic knowledge of health standards and their main aspects.
Key competences are divided into two areas, which allocate the competence approach. The first is seen as nurturing the personal qualities of professionals needed to work in a number of different professions.
The second direction explores how the availability of professional skills that have wide application. In both of these cases, the competence needs to meet two main criteria, such as generality and functionality.
Competence approach in higher education requires the formation of professionals in the following skills:
Knowledge of basic principles of functioning of enterprises;
Ownership foundations of legal knowledge;
Knowledge of basic principles of existence in the conditions of competition and possible unemployment;
Readiness to change profession, and, if will be such need, and scope of activities;
develop creative thinking;
Skills of work in team.
Last, but not least are also such human qualities as self-awareness and self-esteem.
The main features of key competences are that they are multidimensional. Key competencies include different mental processes and intellectual skills (analytical, communicative, and critical), in addition, common sense, etc.
Professional competence consists of key, basic and special competences, each of which consists in turn of a key, basic, and special competencies.
Cultural competence is one of the main personal characteristics of a specialist in any sphere of professional activity.
Cultural competence is revealed in the ability to solve professional problems on the basis of the ability to use information, ability to interact with others.

It is composed of social, cultural, communicative, social and informational competence a wide range of applications, possessing a quite great versatility.

Cultural competence is generated in the process of mastering of disciplines of humanitarian, socio-economic and natural scientific cycles (philosophy, foreign language, cultural studies, law, history, computer science, etc.).

General professional competence shows the specifics of each profession, is required personal characteristics of a specialist in this specific profession (physician, technician, teacher, etc.).

Professional competence consists of professional and ethical competences, domain-specific competences, methodological competences, which are of a General nature.

We also included in the list of General professional competencies: diagnostic, constructive, designing, organizational, analytical, communicative competence.

General professional competences are formed as a result of the development cycle of General professional disciplines needed for all specialties. The block of General professional disciplines is composed of the following modules: fundamental, theoretical, active, integrative, orienting.

Special competence reflects the specificity of each subject specific sphere of professional activity and bound to data specific to the object and subject of labor.

Special competencies the student possesses in the course of development of the disciplines of the specialty (profile training).

A.V. Hutorskoy suggested a model of three-level hierarchy of competences: key competences, subject competencies and all competencies. Key competences refer to the General content of education. Subject-specific competencies tied to a specific subject. All the same competencies refer to a whole series of objects. All of these groups of competencies are interrelated. Core competencies are concretized at the level of first cycle of any items, then at the level of each individual subject for each grade.

The competence approach in education, as a rule, in the Russian science is considered in the following directions:

1. The formation of the professional requirements for specialist (A.G. Bermus, N.F. Efremov, I.A. Winter, L.S. Lisitsyna, O.E. Ivanova, and others);
2. Designing educational standards (A.V. Hutorskoy).

Analyze the fundamental assertions of the main researchers of the competence approach.

From the point of view of scientists, investigating this problem, competence-based approach implies a relationship in one of the educational process and his knowledge. In the process of reflection which produces the formation of the personal position of the learner and its connection to the main subject of their future employment.

Many scholars who have studied this issue, cause significant specific features that distinguish the competence approach from knowledge-oriented. These features, according to the author, can be summarized as follows:

1) the correlation between objectives – preparing and installing the active social adaptation, self-selection of students of their active life position, possible extension of professional education, self-education and self-improvement;

2) focus on the connection the following components of education: skill, emotional value and intellectual;

3) integrative – that is, the join into one not only of all relevant knowledge and skills from a certain sphere of activity, but also personal qualities of the student that will help him achieve specific goals in relation to his future career when he gets out on a particular production.

Does that mean that you must abandon all previously established approaches and techniques, and there is a need to look for something new? No, competency-based approach does not deny
the traditional educational methods and concepts, and he complements them, including, as an additional educational element, the subjectivity of the student.

Traditional educational concepts such as: theory of student-active learning; technology developmental education; personality-oriented technology of training; technology of contextual training and joint scientific and practical collaboration in implementing meaningful shared practical tasks; distance learning technology; computer technology training; technology advanced studies; practice-oriented technology of training; knowledge-oriented technology of training. And now added to them and the competence approach to education.

In the interpretation of scientists studying the problem, perfect model of the competence approach is the result of education very largely depends not only on the proposed content of this teacher education, but also on the abilities, interest in learning of the student, his personal characteristics.

The main idea of competence-based approach is contained in the provision that education should provide the student not only some fragmented knowledge, abilities and skills, but also to develop the student’s ability and readiness to professional activity in a variety of situations and different conditions of work in the workplace.

The competence approach in education is the attempt to harmonize vocational education with the labour market needs. Thus, we see that the competence approach is associated with the demand from employers for training and production of competent specialists.

Scholars, who have researched and developed a competency-based approach, assumed that the results of education and to the production of competent specialists will be considered significant not only in the education system, but also outside it.

The main task, which is placed in the competence approach – figuring out what is necessary and sufficient to know and be able to do for the future expert. And, accordingly, the inclusion of these necessary knowledge and skills to future educational trajectory, as something without which training could not succeed.

The competence approach is a reflection of the needs of the community in the preparation of competent professionals. We have such specialists who will possess not only specific knowledge, but also formed the skills that will allow to apply the received knowledge for solving specific practical tasks in various conditions in manufacturing.

In addition, for contemporary graduates of educational institutions of all levels it is important to understand that the need for the development of such personal qualities that will not only be competitive in the modern conditions of life. But also, these personal qualities that will enable you to be ready and able to cooperate, joint activities in the implementation of new unexpected, totally unknown task. The modern graduate needs to understand that this necessity dictated by life itself, contemporary conditions in the labour market.

All of this means that modern students need not only to know and be able to deal, but, most importantly, to have and to develop the ability to continuous updating and improvement of knowledge. Today’s young people must be constantly ready for a possible transfer or conversion to another subject area but must also strive to achieve efficient, positive results.

Because the needs of society in the preparation of future specialists, who are ready to act effectively outside the educational tasks and make relevant the need for search and development of new approaches and mechanisms of modernization of the education system at all levels.

Competence-based approach involves not the development of separated students from each other’s knowledge and skill, and mastering that knowledge in the complex. In addition, the development of students’ personal responsibility for results of all types of performed activities (study, design, search, etc.).

Researchers in the field of the competence approach in education (I.A. Winter, A.G. Kasprzhak, A.V. hutorskoy, M.A. Choshanov, S.E. Shishov, B.D. Elkonin and others) note that
the difference between a competent specialist skilled in that not only has a certain level of knowledge, abilities, skills, but are able to implement and implements them in the work of [17].

Modern Russian scientists, who developed and researched the competence approach in education, note the presence of important aspect (side). Applied to the modern Russian theory and practice of education, competence approach, does not form its own vision and logic, and involves borrowing from the conceptual and methodological apparatuses of already established scientific disciplines of or reliance on these disciplines. Also competency-based method should be considered in conjunction with many more traditional approaches.

Based on the reviewed scientific-methodical works are proposed the following essential characteristics of a competence approach in education:

– this approach allows efficient use of abilities allowing fruitfully to carry out professional activities;
– allows you to master the knowledge, skills, abilities and skills necessary for employment that require both the autonomy and flexibility on the part of the decision of many emerging diverse and unexpected professional challenges;
– allows to develop cooperation with colleagues from the professional environment and the interpersonal environment;
– allows the implementation of an integrated combination of knowledge, abilities and attitudes necessary for optimal operation of labour activity in the modern industrial environment;
– this approach gives the ability to do anything effectively, well in a fairly wide format contexts with a high degree of self-regulation, self-evaluation, self-reflection;
– on the basis of this approach, students are given the possession of a flexible, very fast and adaptive response to dynamically changing circumstances and environment.

4. The problems arising in the process of realization of the competence approach in education

Scientists who examined a new approach in the modernization of education, noted a number of problems in the system of General and vocational education. These issues obviously affect possible applications of the competence approach in education, formally, without affecting its essence and structure.

A.G. Bermus clearly distinguishes in his work the problem of application of the competence approach in education. He refers to these issues:

1) The problem of textbooks, including the problems with their adaptation to conditions and trends in education and modern humanistic ideas;
2) The problem of state standards, their concepts, models and opportunities consistent definition of their content and functions in the modern Russian education;
3) The problems of qualification of teachers and their professional competence not only newly developed competence approach in education but also more traditional methods and ideas about professional pedagogical activity;
4) The problem of contradictions between different ideas and attitudes in modern education;
5) The problem of internal contradictions between the most popular fields of modernization, including the idea of receiving the exam in all subjects, the idea of profiling high school and others.

Scientists, who developed and researched the competence approach in education, believe that the conditions for the development and use of competence-based approach are as follows:

– the use of redundant information for the development of skills and the formation of skills and attitudes to subjects studied in conditions of uncertainty;
– the predominance of independent cognitive activity over the presentation of educational material from outside (from the teacher);
– use by students of technologies that contribute to the production of a self-assessment of its activities;
– use individual, collective, group, learning activities, organization of individual, group work, group discussions, protection of the results and achievements;
– taking account of the subjective experience of students in choosing areas of study;
– targeted development of reflection (cognitive, social, psychological).

Methods and technologies used in the competence approach is focused on the formation of activity the competences that provides primarily self-esteem, self-realization, self-development of future specialist.

Most modern researchers believe that the greatest opportunities in the implementation of the competence approach in education have the following methods and technologies of training:
– method of projects;
– technology portfolio;
– technology computer training.

The competence approach has brought a lot to the educational process. But you should also understand that truly innovative learning is not the result of changing information technology. But on the basis of the development of new education strategies. Strategies that have come a long way. The path from total disregard of the fact that the personal position of the student has priority in front of goal “learning” – the recognition of the capacity for self-organization with the knowledge and approval as a valuable development of personality.

**Conclusion**

To date, the competence approach has a leading role in the process of modernization of education in most countries in our rapidly changing world.

The competence approach is a reflection of the needs of the community in the preparation of competent professionals. We have such specialists who will possess not only specific knowledge, but also formed the skills that will allow them to use knowledge to solve specific industrial problems in various conditions.

All of this means that modern students need not only to know and be able to deal, but, most importantly, to have and to develop the ability to continuous updating and improvement of knowledge. Today’s young people must be constantly ready for a possible transfer or conversion to another subject area but must also strive to achieve efficient, positive outcomes of its activities, that is, to be competent specialists. And this helps students to achieve the competence approach in education.

Because the needs of society in the preparation of future specialists, who are ready to act effectively outside the educational tasks and make relevant the need for search and development of new approaches and mechanisms of modernization of the education system at all levels, such as the competence approach in education.

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Annotation: analyzing individual judgments of the European Court of Human Rights the problems associated with domestic conditions in pre-trial detention are described as well as the measures taken by the State to resolve them are examined.

Key words: Judgments of the European Court of Human Rights, the Convention for the Protection of Human Rights and Fundamental Freedoms, inhuman and degrading treatment or punishment, the conditions of confinement.

According to official statistics, in 2014 the European Court of Human Rights have been processed 15,792 complaints against Russia, of which 15,574 were deemed unacceptable (statistics provided by the official annual report of the European Court of Human Rights for 2014. The European Court of Human Rights (ECHR) had issued 129 judgments against Russia (concerning 218 complaints). Turkey is on the second place – 101 judgments, Romania is on the third – 87 judgments.

In 2014, in relation to Russia, the ECHR found the most violations of the right to liberty and security of person (56), the right not to be subjected to inhuman and degrading treatment (50).

One of the most common reasons for judicial recourses of our fellow citizens to the ECHR is a violation by the Russian Federation of the third article of the Convention for the Protection of
Human Rights and Fundamental Freedoms “Prohibition of Torture”, which states that “no one shall be subjected to torture or to inhuman or degrading treatment or punishment.” [1].

The judgments of the ECHR concerning inhuman and degrading treatment and punishment are directly related to the conditions of confinement of persons in detention facilities: significant overcrowding in cells, unsanitary conditions, lack of opportunity to sleep, the placement of persons suffering socially significant diseases into cells with healthy individuals, as well as unsatisfactory level of the medical service and the organization of delivering the defendants by convoy divisions [2].

In this regard, let us analyze two ECHR judgments in respect of the Russian Federation on the complaints about a violation of Art. 3 of the Convention.

In one of the first and most famous judicial recourses of Russian citizens to the ECHR – Kalashnikov versus Russia – the complainant reveals the whole problem spectrum of Russian penal institutions, and it is the first time when ECHR evaluates it in terms of compliance with the Convention [12].

The complainant says about the conditions of his detention in remand prison “IZ-47/1” in Magadan, mentioning overcrowding of cells, in which he was held, unsanitary conditions, as well as the length of time during which he was detained in such conditions. This had a negative impact on his health, and made him be subjected to humiliation and suffering [12; 14].

The Court noted that the area of the complainant’s cell was 17 square meters., and it was designed for 8 inmates. The court found that such conditions can not be regarded as acceptable standards, since per inmate in a cell is 0.9 – 1.9 square meters. Thus, the Court notes, the cell was constantly overcrowded, because of what the prisoners in the cell were forced to sleep on the beds over every 8 hours in turns. In connection with the above, the Court recalled that the European Committee for the Prevention of Torture and Inhuman and inhumane treatment considers an area of 7 square meters as the desired standard for the arrangement of cells [4].

The Court also found that there was no proper ventilation in the cell where the complainant was detained, and he had to spend in the cell most of the day (excluding time for a walk: 1–2 hours) in a confined space and the stale atmosphere [8; 10].

The Court also noted that the cell was infested with insects. During his detention in the cell there were no measures to destroy them that led the complainant to the emergence of various skin diseases and fungal infections. In addition, the complainant was in a cell with persons suffering socially significant diseases (syphilis and tuberculosis).

Special attention in the Court's judgment in the Kalashnikov case (p. 99) is paid to the toilet arrangement in the cell: “located in the corner of the cell partition of 1.1 m height separated toilet from the sink but not from the living part. At the entrance to that part with the toilet there was not any screen, and the complainant was forced to use the toilet in full view of other inmates and be present while using it by cellmates. As stated in the Court judgment photos submitted to the Court by the authorities of the Russian Federation show a dirty triggered cell with space allocated for the toilet, deprived a man of privacy [7; 19].

Despite of the fact that the Court came to the conclusion about the absence the signs that administration had intent on the humiliation of human dignity and a violation of the complainant’s identity in the present case it pointed out that the lack of such a purpose can not exclude a finding of a violation of Article 3. The Court concluded that the conditions of detention which the complainant is forced to endure for approximately 4 years and 10 months caused him physical pain, humiliate human dignity and create such feelings that lead him to humiliation and trampling personality.

The Court concluded that the conditions of his detention, in particular the excessive overcrowding, unsanitary conditions and the consequences harmful to the health and well-being of the complainant of this situation combined with the length of detention in such circumstances amounted to degrading treatment [3].
10 years have passed since the Court judgment. What has changed in the Russian penal system during this time?

Summarizing its own practice for a mentioned period of time (over 80 similar cases), the Court answered this question itself. Despite the fact that the complainants said about the conditions in detention centers of different Russian regions, as the ECHR noted, the issues described are of the same type: overcrowding, lack of personal space and beds, limited admission of daylight and fresh air to the cell, the inability to have privacy when using the toilet. The Court concluded that this situation is the result of bad functioning of the Russian penal system, and affects a huge number of people held in detention centers throughout Russia [6; 11].

It is no secret that one of the main problems of the European Court of Human Rights (ECHR) is a huge number of cases pending resolution by the Court. Moreover in most of these cases a similar (“clonal”) problems caused by the imperfection of the laws of the Parties to the Convention for the Protection of Human Rights and Fundamental Freedoms are affected.

One of the ways to resolve this problem is of the pilot procedure for the Court’s ruling. Its aim is identification of systemic problems in the country and an attempt to assist in taking the necessary measures to respect human rights guaranteed by the Convention.

Pilot judgment as an independent solution appeared in the practice of the European Court of Human Rights rather recently – in 2004.

In the DH Res (2004) 3 resolution the Committee of Ministers of the European Council offered the Court “to identify in the regulations that establish a violation of the Convention, that it is the Court considers the underlying violations of a systemic problem and the source of this problem, in particular, indicate that in all likelihood, this the problem would be to generate numerous complaints that it was necessary to assist States in the search for an appropriate solution and the Committee of Ministers of the organization of supervision of the execution of judgments of the European Court of Justice “(Resolution of the Committee of Ministers (Res. (2004) 3) with respect to decisions that reveal a systemic problem lying the basis of a violation (adopted by the Committee of Ministers on 12 May 2004) official site of the Council of Europe.

In March 2011, the Court has included in its Rules of Procedure Rule 61 “pilot judgment procedure”, which determines the order of consideration of systemic or structural violations of human rights. According to the rule, “the Court may initiate the pilot judgment and make the pilot judgment, if the facts stated in the complaint, indicate the existence of a High Contracting Party – respondent structural or systemic problem or other similar dysfunction that caused or could cause similar complaints” (Rules of Procedure of the European Court of Human Rights of 4 November 1998 (in the red. April 2, 2012), official site of the European Court of Human Rights.

In other words, the pilot judgment procedure solves the problem: first, to identify systemic or structural problems in the national legal systems of the States Parties to the Convention for the Protection of Human Rights and Fundamental Freedoms of 1950, reflected in a number of similar complaints; secondly, to indicate to the Government on the measures necessary to eliminate it; and, thirdly, to oblige participating States to address these problems.

A feature of the procedure pilot judgment is that the Court did not consider individual complaints separately, and chooses to be considered a matter of priority one or several similar complaints, contain an indication of systemic or structural violations of human rights. Consideration of all the other similar applications is usually delayed until a decision on the pilot case.

The essence of the pilot judgment is that it is a reaction of the Court to a large number of similar complaints that demonstrate the existence of structural problems in the state, and is intended to induce the respondent State to resolve these problems at the national level. Pilot judgment encourages the government to take concrete measures to resolve the system problems within the established time limit.
Due to the large number of cases, repeatability described situations, the structural nature of the problems related to the conditions in pre-trial detention in January 2012 the Court delivered a pilot judgment about “the Ananiev and others versus Russia” case (judgment of the European Court of Human Rights on January 10, 2012 Case “Ananiev and others versus Russia” (complaints No.No. 42525/07 and 60800/08) (the Ist section) [18].

In the judgment, the Court found a violation by the Government Articles 3 and 13 of the Convention, and noted the presence in the State of the structural problems of inhuman and degrading conditions in detention centers and the lack of effective domestic remedies for violations of the relevant.

Application of the pilot judgment procedure in the case of “Ananiev and others versus Russia” was caused by “a large number of cases, their frequency, scale and structural nature of the problem.” The Court noted that in the period since 2002 was taken 80 decisions against Russia of violations of Articles 3 (inhuman and degrading treatment) and 13 (right to an effective remedy) and more than 250 of such complaints still await consideration.

Applicants complaints were Russian citizens Sergei Ananiev, Gennadi Bashirov and Gulnara Bashirova that during the period from 2005 to 2008 were kept in prison in different regions of Russia in the course of criminal proceedings on them.

So, in 2007, Mr. Ananiev spent nearly two months in the fifteen-meter cell of Smolensk. The camera was designed for 13 people, but in fact it contained up to 20 prisoners.

Bashirov and Bashirova contained in different cells of the Astrakhan remand prison and claimed that they were all full. In support of its complainant the applicants submitted excerpts from the four annual reports to the Human Rights Commissioner of the Astrakhan region, which showed that all the remand prison in the area were constantly overcrowded, and the official limit of filling was overly inflated.

The applicants argued that the Russian authorities had violated Articles 3 and 13 of the European Convention due to the fact that they were kept in overcrowded cells and they could not make any improvements to conditions or adequate compensation.

In that judgment, the Court suggested ways to improve conditions of detention [5].

Some measures should be taken immediately as the Court ordered because it does not require a significant time and money investment (and it is precisely the factors relied on by the official Russian authorities in such matters): isolate the toilet from prying eyes by curtains or walls, remove the dense mesh on the windows that is blocking access to natural light, and increase the number of bathing days.

In addition to emergency measures, the Russian authorities should develop a comprehensive approach for solving the problem of overcrowding in the detention center, which would include changes in the legal system, the instructions for the officers and penal staff of the center [9, 13].

The Court mentioned that the main reason for overcrowding in detention centers is overly frequent use of detention as a preventive measure and excessive length of detention. Based on the statistics provided by Russia, the Court noted that the request for detention is granted by the courts for 90% of criminal cases, sometimes unreasonably. The right to trial within a reasonable time or to release pending trial are often violated (Article 5, § 3 of the Convention).

The court ruled that the strategic task for Russia in solving the mentioned problem should be restrictions on the use of detention. Only in cases of serious and very serious violence crimes should be made the exception for detention rather than the norm [15; 17].

Given that comprehensive reform may take considerable time, the Court recommended a number of temporary measures to prevent overcrowding in detention centers. The Court includes following measures: the maximum limit number per cell reserved for each remand prison, which will be not less than the Russian norm in four square meters per person, and its periodic revision; empowering the chief prison the right of refusing to accept inmates, if it would exceed the limit; laying on the duty of prosecutors to keep in control the prisoners cases...
against whom a preventive measure in the form of detention may be prematurely canceled. In addition, the Russian authorities should put in place effective legal means to prevent further violations, including the possibility of prisoners to receive prompt and effective consideration of their complaints against the inhuman conditions of detention. If the Court invalidated certain aspects of detention, the prisoner must be able to receive compensation commensurate with the sums that the ECHR awards in similar cases [21; 23].

Therefore analyzing the complaints of Russian citizens and the corresponding judgments of the ECHR, the situation in Russian pre-trial detention for nearly a decade has not changed and the conditions of confinement is not humane in many of them.

Since 2007 the Russian legislator takes effective steps to address the problems associated with “the detention conditions of suspects in detention centers into line with the legislation of the Russian Federation for the transition to international standards”. It was resulted in the adoption of a number of federal laws and regulations. The most important of them: the Federal Target Program “Development of the penal system (2007–2016) (Federal Target Program” Development of the penal system (2007–2016). (Adopted by the RF Government Decree of September 5, 2006 No. 540 // Meeting of the legislation of the Russian Federation. 25.09.2006. No. 39. Art. 4075), the Concept of development of the penal system of the Russian Federation until 2020 (Decree of the Government of the Russian Federation dated October 14, 2010 No. 1772-r “On the Concept of development of the penal system of the Russian Federation until 2020 “// Meeting of the legislation of the Russian Federation. 25.10.2010. No. 43. Art. 5544). In addition, the policy is carried out humanization of criminal legislation, reform of criminal and procedural legislation on the application of house arrest as an alternative to detention, Art. 6.1 is introduced in Criminal and Procedure Code. As the principle of the criminal proceedings within a reasonable time the Federal Law of 30.04.2010 No. 68-FL “On the compensation for the violation of the right to trial within a reasonable time or the right to the execution of the judgment within a reasonable time” was adopted. All these measures contribute to reducing the number of remand prisoners and convicts [20].

As of 1 November 2015 thus analysis of official Russian Federal Penal Service statistics (statistics are according to the site of the FSIN of Russia. URL: http: //fsin.rf. shows that 116.9 thousand of people are held in 218 pre-trial detentions and 104 facilities operating in the mode of pre-trial detentions in the colonies – (01.01.2015 – 117 thousand). The limit number per cell reserved for each remand prison is 128,684 locations. Medical treatment for convicts and remand prisoners is provided by 136 hospitals of various fields, as well as medical units or health centers in each penal institution [22].

The construction of the detention facility at 4,000 locations is going to be complete in Kolpino, Leningrad region. The complex of the detention facilities includes 66 building and facilities of total area 163.9 thousand sq. m, including the total area of the cell facilities of 26,04 sq.m. The living area of the remand prison is 7 sq.m. per person which corresponds to the recommended norm in Europe. All buildings in the territory are combined in such a way to move on the area without going outside. This is the first detention center in Europe, equipped by lifts and travelators (URL: http: //fsin rf.

According to Acting Deputy Director of the Federal Service for the Execution of Punishments of Russia V. Maksimenko at the International Penitentiary Forum in Ryazan; “conducted activities helped increase the average size of the sanitary area per one person in cell up to 4.2 square meters (with legal norms of 4 square meters.)” (http://www.rg.ru/2015/11/26/sizo-site-anons.html).

However despite the measures taken by the Russian authorities, our compatriots are not satisfied with the conditions of detention in remand prisons, believing that being in them causes suffering and emotional stress exceeding the unavoidable level of suffering inherent in the restriction of freedom, and causes a feeling of fear, suffering and humiliation, insult
and humiliate the personality of the applicants. In this regard, the flow of complaints sent to the ECHR on violations by the Russian Federation the article 3 of the Convention, shall not be reduced. Let’s analyze one of the latest Judgments of the ECHR on this issue. The decision of the ECHR in the case “Sorokin against Russia” (67482/10 Complaint, the decision of the first section of the European court of human rights dated 10 October 2013 // URL: http://www.minjust.ru. The case was initiated by the Russian citizen Nikolai N. Sorokin on the 25th of April, 2010 in accordance with article 34 of the Convention. In his application the applicant describes the conditions of detention in remand prison “IZ-34/1” in the Volgograd region. Thus, in the period from the 2nd of February, 2003 to the 25th of April, 2010 the applicant was held in remand prison “IZ-34/1” in the Volgograd region. From the 30th of November to the 26th of December, 2006 and from the 16th of March to the 23rd of April 2009 the applicant was transferred to penitentiary medical facility in the Volgograd region, where he was treated for tuberculosis. The applicant argued that the cells were overcrowded.

