



## ПРОСПЕКТ СВОБОДНЫЙ-2016

МЕЖДУНАРОДНАЯ КОНФЕРЕНЦИЯ СТУДЕНТОВ,  
АСПИРАНТОВ И МОЛОДЫХ УЧЁНЫХ

ЭЛЕКТРОННЫЙ СБОРНИК МАТЕРИАЛОВ  
МЕЖДУНАРОДНОЙ КОНФЕРЕНЦИИ СТУДЕНТОВ,  
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## «Research and Globalization»



## **VOLUNTEERING ALL OVER THE WORLD**

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*Financial commercial collage, Krasnoyarsk*

All we ever heard such words as "volunteer", "volunteering". First, we need to address the meaning of these words and their history.

Volunteering - a wide range of activities, including the various forms of mutual assistance on a grant basis.

In accordance with Russian legislation, the volunteers - they are physical persons engaged in charity work in the form of gratuitous works and services (volunteering).[1]

Initially, volunteers were called exclusively volunteer soldiers who received the award for his actions in the form of glory. Associating the word "volunteer" to the public benefit, charitable and selfless activity began with the creation of the last decades of the 19th century, such organizations as the Relief Society, the Salvation Army, and Red Cross Society. In the USSR, the word "volunteer" is practically not used, it is preferred the word volunteer. By the mid-2000s, a request for this kind of activity in the country is obviously formed, began the formation of the first volunteer associations. Since 2010, the government officially announced support for volunteer projects.

Volunteer work not for money, but, nevertheless, he still gets something. This moral satisfaction, respect and the ability to self-realization. Youth, composed of volunteer organizations, gaining experience for future work, implements creativity and leadership skills, meets ambition. All volunteers united by the idea. In humans, there is pride, self-esteem, job satisfaction, the results of its activities.

Most people have a psychological need for communication. Man is important to know that he needed someone, that his work has a real help. Often people who survived the crisis can clearly predict the situation. Instead of anger directed his energy to fight the evil that he himself had once experienced. Way to share feelings with others aimed at helping people.

Volunteers play an important role in society. In today's world there are many problems that can not be solved without the help of volunteers.

For example, volunteering can be shown in key areas such as:

- AIDS prevention;
- promote a healthy lifestyle;
- nature conservation and the preservation of the purity of the environment;
- prevention and control of smoking, alcohol and drug abuse; helping the elderly, the disabled, orphans, the poor, migrants, refugees, the homeless and other people who need material and moral support;
- street landscaping, buildings, green areas;
- help the animals, maintaining reserves and zoos;
- conduct educational conversations with young people to prevent free sex and teenage prostitution;
- online volunteering, an example of which is Wikipedia;
- help in organizing charity concerts and various festivals;
- assist law enforcement agencies, doctors, rescue workers; for example, holding a population survey or search for a lost person in an unfamiliar area; technical support.

Types of volunteering

- There is a classification, according to which the following types of volunteer activities:



- Direction of activity: social, sport, virtual, environmental, construction, agricultural, concert, cultural, educational, office volunteer.
- According to the location of the party's voluntary organization: urban, non-resident and international volunteers.
- According to the types of services provided and work performed: support, transportation, communication with the blind and deaf, care for immobile patients, meeting on sludge station at the airport, the audience service, telephone duty.
- By name event: festival, the Olympic and Paralympic volunteers.
- According to the number of people involved: individual, joint or group volunteering.
- Accessories volunteer to the organization: school, church, corporate, university, orgkomitetovskie volunteers.
- Depending on the type of funding: self-supporting, and subsidy. [2]

Today, there are volunteer organizations in 80 countries. The international volunteer movement consists of many major organizations such as the Salvation Army, Red Cross, the United Nations Volunteers and others. For example, in the IAVE (International Association for Volunteer Effort) - International Association for Volunteer Effort includes more than 90 organizations from Europe, Asia, Africa, Australia and the Americas. These larger organizations have their representatives in the majority of countries, including Russia.

In the Russian Federation, all volunteers are guided in their work by one common principle of "helping people". As an example, "Nastyia" can result in a charitable fund set up in February 2002 on the initiative of citizens of different countries united by the desire to help sick children, with the support and assistance of the Institute of Pediatric Oncology and Hematology RCRC RAMS them. Blokhin. The Foundation aims to improve the quality of diagnosis and treatment of children with cancer, all-round assistance to the families of sick children. [3]

Another example is the Moscow group "Donors - children", which is a completely volunteer association that has no permanent staff or "membership in the society." Volunteers organize study groups in hematology department, children's contests and trips to the theater for the children and parents involved in raising funds to find a bone marrow donor and medicines.