The inmates lacked beds; they had to sleep in shifts. So, camera no. 41 with the area of 20 sq.m was equipped with 16 sleeping places and housed 30 inmates; cell no. 64 with the area of 10 sq. m was designed for 6 people, but it housed 16 inmates, cell no. 70 with the area of 16 sq.m. was for six persons, but it has housed up to 15 prisoners. In addition, the applicant complained about the following aspects of the detention: the cell lacked a toilet, prisoners had to use the hole in the floor as toilets; toilet bowls were installed in cells for the first time in 2008. An 80-meter partition that separated the toilet from the living space of the chamber did not provide sufficient isolation, and people who used the toilet were in full view of other prisoners and guards. The dining table was situated close to the sanitary site. Only four people could sit behind it, and all the other inmates were sitting on the floor or on a bench. Food was a little. There was no hot water. The court noticed that in two complaints filed by co-defendant of the applicant, it has already found a violation of article 3 of the Convention because of the extreme lack of personal space in the “IZ-34/1” during the same period of time (see case “Ananyin V. Russia”), complaint No. 13659/06, paragraphs 65–70, 30 July 2009, and “Lubimenko against Russia”, complaint No. 6270/06, paragraphs 54–59, 19 March 2009) [12].

The parties disputed certain aspects of the applicant’s detention in facility “IZ-34/1” in Volgograd. However, the Court concluded a violation of article 3 of the Convention on the basis of the submitted facts that the official authorities of the Russian Federation has not refuted. The court came to the conclusion that a significant part of the conclusion, which lasted more than seven years, the applicant spent on 2 sq. m of personal space. Sometimes it was less than 1.5 sq.m of personal space and in cell no. 41 and 64 sometimes it was less than 1 sq. m. The applicant was locked in a prison for day and night except for hours daily walks. In this regard, the Court recalled that in previous cases where the applicants were given less than 3 sq. m of personal space, overcrowding was recognized as a serious enough to demonstrate a violation of article 3 of the Convention. Accordingly, it was not necessary to clarify the physical conditions of detention (see, for example, Lind V. Russia, No. 25664/05, § 59, 6 December 2007; Kanytrev V. Russia, No. 37213/02, §§ 50–51, 21 June 2007; Andrey Frolov V. Russia, No. 205/02, §§ 47–49, 29 March 2007; Mayzit V. Russia, No. 63378/00, § 40, 20 January 2005; and Labzov V. Russia, No. 62208/00, § 44, 16 June 2005) [12].

The court considered the jurisprudence in relation to this question, the materials provided by the parties and the recognition as a violation of article 3 of the Convention by the authorities of the Russian Federation. The court came to the following conclusions: the fact that the Complainant had to live, sleep and use the toilet in the same cell with so many inmates by itself was sufficient to cause suffering or experiences to the extent exceeding the unavoidable level of suffering inherent in the restriction of liberty, and to arouse in the applicant feelings of fear, suffering and humiliation that could insult and humiliate him. The court stated that keeping the applicant in overcrowded cell the domestic authorities subjected him to inhuman
and degrading treatment. Therefore there has been a violation of article 3 of the Convention in respect of the applicant’s detention in remand prison “IZ-34/1” from the 31st of January, 2003 to the 25th of April, 2010. Based on the foregoing, the court ordered the Respondent state to pay applicant 23,250 euros as compensation of moral harm. Similar decisions taken by the Court in respect of a number of Russian detention facilities. So, in the case of “Sergey Vasilyev V. Russia” (No. 33023/07) the applicant, serving a sentence in the Komi Republic, complained about inhuman conditions of detention in the remand prison and the excessive length of his detention [12].

The European Court held unanimously that in the present case, the authorities of the Russian Federation has violated the requirements of article 3 (prohibition of torture), paragraph 3 of article 5 (right to liberty and security of person) and article 13 (right to an effective remedy) of the Convention, and obliged the Respondent state to pay the applicant 6,000 Euros as compensation of moral damage. In the case “Klyukin V. Russia” (No. 54996/07) the applicant, living in Moscow, complained about inhuman conditions of detention in the remand prison and correctional colonies (including the content in the medical unit of the colony) [12].

The European Court held unanimously that in the present case, the authorities of the Russian Federation has violated the requirements of articles 3 (prohibition of torture) and 13 (right to an effective remedy) of the Convention and obliged the Respondent state to pay the applicant 6,000 euros in respect of non-pecuniary damage. The applicant, “Lapshov V. Russia” (No. 5288/08), serving a sentence in Kaliningrad, complained about inhuman conditions of detention in the temporary detention center [12].

The European Court held unanimously that in the present case, the authorities of the Russian Federation has violated the requirements of article 3 of the Convention (prohibition of torture), and ordered the Respondent state to pay the applicant EUR 5,000 as compensation for moral damage.

Thus in the national penal system there have been positive trends in the bringing domestic conditions in detention centers into line with international rules, enshrined in the Convention for the Protection of Human Rights and Fundamental Freedoms largely under the influence of ECHR judgments. However full implementation of international standards in this field is Russia’s extremely difficult task requiring significant time and financial outlays as well as the change of the authorities` attitude to complying with human rights and freedoms [16].

Obviously, any measure aimed at solving the most painful problems with protection of personality, can not bring instant results; they suggest a long and systematic work, the interaction of multiple agencies and structures and a range of activities. All this creates difficulties in the implementation the European court´s decision at the domestic level.

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The Problems of Legal Regulation
of the Service Sector in the Russian Federation

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Annotation: the subject of the study is some of the problems in the regulation of services in the Russian Federation. First, the legislation is not explicitly enshrined the concept of service. In addition, on this issue there is no common opinion in legal literature. In general, the service can only be defined as a specific activity. Carried out different points of view on the concept of service. Second, the regulation of relations on rendering of services is carried out by a variety of regulations, which include the Civil Code, some federal laws and regulations providing certain types of services. In a separate civil code regulation provides only for certain contracts to provide services. The author proposes a number of changes in the system of legal regulation of service sources.

Key words: services, the concept of services, services regulatory sources, services, regulation, civil law, contracts, legislation.

The relevance of the study due to the development of the service sector in Russia and around the world. As a result, there is a need for further development of civil-legal regulation of public relations mechanism in the provision of services. Currently, services in civil law of the Russian Federation are one of the most important categories in the system of civil rights objects.

In civil science, there is disagreement over the general definition of the category of services. The researchers were able to come to the same conclusion about the nature of services and to formulate a definition that could be the legal definition of service in the civil law.

A feature of legal regulation of services is their diversity. It is not possible to make provision for the regulation of services in a single legislative act. Service delivery agreements play an important role in the Civil Code. There the Head of the Civil Code that regulate certain types of contracts, and Chapter 39 is dedicated to all unnamed contracts, legal regulation is on par with it also made provision of services rules.

Regulatory services system does not only consist of the Civil Code, but from a number of federal laws, rules, services, and other legal acts. A large number of sources does not provide adequate efficacy of the legal regulation, which inevitably causes a conflict between them. There are a number of services that are prevalent in the economy, but does not have a regulatory framework in the Civil Code (for example, health services and educational services). Such a situation does not correspond to their importance for citizens-consumers.

Some authors also took the view that there are a number of problems in the legal regulation of services. “The legal regulations of relations on rendering of services are many gaps. The lack of clear concepts sometimes leads to incorrect regulation of the emerging relationship. For example, the list of services presented by para. 2 Art. 779 of the Civil Code, although it is extensive, but not exhaustive, does not exclude the possibility to refer to the services of other activities and, consequently, to use the norms of other institutions” [15].
Services are found in Roman law, which later influenced the formation of modern legal systems. The concept of “service” is included as an integral part of the Roman private law, called the lease contract [18, p. 16]. The services are regulated by the Roman private law, divided into several types: the contract of employment of things (locatio-conductio rerum), the contract of employment work (locatio-conductio operis) and contract recruitment services (locatio-conductio operarum). Thus, the concept of service was much broader and included modern counterparts lease, works and services.

During the Soviet period in the history of our country services category did not develop, due to the nature of the planned economy and did not constitute a separate object of civil rights. The Civil Code of the RSFSR in 1922 [4] singled out the legal category of the contribution that can be correlated with the services category. Civil Codes of the RSFSR in 1922 and 1964 [21] contained a chapter on outsourcing contracts, which covered both the execution of works and provision of services. Private hiring from the beginning of Soviet power transformed in the employment contract, and began to regulate a particular branch of law – labor law.

The adoption of the Civil Code of the Russian Federation marked recognition of the important role of services in modern Russia. Various services have been regulated more than a dozen Heads of the Civil Code, and unnamed services are governed by Chapter 39. The legislator has created a fairly detailed system of regulation of civil law contracts to provide services. The role of services as an object of civil rights has increased. However, the services currently are not studied in detail categories, unlike products.

In the science of civil law there are discussions on the scientific concept of service. The lack of consensus among legal scholars due to the fact that the legislature has not set a legal concept of service. Development of clear concepts is necessary for two reasons. Firstly, the need is cognitive. Development of a single concept allows fixing the essential aspects of the object, and more in-depth study all its aspects. The second reason – practical. Law enforcement practice always requires clear benchmarks that will consistently solve disputes.

Study of the concept of services should be divided into two stages: the study of legislation for the presence of provisions on the service in general and an overview of the most common views on the issue in the legal literature.

The first step is to consider the general provisions on services in the Civil Code [22]. Despite the great importance of the category of service for civil rights in the Civil Code there is no rule which would give a clear definition of services. Such rules are called rules-definitions, and at the legislative level are fixed legal concepts. The first mention of services can be found in Art. 128 of the Civil Code, which says the provision of services as an object of civil rights. Based on the article make sense, works and services are independent objects on a par with the property.

To date, the theory of civil rights issues of the legal regime of civil law are the most controversial projects. In particular, there is no consensus regarding the concept of “action”, “work”, “services”. The position of the legislator is also very controversial [2, p. 29].

Also in the Civil Code of the Russian Federation service acts as an object of the obligation. “Commitment is the act of commodity exchange is issued relative civil legal relationship in which one party (the debtor) is obliged to make in favor of the other party (the creditor) a certain action of material nature or to refrain from such an action, and the creditor has the right to demand from the debtor the performance of his duties”. [20, p. 40]. The content of the obligations are the rights and obligations of the parties and the object of the obligation – something that sent these rights and responsibilities. Services related to the active form of obligations, that is, it means that the services are actions, not refraining from action (passive form of liability). Consideration services as an active commitment gets you closer to the disclosure of the essence of the services.

If we turn to st.779 Civil Code, in the definition of a service agreement, you can find an indication of the service as an action or activity. Under the contract of paid rendering of
services Performer undertakes, by the Customer to provide services (to perform certain actions or carry out certain activities), and the customer agrees to pay for these services. This approach relate to the consideration of services as an active obligation, i.e. obligation requiring the commission of certain actions.

For a comprehensive study of the question posed it is possible to refer to the industry’s tax law, which is very closely linked to the civil law. Despite the fact that the tax law uses a different method of legal regulation than civil law, but it does not prevent them from using some general concepts.

Tax Code in Sec. 5, Art. 38 for tax purposes could develop a definition of services, which reads as follows: “the service for tax purposes any activity the results of which do not have a material expression, implemented and used in the course of this activity”. [24].

Federal laws that regulate certain types of services so do not give a definition of services in general, revealing only the identification of specific types of services that are the subject of legal regulation. As an example, the Federal Law “On Postal Communication”, which in Art. 2 define postal services as an action or activity receiving, processing, transportation, delivery (delivery) of postal items, as well as for the implementation of postal money transfers [13].

As an interesting source for the consideration of the concept of services in favor of GOST R 50646-2012 [16], which was approved by order of the Federal Agency for Technical Regulation and Metrology of 29 November 2012 [12].

This standard is called “Public services. Terms and Definitions”. It contains terms that are used in the provision of services to the population and to be applied for the purpose of standardization. One corresponds to the concept of a standard term. The standard is given to the concept of services in general, tangible and intangible services.

Para. 3.1.1 provides that service is a result of direct interaction between the artist and the consumer, as well as their own activities of the service provider to meet the customer service needs.

According to para. 3.1.2 financial service meets the material and household services consumer needs and carried out in relation to a material product, including that provided by the consumer. Standard brings a sample list of such services: car service, repair of articles, washing, repair of equipment, transportation, etc. This type of service repairs, modifies or saves the consumer properties of the product, but also makes them. The same material services provide the movement of goods and people at a distance, that is, to the material and services include transport services.

Standard notes that some types of material services, which are embodied in the material result, sometimes referred to as the work. Thus, the standard considers the concept of services is wider than the concept of work, which are included in their composition.

The second kind of service is the socio-cultural services (intangible services). They meet the spiritual, intellectual, ethical and other non-material needs of man. They are necessary for health, personal development and professionalism. These include insurance, banking, legal, financial, educational, cultural, sports, medical, networking, and other services.

Thus, the regulations do not provide a clear concept of general services, using its definition of actions and activities. This may be due to weak elaborate the issue in the legal literature, and by the fact that the legislature did not see a great practical need for establishing a common legal concept of service.

The second stage of the consideration of the concept of service is a review of some of the views of Russian lawyers on the matter. The Russian legal literature, it can be seen that the authors in different ways may be appropriate to formulate the notion of service. However, scientists also believe that the essential feature of the service is that they are actions or activities.

In considering the concept of services should be approached from both a legal and an economic point of view. As mentioned above, the Civil Code of the Russian Federation is
considering the provision of services as an object of civil rights. In the scientific literature there is no uniform approach to the definition of the object of civil rights, but there are three approaches to consider them. “According to a first object of civil rights is something that sent the rights and duties of the subjects of civil relations. In accordance with the second approach recognizes the rights objects, about which there is a civil legal relationship. Supporters of the third approach under objects understand what the competencies and responsibilities have or may have an impact” [6, p. 91].

In our opinion, the consideration of services as the economic relationship is the most productive and correct. This view is found in the legal literature from the Soviet era. This is due to the fact that the Soviet jurists sought when considering all the issues to apply the dialectical materialist method of Marx, who saw in the social relations of distribution and exchange of the economic basis of society.

Among the authors are of the opinion that the service is a social relation, you can see the differences on other points. E.P Grushevaya thought that “service – this economic relationship is not about the results of labor, and on the labor as an activity” [8, p. 82]. N.A. Barinov contrary saw the value of services is not in itself and in its beneficial results. “Service – is an economic relations arising on the results of labor, creating a use-value, manifested in the form of efficiency of goods (things) or the activity itself to meet the specific, reasonable human needs” [3, p. 17]. The full and correct in our opinion is the position of M. Rossinsky who considered service from two parties: as specific consumer cost, in the form of concrete work and as the economic relation of the consumer and producer of service [17, p. 8].

These views go back to Marx, who in his fundamental work “Capital” gave his own interpretation of the essence of service: “The service is not that other, as the beneficial effect of a use-value – whether of goods, whether of labor”. [10]. Proceeding from the definition of services, which was given by Marx, it is possible to conclude that the economic substance of service as a useful product or effect of labor. From a legal point of view, the service is above all a social relation.

In the unfinished fourth volume of “Capital” of Marx contains valuable position that allows you to further consider the views of Karl Marx on services: “a certain kind of service, in other words, use-values, which are the result of known activities or labor embodied in commodities, while others services, on the other hand, leave no palpable results, existing apart from the perpetrators of these services; in other words, their outcome is not a salable commodity” [11, p. 414].

Some authors try to give a definition of certain types of services. “Educational service – it is economically and socially important category, representing an action or activity, during which one person (the executor, supplier, dealer services) transfers to another party (the customer, the customer, customer service) complex information and knowledge, aimed at personal development, spiritual and intellectual growth, mastery of professional skills, introduction to the experience of humanity, embodied in certain scientific, cultural and spiritual ideas, concepts and discoveries” [5, p. 197].

Works and services is an activity or working process. At the same time, the difference between them lies in the fact that the result of the work is a material object and can become a commodity, as a result of the provision of services cannot become a commodity.

Further comparison of the work and services leads to the fact that the work and services have different purposes. A.V. Barkov said that the purpose of the work is to create a new thing, and its further transmission. The labor process is only important for the final result, and the service of the labor process is inseparable from the result [19]. The purpose of the customer is the subject of appropriate quality. According to the Civil Code, a person who performs the work, the contractor is required to not only perform the activities provided in the contract, but also the result to its result.
In accordance with Civil Code, the service is the action or activity. There is no doubt that as a result of providing services there are any changes, but this result cannot be any item (educational services, health care, information, communications services, legal services, etc.).

The second problem in the regulation of services related to the system of sources, which includes the Russian Federation Constitution, the Civil Code of the Russian Federation, special laws relating to certain types of services, and other regulations. Also the legal regulation of the paid services is regulated by international agreements. Since 2012, the Russian Federation became a party to the World Trade Organization (WTO) and took the commitment to the General Agreement on Trade in Services [7]. This document contains important provisions on international trade services.

The Constitution of the Russian Federation [23] services referred to in para. 1, Art. 8, which states that in the Russian Federation the integrity of economic space, free movement of goods, services and financial resources, support for competition and freedom of economic activity. Art. 74 of the Russian Constitution guarantees the free movement of services and identifies possible conditions restricting the movement.

Civil Code Art. 128 considers the provision of services to the objects of civil rights, and Chapter 39 is devoted entirely to the paid services. Just more than a dozen Heads of the Civil Code devoted to the regulation of certain types of services. In addition to regulation of the Civil Code, there are different rules for the provision of certain services (e.g., telephone service and utilities).

Contracts for the provision of services in the Civil Code can be divided into two groups: one group consists of contracts that are governed by separate chapters of the Civil Code, and to other contracts which are governed by Chapter 39 of the Civil Code, “the paid services”.

Paid services agreement, in its regulatory framework regulated in Chapter 39 (Articles 779–783) of the Civil Code is, at first glance, the contract, which may not be difficult to understand. However, in reality the contract raises numerous questions about its very legal nature, the need to special allocation of such a contract in civil law (Civil Code), to clear the borders of its practical application [1, p. 70].

According to para. 2, Art. 779 of the Civil Code provisions of Chapter 39 apply to all contracts for the provision of services, except for those specifically been settled other chapters of the Civil Code. For example, Chapter 39 applies to contracts for the provision of telecommunications services, medical services, veterinary services, auditing and consulting services, information services and training services, Tourist assistance services. On the basis of para. 1, Art. 779 of the Civil Code, this list is not exhaustive. It is an omission of the legislator that the set of agreements, which are used for civilian purposes have not found mention in the Civil Code. These include legal services, financial services, security services, and a lot of personal services.

Based on economic substance similar contract obligations and obligations to provide services, the legislator has provided the possibility of a default application for adjusting the contract for onerous provision of services provisions of the contract and domestic contract. This provision allows you to eliminate the gaps in the legal regulation of the paid services and to compensate for the small amount of Chapter 39 of the Civil Code.

Art. 783 of the Civil Code allows the application of the rules of the contract, only if it does not contradict the characteristics of the object of a service agreement. This means that the rule will be applied if it is not linked to performance. The provisions on domestic contract may be used only if the client applies for services, designed to meet their household or other personal needs.

Art. 783 of the Civil Code provides for the use of the general provisions of the contract (Art. 702–709 of the Civil Code) and the provisions of the domestic independent (Art. 730–739 of the Civil Code). In Art. 783 specifically states that the provisions of the contract apply to the paid services only if not inconsistent with the provisions of Chapter 39 of the Civil Code of the
Russian Federation and the subject of a service agreement. For example, a contract may apply rules to regulate the order of services, or touch the subjects of obligation to provide services.

Thus, Chapter 39 of the Civil Code does not regulate a particular type of contract services, and establishes general requirements for agreements that have signs of the paid services. Chapter establishes common signs the contract, the basic rights and obligations of the parties. It should be noted that Chapter 39 does not represent a certain part of the Common for all contracts to provide services. This is due to the fact that its content is aimed at regulating only certain types of services, namely the actual nature of the service.

An important source of regulation of contracts for provision of paid services is the rules that are approved by the Government of the Russian Federation. These rules specify and detail the procedure for the conclusion of the contract, the rights and obligations of the parties, their responsibility. Also, provisions are specified for ordering the service, on the forms of payment of the required amount of information that provides executive services.

Special source of legal regulation on the provision of services is the Law “On Protection of Consumers’ Rights”. This law regulates the relations in which only citizens are the consumer. In Chapter 3 of Act does not distinguish between the legal regime of contracts providing services and jobs. Accordingly, in each of its provisions, which are devoted to the works, in parentheses indicates that they are dedicated to service. The only exception is Article 39, which deals with the consequences of breach of contract on the provision of certain services.

A similar combination of legal regulation of work and services is observed in the Regulation of public services in the Russian Federation, which are published on the basis of the Law “On Protection of Consumers’ Rights”. These rules govern the relationship between entrepreneurs and citizens implementing consuming to perform work and provide services.

Thus, the system of legal regulation on the provision of services of sources is a complex system made up and Chapter 39 of the Civil Code of the paid services, with distinct chapters for the named agreements, federal laws to unnamed contracts and no special regulation in the Civil Code and the Rules of providing various kinds of services, which are approved by the Government of the Russian Federation.

Such a complex system of legal regulation of services seems to be irrational. Firstly, of the Civil Code should be equally regulate all contracts for the provision of services, but there are no provisions that could be applied to any agreement for the provision of services. Secondly, a large number of important provisions laid down in the various rules of rendering of services, which in itself is a challenge, both for the application of the law and for citizens who want to protect their rights.

It is necessary to summarize the consideration of a number of issues related to the legal regulation of the provision of services. The lack of well-defined legally enshrined the concept of services in civil law permitted by the definition of the concept of services through actions and activities, which is sufficient for regulatory purposes. Each of the contracts formulated a set of actions and (or) the activities that form the subject matter of the contract. Main services feature is the absence of a material object as a result of service, the result of a service cannot become a commodity.

Services have a complex system of legal regulation of sources, which includes the Russian Constitution, the Civil Code (the provisions of Chapter 39 of unnamed contracts and individual chapters for the named contracts). The source may be the position of the contract in the Civil Code. For a number of unnamed contracts there is a separate regulation in the form of Federal Laws and the Rules of provision of services, which regulate and detail the conclusion, performance and termination of certain types of contracts, liability of the parties, as well as the fixed set of concepts, which are not reflected in the Civil Code.

Chapter 39, dedicated to the paid services has a small volume and needs to be the alternative, application of the provisions of the contract and domestic contract, which do not contradict
existing relationship to provide services. In fact, in the Civil Code there is no chapter that could serve as a kind of the General Part of the contract for any services. It is necessary to reform the rules of the Civil Code of the paid services, bringing them to a simple scheme. Chapter 39 of the Civil Code can be processed into the general provisions for all service contracts and organize the disparate rules of rendering services to more clear legal form, for example, by adding additional chapters in the Civil Code.

The research services and their legal regulation show that the services are one of the toughest categories in the civil law. The presence of a number of studies on the topic of services does not alter the fact that a common approach to service has not been found in the legal literature. However, you can indicate the approximate direction of doctrinal research services in the future: A study of the general concept of services, the similarity and differences of research works and services, as well as studies related to the classification of services in relation to a modern market economy.

References


REFERENCE TO ARTICLE

The Problems of Legal Regulation of Consumer Protection in the Russian Federation

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Annotation: consumer protection is provided not only by the Law “On Consumer Rights Protection”, and other normative legal acts. To effectively protect the rights of consumers in services requires the use of the Civil Code, special federal laws and different rules. The subject of research is the protection of consumers’ rights in the provision of services in the Russian Federation legislation. The first issue is the system of protection of sources of regulation of consumer rights. Very interesting is the question of the concept of public services and its relation to the legislation on consumer protection.

Key words: consumers, services, protection of rights, public services, public contract, contract of adhesion, civil law.

The presence of an effective legal mechanism for the protection of consumers’ rights is an important factor in the development of the entire economy. Ensuring consumer protection is an important area of social and economic policy. Ultimately, the government’s efforts aimed at economic growth and the needs of the population. This goal is achieved through the creation of a legal mechanism to protect the rights of the consumer as the weaker party in these legal relationships.

The object of study in this article will be the protection of consumers’ rights in the provision of services. The aim of research is the consideration of a number of issues related to the system of legal regulation of the sources and the concept of public service. The paper is widely used method of comparing the normative-legal acts.

One of the problems of consumer protection in the services sector is a complex interplay of legal regulation of sources. This article will attempt to enumerate the basic elements of this system. At present, Russian legislation relating to consumer protection regulation of social relations consist of the Civil Code of the Russian Federation, Federal Law “On Consumer Rights Protection”, other federal laws and legal acts of the Russian Federation adopted in accordance with them.

The system of legal measures implemented by the regulation of social relations that arises between the consumer and the seller, aims to create a comprehensive consumer protection institute, which make up the civil rules of civil procedure, administrative and other branches of Russian law [4, p. 26].

Despite the fact that consumer law is a complex branch of law, it regulates the relations that arise originally a civil law. Relations Various services are only part of the relations regulated by the Law “On Consumer Rights Protection”.

The international experience in consumer protection is expressed primarily in the resolutions of the General Assembly of the United Nations on November 9, 1985 No. 39/248 “Guidelines for the protection of consumers’ interests” [2].
The document acknowledged that consumers are often the weaker party in the relationship for a number of objective reasons, such as their economic status and education level. The document calls on countries to take measures to protect the rights of consumers, to create economic conditions to meet the needs of citizens, including the creation of conditions for greater choice and lower prices, to fight abusive business practices and raise ethical standards in the economic sphere. Also, countries should promote the development of public consumer associations.

In this regard, one of the urgent problems of modern Russia recognized the need for effective methods of protecting the rights of consumers. Russian law proclaimed the fundamental rights and interests of consumers, the relevant international legal standards in this area [21, p. 99].

Civil Code in Chapter 39 governs the contract of paid rendering of services. Also, 11 special chapters of the Civil Code regulate certain types of contracts to provide services, to which the head 39 does not apply the rules. A special feature of Chapter 39 of the Civil Code, which relates to the provision of paid services is that it regulates the so-called unnamed contracts to provide services, that is applied to all such contracts that have not found their self-regulation in the individual sections of the Civil Code.

P. 2 tbsp. 779 of the Civil Code defines an indicative list of services that are governed by Chapter 39 of the Civil Code. These include communication services, medical, veterinary, auditing, consulting, information services, training services, tourism services. This list is not closed, so the provisions of this chapter can be applied to a number of common onerous contracts, for example, a contract of paid rendering of legal services. Violation of any of these contracts, if the subject is a citizen who ordered the service for personal needs, is an occasion for the application of the Law “On Consumer Rights Protection”.

The legal mechanism for protection of consumer rights in the Russian Federation was embodied primarily in the Russian Federation “On Consumer Rights Protection” Act [8], which was adopted in 1992. The law at the legislative level secured the rights of consumers in the sale of goods, performance of works and provision of services and establish a legal mechanism for the protection of these rights. For example, these include the right to good quality services, the right to be safe for life and health, the right to information about the services and their manufacturers performers.

Serious changes in the law underwent in 1996 [13], in 1999 [12], and in 2004 [6]. The changes were due to legal practice and the need for its further improvement. Revision of the Act of December 17, 1999 improved the terms used in the law, and because of this the Law “On Consumer Rights Protection” was the match of the RF Civil Code and international standards in the field of consumer protection.

In this article, the main task is to examine the legal protection of consumer rights mechanism for the provision of services, but it should be noted that the Law “On Consumer Rights Protection” does not protect the rights of consumers differences in the implementation of works and provision of services. This is due to the proximity and affinity data types of contracts and the immateriality of their differences for the purposes of the Law “On Consumer Rights Protection”.

Chapter 3 of the Law “On Consumer Rights Protection” regulates relations arising in the performance of work (rendering of services). In the title of this chapter indicates that this article applies to both the performance of works and rendering services. The only article, which is devoted to services is only Article 39 (regulation of certain types of services).

In Art. 1 of the Federal Law “On Technical Regulation” [10] states that the law regulates relations arising in the development, adoption, application and enforcement of voluntary requirements for products, processes of design (including survey), production, construction, installation, commissioning, operation, storage, transportation, marketing and utilization, executing of works or rendering of services.
The relationships that arise from a consumer work contract and the paid services are governed by rules of public services in the Russian Federation [7]. As mentioned above, the rules of providing certain types of services are approved by the Government and are designed to refine the provisions regarding information about our services, order of delivery and payment and the features of the provision of specific services.

In the area of safety of certain types of services are voluntary standards. For example, in the sphere of tourist service operates with GOST R 50690-2000 “Recreation Services. General requirements” [16]. This Standard defines concepts that relate to the provision of tourism services. According to para. 3.12 of GOST, a tourist service refers to the result of the organization or individual entrepreneur to meet the needs of tourists in the organization and carrying out of the tour or its individual components.

Responsibility for violation of the provision of services set the RF Code of Administrative Offences [19], which in art. 14.7 and 14.8 establishes administrative penalties for accounting is the implementation of consumer services, misrepresentation with regard to the properties and the quality of services, the failure of necessary information about the service and its title, and others.

Judicial practice on consumer protection, including the provision of services is expressed in the Resolution of the Plenum of the Supreme Court of the Russian Federation “On consideration of civil cases by courts in disputes on the protection of consumers’ rights” by 2012 [1]. This resolution determines that a significant disadvantage of the service rendered and to methods and to protect the violated rights of consumers.

With regard to this method of consumer protection as a compensation for moral damages should be considered Resolution of the Plenum of the Supreme Court, “Some questions of application of the law on compensation for moral damage” of 1994 [3; 17].

An important source of legal regulation is the Resolution of the Russian Government, which set the rules for the provision of certain services. As a general rule, Regulation governing the contract of rendering of services, which by their legal nature, are public contracts. These rules are adopted in the sphere of consumer services, telephone and postal services, telegraph, and in several other areas.

In recent years, increasingly found the concept of public service. In this connection there is a question about that. In this regard, it is necessary to analyze the category and identify whether these services fall under the Law “On Consumer Rights Protection”.

Category of public services can be viewed from different perspectives. Firstly, as a category, which refers to public law and services provided by the state. Second, public services can be regarded as provision of services for the public contract and the merger agreement.

Currently there is a debate about the relationship between the concepts of public services, public services and social services. Attempts to formulate the concept of public services undertaken a number of authors who wanted to share these concepts and try to clearly define what services are private law, and any public law.

But these relationships cannot be built until the end of the interaction on the basis of civil law and using only its concepts. This is due to the fact that the state is a special subject, which alone publishes legal regulations and monitors their implementation. In consequence, at the moment it is impossible to speak about the protection of the rights of consumers of public services, because these relations are not subject to the rules and regulations of the Federal Law “On Consumer Rights Protection” due to the fact that the service is in the public law sense is not a service, which it considers of the Civil Code. But, the most important foundation on which public services is not subject to the Law “On Consumer Rights Protection”, a subject composition relation. No party that carries on business for profit. In addition, public services may be provided not only to citizens but also to legal entities.

It should be noted that despite the similarity of concepts of public services and the civil law concept of services, these phenomena belong to different sectors of the legal regulation.
Nevertheless, the analysis of public services will consider the service in more detail in a new way.

Category public services appeared in the Russian Federation since the adoption of the Presidential Decree “On the system and structure of federal bodies of executive power” [14]. According to the cop. “D” Art. 2 public services – is the provision of federal executive authorities, directly or through their subordinate federal government institutions or other organizations free of charge or at regulated bodies of services prices public authorities’ citizens and organizations in the field of education, health, social protection and other areas established by federal laws.

Public services can be provided for a fee and on a pro bono basis. The general direction of the new approach to governance is the use of certain categories of civil law to improve the quality of public services. Thus, the public services sector regulated predominantly administrative law.

Category of social services is enshrined in the Federal Law “On the basis of the legislation on social services for citizens in the Russian Federation” [11], which states that the social service is an action or actions in the field of social services to provide a permanent, periodic, one-off assistance, including emergency assistance, the citizen in order to improve the conditions of his life and (or) expansion of its capacity to provide for their own basic needs.

Now we need to turn to the very concept of public service. Y.A. Tikhomirov and E.V. Talapina consider public service as a fairly broad term and refers to them such services, which aim to achieve so universally valid result [18]. Public services are provided by state, municipal and other subjects. Y.A. Tikhomirov noted that such an understanding of public services allows you to include in them as public services and social services rendered by entities outside the state [20, p. 29].

However, further analysis of the ratio of public social services with social services on a reimbursable basis, on the basis of a civil contract. For example, E. Morozova relates to social services in the field of education, medicine, culture and others [5, p. 8].

T. Zhukov believes that public services and the civil service are completely different phenomena. The first – public relations, the implementation of state functions. Second – typical civil matters [22].

Thus, the concept of public services does not interfere with the civil law notion of services and most of them are not regulated by the legislation on consumer protection. An exception may be social services, as in the Federal Law “On the basis of the legislation on social services for citizens in the Russian Federation” there is mention of legislation in the field of consumer rights.

Thus, summing up the study of the question of public services, it can be concluded that public services such as the services provided by the state, not in the sphere of civil law regulation. Therefore, it is impossible to talk about consumer protection in the provision of public services. The sides of these relations are not parties to civil circulation, so the consideration of public services is the prerogative of the science of administrative law. However, for research purposes can be studied within the framework of civil law of public services as an example of convergence in certain formal aspects of private and public law.

Now it is necessary to examine the second point, which you can invest in the concept of public service, namely the category of public contracts and contracts of adhesion. These agreements are purely civil law categories and provided the Civil Code. A characteristic feature of a public contract and a contract of adhesion is that their conditions are drawn up so that they could be concluded with a large number of consumers. The entrepreneur there is no way to determine the conditions of the contract with respect to each user, so these types of contracts allow to fix the conditions in advance.

The principle of freedom of contract does not allow the consumer to impose terms of the contract and to demand its conclusion. However, the entrepreneur is interested in seeing the conditions of the contract were such that they will be able to attract more consumers. The
legislator has provided a number of provisions that protect the rights of the consumer at the conclusion of public contracts and accession treaties, including the provision of services.

This contract is the construction of a certain deviation from the principle of freedom of contract, which is enshrined in Art. 1 of the Civil Code. The requirement that a contract must be concluded with any applicant is a guarantee of non-discrimination of consumers. However, this rule has an exception, according to which legal acts may provide for exemptions for certain categories of citizens—consumers.

The main issue, which concerns the protection of consumers' rights in a public contract and a contract of adhesion in the provision of services is the question of whether a consumer to influence the terms of the agreement and what it has the possibility to protect their rights.

Analysis of a public contract in the field of services and the agreement reveals that the consumer is not completely powerless party to the treaty. On the one hand, at the conclusion of a public contract, the consumer is not able to determine the conditions of the contract (for example, price of the service), but this is offset by the fact that the Civil Code of the Russian Federation in the art. 426 lays down the provisions which allow a consumer to protect their rights at the conclusion of a public contract in the services sector.

First, do not allow disclaimer of a commercial organization to conclude a public contract with the customer if possible provide the corresponding service. Otherwise, the consumer may request a court to conclude with him a public contract. This provision is provided n. 4 of Art. 445 of the Civil Code.

Forcing through the court to the conclusion of the contract is also a violation of the principle of freedom of contract, which is one of the principles of civil law. However, consumer protection is precisely to legally provide them with a number of legal advantages in comparison with the entrepreneurs. The presence of such benefits intended to compensate for the economic inequality between the performer and the customer service. This provision is an implementation of the provisions of the Guidelines for Consumer Protection.

It should be noted that, according to para. 55 Resolution of the Plenum of the Supreme Court number 6, the Plenum of the Supreme Arbitration Court of the Russian Federation No. 8 from July 1, 1996 “On some issues relating to the application of the Civil Code of the Russian Federation” [9] on a commercial organization or individual entrepreneur, the burden of proof is the impossibility of providing services for the public contract.

According to Art. 426 and 445 of the Civil Code, the consumer has a right to damages, which could arise as a consequence of unjustified refusal of a commercial organization to conclude a public contract for services. Losses can be expressed in costs, which was forced to suffer the consumer in connection with the refusal to conclude a contract. For example, he was forced to spend money on travel to another commercial organization, where it could provide the services.

Second, as a general rule, for all consumers the same conditions of public contracts shall be established. From this position, there are exceptions for certain categories of citizens, which, according to Russian law, are social benefits. For example, the Federal Law “On Veterans” [15], Art. 14 establishes the measures of social support for disabled veterans who pay 50 percent of the cost of utilities.

Thirdly, according to para. 4, Art. 426 of the Civil Code of the Russian Federation, the Russian government is entitled to publication of the Rules of certain types of services. These rules expand the list of consumer rights, in particular on the volume of the information, which relates to the service provided.

Non-compliance with provisions on equality of consumers at the conclusion of a public contract and the non-compliance of contract terms established by the Rules of providing certain types of services implies acceptance of these conditions void. The provisions of the Civil Code in this part of the match Art. 16 of the Law “On Consumer Rights Protection”, according to which the provisions of the contract, infringe the rights of the consumer are void.
With regard to the protection of consumer rights at the conclusion of the contract of adhesion, should be guided by the provisions of Art. 428 of the Civil Code. It provides a way to protect the civil rights of a termination or modification of the contract. The content of the relevant provision is very complicated and will require serious grounds that such requirement has been recognized by the court. According to para. 2, Art. 428 of the Civil Code of the Russian Federation acceded to the contract party is entitled to require the termination or amendment of the contract in the presence of three conditions:

1) The provisions of the agreement comply with the laws and regulations of service, but deny to join the side of the rights usually granted under contracts of this kind;
2) The provisions of the treaty exclude or limit the liability for breach of other obligations;
3) The provisions of the agreement include clearly burdensome for the adhering party conditions which it based on their reasonably understood interests, it would not have taken if she had the opportunity to participate in determining the terms of the contract.

Such wording is not possible to determine exactly which provisions can be included in the contract does not conflict with the law, but at the same time be burdensome. Perhaps it is the provisions relating to the price of the contract and the timing of its execution.

Summing up the consideration of consumer protection features at the conclusion of a public contract and a contract of adhesion, it can be concluded that these types of contracts provide for the consumer a number of advantages. Despite the fact that the consumer is deprived of the opportunity to influence the terms of the agreement, it is in their interests contains provisions on the obligation to enter into a public contract with him, as well as the equality of conditions of the contract for all consumers.

Thus, the category of public services can be described as a public-law relationship, and civil law. It seems most appropriate to the concept of public services has been fixed it is in the realm of public law and have an independent regulatory sources not related to the civil law. Using one of the terms “service”, unfortunately, it leads to confusion, since it characterizes only the outer side of the relationship, rather than legal nature.

When considering the issue of the protection of consumers’ rights in the provision of services established that the Law “On Consumer Rights Protection” does not make a fundamental difference in the mechanism of protection of consumers’ rights in the performance of works and provision of services. This situation is due to the fact that many of the provisions of the Civil Code relating to the contract of domestic independent and additionally apply to paid services agreement. This demonstrates the similarity of legal nature of the contract and the paid services, which is also reflected in the similarity of the mechanism of protection of consumer rights.

The main sources of legal regulation in the sphere of protection of rights of consumers are the Civil Code of the Russian Federation, Federal Law “On Consumer Rights Protection” and a number of other legal acts. In international law, there are no significant agreements that would be devoted to the protection of consumer rights, due to the fact that this area is purely an internal legal phenomenon.

The article reveals peculiarities of consumer protection at the conclusion of public contracts and contracts of adhesion. It was established that the concept of public services are serious controversy in the legal literature. Public services are an integral part of administrative law and are not relevant to the regulation of consumer protection legislation. With regard to the category of social services, it is necessary to further theoretical development in order to determine which of the social services are governed by civil law.

Summing up the issue of consumer protection in the services sector, it should be noted the need to further improve the legal regulation of this sphere. In this case, the primary role is played by the coordination rules of the Civil Code and the Law “On Consumer Rights Protection” in the case of changes that can be made in the Civil Code and which will deal with the paid services. Consumer Law is essentially a necessary complement to civil law, despite the fact
that his institution is not considered. Consumer law is a complex industry that is subject to regulation of their specific public relations for the protection of consumers of their rights.

References


REFERENCE TO ARTICLE

Standardization of Urban Soils Quality and Urban Soils Management

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Annotation: the review discusses the problem of valuation of urban soil quality. The analysis of the sanitary-hygienic approach to rationing of urban soil quality and soil monitoring system in Russia. A comparison of the quality of the valuation systems in Russia and abroad urban soils. The experience of the creation of a quality management system in Russia and abroad urban soils. The basic elements of a quality management system of urban soils. Recommendations to improve the regulatory framework of soil quality.

Key words: urban soil, regulation of soil quality, soil monitoring, pollution, soils quality management.

Soils are one of the most important components of urban ecosystems. The quality of urban soils directly affects not only the condition and stability of greenery, but also on the ecological situation in the city as a whole. In urban ecosystems are of particular importance biosphere soil functions: recycling organic residues, purification of the atmosphere and surface waters, the formation of climate, strengthening terrestrial surface, providing biological and geological cycle
of substances [4]. Urban soils are subject to high anthropogenic stress – chemical (pollution with heavy metals, arsenic, petroleum products), biological, radioactive contamination and physical impacts (sealing and cluttering). State of urban soils is essential for evaluating ecological status of the territory as an integral indicator of environmental situation (see Table 1) [8].

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It’s possible to directly impact of contaminated soils on the health of the population in urban areas, for example, increased child morbidity rate due to contaminate of pollutants in their organisms on the playgrounds [21].

Research subject – urban soil as an object of environmental regulation and management.

Purpose of work – to consider the experience Russia and other countries in the development and implementation of urban soil quality standards.

Evaluation of the quality of soil and its monitoring is a complex task caused by the properties of soils such as multiphase nature, the activity of living organisms, a variety of chemical composition.

The main types of environmental regulation of soil quality includes: socio-sanitary (anthropocentric approach), the ecosystem, biogeochemical, statistical and resource approaches [15]. In most countries of the world used social-hygienic standards to ensure the safety of human health. The main feature of urban soil quality valuation is the lack of standards, specifically developed for urban soils.


The purpose of standardization – the development of science-based criteria and norms of maximum permissible concentrations and impacts, covering all types and species of harmful effects as well as the soil of various economic purposes.

Sanitary-hygienic regulation aimed at control of chemical contamination of soils. Sanitary regulations includes the indicators MPC and APC pollutants in soil (such as heavy metals, arsenic and petroleum products).

Development of MPC of contaminants in the soil based on the basic principles of hygienic regulation of pollutants [14]:

1) The receipt and presence in soil of contaminants permitted in amounts safe for human health;

2) Must not be exceeded self-purification capacity of the soil at an isolated, combined or integrated effect of contaminants;

3) Research in extreme soil and climatic conditions facilitating the maximum migration of the studied chemical in contact with the soil environment (water, air, plants), as well as
providing the most intense impact of pollutants on the processes of self-purification and soil microbiocenosis to ensure hygienic strength MPC;

4) The use of standard reference soil, based on a constant granulometric and physico-chemical composition of the sandy soil and microclimate of common parameters.

5) Definition of the study of the most significant pollution characteristics that influence the processes of migration and detoxification of pollutants, self-purification processes of soil and the nutritional value of agricultural plants.

Determination of the threshold amount of polluting chemicals conducted by 6 indicators hazards:

1) General sanitary indicator – the maximum amount of chemical that does not cause major changes in the number of physiological groups of microorganisms for more than 50%, and the enzymatic activity of the soil for more than 25% relative to a control sample similar parameters;

2) Migration-air rate – the threshold concentration is the number of elements in the soil, in which the flow of it into the air is not accompanied by excess of the established daily average MPC;

3) Migration-water rate – the threshold concentration is the maximum amount of the element in which the flow of it into the ground water and water sources from runoff does not create a concentration above the maximum permissible concentration in water reservoirs.

4) Organoleptic characteristics – the threshold concentration is the maximum amount of a chemical in soil (mg/kg of absolutely dry soil), which does not affect the nutritional value and organoleptic properties of food products of plant origin, water and air;

5) Translocational rate – the threshold concentration is the maximum amount of the chemical in the soil, in which the accumulation of its phytomass bodies / agricultural plants will not exceed the MPC set for food;

6) Sanitary-toxicological rate – the threshold concentration is an amount of the chemical in the soil, the total flow of which in the human body by direct contact with the soil in one or more ways of migration is not accompanied by a negative direct or remote effects on human health;

7) Phytotoxicity rate – the level of soil phytotoxicity, at which there is a decrease in productivity of agricultural plants by 10%.

The analysis of regulatory documents shows that 60% of MPC and APC soil polluting substances are set by using translocation index (contaminant migration in plants), which is of paramount importance for the agricultural soils. In urban areas are more important migration-air and general sanitary indicators.

Soil quality standards in Russia should be developed at the basis of international rules and standards, taking into account scientific and technological achievements. It is worth noting that a unified procedure for the approval of such documents did not exist, making it difficult to improving soil quality standards and differences in the methods used.

A serious problem is the lack of differentiation of standards for natural-climatic zones, which limits the possibility of assessing the quality of urban soils. In addition, MPC and APC of contaminants in urban soils are not developed.

The basis of the development of MPC toxic substances should be based on soil and environmental principles, with the concentration of heavy metals should be developed according to the specific soil and environmental conditions.

In Russia there are two types of soil monitoring populated areas: ecological and socio-hygienic. Both types of monitoring aimed at identifying violations of urban soil quality standards and are an essential element in the quality management system of urban soils.

Monitoring of soil contamination by chemical elements carried out within the framework of environmental monitoring. Ecological soil monitoring system includes a network of permanent soil monitoring sites located in different functional areas of the city: residential, industrial, recreational. Among the parameters controlled by the following must be highlighted: the
content of macronutrients, humus, acid-alkaline soil conditions, as well as the content of main pollutants (mobile and total forms of heavy metals, arsenic, oil and PAHs).

Socio-hygienic monitoring (SHM) allows you to identify causal links between health and the impact on it of environmental factors. Monitoring of soil quality populated areas included in the program of research conducted in the SHM. Urban soil quality control allows us to estimate the sanitary welfare of the soil study of the urban area. Placement and number of monitoring points in the network depends on the area of the settlement, the size and density of population, terrain. The monitoring network must cover 20% of the territory of each functional area and cover the entire territory of the municipality.

Sanitary-chemical soil research conducted to assess the self-purification capacity of the soil, the main indicator is the number of health Khlebnikov.

Sanitary-bacteriological indicators reveal the epidemiological importance of soil for human health. Developed direct and indirect sanitary-bacteriological indicators. The direct indicators epidemic danger of soil refers detection of pathogens in samples of intestinal infections (enterovirus, pathogenic enterobacteria). Indirect indicators allow us to estimate the intensity of the biological load on the ground. Indirect indicators include indices coliforms and streptococci.

Sanitary and parasitological studies allow to determine the type of pathogens of parasitic diseases, their stability in the soil environment, invasive. Extensive pollution rate shows the ratio between the numbers of contaminated samples to the total number of samples in percent. Intensive pollution rate shows the total number of agents of parasitic infestations in 1 kg of soil.

During the sanitary and entomological studies determine the presence in the soil of larvae and pupae of synanthropic flies. They have epidemiological significance as carriers of some infectious and parasitic diseases of man, so the presence of larvae and pupae in the soil of populated areas suggests a poor sanitary condition of the soil.

Also apply a few indicators of integrated urban soil quality. Using total ZC soil pollution index reveals the spatial structure of soil contamination and identify areas of risk to public health.

In general, for a system of SHM have the following characteristics: the formation of information funds, conducting a phased analysis, common forms of reporting and methodological framework. Risk assessment depends on the objectivity of the monitoring program, including the selection of priority areas for a specific pollutants studied objects and the sampling frequency.

The system of urban soil quality management in Russia included in the system of state administration in the field of land protection. It includes: accounting of land, land management, land monitoring, land valuation and the collection of land tax, state land control, land distribution and territorial planning [22]. In accordance with the regulations, state monitoring of land subdivided into land monitoring and state monitoring of land use. Monitoring of land use reveals the violation of land use in terms of their purpose. Monitoring the status of land is more focused on the environmental component and provides a quantitative and qualitative characteristics of the land based on the results of observations of the state of the soil (pollution and degradation, disturbance of land and cluttering).

Consider the system of protection and monitoring of soils of Moscow. In order to protect their soils and quality management law “On the urban soils” was adopted in 2007. It regulates the relations between conservation, sustainable use, restoration and improvement of urban soils and is aimed at ensuring the implementation of urban soils ecological functions¹.

Management in the protection and rational use of urban soils of Moscow includes a number of events¹:

1) Monitoring of urban soils;

2) Examination of urban soils;
3) The establishment of urban soil quality indicators and indicators of permissible impact on urban soil;
4) The creation of urban land registry;
5) The establishment of a passport of urban soils;
6) Preparation of soil maps;
7) Confirmation of compliance with urban soils.

Soil monitoring conducted on the basis of the law of the city “On environmental monitoring” Moscow¹. A survey of urban soils is necessary for transactions with land and includes an inventory of the main sources of human impact and environmental assessment of soil quality. Indicators of the quality of urban soils for Moscow determined by federal regulations (SanPiN and HS).

Permissible oil pollution of soil indicators (APC) are set for Moscow considering the level of contamination. Ecological monitoring of soils allows you to get real-time data about their status, on the basis of which it is possible to obtain estimates and forecast data. The use of these types of data necessary for the drawing up of soil and environmental GIS.