Currently volunteering in Russia, as a rule, it is completely based on the activities of non-profit organizations. However, the activity of volunteers is an important factor in strengthening chelovecheskih values in society; it helps to solve the social problems of specific people. For the further development of volunteering in our country need the state support of this movement, the improvement of relations between authorities at all levels with non-profit organizations, citizens.

Today, in the Krasnoyarsk region has developed and implemented a program of modernization directions of youth policy (Flagship Programme) within existing resources, the necessary administrative measures partnerships.

Programs aimed at the formation of the youth communities and youth non-governmental organizations, to support and promote young people's initiatives to meet current priorities of socio-economic development of the region.

The program works "My territory", "Volunteering", "Historical Memory", "Run after me! Siberia ", " Extreme Sports ", " Robotics and Scientific and Technical Creativity ", " Art Parade ", " KVN ", " You - the entrepreneur ", " Krasnoyarsk regional student teams ", " Association of University Sports ", " Team-2019 "" Volunteers victory. " [4]

I am a member of staff of the flagship program of "team-2019" in Krasnoyarsk Financial and Economic College.



Team-2019 is responsible for the preparation of event volunteers region and attracts students to work on the country's major sporting events - 29y World Winter Universiade-2019.

Volunteers prepared this flagship program, will be able to accompany the major events of the city and the region.

My volunteer experience now cannot be called great, but more importantly, what it means to me. My first and most spectacular event as a volunteer is the Krasnoyarsk Economic Forum 2016 held in Krasnoyarsk on February 18-20. I worked in "the signing of agreements" functional group. My duties included assistance in the signing ceremony (removal and filing folders agreements). This gave me a lot 3 days. I met with many initiative young people gained invaluable experience in dealing with people. In addition, I was invited to the ceremony of awarding the best representatives of the volunteer support of the Krasnoyarsk Economic Forum in 2016 and has been awarding letters of appreciation. This is my volunteer work does not end there, and I try to take part in various events in the city.

Volunteer movement can be compared to a large and happy family. As expected, everyone has their own role and responsibilities of its small, and not clearly defined, and developed over time, it is possible, hence the lightness and ease in communication. In addition, there is nothing more pleasant than the realization that you need someone, you are waiting, you always sincere welcome. I am very happy that I am a member of this family.

#### References

1. Федеральный закон от 11 августа 1995 года N 135-ФЗ "О благотворительной деятельности и благотворительных организациях" (с изменениями согласно ФЗ от 23.12.2010 №383).

2. <http://fb.ru/article/178807/volonterskaya-deyatelnost-napravleniya-volonterskoy-deyatelnosti-v-rossii>

3. <http://ria.ru/spravka/20100521/236982093.html>

4. <http://мымолодые.рф/flagmans>



**THE DEVELOPMENT OF THE POLY CULTURAL COMPETENCE OF STUDENTS AND TEACHERS OF THE UNIVERSITY BY MEANS OF THE INTERCULTURAL EDUCATION PLATFORM (EXPERIENCE OF SibFU)**

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Pedagogical team of the Institute education, psychology and sociology SibFU within two years of implementing the international project TEMPUS ALLMEET («Actions of Lifelong Learning addressing Multicultural Education and Tolerance in Russia»), which is aimed at the development of continuing education, aimed at the formation of multiculturalism in education and tolerance in Russia. Allowing universities to play a key role in the implementation of continuing education on such areas as migration, intercultural education, human rights - the main directions of development of the project.

Krasnoyarsk region is a multinational region: according to the population Russia census in 2010 there are representatives of 159 nationalities. By the end of 2012 in the Krasnoyarsk region acted more than 70 national-cultural associations. In view of their affiliates and centers in the municipalities, the total number of civil society institutions and organizations with an ethnic component reaches two hundreds [5].

The process of formation and development of polycultural competence of the individual is an essential condition for the stability of any region, especially for such a multi-confessional and multi-ethnic, as is the Krasnoyarsk region.

Today the multicultural direction in education is the most topical and relevant. Polycultural competence of the person determines its productive life activity, ability to orient in the various spheres of social and professional life, harmonizes the inner world and relationships with a multicultural society [4].

Analysis of the content polycultural competence described in the scientific and pedagogical papers has shown that the component fullness of polycultural competence is varied. Researchers are unanimous that polycultural competence is a complex combination of knowledge, not only exclusively cultural standards of the target language, similarities and differences of their own and other cultures, but also the skills, experience, qualities and personal abilities.