An important task in the urban management is the creation of a register of urban soils, soil preparation of passports and the soil map. Register of urban soils – is a set of data types, subtypes and types of urban soils, their qualitative and quantitative characteristics. Urban soils passport includes information on soil condition on a particular plot of land and the changes occurring in them.

Mapping urban soils reveals parts of the city with the most disturbed soils, estimate the size of the harm caused to the degradation of the soil cover of the city.

Mapping of urban soils is a difficult task due to the complex horizontal and vertical structure of urban soils. The first and the only Russian electronic soil map for the entire town has been developed for the city of Moscow for more than 20 years ago, now the card does not meet the requirements of the environmental decision-making [17].

Urban soil, while in the chemical and physical conditions of anthropogenic impact, acquire new morphological and chemical properties. Soils polluted, mixing, infusing material. There is a change of soil conditions – parent material and microclimate. Changes significantly affect the quality of urban soils and the choice of measures for their rehabilitation.

The main group of urban soils natural, man-made and natural tehnozem. Soils are paved and built-up areas belong to ekranozem group. For these soils are characterized by violation of the water and thermal regimes, and in the evaluation of soil quality is taken into account the overall percentage of sealed soil.

The most comprehensive is the classification of urban soils, proposed T.A. Prokofyeva [16]:
1) Urbanozem (typical for residential areas, are formed as a result of household and building human activities; diagnostic horizon – urbik (at least 5 cm); urbanozem characterized by elevated levels of chemical contamination and salinity);
2) Kulturozem (soil of former orchards and gardens, arboretums and botanical gardens, have a higher humus content and the presence of urbik horizon);
3) Rekreazem (natural and anthropogenic soil formed as a result of land reclamation with irreversibly impaired superficial horizon; common in the arboretum, along highways and well-maintained greened areas);
4) Urbotehnozem (irreversibly contaminated soil, characterized by chemical contamination at 5 MPC in the absence of obvious changes in morphology)
5) Replantozem (tehnozem, i.e., soil-like formation, representing a capacity of 10 cm horizon with a high content of organic matter, is underlain by both natural and anthropogenic soils);

6) Konstruktozem (tehnozem capacity of more than 40-50 cm, created from several layers of different composition and properties, are used to create green areas, sports turf, in engineering constructions);

7) Nekrozemy (soil of city cemeteries).

In addition to the natural parent material, soil-forming processes can occur in various sediments or soils: natural bulk (a stirred natural soils), industrial bulk (contain high concentrations of heavy metals and arsenic), building bulk (mixture of natural soil with garbage), soils of dumps and landfills (rekrementogenic), anthropogenic (so-called “cultural layer”) and alluvial. Thus, these types of classification of urban soils allow to identify the main land use methods.

The most developed quality control mechanisms in the soil of urban planning activities. At the sites of new construction and integrated quality control improvement is required insertion of soil (chemical, biological and radioactive contamination), composed of engineering and environmental studies [20]. However, caring for urban soils in their mode of use is not regulated and generally includes care of the green areas, not taking into account the peculiarities of functioning and dynamics of soil properties. In particular, recent studies show that urban cleaning leaf litter in conjunction with the introduction of reclamation mixtures can lead to the development of potentially pathogenic for human fungal communities [12].

Despite an advanced environmental legislation, in Moscow there is still no developed soil quality management system is not identified inventory and certification mechanisms of soils on the basis of environmental, rather than economic component [7].

In recent years, studies devoted to the quality management of urban soils carried out in several regions of Russia. Studies of soils of Arkhangelsk showed the dependence of soil pollution characteristics of the climatic conditions, soil composition, sources of pollution. It noted the importance of reviewing the activities on quality management of green spaces (creation of lawns, parks, alleys) and the need to create a special soil-chemical monitoring system urban ecosystems Russian Far North [11; 15]. Ecological situation in Petrozavodsk is characterized by increased pollution of soil with lead, cadmium and mercury, which requires the development of a soil monitoring network in close relationship with the medical institutions of the city [13]. The link between soil quality and health of the population found in the Vladimir region [19].

Environmental regulation of soil quality of the countries of Ukraine, Belarus and Kazakhstan in general is similar to that in Russia and based on the anthropocentric approach. Standards in these countries set out requirements to the quality of land, soil fertility and permissible anthropogenic load.

In the United States, Canada and Australia became widespread method of environmental risks, for assessing the risk of soil pollution on human health, the environment and social welfare. Environmental risk assessment based on the analysis of the curves “dose-effect” and probabilistic mathematical analysis [6; 9]. This method uses both qualitative and quantitative assessments. Environmental risk assessment is carried out in several stages: planning risk assessment phase of the question, and risk characterization.

The US Environmental Protection Agency (US EPA) has developed a system of indicators of soil quality – screening levels (SL’s). These indicators designed to protect people (including sensitive) on the risk of diseases over a lifetime. They do not consider the damage caused to ecosystems. This type of indicators used in the initial stages of monitoring but they are not federal soil quality standards. The use of these indicators reveals territory pollutants and conditions that require additional research. Generally, at sites where contaminant concentrations fall below SLs, no further action or study is required. Chemical concentrations above the SL would not automatically designate a site as dirty or trigger a response action; however, exceeding a SL suggests that further evaluation of the potential risks by site contaminants is appropriate. SL’s Indicators are also used for the activities to restore soil quality. SL’s soil quality indicators are
set for the various regions of the country, and taking into account land use: residential areas, industrial zones, recreational areas1. Indicators updated every year in spring and autumn.

Standardization quality of EU soils based on two approaches: the sanitary-hygienic and ecological. In most European countries use an ecological approach, based on the calculation of the carrying capacity of ecosystems. Apply indicators of soil quality system – Soil Screening Value (SVs), which allows evaluate the possibility of using lands for a specific type of activity and the risk to human health.

SVs consists of three groups of indicators [2]:
1) Slight risk (target value);
2) A warning risk (trigger value);
3) An unacceptable risk (intervention value).

Warning indicators are analogous Russian MPC and APC. It should be noted that the values of concentrations of SVs in Europe differ depending on the methodology used in the country: in Germany, France and the Netherlands – toxicological model and in the Czech Republic – by means of averaging the background impurity concentration areas and industrial pollution. Not all countries have established indicators for the three levels of pollution. In many of them, the most actively used only one indicator – warning risk. Compared with Russian regulations in Europe more attention given to arsenic.

The problem of anthropogenic transformation of urban soils affected EU countries, despite the well-developed system of environmental regulation and control. In Europe, has been adopted strategy for soil protection and soil protection directive in 2006 [3]. These documents aimed to ensure sustainable development principles while using soil resources in the European Union. Among the main problems of urban soils were identified sealing and contamination.

Soil sealing is an actual problem for countries such as Malta, the Netherlands, Belgium, Germany and Luxembourg. Highest rates increase in the area of sealed soil observed in Ireland, Cyprus and Spain [5; 18].

The most developed urban soil quality standards in Germany, they are set for the four functional zones of the city: children’s playgrounds, residential areas, recreational areas, industrial sites. Due to the high level of soil sealing in Munich it was asked to create the urban soil management system. This system is based on the use of soil quality assessment, remediation measures and effective environmental policies (see Figure 1) [1].

![Figure 1. The Urban Soils Quality Management System in Munich](https://www.epa.gov/risk/regional-screening-table-frequent-questions-november-2015)

The strategy of management of urban soils (URBAN Soil Management Strategy) was organized as an ecological project in 2008, in Central Europe countries for the purpose of creating urban soils as an environmental resource management system [3]. The strategy noted that the preservation of soil quality is an important task for ensuring the normal functioning of urban ecosystems.

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As part of the project, from 2008 to 2012 was implemented the urban soils quality management system in 15 cities (Bratislava, Milan, Prague, Salzburg, Stuttgart, Wroclaw, Vienna, etc.). Control object served areas of the city, different in size and functional purpose. The main problem of the urban soils quality management system, according to the authors of the project, is the complexity of the analysis of information and data about the soils quality, while the indicators of pollution, soil structure, its physical and chemical characteristics allow correctly assess and manage risks.

To solve this problem it was proposed to use GIS technologies. Use a special soil quality assessment tools:

1) Evaluation of the quality of soil ecosystems;
2) Assessment of the loss of soil resources;
3) Evaluation of soil contamination;
4) Assessment of the extent of soil sealing;
5) Evaluation of security greenery.

Based on the results made decisions on the urban soils quality management system: remediation of soils (entering the ground) and the creation of green zones and corridors between the functional areas of the city [3]. URBAN SMS experts concluded that the basis of the protection of urban soils is the rational planning of the territory. The results of this project were used to develop the new Directives in 2013 and 2014 of soil resources management.

Regulation and management of urban soil quality is a complex problem. Most of existing urban soil rationing quality approaches focused on ensuring the safety of human health and life.

The properties of urban soils do not allow to set unified quality standards, so the need to develop standards for different types of soil, as well as standards for the major functional zones of the city.

The main activities for the management of urban soils in Russia aimed at compliance with quality applying soils and care of green areas. Used standards for agricultural soils are ineffective in the city. The experience of other countries shows that the use of the ecosystem and statistical approaches in the rationing based on GIS technologies allows you to create an effective urban soil management system.

The main objectives of the establishment of urban soils quality management system are: the introduction of the principles of sustainable development in spatial planning at the regional and local levels, conducting prevention policies, restrictions and compensation for damage caused to the soil, the use of GIS technology.

References


REFERENCE TO ARTICLE

The Production of Biogas from Sewage Sludge, Experience Lyberetsy Treatment Facility of Mosvodokanal

Annotation: the article focuses on clarify if producing of biogas at the Lyberetsy Treatment Facility is fully or not. The article describes the sludge treatment technology, one of the stages which are methods of generating biogas on the plant. An analysis helps to identify, how effectively going production of biogas with the help of sludge digesters of Lyberetsy Treatment Facility.

Key words: biogas, sludge digester, production of biogas, sewage sludge, the activated sludge, sewage, anaerobic digestion.

Currently, humanity is in search of alternative fuels and new energy sources. The reasons for the search are environmental, economic and social aspects. Many countries have already implemented in their production or use for household needs new technologies, working from the sun, wind and waves. Biogas arises in a number of alternative clean fuels from which electricity could be gained [3].

Energy – it is one of the most important sources of maintaining human life and ensure satisfaction of his basic needs. We are moving towards a problem with the energy crisis. Its connection with environmental and economic problems is absolute. The interest in alternative and renewable energy sources is growing because there is a problem with the excised reserves of natural deposits of energy resources, by this I mean with their limitations.

Biogas is producing from renewable organic raw materials [2], which is very profitable and convenient for agricultural activities. Household and food waste, plant material and waste water are also good raw material for the production of biogas. Thus, biogas is the result of waste reduction and in conditions for good biogas production it could be brought up to production without waste.

Decomposition of organic landfills solid waste leads to the release of harmful pollutants such as methane (CH₄), carbon dioxide (CO₂), carbon monoxide (CO), ammonia (NH₃), nitrogen dioxide (NO₂), hydrogen sulfide (SO₂) and many others [11, p. 11]. It applies also to pollution of water and soil. Storage of organic matter in landfills leads to biological pollution, involving in particular pathogens, and then these peddlers of contagion, like rodents, rats, insects.

Solving the problem of extracting and benefits has been found. The first documented biogas set was built in Bombay, India, in 1859 [22]. Components of gas emitted from a degradable biomaterial tend to burn or oxidize by reacting with oxygen, which allows for release of energy. This was the growth of interest in this area.

This issue is quite relevant and depression in her and in her system could serve as a valuable environmental science, natural environmental protection.
The most developed market of biogas sets and, consequently, their production is in Europe. The Russian agricultural complex every year produces 773 million tons of waste, of which can get 66 billion m³ of biogas, or about 110 billion kWh of electricity. The total demand of biogas plants in Russia is estimated at 20 thousands enterprises (Info 2011) [6].

Modern Moscow canalization is a complex system of engineering structures [20]. Mosvodokanal daily takes its treatment plants domestic and industrial sewage. Mosvodokanal has circulating water plants and treatment facility plants, in other words, canalization. Four plants of treatment facility located in different sides of Moscow:
1. South Butovo Treatment Facility;
2. Zelenogradsky Treatment Facility;
3. Kuryanovo Treatment Facility;
4. Lyberetsy Treatment Facility.

“All domestic and industrial sewage entering in the system of the canalization of Moscow, undergo a complete cleaning cycle Kuryanovo, Lyubertsy, South Butovo and Zelenogradsky treatment facility, which eliminates the discharge of untreated wastewater into natural water bodies.

The high degree of purification of urban wastewater provides a constant reduction of pollutants discharged into water bodies. Modern methods of sludge treatment use in the treatment facility: thickening of the sludge on belt thickeners, fermentation in the sludge digesters, compaction and dewatering in centrifuges (decanters)”

Sewage sludge is formed at the plant after undergoing treatment plants use as raw materials to produce biogas. Fermentation in sludge digesters is a condition for its production. It is not known, how effective this biogas set at the wastewater treatment plants.

To explore this point in more detail, it has taken only one plant of Mosvodokanal – Lyubertsy Treatment Facilities – and aims and tasks were set for further study the issue.

Aim: evaluate potential for increase production of biogas at the plant of Lyberetsy Treatment Facility from sewage sludge.

The following tasks have been formulated to achieve this aim:
1. Disassemble system of biogas generating with the help of sludge digesters of Lyberetsy Treatment Facility;
2. Evaluate efficiency of biogas generating with the help of sludge digesters of Lyberetsy Treatment Facility.

Biogas is a gas, produced as a result of decomposition of organic matter by anaerobic digestion. Methane fermentation contributes this process. It is influenced by four kinds of bacteria (in a food chain each subsequent bacteria feed waste product previous) [18]:
1. Hydrolysis bacteria;
2. Acid-producing bacteria;
3. Hydrogen oxidizing bacteria;

The whole process of oxygen-free fermentation takes place in several stages.

In the first stage, when the organic substrate is already on the wall of the tank of a biogas set, hydrolysis bacteria in the course of their ability to live with the help of enzymes transform high-molecular organic substances in the low-molecular compounds. This process is known as hydrolysis, to form the oxidation of fatty acids [18].

Reproduction hydrolytic bacteria in environment are very fast. Their colonies are easily converted into one-dimensional polymers. For the good of the process is required to control the pH level, as well as the residence time of the substrate in the biogas set. Enzymes which are released by bacteria first step helps to split the substrate to the organic compounds soluble molecules [18].

1 URL: http://www.mosvodokanal.ru/sewerage/sewagetreatmentplants/.
The second step is a process of oxidation. By absorbing the waste products of previous bacteria, acid-producing bacteria continue to break down. In this phase, the remaining oxygen is absorbed, and the anaerobic conditions are produced for further anaerobic bacteria. Acid-producing bacteria convert fats, proteins and carbohydrates into volatile acid [1]. Such gasses as hydrogen, carbon dioxide, hydrogen sulfide and some acids and alcohols begin to stand out [18].

The third stage is the formation of acetic and formic acid, carbon dioxide and hydrogen. Hydrogen oxidizing bacteria, that are temperature sensitive, do it [18].

And finally, the last stage is in vital functions of methane-producing bacteria (methanogens). Their reproduction does not take place quickly, unlike hydrolysis bacteria, but the formation of methane from products already accumulated quite intensively, if met for this purpose all the required conditions. Acetic and formic acids contribute a lot to this process. The more acetic acid was allocated, the more methane is formed [5].

“For the organization of the necessary conditions and an increase in metabolic activity of bacteria should consider the following factors determining the efficiency of the fermentation process: the anaerobic conditions in the reactor; fermentation temperature; feedstock composition (presence of nutrients); moisture content of the feedstock; mixing fermented raw materials; during fermentation; the amount of load; acid-base balance; the ratio of carbon and nitrogen; no process inhibitors” [1].

The main methane producing reaction may be written as follows [16]:

\[ \text{CO}_2 + 4\text{H}_2\text{A} \rightarrow \text{CH}_4 \uparrow + 4\text{A} + 2\text{H}_2\text{O} \quad (1) \]

\[ \text{H}_2\text{A} \text{ in this reaction is an organic substance which contains pure hydrogen. Thus, the reduction reaction is as follows [15]:} \]

\[ \text{CO}_2 + 4\text{H}_2 \rightarrow \text{CH}_4 \uparrow + 2\text{H}_2\text{O} \quad (2) \]

Based on this information we can independently be concluded that part of the biogas, but it is generally 50–87% methane, 13–50% CO2, as well as small amounts of substances such as hydrogen (H2), hydrogen sulfide (H2S), moisture and siloxanes (silicone fluids almost always result from anaerobic decomposition of materials which are commonly found in soaps and detergents), and others.

“Biogas energy is reliable and cost-effective alternative to the main natural gas and centralized power, as well as a source of cheap, non-polluting organic fertilizer, organic comparable values with complex fertilizers” [2].

Biogas refers to a cleaner fuel. Calorific value of biogas ranges from 20–28 MJ/m^3. Its combustion products, H2O and CO2, are not chemically hazardous substances.

Calorific capacity of combustion each kind of fuel depends on:

1. Combustible components (carbon, hydrogen, combustible volatile sulfur, etc.);
2. Moisture content and ash content of fuel [4].

According to the data, released by Mosvodokanal, calorific value of generating biogas at the plant is 20.9 MJ/m^3 (5000 Kcal/m^3).

Biogas production at the plant by using sludge digesters of two blocks (figure 1) Sludge digesters are sealed reinforced concrete structures of cylindrical shape. Sewage sludge after primary precipitation tanks (moisture content 96–97%, ash content of 25–30%) and waste activated sludge after (moisture content 94–97%, ash content of 27–35%) sludge thickeners continually loaded into sludge digesters.

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Primary precipitation tanks used for precipitation of insoluble (suspended solids) and collecting the floating material. Primary clarification of wastewater is carried out in circular tanks. There are a total of 42 Primary precipitation tanks. Sewage sludge from primary precipitation tanks is a suspension, the organic portion of which is 75–80%.

Aerotanks are large corridor-type structures. It is intended for biochemical oxidation of organic substances by aerobic microorganisms, which are called “activated sludge”. The activated sludge is biocoenosis of microorganisms and protozoa; the organic portion is 70–85% (Figure 2). To ensure the organisms of the activated sludge by the oxygen and mixing activated sludge with the wastewater in the aeration tanks supplied with compressed air. There are a total of 32 aerotanks different constructions with a total capacity of about one million cubic meters. The residence time of the waste water in aeration tanks is 8–10 hours. The existing technological scheme of biological wastewater treatment provides biological oxidizable removal of organics by 92%.

The composition of sewage sludge and activated sludge can vary within wide limits and depends on the composition of the sewage, its purification scheme adopted, and other factors [23].

The process of decay – anoxic fermentation – is due to the vital activity of methanogenic bacteria. Bio-waste immersed in a biogas plant, in an initial reactor, which has to be completely gas-tight, sealed tank. This construction is thermal insulated, because the temperature must be stable for microorganisms. The reactor must be equipped with some kind of mixing of the contents in order to prevent the formation conditions or floating sludge layer.

The main task of sludge digesters of Lyberetsy Treatment Facility is to reduce the amount of formed sludge from wastewater treatment for further storing them on the landfill “Korenevo” (Figure 3).

Each sludge digester is equipped with pressure-dividing raker, loading and unloading systems, propeller stirrer, steam injector capacity of 5 t / h, biogas drainage system and the emergency overflow system.
Figure 2. Kinds of Protozoa of the Activated Sludge

List of symbols:
1. - switching center
2. - sludge digester
3. - uploading box
4. - gas-holder
5. - mixing box
6. - screens
7. - seal of digested sludge
8. - thickening node
9. - filter presses
10. - sludge field
11. - emergency sludge field

Figure 3. Sludge Treatment Technology at the Plant of Lyberetsy Treatment Facility [20]

All sludge digesters are maintaining thermophilic fermentation process at a temperature of 50–55°C. Temperature plays an important role in the process of digestion. It affects the rate of organic matter decomposition in sludge digesters. But also many significant factors are the moisture content of sludge (bacteria can process only substance in solution [21]), the load, pH in the tank, sludge residence time in the tank.

The residence time of sludge in the sludge digester – 5–8 days. Sewage sludge contains easily decaying organic matter and pathogens, and that is the reason for their processing. As a result of precipitation in sludge digesters is their stabilization, i.e. a biochemical decomposition of organic substances involving microorganisms. At the same time there is an allocation of biogas and neutralization of pathogenic microflora.

Microorganisms in the course of time the hydraulic sedimentation, requiring constant new supply of feed, metabolize (transform) the organic matter in the biomass and the output produced two products:
1. Biogas;
2. Substratum (composted and fluid).

The biogas accumulates in the store (gas-holder), which maintains a constant pressure in the gas network, then passes cleansing system and supplied to consumers (boiler or electric generator) [19].

After washing and thickening, sludge is fed to the mechanical dewatering facilities. In order to improve its properties giving water precipitate undergoes conditioning using a polymer flocculation aid. Air-conditioned sludge is supplied to the filter press for mechanical dewatering.

On the Lyubertsy Treatment Facilities using modern membrane filter presses (total 15 units). Filter press design allows to effectively dewater the sludge to a moisture content of 72–75%. Power filter presses can provide all dehydration produced on an industrial method of sediment plants.

Lyubertsy Treatment Facilities are constantly evolving and expanding. The reconstruction of buildings and modernization of equipment, automation of technological processes, introduced new technologies and new equipment.

The residence time of sludge in the sludge digester is 5–8 days. Sewage sludge contains easily decaying organic matter and pathogens, and that is the reason for their processing. As a result of precipitation in sludge digesters is their stabilization, i.e. a biochemical decomposition of organic substances involving microorganisms. At the same time there is an allocation of biogas and neutralization of pathogenic microflora.

The biogas is used to heat the feed sludge on the plant (up to 20°C), thus saving energy in this aspect by 36%, as well as for heating in the winter season of the main plant building.

Table 1

<table>
<thead>
<tr>
<th>Sludge Treatment Facilities</th>
<th>Gas-holders “wet”</th>
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<tbody>
<tr>
<td><strong>The old plant of Lyberetsy Treatment Facility</strong></td>
<td></td>
</tr>
<tr>
<td>diameter</td>
<td>22.6 м</td>
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<tr>
<td>deepness</td>
<td>28.5 м</td>
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<tr>
<td>useful volume</td>
<td>8000 м³</td>
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<tr>
<td>quantity</td>
<td>12 (buried in the ground) (figure 1)</td>
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<tr>
<td><strong>The new plant of Lyberetsy Treatment Facility</strong></td>
<td></td>
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<tr>
<td>diameter</td>
<td>24.2 м</td>
</tr>
<tr>
<td>deepness</td>
<td>27.98 м</td>
</tr>
<tr>
<td>useful volume</td>
<td>8000 м³</td>
</tr>
<tr>
<td>quantity</td>
<td>8 (ground)</td>
</tr>
</tbody>
</table>
The plant is forming from 17 to 23 thousand m³ of sludge (an average of 20 thousand m³) per day, which is loading every hour up to 50 m³ into each sludge digester (there are 20 of them on the plant) (Table 1). Loading dose is 15–19%.

The day produced an average of 130 to 160 m³ thousands of biogas (maximum 200 m³ thousands). The volume of biogas generated is dependent of the volume of wastewater at the plant and their composition (Table 2).

**Table 2**

<table>
<thead>
<tr>
<th>Data</th>
<th>The resulting biogas, m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.04.2016</td>
<td>138 014</td>
</tr>
<tr>
<td>02.04.2016</td>
<td>131 598</td>
</tr>
<tr>
<td>03.04.2016</td>
<td>133 779</td>
</tr>
<tr>
<td>04.04.2016</td>
<td>131 908</td>
</tr>
<tr>
<td>05.04.2016</td>
<td>130 246</td>
</tr>
<tr>
<td>06.04.2016</td>
<td>127 645</td>
</tr>
<tr>
<td>07.04.2016</td>
<td>126 635</td>
</tr>
<tr>
<td>08.04.2016</td>
<td>126 912</td>
</tr>
<tr>
<td>09.04.2016</td>
<td>138 785</td>
</tr>
<tr>
<td>10.04.2016</td>
<td>128 691</td>
</tr>
<tr>
<td>11.04.2016</td>
<td>126 927</td>
</tr>
<tr>
<td>12.04.2016</td>
<td>116 735</td>
</tr>
</tbody>
</table>

Production of biogas from 1 kg of organic matter gradually increasing along with the increasing of fermentation time, thus rapidly initially, starting from the second day of substrate being in a tank and as increasing fermentation time, production becoming slower (from 15–20 days). In practice, it is never was complete decomposition of organic matter, but having studied the situation in more detail, I have found that organic conversion process should be from 5 to 12 days with maintaining of a thermophilic mode, and after the 12th day of biogas production, efficiency will drop significantly.

The sediment is fermenting at the plant around 7 days on average. Assuming that in 12 days secretion of biogas will reach 70% of the specific sediment volume; in this case only 40% would be released in 7 days.

With simple theoretical calculations it could be assumed that using a twelve days mode in the sludge digester, the plant could increase biogas production by 1–2%, and thus seven-day mode can be considered as not enough effective one:

**Initial data:**
1. Loading dose is 15%;
2. Minimum biogas production at the plant = 7 m³ from 1 m³ sludge.

**Calculation:**
- 50 m³/h × 24h = 1200 m³/day (one sludge digester)
- 1200 × 20 = 240 000 m³/day (twenty sludge digester)
- 1200 × 7 days = 8400 m³ (for a week)
- 8400 × 7 m³ (biogas) = 58 800 m³ (one sludge digester for a week)
- 7 days: 58 800 – 40%
- 12 days: 102 900 – 70%
- 85 750 m³/days (one sludge digester)
- 171 500 m³/days (twenty sludge digester)
It is also known that the norm load of sewage sludge to the activated sludge is equal to 1:1 or 1.5:1. The volume of biogas produced from 1 m³ of sludge is equal to 7–10 m³. But according to the experience of Mosvodokanal, from 1 m³ of activated sludge now is producing up to 6 m³ of biogas maximum.

Possible reasons:
1. Temperature conditions;
2. Inadaptability to load changes;
3. Sensitivity to various influences;
4. Engineering solutions;
5. Biological parameters, and others.

Conclusions on the basis of work done:
1. The activated sludge needs little different conditions for the formation of biogas, considering that it comprises up to 85% organic matter;
2. Thermophilic mode specifically used for the recycling of large amounts of sludge. By optimization of the plant and the waste composition, processing can be accelerated even up to 3–4 days. However, this option is absolutely not adapted to full production of biogas from sediment;
3. The production of biogas at the plant of Lyubertsy Treatment Facility is not effective enough.

Using biogas has two main positive points:
1. The reduction in energy costs. For instance, people use single-family biogas set in India, Vietnam and Nepal for other heating aims and cooking. That reduces costs of gas and electricity;
2. Preventing of the introduction of methane in the planet’s atmospheric envelope. Methane is one of greenhouse gases. Its life in the atmosphere is approximately 12 years. Extraction of methane from the atmosphere can occur due to various processes, but it is determined by its concentration and residence time. Of course, control of this process and regulation in the system “biogas – the atmosphere” leads to stabilization and sustainability of components of air. Preventing one of the reasons leading to the greenhouse effect, have already led to improvement of air quality and overall health of our planet.

This information makes it possible to develop methods for increasing biogas production with a view to its further use in various projects.

Nowadays quantity of generating biogas on the plant of Lyubertsy Treatment Facility enough to ensure the work of twenty sludge digesters operated simultaneously, and also for generating thermal energy through the boiler room for the building of Mosvodokanal on the plant. But as soon as redundancy, new possibilities will open for the station to use producing biogas in other areas, such as happened to another plant of Mosvodokanal – Kuryanovo Treatment Facility.

Now the utilization of biogas takes place at the mini thermal power plant with electricity generation and receipt of additional heat in gas engines, built in 2009 [13]. “Mini thermal power plant works in parallel with a network of MOESK and provide 50% of the needs of the plant in the heat. This will allow the process of wastewater treatment in the conditions of a possible shutdown of external power sources”.

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REFERENCE TO ARTICLE
Ensuring Environmental Safety of Water Bodies for Urban Areas (On Example of Moscow Region)

Annotation: every year, because of the poor quality of water decreases the amount of fish in the water bodies. That’s why now more and more often the question arises about the quality of the water. The objects of our study were: Klyazma watercourse, fish of this watercourse, artificial reservoir VNIIR, fish from the artificial reservoir VNIIR. The subject was the process of ensuring the environmental safety of water bodies in urban areas and agriculture. The aim: to study the activities of federal and municipal authorities in the field of environmental safety of water bodies in the Russian Federation. Identify the strengths and weaknesses of the current system, as well as the development of proposals and recommendations for its improvement.

Key words: water body, water pollution, environmental safety.

Water pollution problem faced by mankind for a long time. In recent years there has been a sharp increase in the population urbanization, which entails the pollution around industrial centers and beyond.

According to the World Health Organization (WHO), every year in the world due to the poor quality of water kills about 5 million people [3]. Water is an essential component of the environment (OS). Its presence is vital for plants, animals and humans. Water is the source of life on Earth. She has the ability to cleanse itself, but in the current conditions of the possibility of self-purification of natural water systems seriously undermined [11].

Article 42 of the Constitution states that every citizen has the right to a healthy environment and reliable information about its condition [6].

Water object – natural or artificial pond, watercourse or other object, for permanent or temporary concentration of water which has the characteristic shape and features of the hydrological regime [2].

Pollution of water bodies – discharge or delivery in any other way into surface and underground water bodies, as well as the formation of harmful substances, which degrade the quality of surface water and groundwater, limit their use or adversely affect the condition of the bottom and banks of water bodies [19].

Environmental security – the state of protection of the environment and the vital interests of man and citizen of the possible negative impact of economic and other activities and threats of emergency situations of natural and man-made disasters, their effects [12].

Currently, “the major contribution” to the pollution of water bodies on the territory of the urban district of the Moscow region Elektrostal make: sewage, runoff from polluted areas, air emissions, landfill and more. Nowadays, more and more often the question arises about the
environmental safety of water bodies [17], [20]. Every year the water consumption, as well as the discharge of contaminated water. Thus, gradually destroyed the balance of the community, limited economic and recreational use of the water bodies and watercourses.

Since 1977, the world held global monitoring of water quality in water bodies. This control is carried out at special stations, near the industrial centers. Water quality is determined by more than 50 indicators. Namely, for the content of water: Escherichia coli, nitrate, particulate matter, dissolved oxygen, heavy metals and other pollutants, which adversely affect the flora and fauna of ponds and streams, as well as adversely affect human health.

Due to the rapid population growth, increasing growth and water consumption. The significant growth of the industry has led to the pollution of lakes, rivers and streams. Some rivers of our country are practically transformed into the gutters.

It is very dangerous to humans, coming from domestic waste water detergents that by foaming prevent entry of oxygen into the water, respectively, this leads to poisoning, first, and then to the death of fish. It is not difficult to imagine what puts people at risk of your body when eating fish from this pond. Environmentally dangerous not only toxic substances contained in wastewater. The fine fibers emitted by enterprises for the production of construction and other materials, can clog the respiratory systems of aquatic organisms and cause their death.

Within the framework of its powers, the European Union attaches great importance to environmental issues, including water resources.

Directive 96/61 on integrated prevention and control of environmental pollution by industrial enterprises established that companies must obtain permits for discharges or other operation of a variety of natural environments: water. The permissions are assigned obligations in respect of emissions of harmful substances into the environment. This Directive is aimed at introducing the best available technologies, which in turn minimizes the environmental pollution.

The important role played by Directive 2006/44/EC “On the quality of fresh waters needing protection or improvement of quality indicators in order to protect fish stocks”.

The European Union attaches great importance to fisheries, and it provides funds to support fisheries and aquaculture.

The whole policy of the EU is based on the directives:

- Directive 76/160/EEC, which was replaced by Directive 2006.7.ES;
- Directive 91/271/EEC Urban Waste Water Treatment with the emission of municipal water and some industrial waste (1991);
- Directive 98/83ES Drinking Water on the quality of drinking water (1998);

EU Member States have signed national legislation in accordance with these directives. Even in 1973, the European Council of the first legislative acts in the field of water policy of the EU has been adopted. Since then, the EU water legislation plays a major role in the development of national water policies in many countries.

Since the beginning of the new financial structure of 2007–2013. The EU provides financial support to neighboring countries with a special mechanism of the European Neighbourhood and Partnership Instrument. This mechanism aims at sustainable development and protection of the environment, so that the foundations for a harmonious territorial development on the EU’s external borders.

The European Environment Agency annually appreciates the quality of water in water bodies in the EU.

The preservation and protection of biodiversity and ecosystem services in the EU member countries, is a priority.

Every three years, Member States shall publish reports on the quality of water. On the basis of these reports, the Commission, every three years, is a summary report on the quality of water.
The purpose of research – to study the activities of the federal and municipal authorities in the field of environmental safety of water bodies in the Russian Federation as an example the city of Elektrostal.

In 1995, a law was passed, designed by environmental experts of the Russian Federation, which regulates legal relations in the sphere of use and protection of water bodies. The law is aimed at protecting waters from pollution, contamination and depletion. A prerequisite for the development of the Act was the increase in wastewater volumes, point and area sources of contamination of components of the hydrosphere (surface and groundwater), leading to the depletion of fresh water quality.

By the means of protection of the hydrosphere components primarily include the complex of water protection measures, including the sewage treatment plant with a cascade of high-performance clarifiers and filters. In addition, now increasingly use special forest plantations for the interception and subsequent purification of waters coming from certain areas – from the fields, roads and settlements. For these purposes, the most acceptable is highly productive, with powerful forest litter and stacked (with shrubs) coniferous-deciduous forest stands. Plantations can accumulate, purify, and then converted into an underground drain huge amounts of water. Artificial reforestation along river banks, ponds prevent soil erosion after rains or during the spring floods, protecting it from leaching and contamination of the hydrosphere components.

Similar artificial plantations produced and near springs, sources of small rivers. In this case, any economic activity of the people, the population in these forest stands is prohibited, as well as the presence of natural, natural forests.

Great harm to nature during the past 50–60 years have caused the war since the Second World War, ending with localized in different parts of the Earth (in 1950, the Korean War, in the 1960-ies, the war in Vietnam with US chemical and biological weapons).

Protection of the hydrosphere components – ponds of all types – depends on the state of air pollution. As is known, acid rains, not only over the fields and forests, but also over the ponds, and in dry weather, industrial dust emissions from industrial plants and settles on the surface of ponds.

Based on the interconnection of air pollution and hydrosphere components in Russia in 2002, it was developed and adopted by the Russian Federation Law “On Environmental Protection”.

Federal Law of 10 January 2002 No.7-FL “On Environmental Protection” establishes the legal framework for the protection of water bodies and is aimed at the realization of the constitutional rights of citizens to a healthy environment and reliable information about its condition. The legislation of the Russian Federation subjects in the field of protection of water bodies shall be entitled to provide for the introduction of additional environmental protection requirements of water bodies [14].

But, unfortunately, in Russia 20% of water samples do not meet the standards of quality in its chemical parameters, and 16% – bacteriological. For comparison, in developed EU member states, such as Britain and France, does not conform to only about 0.01% of the water samples.

The difference is obvious, especially if you take into account the fact that under the constant supervision are only 15 of the 28 indicators required.

So, according to conservative estimates, 50% of Russian citizens use water every day, carrying a lot of risks for their health. According to recent studies of domestic and foreign experts, contaminated water getting into the human body while drinking, eating, taking water treatments, causes up to 80% of the most common diseases and is capable of up to 30% to accelerate the aging process.

In Switzerland, the best is not just chocolate and cheese, but also the quality of water in water bodies.

Europe in the early 70-ies began to look for a solution, “dirty” water, while Russia only in the 80s beginning of the search for solutions. European standards tougher Russian, it is necessary
to strive for them or the tendency of pollution and dumping of waste into water sources and will continue. Only 1 liter of waste water, which is “encouraging” periodically drinking water reservoirs, industrial organization, pollutes 8 liters of clean water.

As for Russia, there are some large treatment plants (in Moscow, St. Petersburg, Nizhny Novgorod and other cities). While in Europe tend to abandon chlorination, in Russia – this is still one of the main methods of water purification. Europe has long followed the high activity of chlorine, which reacts with all elements that are in the water, Russian scientists are also aware of this fact, but the introduction of new water purifiers is impossible due to the weakened economic incentives.

Europe is not the first year of applying ozonation. Ozone dissolves rapidly in the water by destroying bacteria and viruses in the course of the reaction does not create new forms of toxic compounds, as is the case with chlorine. In Russia, the number of machines with the water treatment system is growing slowly, which regards Europe, here in the last year of production and the introduction of an increase of 35%.

Thus, the quality of water in the reservoirs of Russia is worse than the quality of water in the reservoirs of Europe.

Administrative functions in the area of environmental safety belong to the state of the quality of water bodies. At the moment, the Federal Service for monitoring water quality [9]. In turn, on the territory of the municipality are their services for environmental control, which are subject to the Head of the municipal formation [5]. But it is worth noting that in the course of socio-ecological-economic and political changes taking place in Russia, the mechanisms to improve the management of environmental safety of water at the municipal level is not developed enough, which prevents a more complete provision of rational and safe wildlife management [13].

State in the field of environmental safety management based on the following principles [7]:
1. Priority protection of human life and health, the preservation of the gene pool and provide guarantees for the life and health of future generations;
2. The harmonization of the socio-environmental and economic interests of society for sustainable development [15];
3. Minimizing the technical impact on natural ecosystems, preserving their stability;
4. Presumption of potential environmental danger of any kind of economic and other activities [1];
5. The equation of violations in the field of environmental safety in human rights violations and the duty of responsibility for environmental offenses;
6. Providing complete, accurate and timely information to citizens, institutions and organizations about the dangers of environmental hazard [4];
7. The combination of legal, administrative and economic governance;
8. Ensuring optimal levels of reproduction, rational and balanced use of the whole complex of natural resources, their protection [2].

The Elektrostal Town, Moscow region is the center of metallurgy and heavy engineering. [8] The city has the country’s largest production of nuclear fuel, steel, heavy machinery and chemical products. In addition, the city has more than a hundred small and medium enterprises that produce building materials and much more. Major industrial enterprises in the city:

MUP “TAP GC” (Production and Technical Enterprise Municipal Economy).
JSC “MZ Elektrostal”— one of the leading Russian enterprises in the production of steels and alloys for special purposes.
JSC “Machine Building Plant” (JSC “MSZ”, “Elemash”) – the largest enterprise of nuclear power engineering, in the corporation TVEL.
JSC “Simple Machines Heavy Machinery Plant” (JSC “EZTM”) – a manufacturer of process equipment for metallurgy and mining industry.
JSC “Electrostal Chemical and Mechanical Plant” – one of the leading companies in the Russian Federation for the development and serial production of the filter means of individual and collective protection from weapons of mass destruction and chemical hazardous substances, filter fabrics, catalysts, chemical absorbents, desiccants and activated carbons.

During practice we found that the highest intake of natural water body Klyazma produces enterprise: JSC “MZ” Elektrostal: 1720.29/2168.82 thousand cubic meters.

In 2015, economic entities dropped into water bodies on the terrain: oil products – 7.59 tons. (2013 – 9.02 t.); suspended solids: 145.34 tons. (2013 – 154.38 tons.). Obviously, there is a tendency to reduce water pollution in the territory of the urban district Elektrostal. The proportion of suspended solids discharged into the natural environment objects of economic entities in 2015 in percentage is shown in Figure 1.

As can be seen from the figure, the dominant source of pollution affecting water bodies Elektrostal MUP is “Manufacturing – technical enterprise of municipal economy”, the third place – JSC “MZ Elektrostal”. When the boiler there is water pollution harmful emissions. The amount of waste and pollution are dependent on the performance of thermal power plants, the fuel used, the mode of treatment and ash handling, etc.

In the city of Elektrostal, Moscow region local government functions are performed by the City District Administration. It carries out its activities in accordance with the laws and regulations of the Russian Federation and the Moscow region, the Charter, decisions and orders of the Administration of Urban District Elektrostal. The structure of the City District Administration Office includes industry, transport, communications and ecology, and in the Office, in turn, includes the Division for the organization of traffic, transport, communications and environment [10].

A feature of the Division’s work is the fact that a small area of the city Elektrostal are many industrial enterprises, the effects of which affect the condition of the water of the city and of the environment as a whole. The main functions of the Division are as follows:

1. Monitoring of pollution facilities.
2. Implementation of measures to prevent violations.
3. Implementation of testing sewage treatment plants.
4. Implementation of data collection from businesses.
5. Implementation of public awareness.
6. Consideration of letters and complaints from citizens.

However, the Division for the organization of traffic, transport, communications and ecology does not take their own samples, but only analyzes the statistical data provided by enterprises. As a result, the implementation of environmental monitoring, in our opinion, is not complete. Therefore it is necessary to make changes in the program of the Division.

Activity of Administration of city district Elektrostal on water quality management is aimed at regulation of discharges from industrial plants. The basis for the issuance of the company
permission to reset and test the water protection activity of the enterprise at the state control
over protection of water bodies are norms discharge of pollutants from sewage into water
bodies (PDS).

Maximum permissible discharges (MPD) – the mass of matter in the wastewater, the maximum
allowable for the lead with the regime established in this paragraph of the water body per unit
of time in order to ensure water quality standards in the checkpoint.

Maximum allowable discharges are established by territorial authorities in the sphere of
protection of the federal executive authority for the specific environment of stationary source
emissions (pollutants) into the water bodies.

The release of harmful substances into the water body stationary source specified in a permit
issued by the territorial body of the federal executive authority in the field of environmental
protection, the executive authorities of the RF subjects, carrying out state administration in the
field of environmental protection on the basis of the PDS project.

The duty of the PDS project development is regulated by the Federal Law “On Environmental
Protection” of January 10, 2002 No. 7-FL and SanPiN2.1.5.980-00 “2.1.5. Drainage populated
areas, sanitary protection of water bodies. Hygienic requirements for surface water protection”
(app. Chief state sanitary Russian Federation June 22, 2000, the doctor).

Drinking and technical water supply enterprises, the population of the urban district
Elektrostal carried water from underground sources: MUP “TAP GC”, LLC “Vodoservis”, JSC “MZ”
region Public system”, from the natural water body: p. Klyazma.

It is also worth noting that the heavy metals at high concentrations harmful to the ecosystem
and biological objects. Heavy metals pollution and the scale of the impact on biological objects
occupy a special place among the pollutants. Exposure may be direct or indirect. In the former
case reaction with the blocked enzymes, resulting in a reduction or cessation. In the second
case, nutrients are transferred in the form of inaccessible and creates a state of “starvation
protection”.

Heavy metals are dangerous by the fact that the output of the slow medium. For example, the
half-decay period – lead is from 740–5900 years.

It is known that heavy metals – is a trace elements that make up the thousandths of a
percent of the mass of the Earth’s crust. But they are scattered in the environment is uneven.
Their concentration may be due to two reasons.

The first – a natural geochemical anomaly, i.e., the concentration of certain trace elements
occurs as a result of geological processes occurring in the lithosphere.

The second – human activities. The concentration of elements occurs as a result of
technological processes carried out by man.

According to the geochemical component of the surface waters in the territory of the Noginsk
district are environmentally safe. Exceeding MPC observed only for artesian water by fluorine,
boron, lithium and strontium. But as the water of artesian wells when filling ponds, on an
experimental basis is not used, we further analyze these elements do not, and do not consider.

In our work, we were interested in the presence or absence of contamination in an artificial
reservoir VNIIR. We were taken for the study of atomic absorption four elements: copper, zinc,
cadmium and lead [16]. Studies have shown that no one element does not exceed the maximum
permissible concentration for fish farms. This suggests that the water does not feel VNIIR
anthropogenic impact. Next, we evaluated the quality of the fish on the basis of criteria (signs):

- The state of the skin-scale cover;
- The state of the eye;
- The state of the abdomen;
- The state of the gills and gill covers;
- The state of the muscle tissue;
Fatness;
- Smell;
- Meat color of the spine;
- The color of the internal organs;
- The color and the position of the gill covers;
- Color, clarity and consistency of the mucus in the gills;
- The color of the anal ring;
- The presence of worms in the internal organs and muscle tissue.

Having concluded that the fish from the pond VNIIR just will not feel anthropogenic impact.

Further detailed analysis of the data showed the following. Traced the apparent accumulation of Pb and Zn in fish ponds and discharge channel. And the accumulation of Pb statistically significant. Therefore, we do explanation – an increase in lead and zinc content in the discharge channel is the result of anthropogenic impact from passing near the road and is not a result of activities VNIIR. The tendency of increasing the content of Pb and Zn in the fishpond can be caused by the following two or one of two reasons.

- When dumping slag pond dams used for steel making;
- Contamination occurs as a result of lime.

Calcareous materials are the source of heavy metals, and especially Pb, Zn and Mn.

Manganese (Mn) – an element related to the third class of danger (slightly toxic) contact element has not been studied.

Characteristically, the tendency of increase of Pb observed against the background of reduction of iron, which is a consequence of dilution water from the head pond of water flood and precipitation.

Do not forget that an overabundance of certain elements in the water or the fish can lead to liver disease and kidney failure, brain damage, allergic reactions, atherosclerosis, bronchial tubes disease, schizophrenia, memory impairment, insomnia, nervous condition, lacrimation, irritation of mucous membranes and conjunctivitis, sneezing, headache and muscle pain, high temperature, sweating, cramps in the limbs. For example, the allowable residual amount of copper in the fish products 10 milligrams per kilogram of product.

So, to solve the problems of ecological safety of the watercourse Klyazma in the Elektrostal Town, Moscow region at the state and municipal levels, in our view necessary bodies specialized control to carry out the state registration of adverse effects on the aquatic environment, as well as monitoring water quality in the water body and the sources of its pollution. Industrial enterprises need to take measures to reduce the discharge of pollutants into water bodies: improvement of technological processes, the commissioning of new and improving the efficiency of existing wastewater treatment plants, the elimination of pollution sources, work on re-profiling of departments and sections.

To ensure sustainable (balanced) development in the field of environmental safety of water bodies must apply effective ways of optimization at the state and municipal levels [18]. At the national level: improving the regulatory framework, tighter monitoring and control of enterprises – water users, the increase rate of pollution charges, depending on the hazard class of the enterprise, reducing the volume of discharges into water bodies. At the municipal level: the amendment of the Regulation “On the Road Traffic Department, Transport, Communications and Environment” report to the public the actual information through the media (the media), the introduction of the enterprises of the best available technologies (BAT), the restoration of the environmental police.

Due to the fact that I am a master of the first course, the ecological state of the watercourse Klyazma, as well as a fish out of it is improvement. We are planning to conduct a study of the water body by the use of Klyazma target.
Do not forget that the state of water quality and the quality of the fish depend directly on the person. And if today someone of us will be at least about littering of water bodies, this will help avoid contamination of domestic waste.

No wonder Prishvin M. wrote: “Fish – water bird – the air, the beasts – forest, steppe and mountains. A man needs a homeland. And to protect nature – means to protect the homeland”.

References

REFERENCE TO ARTICLE
Modern Technologies of Psychological Prevention of Drug Addiction in Teenage

Annotation: a study of 35 male adolescents from the risk group of the formation of addiction to psychoactive substances. Were investigated the indices of emotional intelligence, level of anxiety and aggressiveness before their start in the program of the preventive aid of addiction to psychoactive substances and after its completion. It is established that the analyzed program renders influence on the level of anxiety and emotional intelligence. The conclusion was made that the program can be used as the means of the preventive aid from psychoactive substances abuse for adolescents. The connection is established between aspects of emotional intelligence, deviating behavior influencing the formation of addiction to psychoactive substances. It was concluded that the analyzed program can be used as practical recommendations to psychologists of preventive aid and rehabilitation centers for the development of methods of psychological correction and preventive aid of psychoactive substances abuse.

Keywords: drug addiction, anxiety, emotional intelligence, psychoactive substances, teenage environment, drug dependence, preventive aid from drug addiction.
According to the data of the National Scientific Centre for Narcology (by the Ministry of Healthcare of Russia), consuming of psychoactive substances by teenagers is growing and has already turned from phenomenon to epidemic. The main consumers are youngsters who are already stressed by tight conditions due to different life phenomena [12]. The factors of social and economic instability, unclear system of values, devaluation of family and school values, increase the risk of drug exposure especially with the teenagers who reveal emotional disorders or deviant behavior, have negative life experience and have already tried drugs or any psychoactive substances [11]. One of the prevailing measures of fighting with drug addiction is prevention. It has been stated that people having trouble with defining and expression of emotions, as well as personal risk factors (low self-esteem, weak decision making skills, certain peculiarities of social intelligence, etc.), are more subject to falling into addiction [7]. The risk of drug consumption can be reduces by influencing the emotional sphere. The abilities which help to become aware and to understand one’s own emotions better, as well as the emotions of other people, are called emotional intelligence [8]. The ability to discern, understand and evoke feelings and emotions, on one hand, can be related to intellectual activity, but on the other hand, emotional reactions are no less important for personal adaptation than the intellectual qualities. As far as in the previous century, L.S. Vygotskiy established a link between personal emotions and thinking. Long before foreign authors he pointed at the coordinated work of intellectual and emotional-volitional spheres of a person to ensure his the successful functioning and adaptation in the environment [20].

Based on the above mentioned ability model, the following top-down abilities that are included into emotional intelligence, can be marked out:

- Perception and expression of emotions;
- Increasing the efficiency of thinking with the help of emotions;
- Understanding of one’s own and other people’s emotions;
- Handling one’s emotions.

Such a top-down modal is based upon the following principles: ability to discern and express emotions is the base to generate emotions to solve certain procedure tasks [21]. These two classes of abilities (to discern and express emotions and use them in solving tasks) are essential to the outwardly expressed ability to understand events preceding certain emotions and following them [9]. All the abilities described above are necessary for inner regulation of one’s emotional states and for successful influence on the environment, leading to regulation of both one’s own, as well as other people’s emotions [10]. According to Goleman, emotional intelligence in its turn, consists of the following components: personal competence and social competence. By personal competence he meant self-understanding, self-regulation and motivation, and by social competence – a success in establishment of relationship and empathy [5].