More than focusing on the challenges, the priority is to establish goals of self-valuing and accepting differences as a maturity factor, developing an historic conscience able to interpret the present from the past, cultivating the dialogue and the operative solidarity. As Galino [3] proposes, intercultural education is an education for universality. In other words, a pedagogical model for the cultural enrichment of citizens is created, deriving from the recognition and respect for diversity, through exchange and dialogue, active and critical participation in a democratic society based on equality, tolerance and solidarity (Sales & Garcia) [7]. Rey adds that the essential role of pedagogical institutions is not the unilateral adaptation of immigrants to the constraints of the host society, but rather interrogating (turning point for learning), listening to the other and educating for local and international solidarity [6].

In order to develop intercultural education, it is needed is to provide educators with intercultural competences. According to Bennett [1], these consist of diverse cognitive, affective, and behavioural skills that support an assertive interaction in varied cultural contexts. It is necessary to promote the sensitivity to intercultural challenges, intercultural

practices, curiosity, and cognitive flexibility and deepen knowledge on cultural shock, prejudice, racism, differences in values, and other emerging challenges within the intercultural projects.

One of the objectives of the international project TEMPUS ALLMEET is the development of polycultural competence of students and teachers of the Siberian Federal University.

Organization of multicultural education and the development of polycultural competence of students and teachers at the Institute of Education, Psychology and Sociology SibFU is based on the basic principles of the organization of multicultural education in Europe.

The basis of construction of intercultural education policy in Europe is a «White Paper on Intercultural Dialogue» of the Council of Europe, declaring the harmonization of relations between people of different nationalities and cultures [10]. The aims of intercultural education in Europe, are included in the «four educational pillars for XXI century» (Delors, 1996) [2]:

1. to learn how to know;
2. to learn how to do;
3. to learn how to live together;
4. to learn how to be.

The key sectors of the curriculum for the development of intercultural skills are the democratic citizenship education and the knowledge of languages and history.

During the project activities SibFU team studied the international experience of countries such as Italy, the Netherlands, Portugal, United Kingdom. Team members visited various educational organizations of these countries, which apply multicultural education, various centers for work with migrants and representatives of different cultures and nationalities.

Under the polycultural competence we understand the integrative quality of a person, including a system of multicultural knowledge, abilities, skills, interests, motivation and values, intercultural experience and social norms and rules that are necessary for human existence in the contemporary multicultural society. Polycultural competence necessary for the person to solve tasks in the professional field and a positive interaction with the representatives of different cultures [8].

Intercultural Education Platform (IEP) was created by SibFU team members to address the project objectives and the development of polycultural competence of students and teachers. The platform is based on the principles of openness and organization of education in the concept of individual lifelong learning.

The main activities implemented in the frameworks of IEP:

1. Monitoring of issues related to migration, interethnic and interreligious relations.
2. Collection and analysis of data, information about migration
3. Seminars and workshops dedicated to the practice and methods of cultural equality.
4. Courses, training for the target groups of the project (students, teachers, representatives of national diasporas, government and municipal officers.
5. Organization of public forums, round tables aimed at forming of positive attitude towards people of other religions and cultures.
6. Implementation of the various multicultural events, competitions, festivals.

IEP consists of several interactive spaces and systems of functional connections between them. Each interactive space is organized as a medium of individuals communication of educational process, which directly implements the specific activities listed above.

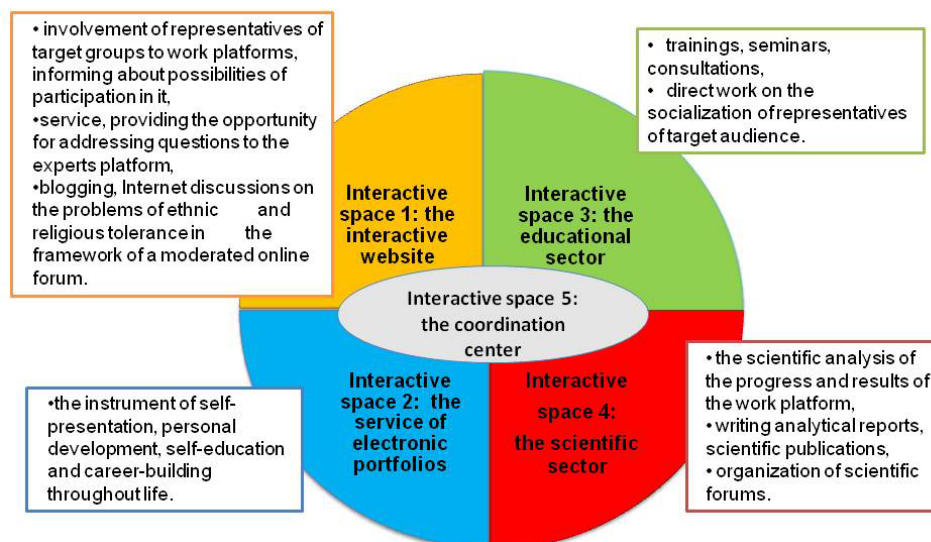
Interactive spaces may be arranged as in network the Internet, and in the format of interactions of individuals of educational process.