Teenagers with behaviour deviating from current social norms are subject to emotional lability, and often are emotionally unstable, changing from one emotional state to another quickly [17]. Deviant teenagers are prone to low frustration tolerance, i.e. it is difficult for them to develop stable forms of emotional response in a psychologically difficult situation. Such teenagers are subject to prompt arousal of anxiety and to mood fluctuations. All the above mentioned characteristics indicate psychological and emotional immaturity. Incapable of understanding one’s and other people’s emotions, to evaluate other people’s reactions correctly and unable to regulate their own emotions and take decisions, they are driven into numerous life failures [4]. Emotional intelligence provides stress protection and adaptive functions. Decrease of these functions is one of the possible variants of increasing risk of drug exposure for teenagers [19].

Despite the fact that emotional intelligence is a rather new psychological concept, this phenomenon is acknowledged by an increasing number of researchers. The components of
emotional intelligence are important and necessary for inner regulation of one’s emotional states and for successful interaction with the environment. Development of these components encourages personal and professional growth, and brings along success in life. But it is worthy of note that only a few academic works are dedicated to emotional intelligence of children and teenagers, more frequently engaging adult personalities as objects of research. Neither any particular works are known, intended for research of emotional intelligence of deviant teenagers [18].

In the development of activity alternative to drug consumption, a significant role is played by youth, creative, sports and other social institutions, because physical, creative and entertaining activity includes a strong preventive component. These programs are especially effective for high-risk groups with tendency to drug consumption and showing signs of deviating behavior [15]. The development and approbation of various programs of preventing addiction to psychoactive substances among children and teenagers is becoming an increasingly actual direction of scientific work in Russia. However forming of effective preventing strategies comes across some major difficulties. According to K.S. Lisetskiy and S.V. Berezin [1], the results of introduction of current preventive programs are not optimistic. It is explained with a number of reasons: lack of strong theoretical basis of the models, absence of a sufficient number of approbated techniques; an inaccurate definition of subject (object) of influence, etc.

**Preventing program**

The preventing program for drug addiction and psychoactive substances addiction has been approbated [2]. The research was conducted at the basis of counseling center “Dialogue”. A total of 35 people (male teenagers), aged from 11 to 14, took part in the research. They had been sorted into the risk group of psychoactive substances abuse, on the basis of deviant behavior and genetic predisposition for alcohol addiction [6]. The goal of the research is to investigate the influence of the developed program on the indices of emotional intelligence, anxiety, aggressiveness and the skills connected therewith, such as analytical and critical evaluation of informational input that teenagers receive concerning drugs, as well as their ability to take sensible decisions and creating a positive image of themselves [16]. The program applied such techniques as talks, games, discussions, role playing games, questionnaires, training course elements. In order to achieve the goal methods were chosen that allow to evaluate the state of emotional and volitional sphere of the children (their emotional intelligence) [3], a questionnaire on the level of anxiety (Phillips method), test on the level of aggressiveness which employs Bass-Darky questionnaire. The test on the level of emotional intelligence was applied by the method proposed by H. Hall [13]. It allows to reveal the ability to understand the attitudes of a personality, manifested through emotions, and to control the emotional sphere depending on the taken decisions. The above mentioned test shows how a person uses emotions in his life and takes into consideration different aspects of emotional intelligence: the attitude to oneself and to others, abilities to communicate, attitude to life and search for harmony. The results of the examination by these methods before and after participation in the program are presented in Table 1.

**Table 1**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Before participation in the program</th>
<th>After participation in the program</th>
<th>t</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>δ</td>
<td>M</td>
<td>δ</td>
<td></td>
</tr>
<tr>
<td>32,167</td>
<td>21,153</td>
<td>38,733</td>
<td>20,291</td>
<td>3,787</td>
</tr>
</tbody>
</table>

The results listed in Table 1 indicate the increase in the average indices of integrative level of emotional intelligence, and the conducted calculation shows that the changes observed
in the group are significant. The indices of anxiety before and after the participation in the program are presented in Table 2.

### Table 2

<table>
<thead>
<tr>
<th>Anxiety Scales</th>
<th>Before participation in the program</th>
<th>After participation in the program</th>
<th>t</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>δ</td>
<td>M</td>
<td>δ</td>
</tr>
<tr>
<td>General anxiety</td>
<td>12.267</td>
<td>4.487</td>
<td>10.100</td>
<td>3.199</td>
</tr>
<tr>
<td>Social stress</td>
<td>6.300</td>
<td>2.261</td>
<td>6.167</td>
<td>2.102</td>
</tr>
<tr>
<td>Frustration</td>
<td>7.633</td>
<td>3.011</td>
<td>7.433</td>
<td>2.800</td>
</tr>
<tr>
<td>Fear of self-expression</td>
<td>3.167</td>
<td>1.367</td>
<td>1.900</td>
<td>1.094</td>
</tr>
<tr>
<td>Fear of being checked for knowledge</td>
<td>4.033</td>
<td>1.497</td>
<td>3.800</td>
<td>1.584</td>
</tr>
<tr>
<td>Fear of not meeting other people’s expectations</td>
<td>2.567</td>
<td>1.357</td>
<td>2.400</td>
<td>1.192</td>
</tr>
<tr>
<td>Problems in relations with teachers</td>
<td>4.867</td>
<td>1.676</td>
<td>4.667</td>
<td>1.539</td>
</tr>
<tr>
<td>Low physiological resistance to stress</td>
<td>2.067</td>
<td>1.437</td>
<td>1.900</td>
<td>1.269</td>
</tr>
</tbody>
</table>

The results given in Table 2 give reason to assume that the general level of anxiety reduced after participation in the program, fear of self-expression and of disconformity with other people's expectations reduced significantly as well. However, the indices reflecting the experience of social stress, the fear of being checked for knowledge and problems with teachers have remained high. Besides, the physical resistance to stress remained insufficient. To detect the influence of emotional intelligence functions on certain signs of deviant behavior the connection between these indices has been researched. The results of this influence are presented in Table 3.

### Table 3

<table>
<thead>
<tr>
<th>Indices of emotional intelligence</th>
<th>Emotional awareness</th>
<th>Control of emotions</th>
<th>Self-motivation</th>
<th>Empathy</th>
<th>Recognition of other people’s behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameters of deviant behaviour</td>
<td>Aptitude to violate norms and rules</td>
<td>-0.25</td>
<td>-0.52</td>
<td>-0.32</td>
<td>-0.51</td>
</tr>
<tr>
<td></td>
<td>Aptitude to addictive behaviour</td>
<td>-0.14</td>
<td>-0.54</td>
<td>-0.41</td>
<td>-0.31</td>
</tr>
<tr>
<td></td>
<td>Aptitude to self-harming and self-destructive behaviour</td>
<td>-0.24</td>
<td>-0.42</td>
<td>-0.24</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>Lowered volitional control of emotional reactions</td>
<td>-0.24</td>
<td>-0.58</td>
<td>-0.59</td>
<td>0.21</td>
</tr>
</tbody>
</table>

To calculate the indices we used STATISTICA 6 program, applying Pearson correlation coefficient as statistic criterion. Results listed in Table 3 indicate a negative connection between the ability to control one’s emotions and inclination to break the established norms and rules with the lowered voluntary control of emotional reactions. The evaluation of indices of aggression is presented in Table 4.
### Table 4

**Comparative Indices of Showing Aggression for Teenagers Before And After The Program**

<table>
<thead>
<tr>
<th>Agressiveness scales</th>
<th>Before Participation in the Program</th>
<th>After Participation in the Program</th>
<th>t</th>
<th>p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>δ</td>
<td>M</td>
<td>δ</td>
</tr>
<tr>
<td>Physical</td>
<td>3,033</td>
<td>1,377</td>
<td>2,500</td>
<td>1,075</td>
</tr>
<tr>
<td>Indirect</td>
<td>2,600</td>
<td>1,163</td>
<td>2,367</td>
<td>0,999</td>
</tr>
<tr>
<td>Aptitude to irritation</td>
<td>2,433</td>
<td>1,040</td>
<td>2,233</td>
<td>0,774</td>
</tr>
<tr>
<td>Negativism</td>
<td>2,900</td>
<td>0,960</td>
<td>2,667</td>
<td>0,844</td>
</tr>
<tr>
<td>Affectivity</td>
<td>3,133</td>
<td>1,074</td>
<td>2,867</td>
<td>0,776</td>
</tr>
<tr>
<td>Suspiciousness</td>
<td>2,033</td>
<td>1,691</td>
<td>1,067</td>
<td>0,868</td>
</tr>
<tr>
<td>Verbal Agression</td>
<td>3,367</td>
<td>0,999</td>
<td>2,900</td>
<td>0,803</td>
</tr>
</tbody>
</table>

**Notes:** M – average index in group; δ – standard deviation; t – index of Student criterion; p – possibility of mistake.

The results listed in Table 4 give reason to assume that after participation in the program the level of aggressiveness reduced almost in every indicator (except irritation).

Thus, the analyzed program influences the level of anxiety and emotional intelligence. This gives reason to assume that it can be used as a way to prevent psychoactive substance abuse by teenagers. Besides, the conducted research has shown the connection between aspects of emotional intelligence, deviant behavior and the associated risk of forming an addiction to psychoactive substance.

So the analyzed program can be used as practical recommendation to psychologists in centres for prevention and rehabilitation while developing the methods of psychological correction and prevention of psychoactive substance abuse.

As for the diagnostic methods, they can be useful for evaluation of efficiency of the program under consideration, as well as other programs, intended for prevention of addiction to psychoactive substance or correction of its initial signs. Forming of ability to regulate one’s emotions and to show them in socially acceptable form for children and teenagers should be defined as one of the factors that can prevent forming of addiction to psychoactive substance as well.

**Contents of the program**

Each class takes 75–90 minutes, held once per week. At that, the teenagers, on one hand, were not overloaded and did not experience lack of time for other activities, and on the other hand, the acquired skills were regularly supported and their interest did not fade.

At **Class 1** the participants were introduced to each other, the general information about drug addiction among the youth was given.

**Class 2** was dedicated to forming an intention to constructively cooperate with people, regardless of the various types of their expression of individuality: a positive attitude to their own uniqueness was formed; teenagers learned the technologies of building their image, its main stages of development were discussed, as well as questions of conversational ethics and personal image.

**Class 3.** Was dedicated to increase of inner interest to oneself from the point of view of personal characteristics: the ability to for an adequate self-esteem were recognized; favourable motives of behavior were formed.

**Class 4.** Notion and reasons of stress were analyzed, it was recommended how to form different ways of adequate behavior in stress and how to handle acute negative emotions.
Class 5. The aim is to recognize one’s own need and ability to communicate: some problems in communication were solved, oratory skills taught, as well as some elements of non-verbal communication and its effect of one’s personal image.

Class 6. A belief was being formed, that Psychoactive Substance Consumption is a false way of solving life problems, skills of refusing to consume psychoactive substances were taught.

Class 7. Results of collective work were discussed: summing up.
Beside the basic topics for classes the program included work on the following topics:
– What is addiction?
– Smoking and alcohol
– Coexistent illnesses
– Responsible behavior, goals in life, resources to reach them

Techniques and principles of work
1. Building of dialogue with teenagers, in which their opinion is valued and they are invited for contemplation and self-reflection. As a rule, teenagers have a vivid response to this type of classes. However, before asking a question relevant to the topic of discussion, it is important to understand which goal we intend to reach. While building a discussion it is necessary to guide teenagers to the awareness that addiction to psychoactive substances is a very serious disease indeed which frequently leads to lethal outcome.

2. Teen age implies certain peculiarities of perception. Often their imaginary thinking is more developed than abstract and logical thinking. That is why the techniques that affect imaginary thinking and emotions of a teenager are most weighty arguments, like the ones listed below.

Exercise ‘House’
There is a pile of books lying on the table, which symbolizes our society – this is a house in which every person is a brick and performs his or her function. A lot of teenagers think that they can decide for themselves, what they should do and how to live, and that they have a right to “fall out” of the society.
But if you get any book from the bottom of the pile, the whole pile will fall apart. It is the same in the society: if one person falls out, the whole community around him suffers – family and friendship ties are destroyed, such a person cannot study or work effectively. But it is not just him who suffers, but his friends and family as well. This is the way how each person contributes to the development of the whole society. He is responsible for what becomes of the house and the society around him.

Exercise ‘Get in and Get out of the Circle’
Another metaphor to understand the phenomenon of addiction can be another game exercise, in which all participants of the group stand in the circle, hand in hand. The task of the volunteer is to get inside, or get out of the circle. After the class it is possible to explain the meaning of this game. The circle is a symbol of addiction, which holds the person who is trapped in its net. On the other hand, the circle is also a symbol of society, which is not ready to take the addict back, if he has decided to give up consuming psychoactive substances.

Exercise ‘String Puppet and the Puppet Master’
In this game participants work in couples, each one in turn becomes a puppet master who shows the movements to the ‘string doll’. The task of the ‘string doll’ is to copy the movements of the ‘puppet master’ as accurately as possible. Then they change the roles. After finishing the game part it is necessary to summarize that an addict is a string doll for his or her addiction, which can affect whole person’s life.

Exercise ‘Associations’. It is a diagnostic exercise as well, because it reveals most troublesome teenagers. The exercise consists of two parts – it is necessary to give a felt-tip or a ball pen
to the school student at the front desk, which he passes over to his neighbour, who passes it further on after doing the task:

– in the first part the children are offered to speak out their associations for such words as “drug”, “addict”. Most children give such associations as: “disease”, “death”, “addiction” etc. Some schoolchildren may speak out such associations as “disco”, “bliss”, “cool”, “good” etc.

– in the second part of the exercise it is offered to read the associations which belong to addicts themselves: sickness, death, withdrawals etc.

It is reasonable to cover the following topics in the discussion:

Addiction and how it is different from life needs. It is necessary to emphasize that needs are something a person cannot live without, but addiction does not bring any good to a person, only harm. Besides, the person is enslaved and cannot imagine his further life without the subject if his addiction. There are two types of addiction: psychological and physical, and it is psychological addiction which is considered to be the most severe, that is why it is so difficult to cure this disease with medical means only.

Habituation and tolerance to the subject of addiction. With each new dose of psychoactive substances a person gets used to the substance and with the course of time he stops reacting to the stimulators. Therefore, he needs to increase the dose constantly, otherwise he will not achieve the desired effect.

Withdrawal syndrome. The organism gets used to the psychoactive substances, because it builds into the metabolic processes, and if the regular administration thereof is stopped abruptly, it causes unpleasant and painful sensations, which are called withdrawals.

Consequences of psychoactive substance consumption. This can also be done in the interactive form by introducing exercise ‘Spider net’. It is necessary to draw a point in the middle of the board and lines spreading from it, and at the end of each line to write, together with the teenagers, the consequences of developing addiction: for mental and physical health, relationship with friends, with family, for school results, career and relationship with the society as a whole. It is necessary to draw special attention of teenagers to the fact, that first of all addiction weakens the will of a person, the ability to control actions. Together with his will, a person loses freedom and his human face, that is why this loss is most painful. It is also necessary to emphasize that negative consequences, as a rule, reveal themselves in all the spheres of human life at the same time. That is why a person is trapped in addiction, like a fly in the spider net.

A few classes are normally dedicated to dethronement of myths about drugs.

Myth No. 1. There are Light and Heavy drugs. When mentioning the harm for health, you can inform the students about the consequences of consuming the so called “light” drugs: cannabinoids, oxybutirate natrium, etc. At the class about prevention it is necessary to scrutinize the myths about psychoactive substances and addiction. Scientific research has shown that even the so called “light” drugs have a negative effect on physical and mental health of a person.

Myth No. 2. It is no bad if you just try once.

In this case you can give the scheme how drugs affect a person. You should draw a scheme on the blackboard, where the horizontal axis shows time, and the vertical axis shows emotions: negative at the bottom (with “−” sign), and positive (with “+” sign) at the top of the axis. Normally, a person experiences both negative and positive emotions. For example, a teenager gets the highest mark in physics, his mood goes up, then he has a quarrel with a friend, and the mood goes down, then he made up with him – it goes up again (we draw a curve on the blackboard). And so it goes – either raise of emotions, or a fall. However, usually these emotions do not go over the top, and they do not deviate far from the middle level. But one day a young man or a woman decides that it is not enough to have the ‘normal’ emotions, and they take a “pill”. What happens to emotions? Where do they go? Right, they go up, and much higher than in
case of a simply good mood. The emotions reach their peak. What happens next? Within a period of time, positive emotions change to negative ones, and a person has also stronger negative emotions than usual. Why? Because the body has lost a lot of energy when the emotions went up so quickly, and now it needs to restore, so here comes the physiological decline. But this person already remembers and knows how it feels to be “high”, and it is the moment of emotional decline when it comes to his mind that it felt so good quite a short time ago. What does he do next? He takes another “pill”, but the paradox is that it will never feel like the first time, because the process of habituation has already started, and each new time will bring less and less pleasure or he will need to increase the dose.

Meanwhile, emotional declines become deeper each time, and emotional lifts become lower. Finally, the addicted person takes the drug to shift from deep emotional decline to a neutral “zero” state.

We understand that physical addiction does not appear immediately, each one is an individual, but there is also a mental addiction, which is much stronger than physical one. When does it appear? Right, at the moment of the first strong emotional peak a person remembers the emotion, and further on he wants to repeat this emotion by taking the psychoactive substance. There is even a saying invented by addicts themselves: “One time is sometimes too much, and then a thousand times is too little”. Thus, psychological addiction, the most severe one, appears already in the first times of taking drugs, that is why a belief that one time will bring no harm, is a myth.

The conducted research has identified the connection between aspects of emotional intelligence, deviant behavior and the entailed risk of forming an addiction to psychoactive substances. The program under analysis influences the level of anxiety and emotional intelligence. Introduction thereof with purpose of correcting anxiety has shown that teenagers taking part in it demonstrated reduced indices on majority of the researched parameters reflecting the level of aggressiveness. The acquired results can be used in practical tasks of psychologists who work in rehabilitation and prevention centres. They can be applied at developing of complex programs of psychological correction and psychoactive substance abuse by teenagers. Moreover, the used diagnostic methods can prove useful for evaluation of efficiency of the analyzed program, as well as of other programs intended for prevention of addiction to psychoactive substances or correction of its initial signs. Forming of ability to regulate one's emotions, to express them in socially acceptable form can also be a factor helping to prevent addiction to psychoactive substance.

References


REFERENCE TO ARTICLE
Psychological Peculiarities of the Convicted Persons with Drug Dependence

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Annotation: the study of psychological features of the convicted persons with psychoactive substances dependence is necessary to influence the convict to prevent repeated crimes. To examine the convicted persons with psychoactive substances dependence, a range of tests was formed for study their personal peculiarities. Based on the data pedagogical and psychological peculiarities of influence on the convicted persons with psychoactive substances dependence were revealed.

Key words: psychological peculiarities, convicted persons, addiction.

Introduction. Social danger of recidivism is the fact that a person committed more than one crime will perpetrate another crime. The proportion of recidivism is high and depending on the region it has recently ranged from 25% to 50% (in average 30%) [3].

One of the main objectives of the concept of development of the penal system until 2020 is the reduction of recidivism committed by persons who have served a sentence of deprivation of liberty increasing the efficiency of social and psychological work in places of deprivation of liberty and the development of the system of post-penitentiary assistance for such persons. One of the most effective ways of reducing recidivism is its prevention. Recidivism prevention can be divided into general, special and individual. Within psychological work with prisoners in places of deprivation of liberty it is the most effective individual recidivism prevention. Individual recidivism prevention is a complex of measures aimed at preventing the commission of repeated crimes. They are: measures of the study and elimination of specific subjective conditions of possible commission of further crimes of previous convicts; measures of statement for preventive control; the consolidation of results of reformation and other measures [2].

One of the most important tasks of rehabilitation of the convict is his readiness to correct himself in different spheres of life in solving life problems in various conditions and situations. Psychological peculiarities of the convicted persons play an essential role in determining aspects of social behaviour of the convicts [16]. In this article we will examine the psychological peculiarities of the addicted convicted persons. Addictive behavior is the desire to escape from reality by changing the mental state artificially with the help of using any substances (alcohol, drugs, tranquilizers) or the implementation of any activity (gambling, collecting) [7–10].
Alferov Y.A., Hmel A.P. were involved in the study of the peculiarities of convicted persons with drug dependence [1]. From their point of view, these persons are sent to the environment which often develops negative habits and inclinations, disrupts and directs them to a false path. Convicted persons with drug dependence are psychologically deformed by anti-social behavior. They are emotionally unstable, excitable and angry.

RW RPL SAFPS of Russia in St. Petersburg and Leningrad region is devoted to the study of peculiarities of the convicted persons with drug dependence [2]. Their research showed that the convicts with drug dependence have psychological features such as dependence, suggestibility, cowardice, infantilism, dishonesty, apathy, lightheadedness, resentment, inferiority complex, desire for risk, “thirsty thrills”, desire to escape responsibility making decisions.

Within done research on the basis of penal institutions of Kaliningrad and Leningrad regions, the analysis of disciplinary practices and the degree of criminalization of the convicts with drug dependency was carried out. This analysis revealed that in places of deprivation of liberty:

- 65.77% of convicts had committed violations of the regime and the internal regulations;
- 7.5% of the convicts had committed self-mutilation or suicidal attempt in the period of serving the sentence;
- violation of the detention regime and, as a consequence, the imposition of penalty was an average of 2.1 times a year of served sentence which is almost 11 times higher (0.2 penalties) compared with the average convict in St. Petersburg and Leningrad region;
- such penalties as reprimand – 47.3% and the placement in a lock-up, FIW, PCT – 26.0% were often imposed among applied measures of influence.

Correlation analysis of indicators of disciplinary practice and criminological characteristics of the convicted persons with addiction has shown that the number of penalties they have has a negative relationship with the date of conviction and the type of discipline: the number of penalties is more for a short time sentence and low regime than under a long term sentence and high regime. Thus, the shorter the term of the conviction, the lower the motivation of parole involving good behavior during the period of serving a sentence (no penalties). The less high regime, the more opportunities to meet the need in the use of psychoactive substances and, accordingly, receiving penalties for it.

Criminological analysis of the convicts with alcohol and drug addiction has shown that they often committed the following crimes:

- by criminal orientation: deliberate causing of heavy harm to health (28.8%), murders (16.4%), thefts (28.8%), the acquisition or sale of drugs (16.4%).
- by gravity: the most grave (49.3%) and grave (45.2%).

Moreover, the range of the number of precondemnation of the addicted convicted persons is 1 to 8, 60.3 per cent of addicted convicts having 2 or more prior precondemnations.

Thus, the results of the study have shown a high predisposition of such persons to repeated commission of crimes and their propensity to violate the detention regime and, hence, disadaptation in places of detention [13; 14].

**Methods.** The method concerning addicted convicts must identify the maximum number of required components of the study, maximum detection, as well as the method must take into account the level of deviance of the examined convicted persons.

We have formed the range of diagnostic methods for the study of addicted convicts: the Method of “Emphasis 2–90” in edition M.I. Vyhdorchyk [6], the Methodology for psychological diagnosis of mechanisms of psychological protection of the “life style Index” LSI – G. Kellermann and R. Plutchik [11; 20], the Technique of research of level of subjective control (hereinafter UIC) in the modification of E.V. Bazhina, E.A. Golynkina, Etkind A.M. [4; 15; 17; 19]. The method of color metaphors (MCM) [22], the Value orientation of a personality [18], the questionnaire of the convicted persons.
According to the results of the survey of the addicted convicted persons, methods of influence on deviant behavior of convicted persons aiming at the correction of their criminal important features were formed.

**Results.** Doing research, we have got the following results:

**Socio-demographic features of the convicted persons with drug dependence.**

1. The average age of the addicted convict is 20–24 years – 19%; 25–29 years – 22.6%; 30–34 years – 25%; 35–39 years – 15%; 40–44 years – 6%, 45–49 years – 9.5%, over 50 years – 2.4%.

2. Thus, the obtained results suggest different age categories of the convicted persons with drug dependence but most of the convicts are juvenile delinquents and adult offenders (81.6%).

**Education.** Convicted persons with drug dependence studying neither at school nor in educational establishments make up 2.4%, convicted persons having primary education make up 2.1%, convicts having incomplete secondary education make up 30.9%, convicts with secondary education make up 34.5%, convicts with technical secondary education make up 21.6%, convicted persons with higher education make up 9.6%.

Thus, it is possible to say that for this category of convicts a low level of education, lack of vocational education are typical, the majority of respondents studied only in secondary schools (65.4%).

3. **Family features.** Basically the addicted convicted persons seek to maintain relationships with relatives 81%.

**Criminal-legal features.**

1. **Type of the crime:** murder (article 105) – 9.8%; deliberate causing of heavy harm to health (article 111) is 8.5%; the theft of another’s property (article 158) – 17.1%; the open theft of another’s property (robbery) (article 161) is 7.3%; the assault with the aim of theft of another’s property, committed with violence, dangerous for life or health or with threat of application of such violence (robbery) (article 162) – 7.3%; illegal production, acquisition, storage, transportation, shipment or sale of drugs or psychotropic substances (article 228) – 43.9%; other types of crime – 6.1%. Thus, the most common crime is the crime associated with illegal production, acquisition, storage, transportation, shipment or sale of drugs or psychotropic substances. This fact is explained that this crime is connected with the possibility for drug addicts to obtain money to purchase drugs.

2. **Previous criminal record.** Convicts without previous criminal record – 25%, convicts without deprivation of freedom (conditionally) – 25%, convicted persons having 1 conviction with serving a sentence in places of detection – 7.9%, convicts with 2 convictions – 17.9%, convicted persons with more than 3 convictions – 7.9%.

Thus 75% of convicted persons have already had criminal record and 50% of them have served a sentence in places of deprivation of liberty. Moreover, 66.7% of the number of convicts who served earlier sentence in places of detention were released at the end of the term, and only 33.3% of them had parole.

3. **Attitude to the offence.** A significant part of convicts of this conditional group have found themselves guilty (40%) but most of them consider punishment severe. Taking into account that most of the respondents in this group were sentenced for drug trafficking, this fact can explain that the drug addicts realize the dangers of drugs, as well as justifying its actions of high importance of money, for which they have committed crimes, they are not aware of the gravity of the crime and the harm inflicted on society by their criminal actions. Because of this, the punishment is perceived as too strict.

Let’s analyze the results of the evaluation of the behavior of convicts with drug dependence from the point of view of experts.

From the point of view of 64% of experts, the convicts have an average status; they have a negative orientation, react negatively to educational interventions. 50% of experts are sure
that these convicts can’t correct yourselves and they don’t want to be involved in psycho-correctional work. Violations of the detention regime are associated with the point of view of experts with self-harm (this was indicated by 24% of experts), a violation of the order of the day (14%), the manufacture, holding and shipment of prohibited items (29%).

Psychological peculiarities.

Analyze the diagnostic results according to the method 2–90 Accent.

Table 1

The Results of Diagnostics of Convicted Persons with Drug Dependence by the Method of Focus 2–90 with Psychoactive Substance Dependence

<table>
<thead>
<tr>
<th></th>
<th>Average value</th>
<th>Average deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperthymic</td>
<td>19,80</td>
<td>6,16</td>
</tr>
<tr>
<td>Jam</td>
<td>15,80</td>
<td>4,43</td>
</tr>
<tr>
<td>The emotive component</td>
<td>14,40</td>
<td>5,31</td>
</tr>
<tr>
<td>Pedantry</td>
<td>15,22</td>
<td>4,25</td>
</tr>
<tr>
<td>Anxiety</td>
<td>9,73</td>
<td>4,14</td>
</tr>
<tr>
<td>The cyclothymic component</td>
<td>16,89</td>
<td>6,46</td>
</tr>
<tr>
<td>Demonstration</td>
<td>14,91</td>
<td>4,16</td>
</tr>
<tr>
<td>Excitement</td>
<td>17,84</td>
<td>5,03</td>
</tr>
<tr>
<td>Dysthymic</td>
<td>12,24</td>
<td>4,98</td>
</tr>
<tr>
<td>Exaltation</td>
<td>14,53</td>
<td>6,58</td>
</tr>
</tbody>
</table>

Analysis of the results of table 1 has shown that hyperthymic and anxiety are typical for addicted convicted persons. A high indicator on a scale hyperthymic shows high activity, sociability, (turning to people for help, may resort to flattery, deception), propensity for risk ability to grasp everything on the fly, promiscuity in the choice of friends, intolerance of loneliness, low level of development of volitional sphere. There may be a manifestation of verbal forms of aggression (the desire to mock, to be rude without malicious intent). Situations that can cause conflict and stress are the following: the forced isolation, limited physical activity, and involuntary subordination of certain systematic requirements. Feature of excitable personality is the expressed impulsiveness of behaviour. All manner of communication and behavior largely depends not on logic, not from rational evaluation of his actions, and it is caused by a momentary impulse, desire, instinct or uncontrollable promptings. In the area of social interaction they are characterized by a very low tolerance that can be characterized as the lack of tolerance in general. Strict observance of all rules is a way to compensate for its own inertia. A tendency to conservatism arouses dissatisfaction to all new features (these features somewhat compensate for the peculiarities of the intolerance of hypertime to the regulations). Origin of stress may result in the denial of selfish interests and privileges, especially financial, as well as limit your ability to exercise authority.

At the same time a high score on the hyperthymic and anxiety shows rapid behavioral responses, the behavior has high orientation in the event of the external world. The combination of the above mentioned scales with low anxiety (at slightly lower dysthymic features) indicates a certain fear of responsibility, desire to extend the state of carelessness, infantilism.

Further analyze the results of the study on the methodology of psychological diagnostics of mechanisms of psychological defenses (life style index – LSI), designed on the basis of theoretical studies by G. Kellerman and R. Plutchik.
Table 2

The Averaged Results of Diagnostics of Convicted Persons with Drug Dependence According to the Method “Life Style Index”

<table>
<thead>
<tr>
<th></th>
<th>Average value</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Denial (A)</td>
<td>7,35</td>
<td>2,34</td>
</tr>
<tr>
<td>2 Suppression (B)</td>
<td>4,74</td>
<td>2,21</td>
</tr>
<tr>
<td>3 Regression (C)</td>
<td>4,57</td>
<td>2,50</td>
</tr>
<tr>
<td>4 Compensation (D)</td>
<td>4,26</td>
<td>2,45</td>
</tr>
<tr>
<td>5 Projection (E)</td>
<td>7,24</td>
<td>3,04</td>
</tr>
<tr>
<td>6 Substitution (F)</td>
<td>4,48</td>
<td>3,08</td>
</tr>
<tr>
<td>7 Intellectualization (G)</td>
<td>5,93</td>
<td>2,39</td>
</tr>
<tr>
<td>8 Jet formation (H)</td>
<td>5,2</td>
<td>2,45</td>
</tr>
</tbody>
</table>

The analysis of Table 2 has shown that the leading mechanism of protection of convicts with drug dependence is “projection” and “denial”. Projection is the unconscious mechanism, reflecting their own unacceptable thoughts, desires, inclinations, feelings, and attributing them to other people. Projection is a kind of protection against the fear of cymonebreathe. From the perspective of Bovina B.G. [5], this mechanism has developed in the early stages of ontogenesis to deter feelings of rejection. Attributing to others the various negative qualities creates a rational basis for their rejection and self-acceptance on this background. The subject attributes to other people motives, motives that are not conscious and does not notice in himself. Thus, it shifts the focus from your own unconscious to another person and unable to understand themselves. In this regard, it is very difficult and sometimes impossible to overcome or refute the projection of an erroneous perception, conception, understanding significant relationships. Since projective protection occurs in relation to the unacceptable, negative feelings and desires, then naturally other people are perceived as having negative, threatening, and hostile intentions. As a rule, an expressed manifestation of projective protection is manifested in such qualities as selfishness, rancor, vindictiveness, resentment, a keen sense of injustice, suspicion, hostility, intolerance to opposition, the accusations of others.

Mechanism of psychological protection – denying – is manifested in the denial of some frustrating, alarming circumstances, either the denial of any inner impulse or the hand itself. Typically, this mechanism is manifested in the denial of those aspects of the external reality, which, being obvious, for others, however, are not accepted, are not recognized by a person. In other words, information that causes anxiety and can lead to intrapersonal conflict is not perceived. I mean the conflict arising from the contradiction of motivations and basic personality or information threatens self-esteem or social prestige of the individual.

The mechanism of denial is the earliest in ontogeny and the most primitive defense mechanism. This mechanism can be expressed in such personal features as egocentrism, suggestibility, demonstrative, thirst for recognition, arrogance, boasting, affective demeanor, paphos, insensitivity to criticism, absence of criticism, lying, tendency of the simulation, underdevelopment of the ethical set, possibility of psychosomatic disorders (conversion-hysterical reaction, dysfunction of analyzers, endocrine disorders).

Table 3

The Averaged Results of Diagnostics of the Convicted Persons with Psychoactive Substances Dependence

<table>
<thead>
<tr>
<th>Io</th>
<th>Id</th>
<th>In</th>
<th>Is</th>
<th>Ip</th>
<th>Im</th>
<th>Iz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average value of this sample</td>
<td>26</td>
<td>7,4</td>
<td>6,9</td>
<td>5,6</td>
<td>4,8</td>
<td>1,9</td>
</tr>
<tr>
<td>Standard deviations</td>
<td>3,2</td>
<td>2</td>
<td>1,8</td>
<td>1,56</td>
<td>1,59</td>
<td>0,86</td>
</tr>
</tbody>
</table>
The analysis of table 3 has revealed that in the field of achievements there is a tendency to externality factor, i.e., this category of convicts attributes their successes and achievements to the circumstances – good luck, good fortune or the help of others.

The analysis of the research results of the method “The methodology of color metaphors”. Basic needs of addicted convicts include such concepts as “joy”, “pleasure”, “soft”, i.e., getting positive emotions. Taking into account that basic needs are associated with neither “future” nor “past” nor “present”, this may indicate a high degree of frustration of this need.

The current problems of the convicts are “religion”, “status”, “excitement”, “buzz”, “throw”, “power”, “looking”, “bribery”. The obtained results have shown that the main matter for this category of convicted persons is the problem of power. The combination of words such as “buzz”, “throw”, “bribery” shows that this category of convicted persons is relevant to the search for ways to obtain surfactants. There is no connection with other words and with the concept of “religion”. It may indicate the repression of this concept or ignore it.

Draw attention to the fact that future ideas for addicted convicts are important and relevant. They associate future with words such as “freedom”, “love”, “life”, “parole”, “health”, “communication”, “entertainment”, “fun”, “future plans”, “sex”, “hope”, “health”, “my future”. The results show that addicted convicts dream about pleasure, intimate communication and freedom. The future is bright and cloudless, fantasies about the future are more relevant than the issues of the present, i.e. they are characterized by the care of problems in dreams and fantasies.

We have received approximately equal average values of concepts such as “What I am really?” and “What person I want to be?” However, what is striking is the fact that the notion of “What I am actually?” stands in the same block with the fantasies, and the concept of “What person I want to be” has one of the highest ranks, which suggests the presence of inadequate self-esteem.

Analysis of the results according to the method “The value orientation of the personality” is presented in Table 4.

<table>
<thead>
<tr>
<th>Value Standard deviation</th>
<th>Value</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rest</td>
<td>3,8</td>
<td>1,3</td>
</tr>
<tr>
<td>2. Material well-being</td>
<td>4</td>
<td>1,4</td>
</tr>
<tr>
<td>3. Search of pleasure</td>
<td>3,3</td>
<td>1,8</td>
</tr>
<tr>
<td>4. Aid, mercy</td>
<td>5,4</td>
<td>1,2</td>
</tr>
<tr>
<td>5. Love</td>
<td>4,2</td>
<td>1,2</td>
</tr>
<tr>
<td>6. New knowledge</td>
<td>3,7</td>
<td>1,5</td>
</tr>
</tbody>
</table>

Analysis of the results of table 4 has shown that the most significant need for addicted persons is the need to provide assistance. The least important for them is social status and social activity.

On the basis of the generalized analysis of experimental and theoretical study, we have proposed a psychological and educational system of this category of convicts.

To develop a programme of remedial work we have made a portrait of addicted convict.

**Criminal features**: the most typical crimes are crimes connected with illegal production, acquisition, storage, transportation, shipment or sales of drugs or psychotropic substances, high criminal infestation (unwillingness to grasp the gravity of his crimes, relapse of criminal
behavior). The average status in the stratification of convicts in the colony, a presence of negative direction, a negative response to educational interventions, a possibility of minor correction.

Social features are the following: age up to 39 years, the lack of professional education, and the desire to maintain the relationship with the immediate environment.

Psychological characteristics are the following: a high level of activity, excitability, irresponsibility, violation or disregard of obligations to the people, the ego, ostentation, arrogance, affective behaviour, insensitivity to criticism, absence of criticism, lying, tendency to simulation. Possible manifestations are aggression and auto-aggression, impulsivity, irresponsibility, suggestibility, absence of self-esteem.

According to the prepared psychological portrait we have identified the main peculiarities of the influence on the addicted convicted persons. The main features of influence include: the formation of an adequate self-assessment; work with fears, phobias; learning socially approved way of relieving psychological stress (methods of self-regulation of behavior); the study of children's problems, especially the relationship with the mother; the formation of an adequate picture of the future and importance of the present time; the correction of destructive fixed protection structures (projection, denial); understanding the motives of their behavior and the search for more rational ways to satisfy their desires; the development of reflection. Working with these convicts, special attention should be paid to maintaining motivation and creating an environment of psychological safety. Taking into account the demonstrative, the presence of artistic perception, the presence of artistic inclinations, the use of different methods of art therapy, and a metaphorical associative cards will be quite effective.

Conducting educational work with this category of inmates it is necessary to apply the following forms of work: to perform permanent control over the behavior of convicts; to make it possible for addicted persons to take part in amateur activities their artistic gift; to facilitate the employment of prisoners with drug dependence; to perform individual tasks that contribute to the formation of personal responsibility for actions performed; to develop and maintain an interest in religion. Thus, in this article we have examined the psychological characteristics of the addicted convicted persons, we have proposed measures of educational and psychological influence on this category of inmates.

References

REFERENCE TO ARTICLE

Overview of Acoustic Methods Nondestructive Testing of Buildings and Structures

Receiving date: 24.08.2016
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Taking to print date: 01.11.2016

Annotation: overview of acoustic testing methods was held. The main advantages and disadvantages of the means and technical facilities of acoustic testing were considered. Ways of improving means of acoustic testing of buildings and structures were identified.

Key words: nondestructive testing, acoustic methods, defect.

The complex methods used in the diagnosis of buildings and structures, together with methods that require direct access to the materials of construction and direct test structures are also used non-destructive testing methods [1]. Acoustic building structures testing methods are some of these methods.

Acoustic methods are widely used in the study of concrete and reinforced concrete structures. These methods have high resolution. Deformation and strength characteristics of the materials can be estimated with their help. However, these methods have a restricted depth studies (up to 1–1.5 meters) and a limited ability to work in the study of the performance of extended constructions. It is necessary to initiate pulses having a center frequency at a high enough range (hundreds of Hz to tens of kHz) for the application of acoustic methods in the study of building structures. This requires the use different types of sources. Unfortunately, the complexity of the geometric structure of the subsurface structure, within which there are wave fields, produces the extraordinary complexity of the wave fields, and this is a serious complicating aspect in the application of acoustic methods. Transmitted and reflected waves of all types (longitudinal,
transverse and surface) can be used to obtain information on the structure and properties of the test structures.

The advantages of acoustic control are the ability to control a large thickness (this is the most reliable way for thickness of over 80 mm), lower costs compared to radiography, security, the ability to detect small size defects. There are promising methods that are gradually replacing radiation techniques. However, acoustic testing methods have some disadvantages: the deterioration detecting bulk defects compared to planar, defects cannot be detected that are perpendicular to the direction of wave propagation is smaller than the wavelength, the type of the defect was determined more difficult when compared with the radiation means, some materials cannot be controlled due to the high level of structural interference. The main drawback of acoustic testing is subjectivity: the dependence of the results on the skill and care of the operator. In order to eliminate this disadvantage mechanized displacement of piezoelectric transducer with respect to the product, are devices that using a computer is stored signals during the scanning process.

**The main types of acoustic non-destructive testing methods**

There are many acoustic methods of nondestructive testing which are used in several different ways. They are divided into two groups – active and passive methods. Classification of active acoustic methods is shown in Table 1. Passive methods are divided into vibration diagnostics technique, noise diagnostic technique and the acoustic emission technique [5].

### Table 1

<table>
<thead>
<tr>
<th>Active acoustic methods of nondestructive testing</th>
<th>Reflection</th>
<th>Through transmission</th>
<th>Combined</th>
<th>Natural oscillations</th>
<th>Impedance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Echo technique</td>
<td>Echo technique</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Echo-mirror technique</td>
<td>Echo-mirror technique</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diffraction technique</td>
<td>Diffraction technique</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delta technique</td>
<td>Delta technique</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reverberation technique</td>
<td>Reverberation technique</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ultrasonic microscopy</td>
<td>Ultrasonic microscopy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coherent technique</td>
<td>Coherent technique</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amplitude technique</td>
<td>Amplitude technique</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Temporal technique</td>
<td>Temporal technique</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulse velocity test</td>
<td>Pulse velocity test</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Multiple amplitude technique</td>
<td>Multiple amplitude technique</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mirror amplitude technique</td>
<td>Mirror amplitude technique</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Echo amplitude technique</td>
<td>Echo amplitude technique</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Echo through technique</td>
<td>Echo through technique</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forced oscillations</td>
<td>Forced oscillations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free oscillations</td>
<td>Free oscillations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexural wave</td>
<td>Flexural wave</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressional wave</td>
<td>Compressional wave</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple impedance</td>
<td>Multiple impedance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Active methods are based on the study and reception of elastic waves, passive methods are based only on the reception of waves, the source of which is controlled object.

Active methods are divided into methods of reflection, through transmission, combination, natural oscillations and impedance.

Through transmission technique are based on observation of the changing parameters of ultrasonic vibrations that pass through the test object. Originally continuous wave applied
to find defects. Fixed parameter considered the amplitude of the through oscillation, and its change was seen as a defect in the test object. At the moment it is used not only continuous wave, pulse wave are used too. And the fixed parameters are the amplitude and phase spectrum and time of the signal, and there were other methods of transmission.

Reflection methods are based on the receipt of information on the reflection of the acoustic waves in the test object.

The combined methods used principles such as a passage and reflection of waves.

Methods of natural oscillations is based on the measurement of the frequency (or spectrum) of controlled vibrations of objects. The natural frequencies were measured at excitation in the products of both forced and free oscillations. Free oscillations are usually excited by mechanical kick, and forced oscillations are excited by means of exposure to harmonic force varying frequency.

Impedance methods are based on the analysis of changes in mechanical impedance or input acoustic impedance of the surface area of control object that communicates with transmitter [6].

Through transmission methods

Through transmission methods are divided into the amplitude technique, temporal technique, pulse velocity test and multiple amplitude technique.

The amplitude technique is based on the registration of the reduction of the amplitudes of waves passing through a controlled entity due to presence of the defect. Also there are using registration of phase, and wave propagation time, but much less amplitude. There are using longitudinal, shear and normal modes to control the shadow method. When normal waves are used it may use only one side of the object [3]. Its disadvantage is that the method requires a two-way access to the object with a coaxial arrangement of the emitter and receiver and does not determine the depth of the defect [15].

The temporal technique is based on the pulse delay registration, which is caused by an increase in the pulse way to object when bend around the defect, wave type is not changed. This method detects not only internal defects in the casting or the forging, but also to measure its dimensions. Also temporal technique used to detect cracks appearing in reinforced concrete structures when loaded. The occurrence of cracks is recorded more frequently than with other known methods. The method is applicable to control the sleepers at the factory, prestressed concrete bridge spans, etc [18].

Pulse velocity test is based on registration of changes velocities of the spread of dispersed modes of elastic waves in the fault zone and it is used for one-way and two-way access to the controlled object. This method is most often used with the dry converters point contact. When the options considered with one-way speed of zero-order anti-symmetric wave access, which is excited by the transmitter, in the separated layers of defects is less than the defect-free zone. If we consider the two-way access to the defect-free zone of the energy is transmitted longitudinal wave of the defect – waves passing a long way and propagates with lower velocity than the longitudinal waves. When phase changed or travel time increased (only in pulse form) in a controlled product provides information about the defect. This method is used for quality assessment (determining the grade) of concrete. One of the characteristics of the concrete is pronounced direct dependence of the sound velocity on the quality (of dispersion). Therefore, the method has found application in the construction. Also it used for the diagnosis of composite materials [5].

Reflection methods

Echo technique is the most common method. The vibrations are generated by a transducer (i.e. acts as a generator) and reflected from the defect echo signals are received by him (the receiver) in this method. Ease of execution of this method disseminated widely, as for control requires only one transmitter is therefore no need for a device for capturing and combining the
acoustic axes, it is necessary when using two converters. In addition, it is possible to determine the coordinates of the defect accurately, such as the depth and position in the test object (relative to the transducer) using this method. Echo technique is the most commonly used method. When we use different types of waves, using this method solves problems of inspection of forgings, castings, welded joints, many non-metallic materials. Echo method is also used to measure the size of the product. After we measured the bottom of signal arrival time and the knowledge of the velocity of ultrasound in the material, it is possible to determine the thickness of the product with one-way access. If the thickness of the product is unknown, on this signal is possible to measure the speed of ultrasound attenuation estimate and determine them the physical and mechanical properties of materials.

Echo-mirror technique is the most authentic technique at detection of planar vertically oriented defects. Echo-mirror technique is based on using two transducers on one side of the workpiece. It is implemented at the ensounding of the seam with two piezoelectric transducers, which move along the surface near the seam area from one side of seam so as to fix a piezoelectric transducer signal emitted by the other piezoelectric transducer, and twice reflected from the defect and the opposite surface of the article. There are controlled equidistant surfaces products with this technique. And if their thickness is less than 40 mm, it requires special piezoelectric transducers [14; 21].

Delta technique is a variation of the echo-mirror technique, but the mechanism of reflection wave from defect and method of adopting signal are differing. There is ultrasonic energy that is reradiated from defect used in delta technique. When transverse wave falls on the defect it is partly reflected by the mirror, partly transformed into a longitudinal and partly re-emits in the diffracted wave. Transformed longitudinal wave propagates normally to the bottom surface, then reflected from it and fixed by direct piezoelectric transducer. The same piezoelectric transducer will be fixed longitudinal diffracted wave that breaks from the upper tip of the crack and extends vertically upwards [3]. With this method, you can search for specific located defects. This method is very sensitive to the vertically oriented cracks, which is not always possible to identify the usual echo technique.

Diffraction technique works by using two transducers on one side of the part located opposite each other. If a defect has sharp edges (such as cracks), then the fluctuations will be diffracted on the ends of defects and will be reflected in all directions, including toward the receiver. Both the pulse arrival time will be registered with the flaw when the amplitude is sufficient. Both signals from the upper and lower boundaries of the defect will be displayed simultaneously on the screen of the flaw detector. With this information it is possible to accurately determine the conditional defect height. The method is quite versatile, it allows ultrasonic testing of any complexity at the seams, but it requires special equipment to fix the transducers, as well as flaw, capable of operating in this mode. Furthermore, the diffracted signals are sufficiently weak [5].

Reverberation technique analyzes the gradual attenuation in the test object. In the case of a two-layer structure and with the qualitative connection layers, the first layer is to transfer part of the energy in the second, so the reverb will be reduced. Otherwise, multiple reflections will occur from the first layer, the so-called forest. In practice, this method can be used to monitor coupling of different types of welding, for example it is welding with babbitt example cast iron. The main disadvantage of this method is the registration of flaw echoes from the border joining two layers. The cause of these echo signals occur due to the difference in the velocities of elastic vibrations in compound materials and different specific acoustic resistance. For example, permanent echo occurs on the border babbitt-steel quality even in areas of adhesion. Due to the structural features of certain products, quality control of materials reverberation technique may not be possible because of the presence on the screen flaw echo from the connection border [12].
Ultrasonic microscopy uses a higher frequency of the ultrasonic beam input and applies it focus such a way that defects are detected, the dimensions of which do not exceed tenths of a millimeter. A significant improvement of this method consists in the application of transverse waves and surface waves, instead of longitudinal waves. If we compare this method with others, then it has significantly lower demands on the purity of the surface of the object of control [5]. Widespread use of this method in industry is difficult in view of the extremely low productivity of the method. This method can be used for research purposes.

A coherent approach is a kind of echo-pulse method. In this method, the phase of the echo signal clause is used in addition to the main echo parameters: amplitude and time of arrival. Coherent method uses several identical transducers operating in phase. Special converters are also used, such as traveling wave inverter or its modern equivalent – transducer with phased array. Research of applicability of this method to real objects of control has not yet been completed. The method is at the stage of research studies.

Combined methods
In the mirror amplitude technique is a sign of a defect is decreasing of intensity (amplitude) of the ultrasonic wave reflected from the opposite surface of the object. The reflected signal is called the bottom. The method does not require two-way access to the controlled object. It allows you to identify the root defects in butt joints more accurately. This method is resistant to interference. And it applies to products of small thickness with rough surfaced. However, the accuracy of determining the coordinates of the defect is low in this method [2]. According to the technique of performing it relates to methods of reflection and physical control entity (measured signal is twice the previous article in the defect area) it is close to the amplitude technique. In the construction this method used for the control of butt compounds, single rod with a diameter of 20–40 mm reinforcing steel.