The first version can be realized through using resources the web educational platform, social networking, on-line consultation, etc. The second version interactive space can be arranged through the direct interaction between the subjects of the educational process - lectures, workshops, seminars, courses, etc. Each interactive space may represent one or more functions associated with implementation of the main activities of IEP.

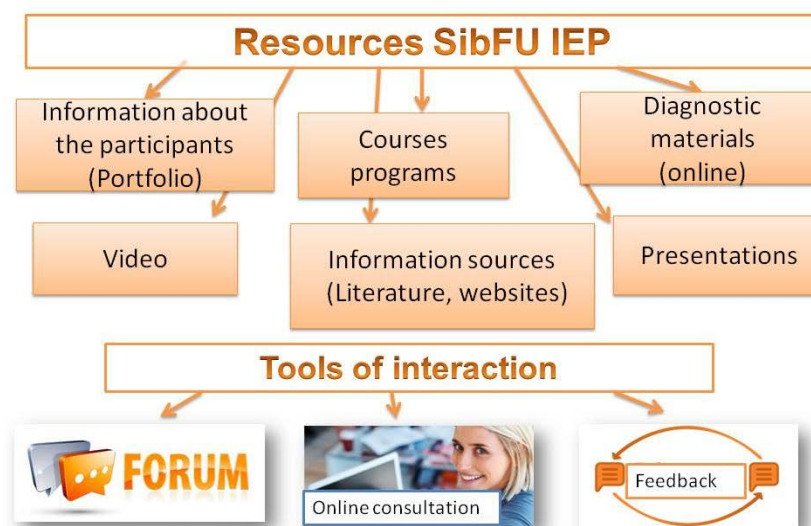
There is an example configuration of IEP, consisting of five interactive spaces:



**Image 1. Configuration of IEP, consisting of five interactive spaces**

Intercultural education platform implements additional courses for the development of skills, abilities and experience of intercultural interaction. For support and accompany of these courses used intercultural web platform created by the project team [9].

Map of web-platform resources for supporting intercultural education (<http://tempus-allmeet.ipps.sfu-kras.ru>):



**Image 2. Resources of web-platform of IEP**

Additional courses (for example) are implemented in the framework of the platform:

1. Training «Open school – from tolerance – to self-realization» for teachers.
2. Training «Development of intercultural communication in the context of lifelong learning (e-portfolio, VPL)» for trainers.
3. Workshop «Contemporary International Relations: the context of the development of tolerance» for students.
4. «Polycultural formation» for students.

5. Training «Conflict management in multicultural and interpersonal interaction» for government and municipals officers, representatives of diaspora and national autonomies.

6. Workshop «IEP opportunities for PL2S» for government and municipals officers, representatives of diaspora and national autonomies, teachers.

7. Workshop «Assesment of personal and professional experience, goal setting and planning in lifelong learning, development.career» for teachers.

The team Tempus ALLMEET for estimating of formation of the level of tolerance during the courses applies the author's technique «Express-based questionnaire for studying the dynamics of the verbal component of tolerance» (Trufanov Dmitriy)

Implementation work of th Intercultural educational platform will allow to realize the main goal - the development of polycultural competence of students, teachers and all interested participants. Also, the platform resources can be used by teachers for the implementation of multicultural education in schools, universities, etc. Content IEP is constantly being updated, supplemented by a teachers and students.

### References:

1. Bennett, J. M. (2011). Developing intercultural competence for international education faculty and staff. 2011 AIEA CONFERENCE, February 20-23, 2011 San Francisco, CA, USA Association of International Education Administrators, retrieved from [www.aieaworld.org](http://www.aieaworld.org).

2. Delors, J. (1996). *Learning: The treasure within*. Report to UNESCO of the International Commission on Education for the Twenty-first Century. URL: <http://www.ifap.ru/library/book201.pdf> (date of the application: 01.04.2016).

3. Galino, A. (1990). La educación intercultural. Origenes y enfoques. In A. Galino & A. Escribano. La educación intercultural en el enfoque y desarrollo del curriculum. Madrid: Narcea, pp. 7-22.

4. Novikova I.A. Formirovaniye i razvitiye polikulturnoy kompetentnosti pedagogicheskikh rabotnikov v postdiplomnom obrazovanii // Mezhdunarodnyy nauchno-issledovatel'skiy zhurnal. Ekaterinburg. – 2015. – № 10 (41) Chast 5. – S. 39 -42.

5. Rafikov R.G. Strategiya gosudarstvennoy natsionalnoy politiki Rossiyskoy Federatsii i instituty grazhdanskogo obshchestva Krasnoyarskogo kraya // Obshchestvenno-prosvetitel'skoye dvizheniye v Rossii i Krasnoyarskom kraye: problemy i perspektivy: sbornik materialov nauchno-prakticheskoy konferentsii 12 dekabrya 2012 goda. – Krasnoyarsk: Filial NOU VPO «Sankt-Peterburgskiy institut vneshneekonomicheskikh svyazey. ekonomiki i prava» v g. Krasnoyarske. 2012. S. 30-36.

6. Rey, M. (1992). La escuela y la migración en Europa: Complejidad y perspectivas. In M. Siguan (Coord.). La escuela y la migración en la Europa de los 90. Barcelona: ICE de la Universitat de Barcelona e Editorial Horsori, pp. 13-24.

7. Sales, A. & García, R. (1997). Programas de educación intercultural. Bilbao: Desclée De Brouwer.

8. The development of polycultural competence of students and teachers of the university by means of eportfolio on the basis of the intercultural education platform. Smolyaninova O.G., Trufanov D.O. [Abstract] *6th International Conference on Education and New Learning Technologies, July 7th-9th, 2014 — Barcelona, Spain. — Pp.6414-6417.*

9. Website IEP the web educational platform IEPS SibFU URL: <http://tempus-allmeet.ipps.sfu-kras.ru>

10. White Paper on Intercultural Dialogue. "Living together as equals in dignity." Approved by the Foreign Ministers of the Council of Europe member states at the 118th session of the Committee of Ministers, Strasbourg, 7 May 2008. [http://www.rus-eu-culture.ru/files/images/White\\_paper\\_2.pdf](http://www.rus-eu-culture.ru/files/images/White_paper_2.pdf)



## **MEDIA AS A WAY OF EXPOSURE**

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Our pace of life is rising in last years. It is because we are actively developing the media sphere. People can get a lot of information easily and as soon as they need it. It affects on people's point of view and on their next steps. So, it's easy to expose on people's mind through media. We do not know exactly what happens in other countries, but we can know about some news from TV and newspapers. But is it true?

Alvin Toffler wrote a book about this ability of media to expose on people's mind. It is "Metamorphosis of power". Toffler said that people nowadays have an opportunity to get almost all information they need. A temporary space is blurred and we can get to know everything as soon as we want. But there are some problems with safety and quality of information. Although the main thing the author wanted to tell is about power which you can get with information. So, if you will filtrate an information and give only news you want people know, you take public opinion under your control.

One more interesting book about this topic is "Social space and symbolic power" written by French sociologist Pierre Bourdieu. At this book author firstly said about symbolic power which can make a lot. He even wrote: "We can now examine under what conditions a symbolic power can become a power of constitution". And another book written by the same author is "About television and journalism". Pierre Bourdieu gives us more details here about media as symbol power. Author thinks that we are able to change the world if we have this power, because we can change the images in the minds of individuals. This power carried by journalists' words, so it does not show the symbols. It shows their understanding. Pierre Bourdieu also said about the main conditions for spreading an information is symbolic capital. Firstly, it is when the public trust journalist. And secondly it is adequate reflection of reality.

So, if journalist knows about the power he has, of course, he will use it. We can see this using at everyday life. There are many TV channels, radio stations and newspapers around us. And we usually believe it, because we can not know exactly what happened in other parts of the world.

I can give an example how do people in America expose on society's mind. "The daily show with Jon Stewart". This American TV show became more popular in Russia after an episode about falling of meteorite in Chelyabinsk. Now I want you to look at that episode more attentant. I wrote here some parts and details which were more interesting as for me from the episode.