Echo amplitude technique analyzes both passing and reflected waves. Echo amplitude technique has been applied in the form of an auxiliary method in the laboratory control of small but important parts. For this technique are used the two antenna arrays which are located on opposite sides of the reflector, by which in a dual scan mode echoes are registered on the three acoustic channels. The first acoustic channel transmits and receives the echo signals of the first grid, the second acoustic channel transmits and receives the echo signals of the second grid, and the third channel is set up so that emits pulses of the first grid and second grid takes echo [4].

Echo-through method is based on the through signals that have experienced double reflection in the product. That is, the two signals are recorded. The first, which once passed through the object. And the second, which is experiencing double reflection in the object [7]. When there is translucent defect, this is corresponds to recorded signals which correspond to reflected waves from the defect and also experiencing reflection from the top and bottom surfaces of products. Large opaque defect detected by the disappearance or severe reduction of the signal, i.e., amplitude technique. It is used to control the plate iron.

Natural oscillations method
These methods are based on the analysis of natural frequencies and damping of elastic oscillations, which are measured in the mode of forced or free oscillations. There are methods of free and forced oscillations.

Free oscillations are excited by short-term exposure to the test object, then the object varies in the absence of external influences. The source of short-term exposure can be any mechanical impact, such as a hammer. Forced vibrations are excited by external periodic influence.

For methods of free and forced oscillations there are exist integral and local methods. The integrated method analyzes the natural frequencies of the product, the vibrating as a whole. The local methods are analyzed fluctuations of its individual sections. These methods are used to determine the elastic objects, measuring small cracks at unilateral access.
Method of natural oscillations is one of the oldest methods of non-destructive testing. The simplest version of it is tapping. And it is widely used for the detection of voids. Lack of tapping is biases due to the human factor – the assessment of inspection results by ear. Currently, the method is improved: subjective indicator (human ear) is replaced by an objective indicator (instrument) [17].

Advantages of natural oscillations over other low-frequency acoustic methods of nondestructive testing (impedance, pulse velocity test and others) are the ability to detect defects at a great depth, control structures from materials with low modulus of elasticity and control structures of materials with high rates of decay (foam rubber) [16].

**Impedance method**

Impedance methods use the dependence impedances products at their elastic vibrations on the parameters of these products and the presence of defects. The impedance method use bending and longitudinal waves.

When using the method of bending wave transducer rod type in the product excites harmonic bending vibrations. In pulse variant of this method in the system drive – the product pulse freely damped oscillations exciting. If the amplitude decreases and the carrier frequency of these oscillations decrease too, it is indicative of a defect [5].

Also, duals converters used instead of the combined converters, which are within a common housing separate emitting and receiving vibrators. The combined converters use frequency up to 8 kHz. But duals converters used pulses with carrier frequencies of 15–35 kHz.

If you take controlled multi-layered structure and excite longitudinal elastic wave of a fixed frequency by means of a flat piezoelectric transducer. Defects will register to the change of the input electrical impedance of the piezoelectric transducer. Impedance is determined by the input acoustic impedance controlled design, which depends on the presence and depth of defects in the connection between the elements. Impedance changes are presented in the form of a point in the complex plane, with the independent nature of the position of the defect. Unlike methods that use bending wave transducer contacted with the product through the contact layer of grease.

Contact impedance method, which is used to control the hardness, mechanical work on an evaluation of the impedance of the contact zone of the diamond indenter drive rod which is pressed to the controlled object with a constant force. Growth elastic mechanical impedance caused reduction of hardness that increases the area of the contact zone. It is noted when the natural frequency of the longitudinal oscillating inverter increased. Frequency is uniquely associated with the measured hardness [5].

Impedance methods are used for quality control of products, for example, to assess the integrity of the welds, glue joints. As well as the impedance method can detect defects in the compounds of multilayer structures made of composite plastics and metals used in various combinations [6].

**Passive acoustic methods**

Analysis of elastic wave oscillations that occur in the test object is the basis of passive acoustic methods.

Passive acoustic methods include vibration diagnostics technique, noise diagnostic technique and the acoustic emission technique.

The most typical method is a passive acoustic emission technique. The essence of this technique of non-destructive testing is to capture and analysis is very weak of elastic oscillations that arise in the development of a solid in it such as cracks defects. Thus, the acoustic emission technique is a passive method. When promoting a crack in the metal (ceramics, glass) elastic energy is released and there are waves of elastic oscillations in the body. These vibrations can be caught, for example, using piezoelectric sensors and to obtain important information about the location of the crack in the part or structure, its size and to monitor its development [8].
Acoustic emission technique has been applied in the diagnosis of building structures. For example: it is used in the quality control of brick masonry, in controlling the quality of flat tiles at different temperatures, when monitoring corrosion of reinforced concrete and in others situations [18].

The vibration diagnostic techniques are analyzed vibration parameters of any particular part or assembly using the contact-type receivers. Vibration diagnostic techniques are different from many other methods for greater versatility, instant response even to minor changes in the state of the controlled object. The variety of the physical nature of vibration and wide frequency range provides highly informative in the process control parameters of the object that are diagnosed. You can reliably determine the technical condition of bearings, gear mechanisms, rotating rotors and more using vibration diagnostic techniques, allowing you to monitor the status of a technical object, the quality of its maintenance and to prevent failures due to the detection of a fault at an early stage of origin of the defect [19].

And when noise diagnostic technique – studied the spectrum of the noise operating mechanism, usually with the help of microphone receivers. There are measured amplitude and frequency characteristics of the noise, which is compared with those of a reference (known defect-free) unit at similar operating objects.

Acoustic methods can be divided into low-frequency and high-frequency, if to take frequency as characteristic. Fluctuations in the audio and low-frequency (up to several tens of kHz) ultrasonic frequency ranges are low frequency. A refers to a high-frequency vibrations in the ultrasonic frequency range the high frequency: typically a few 100 kHz to 20 MHz. High frequency techniques usually called ultrasonic [8].

Application of acoustic non-destructive testing in the diagnosis of buildings and structures

To date, the diagnosis of buildings and facilities used five main methods of acoustic non-destructive testing. There are echo technique, echo-mirror technique mirror, amplitude technique, echo-mirror method, mirror amplitude technique and delta technique. In this method of controlling acoustic echo technique is most frequently used (approximately 90%).

Acoustic methods of nondestructive testing are widely used in the diagnosis of buildings and structures. These methods are used for quality control of concrete and reinforced concrete structures. As an example: there are applications in the diagnosis of pile foundations, strip foundations, foundation slabs. Also, using acoustic methods of control can control the quality of the welded metal joints; check the pipe lines, engineering and communication networks for detecting defects. Another application is to separate structure thickness measurement, with no access to the other side of the structure [9; 10].

The advantages of acoustic non-destructive testing is the high accuracy and speed of research, low cost, safety for humans, the object is not damaged when checking and does not require decommissioning object for diagnostics.

The main problems of acoustic methods of nondestructive testing are the limited information obtained by the defect, the requirement for constant adjustment of the equipment, need a good contact with the surface of the transducer, no visible defects parallel beam, requires trained operators (needs some skill to work with the devices).

But due to the development of computer technology with the time burden on operators would decline. And due to increase in computing power may obtain deeper information. The development of new methods of acoustic non-destructive testing may open up new possibilities in the diagnosis of buildings and structures.

Acoustic non-destructive testing methods are very important in the diagnosis of buildings and structures. This article describes how to work with the methods of acoustic control and the ability to detect defects using these methods, in buildings and structures. Knowledge of and ability to use these methods will improve the operational safety of building structures.
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About the Methodology of Information Ethics Norbert Wiener

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Annotation: the article provides an overview of the work of Norbert Wiener, devoted to problems of social and ethical issues that arise in connection with the introduction of computer and information technologies. It reflected the methodological views of scientists and their contribution to the emergence of information ethics.

Key words: methodology, information technology, information ethics, safety, man.

In most countries of the world “information revolution” greatly changed many aspects of life: trade, employment, healthcare, security, transportation, entertainment, and much more. This means that information and communication technologies (ICT) have influenced from different sides on such fundamental aspects of the human being, as a social, family life, human relations, education, career, freedom and democracy. At this stage of development of society and all the louder more urgent problem of information ethics. One of its components performs computer ethics is the branch of applied ethics that examines and analyzes the social and ethical implications of ICTs.

Over the past few decades, the rapidly developing field of computer and information ethics generated university courses, professors, research centers, conferences, seminars, professional organizations, educational materials, books and magazines.

More specifically, the term “computer ethics” has been used in the past, having a number of different variations. For example, it has been used in traditional Western ethics theories, such as utilitarianism, Kantianism, virtue ethics in relation to those social relations, in which largely involved computers and computer networks. “Computer Ethics” is also used to denote the type of professional ethics, in which computer scientists apply codes of ethics and standards of good practice within the profession. Further, such items as “cyberethics” and “Internet ethics” have been used to denote ethical issues associated with the Internet computer network.
The soil for the study of the above-mentioned phenomena are the work of the great prophet of his time Norbert Wiener (1894–1964), and auxiliary tools to the study of the ethical field, which he himself laid, it can serve as a methodological principles.

In the middle 1940-ies, innovative developments in the field of science and philosophy led to the creation of a new branch of ethics that would later be called “computer ethics” or “information ethics”. The founder of this new philosophical field was an American scientist, a professor of mathematics and engineering Norbert Wiener. During World War II collaboration with scientist colleagues from America and the UK contributed to the development of electronic computers and other new and powerful information technology. Pursuing this joint work, Norbert Wiener and his colleagues have created a new branch of applied science, which has been designated as “cybernetics”. Even at the worst time, when the war came, Wiener foresaw the enormous social and ethical implications of cybernetics, synthesis and computing machinery. He predicted that after the war, the world will undergo a “second industrial revolution” – “Auto era” with “enormous potential for good and for evil”, which will generate an incredible amount of new moral constraints, challenges and opportunities.

When the war ended, Wiener wrote a book “Cybernetics” (1948), in which he described his new branch of applied science and has revealed some of the social and ethical impact of electronic computers on society [16]. Two years later, he published “The use of human rights” (1950) [17], a book in which investigated a number of ethical issues that will be most relevant in connection with the beginning of a more widespread use of computer and information technologies. Just as in the two above-mentioned works, Wiener continues to develop the theme (at the time) the potential ethical issues in the book “The Corporation: God and Golem” (1963) [19], which includes topics not lost its relevance today day: computers and security, computers and unemployment, the duties of computer specialists, computers for people with disabilities, communication networks and the process of globalization, virtual community, telecommuting, synthesis of man and machine, roboethics, artificial intelligence, computers and faith, and many other questions.

The obvious fact that Wiener unquestionably became the creator of a new field of ethics, however, appear to himself as such, he did not consider. As a result, the concept of “computer ethics” or “information ethics” came into use decades later. Despite this, we can say that the scholarly work really became the basis of a strong methodological foundation for modern research in the field of computer and information ethics. Stroke his mind racing ahead of his contemporaries; at the time, many scientists thought it explorer Vitus in the fruits of their ethical fantasies. TW Binh said that Winer himself did not recognize the critical importance of their achievements in the field of ethics; and only a few decades, some of the social and ethical consequences of the impact of information technology that Wiener predicted at the end of the 1940-ies, will become apparent to those of other scientists and society [4, p. 20].

Wiener did research some of the possible impact of ICT on key human values – being, health, freedom, security and opportunity, human capacity, knowledge and happiness. The ideas and methods he used were so severe and extensive that they can be successfully consuming to detect, analyze and solve social and ethical problems associated with all types of information technology, including, for example, computers and information networks; means of broadcasting and communication; Media and Journalism. Binh said that because of the breadth of issues Wiener and applicability of his ideas and methods of all kinds of information technology, the term “information ethics” is the most appropriate name for the new field of ethics, which he founded. The term “computer ethics”, as a rule, is used today to refer to only one of the subsystems range of information ethics issues that gave rise to Wiener [5, p. 6–13].

Trying to identify the methodological bases of the permission of the impact of computer technology on ethics, Wiener lays cybernetic view of the human nature and the nature of society. On this basis, it adopted “the great principles of justice”, which, he believed, are obliged to
follow all of society. These powerful ethical concepts enabled Wiener understand many issues on information ethics.

**Methodology The information ethics Wiener**

Giving his assessment of human flourishing and the principles of justice, Wiener aims to ask questions about “what we do and how we should respond to the new world that confronts us” [3; 12]. He used several methods and strategies to analyze, understand and address social and ethical issues in the coming information age. His book, “The use of human rights” is the most striking proof of that, although many of the theses of this book are frustratingly sketchy. Often controversy Wiener is not always orderly and not always full, often in places where we want it to be strict and pedantic. Wiener uses at least three different ways to address the issues in the field of information ethics. These include:

1. The study of the impact of information technology on the fundamental human values, with an emphasis on the promotion and protection of these values;
2. Identify the ethical issues arising from the implementation of information technologies; then offers solutions to these problems;
3. Proactive search for ways to use information technology to create a better world.

Studying the impact of information technology on the fundamental human values, Wiener thoroughly reflects on ways to protect human values from the harmful effects of the use of information technologies, as well as on ways to promote human values from the standpoint of efficiency of application of these technologies. He talked a lot for example, on the impact of information technology on human happiness and survival. Thus, he warns of the grave dangers of human security, which may occur if the “flirt” with computers is used in military and strategic purposes. He also explored the central role of information feedback mechanisms in the learning process, drawing an analogy with the processes of mechanized human body.

Wiener describes the communication in society as “the cement that binds its fabric” [3, p. 27], and the critical importance of open communication in a democratic society, where “the difference of communication blocks between individuals and classes is not too high”, but freedom is thus strengthened. He noted that, strictly limited and subject to censorship, freedom, thus infringed in fascist and despotic societies, communication between individuals and groups. He also expressed concerns about America’s communications infrastructure in the 1950-ies, as rising costs and complexity of communications technologies weaken democracy, while increasing the benefits of this technology. A series of subsequent scholars discussed the impact of information technologies on democracy, for example, Deborah Johnson in his article “Is the Global Information Infrastructure Technology democratic?” [14].

During the five decades after founded the Wiener information ethics, a number of other thinkers have used his methods to study the effects of information technology on human values. For example, in 1991 the national major scientific conference USA, dedicated to computer technology and human values has clearly formed around this approach. In a keynote speech to the participants of the conference review has been given that it is often too little attention is paid to the effects of new technologies on the development of human values. It was suggested to take a course on the promotion of human values in the era of “computer revolution” by means of information technologies [6, p. 1].

The fruitfulness of the approach of “human values” with respect to information ethics can be seen in a number of recent studies, including the emergence of a new field of research called “the importance of sensory approach to computer design” [7; 9–11]. The most complex and carefully crafted version of this approach to date is presented in the article of Philip Brey “exposing computer ethics” [1].

Identify the ethical issues arising from the implementation of information technologies – the second strategy or methodology that is used by Wiener in information ethics. It was to identify or assumption that has caused ethical issues that give rise to information technology or which
may give rise in the future and then suggest ways to eliminate or minimize these problems. The
clearer and most fully developed example is the Wiener reflections on “the ethical implications
of computerized plants” [17]. In the early 1950-ies, Wiener predicted that the world will soon
see the creation of a “self-winding” with the “ultra-fast computing machine” functions as the
“brain” for the management of production processes and quality control of the production plant.
The computer will be connected to the “artificial sensory organs”, as thermometers and sensors
that allow it to monitor the environmental conditions at the plant, as well as the progress of the
production cycle. There will also be hardware “effectors” which would “act in the outside world”,
functioning as the hands, feet and tools that were used to work on the assembly line. In “Auto
Plant” computer driving the equipment, replace the muscles and sensory organs of workers –
“blue-collar”; while the components of the arguments and calculations of the computer will
replace the “low level of judgment” and the actions of “white collar” – employees: accountants,
office workers and factory librarians. Ultimately, Wiener predicted the possibility of enrichment
of unscrupulous breeders due to laid-off workers and society as a whole.

To prevent such disastrous consequences, Wiener suggested that union leaders, business
executives and public policy makers need to plan and develop ways to deal with these issues
before they occur. Thus, in cases like this, “instead of reducing the responsibility of designers
and organizers, we must significantly increase it, as we are obliged to make it possible for them
to do things they would not have thought to do before” [18]. As a socially active thinker himself
Wiener met with trade union leaders, business leaders and policy makers to discuss new rules
and laws that must be taken to minimize the possible harm resulting from automatic factories.

Somewhat later, scientists in the field of information ethics have developed techniques that
are similar to the above. For example, in the mid 1970-ies, Walter found on their course of
medical ethics at the University, that ethical problems are often compounded by the significant
changes that involve computers. Maner has responded to this problem by creating a new
university course, which he called “Computer Ethics”. Students in this course should have to
identify ethical problems, “by, exacerbated by, or modified under the influence of computer
technologies”, and then from the ethical point of view to analyze these problems with a view to
their resolution or elimination [12; 14].

The most powerful and well developed technique, which is similar to the second Wiener
strategy is the one that James Moore drives his exemplary article “What Is Computer Ethics?”
[13] Referring to Moore, computer technology is so flexible and so “logically malleable” that
they act almost as a “universal tool”. So, it is computer technology made it possible to do things
that would never have been done before, and it was then identified “political” vacuums: Do we
have to do a lot of new things to which computer technology make it possible to touch? Moore
believes that to answer this question, we need to formulate “a new policy for the ethical use of
computer technology”.

Today, the scope of computer ethics knows a lot of cases that illustrate the usefulness of
the approach of the “political vacuum” Moore. Internet, for example, appears an easy way for
students to “build” their coursework using plagiarized material downloaded from the World
Wide Web. As a result, a huge amount to fill the “vacuum Policy”, teachers, librarians and
school teachers now have to contend with the new rules and practices to reduce to a minimum
the plagiarism. Another example is pornography, which lies only with one click on your home
computer. Parents and law enforcement officials face the challenge of the rapid development
of strategies to protect children from the “hard-core porn”, even in the “sanctuary” of their own
homes.

Creating a better world with information technology – third strategy information ethics
Wiener. He regularly wrote in his writings, that this technology can be used both in the name
of good and evil; and the principle of Compassion suggests that people should be promoted as
their interests and the interests of others.
Wiener followed his own counsel and participated in various projects for the development of prosthetic and other devices to solve medical problems. Some of his projects, include, for example, machines that help patients overcome tremor, “artificial light” under the control of a patient’s own CNS and “auditory gloves” to hear the spoken words deaf, converting sounds into tactile sensations. The discussion of such prostheses Wiener raised some important ethical and philosophical questions, e.g., the need for research systems, including both human and mechanical elements [19, p. 75]. So way, Wiener thought about the possibility of a new engineering, which would include the construction of a mixed nature of the system, involving both human and mechanical parts. However, this type of technology is not necessarily limited to the “details” of the human body that we have lost. There are parts of prostheses, which we do not have, and which we have never had [19, p. 76].

Wiener said propeller ship propeller operates like prostheses for people who like “artificial fins” on the tail of a dolphin. Creatures that are composed of human and mechanical parts, working together, can be powerful agents capable of doing much good in the world, but also a lot of evil. These problems of man and machine combinations that Wiener raised in the 1950-ies and early 1960-ies, in many ways similar to modern concerns about “cyborgs.”

The current range of ethical issues is indicated by Wiener as “communication and control”. Developing methodological foundations of cybernetics, he elaborated on the existing information transmission theory, with an equal sign between the concepts of “communication” and “control” is not placed randomly. Wiener expressed the idea that people send messages within a certain system in an attempt to control their environment [15; 17], and identifies a method for transmitting information between people with a way of “communication” of people and mechanisms in order to illustrate this way: human interaction is no different from the functioning of the mechanism, when one of the subjects of the “dialogue” will be given to the team, for example, to complete the task. In such a situation, and a man and a mechanism to execute it. This suggests that when people are “sent” message, they know exactly what it was received as soon as the recipient responds – verbally or nonverbally. To control something was the most productive, the sender is obliged to receive and read the replies from the recipient. In other words, the founder of cybernetics suggests that people are like a machine that is mainly based on the processing of information and the constant desire to control its environmental impact, as well as the environments of those around her. According to Wiener, the society can only be understood through the study of messages and means of communication that belong to it. He believed that in the near future the development of messages and means of communication, messages between man and machines, between machines and man, and between machine and machine will lead to a strengthening of their role in society life [17, p. 16].

The main function of communication, Wiener, is environmental monitoring, in which the subject lives. The researcher argues that the information itself is necessary to refer to the content of what a person receives from the outside in the process of adapting himself and his feelings to the outside world. This idea implies that human communication task is to introduce the specific environment and at the same time striving to influence those aspects of it that are essential to the subject.

Among Cybernetics important goals Wiener defined: 1) language development, and methods that would allow most effectively solve practical communication and control issues in general; 2) identify the right set of ideas and methods by which it would be possible to classify the specific manifestations of communication and control with respect to the set of concepts.

Wiener sees through the prism of the cybernetic theory of society the problem of the control positions and possible failures in the communication system. At the same time, he notes that in its communication system is debugged, adjusted to the ideal form could take the form of a mechanism that could control everything on the planet, even human society. Note that Wiener notes that this technology can be very dangerous, it appear it is in power-hungry and greedy
hands. Fortunately, says the scientist, like the “ideal” is not destined to be due to the complexity and unpredictability of human behavior.

Wiener believed that “Automated Century” the possibility of a communicative network that will be very closely intertwined mechanisms with people grant power of action “from one end of the world to another” – a network that allows you to “be everywhere”. Thus, Wiener not only predicts the establishment in the future of the Internet, but also gives a very real futurist outlook for our generation. Already, there are technologies that can not only broadcast the image and the image anywhere in the world, but also help to perform complex manipulations that can transmit odors or have serious mechanical effects remotely.

This view of the future in which the communication act as very strong “cement” that binds the society is firmly together, serves an important foundation understanding the processes and consequences of globalization. Thus, in the works of Norbert Wiener developed methodological ideas remain relevant to modern researchers, analyzing the possibility of global ethics, global system, the future of the world community or “world government”.

It is difficult to overestimate the contribution of Norbert Wiener in the development of ethical thought XX–XXI centuries. Anticipating his time, he was able to initiate a new direction in applied ethics. The scientist rightly said that no matter what the height of the technology has not risen a modern society, will lead them to the man, and the great task of mankind in the age of vast technological discoveries and the huge flow of information to save its face. Thus the foundation, which laid the Norbert Wiener in his concept of information ethics, will be relevant not only today, but also in the foreseeable future.

References

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For registration of the text does not use special fonts and styles. Roman numerals are denoted by Latin letters.

The text in square brackets indicates the serial number of links in accordance with the list of literature. Illustrations are performed in graphic editors in the form of black and white image files with a resolution of 300x300 dpi in real size printing. All the illustrations are accompanied by captions (do not repeat the phrase, references to figures in the text), including number, name and illustration, if necessary - symbols.

The drawings are executed in accordance with the following requirements:

1) zoom - the smallest (subject to legibility);
2) letters and numerals in the figures in shape and size must comply with the symbols in the text;
3) image size - less than 15x20 cm, only in portrait orientation; standard graphics are not less than 8.5 cm wide;
4) text and symbols are removed from the picture in the text or captions.

Illustrations (charts, tables and figures) may be included in the text file, but, in addition, they should be presented as a separate file with a resolution of 300x300 dpi in real size printing.

Terms and definitions, physical units that are used in the paper must comply with national or international standards.

The formulas should be numbered in parentheses, literary references - in square brackets, subscript notes are issued in the form of footnotes. Formula expression are performed only in the equation editor MathType or Equation Editor. In the formulas, the Latin and the Greek lowercase letters should be typed in italics, while the Greek capital - right. Vectors and matrices should be typed in bold straight; “E” in the value of the exponent - straight light font.

6. Requirements for tables and figures

The text can contain tables, signatures which must be given above the table with width alignment. Making text in tables: single spacing, font 10 Times New Roman.

The text must be given a reference to the figure indicating the number of the figure.

Note. Avoid abbreviations tables, figures and equations (ie Tab. 1, Fig. 2, Eq. 3) in the caption or text. Do not write “in the table above / below” or “in the figure on page 2”, because the position and page number of the table or figure may vary in layout.

All components of the formulas must be made in macro «Microsoft equation» (program Word).

Graphic drawings must be of good quality. If there is a line, the text should be displayed clearly.

The number of tables, figures and formulas are not limited.

Please send files with articles in the format .doc, or else in the publication may not be displayed correctly the drawings and formulas.

7. Literature (sources list)

Bibliography of the unit is the article must be submitted bibliographic references and bibliographies at the end of the material.

References in the text are in parentheses. Sources indicated by author and year (for example, in the case of one author - Muralidharan, 2010, in the case of two authors - Muralidharan and Bor, 2010, in the case of three authors or more - Muralidharan et al., 2010). All sources of bibliography should be cited in the text.

References is made in strict alphabetical order.

Allowed minimum number - 20 sources. When you borrow material from other sources link to this source. All sources of bibliography should be cited in the text.

At least 2-3 sources - is the work published in the last 5-10 years. It is recommended, but not required, to have been the sources, published in English.

Self-citations are not more than 1-2 springs. In accordance with the ethics of scientific publications database Scopus recommends the degree of self-citation in the range of 0-10%.

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Foreign spelling given in brackets, except for references.

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3. Certificate from the place of study (for full-time post-graduate students).

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