1. No great loss without some small gain– Russians at least a little warmed up. Emcee confirms the stereotypical thing about endless winter. Of course, the joke is imprinted in the subconscious of the audience.

2. The author proposes to watch the video with the original sound, but the driver is going in silence. So, he takes one person as an example and shows how Russians are cold-blooded.

3. After reviewing a compilation of recordings from dashboard cameras speaker concluded that Russians are just crazy in everyday life. Of course, some of the audience will continue to think this way. You can not blame the authors of the script in such a submission. It's just a show, the content of which was taken from the Internet. Then, for example, we see a fragment of the recording, where is showed the conflict of drivers. They go out with lumbers and a man with an ax appears. We should not be surprised that other people will image us as a

violent people after the publication of these records by the Russians. But, fortunately, the conflict on the recording ended peacefully.

4. There are fortitude and indifference again. Speaker notices that the Russian can not be surprised by helicopters, fighter jets and even tanks on the road. It is not only about the people. Even cows after their van were overturned, just stood up calmly.

5. The episode ends with lots of videos from dashboard cameras and a speech about America which is not so yet. These things leave an imprint in the subconscious of audience. It all because we take a video and download it on Internet, than screenwriters filtrate it and add some jokes. Everything sounds really earnestly.

I didn't make any statistics, I just tried to analyze one of the episodes. But you can clearly see how easily this show can influence on people even without any statistics. Don't forget that image of our country depends on things like that. I'm just trying to say that you should use different information carefully and also should pay your attention to the fact that every word from mass media can easily change people's minds.

### References

1. Тоффлер Э. Метаморфозы власти: Пер. с англ. / Э. Тоффлер. — М.: ООО «Издательство АСТ», 2003. — 669, [3] с. — (Philosophy). [http://yanko.lib.ru/books/cultur/toffler-power\\_shift-ru-1.pdf](http://yanko.lib.ru/books/cultur/toffler-power_shift-ru-1.pdf)
2. “Social Space and Symbolic Power” Pierre Bourdieu Sociological Theory, Vol. 7, No. 1. (Spring, 1989), pp. 14-25. <http://www.soc.ucsb.edu/ct/pages/JWM/Syllabi/Bourdieu/SocSpaceSPowr>
3. Pierre Bourdieu “About television and journalism”. <http://fanread.ru/book/10129080/?page=6>
4. The daily show with Jon Stewart. How I meteored your motherland. <http://www.cc.com/video-clips/1stf5e/the-daily-show-with-jon-stewart-how-i-meteor-ed-your-motherland>



## **PLANE CRASH: COMMON CAUSES AND WAYS TO PREVENT**

**D. Fatkulina**

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There are many different modes of transport, but the most popular is the plane nowadays. It's main advantage is speed. But, unfortunately, it is not a safe way to travel. One fall can be lost a lot of people. This is a very topical problem of our time. It is important to understand why it happens and how to prevent falling.

Formally crash can happen due human factors, technical refusal. It is also possible that the cause is not set.

The aircraft is a big powerful machine. It would seem that it can't break anything, but a small bird is able to damage the plane. It can get into the engine thereby breaking it. The bird can damage skin of the aircraft. These creatures are a serious problem.

The plane surrounded by the birds on picture 1.



*Picture 1–The plane surrounded by birds*

There have been cases when the guilt of the crash was open door. One day after taking off in an airplane opened the luggage compartment. After that there was a complete cabin depressurization. This led to the imminent death of people on board. To avoid such incidents cost ways to strengthen the door fastener in position. It locks automatically add the ones that can be closed from inside the cabin.

Also, very often one of the reasons is the desire to save money. Everyone knows that aircraft maintenance is expensive. Many dishonest people trying to make in this case. I know the plane crash, which happened only due to the fact that the plane was not treated with anti-freezing liquid. To avoid many technical problems, do not neglect full inspection of the aircraft before take-off.

In addition, the cause of the crash could be the age of the ship. It is important to take into account the service life of the aircraft. Unfortunately, due to the frequent lack of new resources, airlines are forced to use the old vessel.

Unfortunately, the equipment may malfunction. This is especially true for orienting devices. Most likely this problem can be solved as follows duplicating all equipment. If the readings are different, it will be a wake-up call for the pilot. He may be able to avert the crash.

Another important fact is the state of the pilots. What kind of security can there be if the driver is drunk. Unfortunately, such cases were already. So, I believe that it is necessary to check the status of pilots before every flight. Also, the pilot may be mentally ill. More recently, there was an accident. One of the drivers got out of the cab. The second closed cabin inside and directed the plane into the mountain. After that all the people were killed. This situation proves once again that it is necessary to check pilots.

The aircraft is very important to observe the load. in 1995 in Angola immediately after takeoff the plane crashed because of this. How then turned out, it was at forty more than it was installed passenger seats. The plane just could not stand being overweight. It is therefore necessary to abide by all the rules.

Strangely enough presence of the stranger in a cabin can serve as the reason of plane crash. In 1994 the plane of Aeroflot has crashed in the Kemerovo region. One of pilots has put the son on the place. The kid has incidentally disconnected the autopilot. Pilots have very late noticed it. They tried to return control over plane but it has appeared it is impossible. The plane has crashed. I consider that pilots have to understand that bear responsibility for lives of other people. They shouldn't let anybody to themselves in a cabin.

Weather conditions are important. Lightning is dangerous for plane. It may break all devices. To avoid this, it is necessary to install lightning rods on a plane longer.

Plane and lightning on picture 2



*Picture 1 –Plane and lightning*

After all, in the fall of aircraft killed a large number of people. But fortunately this happens very rarely. The chance to die in a plane crash is only one hundred thousandth. So do not be afraid of flying. Enjoy every moment.

## References

1. Plane crash in Russia since 1991[Electronic resource]. Mode of access: [http://ru.wikipedia.org/wiki/Авиакатастрофы\\_в\\_России\\_с\\_1991\\_года](http://ru.wikipedia.org/wiki/Авиакатастрофы_в_России_с_1991_года)
2. Reasons of accidents of aircrafts [Electronic resource]. Mode of access: [http://olymp.as-club.ru/publ/arkhiv\\_rabot/odinnadcataja\\_olimpiada\\_2013\\_14\\_uch\\_god/prichiny\\_katastrof\\_vozdushnykh\\_sudov/32-1-0-946](http://olymp.as-club.ru/publ/arkhiv_rabot/odinnadcataja_olimpiada_2013_14_uch_god/prichiny_katastrof_vozdushnykh_sudov/32-1-0-946)
3. The most common causes of plane crashes[Electronic resource]. Mode of access: <http://mir24.tv/news/world/12288308>

## SOLAR SYSTEM EXPLORATION AS A PART OF NATURAL HUMAN CIVILIZATION PROGRESS

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Humanity has existed for over 200 thousand years. Much on Earth has been studied. The next step should be the exploration of outer space. Human nature involves the development, perpetual life motion, which is impossible without leaving of the usual habitat and conquering the unknown.

The world population is growing, and with it increasing consumption. Today the ratio between the amount of extracted resources in relation to recoverable is 1.6, according to GFN. Taking into account the growth of consumption, the UN suggests that by 2030, considering ratio may rise to 2. Obviously, if the growth rate of production or restore does not change, mankind will face problems of life. Probably there are three kinds of task on this problematic which can be formulated in the form of questions as follows:

- How to change the level of expenditure/renewability?
- How to increase reserve?
- How to optimize the technology for the extraction/recovery?

This article discusses one solution to the tasks of increasing mineral reserves by mining them in space. The article will be considered transport capacity of mankind and will be evaluated the space fields.

First of all, it is necessary **evaluating** transport capability. At the moment the most advanced in this area is the development of Russian scientists – nuclear power ion engines (NPIE) megawatt class.

NPIE is a propulsion system of the spacecraft, including its onboard systems, such as:

- Electric rocket engine (ERE);
- Power supply system, provided by the nuclear reactor;
- System storage and supply of the working fluid (fuel);
- Automatic operation and **control**.

A nuclear reactor produces energy for the ERE, which creates a sparse plasma, pulls the ions that then pass the accelerating potential difference. According to the Third law of Newton spacecraft moves opposite to the trajectory of the ions.

Fuel for the engine is the dioxide or carbide of uranium with high enrichment and as a consequence light weight, with the same amount of energy. The engine design allows you to maneuver and accelerated, and the service life is over 100 thousand hours.

On 2018 scheduled launch of the spacecraft on the basis of the megawatt class NPIE to Mars. According to the developers, path in one direction is no more 1.5 months. The distance to Mars at launch will be about 58 million km. Resorting to trivial calculation, you can find the approximate average speed:

$$v = \frac{S}{t}; v = \frac{58 \cdot 10^6}{1,5 \cdot 30 \cdot 24} = 53,7 \cdot 10^3 \text{ km/h(1)}$$

From here easy to calculate the maximum flight range:

$$S = vt; S = 53,7 \cdot 10^3 \cdot 1 \cdot 10^5 = 53,7 \cdot 10^8 \text{ km} = 5,37 \text{ billion km(2)}$$

When choosing the ways and objects of development necessary first to define the limits of movement. On the basis of calculations by formula (2), the last point of the flight, with the possibility of return is the neighborhood of Uranus (the minimum distance to the Earth is 2.57 billion km). The maximum flying range comparable with the distance to the



Kuiper belt (the minimum distance from Pluto to the Earth is 4.3 billion km). Quite beyond the Solar system, without additional resources, is impossible. The article will consider only objects that are part of the ring of Uranus, because **repair service** of the spacecraft in space at the moment is not possible.

The space from the Sun to Uranus is filled with a huge number of cosmic bodies such as planets, asteroids, satellites and comets. The latter does not represent a serious value due to their composition. Considering the planet, should be taken of the climatic conditions, the gravity and depth of fossil. Venus, Uranus and Neptune have aggressive atmosphere. Jupiter and Saturn have not solid surface. Suitable for development remain Mercury and Mars, as well as some planetary satellites. Much more suitable than they can do the terraforming process, which modifies the climatic conditions of cosmic bodies. The Possibility of such a process implies the availability of technology to move in space massive objects, such as asteroids and comets. Most suitable for terraforming the planet is Mars, but even here, the melting polar caps, with the release of CO<sub>2</sub> to increase atmospheric density, is a few hundred years. While the atmosphere will be suitable for a person will have tens of thousands of years. Moreover, using only the earth's resources, this process is impossible.

Solution of the problem, and also problems terraforming can become asteroids and meteoroids. Their main difference is in the size: asteroids – 30 m - 1000 km; for meteoroids – 100 m-30m. According to the David J. Tholen classification there are three major groups of these objects:

- C-group. Carbon Asteroids contain organic carbon, phosphorous, large quantities of water and other substances, usable as fertilizer;
- S-group. Silicon asteroids;
- X-group. Objects with high metal content.

Mainly they are concentrated in the asteroid belt, located between Mars and Jupiter, at a maximum distance of 389 million km. Considering the maximum range of flight the spacecraft and variety of sizes of asteroids, one of them can be put into Earth orbit followed by a landing in uninhabited areas of the planet.

I believe that technology and human knowledge about the cosmos has reached the required degree of development for the development and parallel research. In my opinion the solution of this problem should begin with moving the asteroids. As for the economic side of the issue, you must change unnecessarily politicized the concept of value on a more objective characterization of the resource, based on the evaluation of reserves and the cost of resources required for its production. This is necessary because state paradigm of the planet hampered the development of the space sector. Space industry should be regulated by whole of mankind, as a species, because in the scale of the cosmos humanity is too small to afford to be divided.

### References

1. Joseph Jacobsen Sustainable Business and Industry: Designing and Operating for Social and Environmental Responsibility ACQ Quality Press Milwaukee, Wisconsin 2011, Page 50
2. HOW DO WE TERRAFORM MARS? [Electronic resource] Access mode: <http://www.universetoday.com/113346/how-do-we-terraform-mars/>
3. Ядерная энергодвигательная установка мегаваттного класса [Electronicresource] Access mode: [https://ru.wikipedia.org/wiki/Ядерная\\_энергодвигательная\\_установка\\_мегаваттного\\_класса](https://ru.wikipedia.org/wiki/Ядерная_энергодвигательная_установка_мегаваттного_класса)
4. Спектральные классы астероидов [Electronicresource] Access mode: [https://ru.wikipedia.org/wiki/Спектральные\\_классы\\_астероидов](https://ru.wikipedia.org/wiki/Спектральные_классы_астероидов)





5. Кириенко: космический корабль с ядерным двигателем долетит до Марса за полтора месяца [Electronicresource] Accessmode: <http://tass.ru/kosmos/2711628>



## GLOBALISATION AS A PROCESS OF A NEW-WORLD CREATION

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In the modern society, globalisation has been dominating across the most discussed issues around the world. This is the phenomenon, many individuals feel associated with, as a result of the inter-flow of the globalisation concept within a wide range of different social spheres, such as economical, political and public contexts. However, what is actually meant by the term “globalisation” and why this issue happens to be a trigger for debates across the globe? In this research, I am attempting to address the main aspects of globalisation and present the approaches this concept may be explained through.

To start with, it is important to mention that globalisation is to be considered as a process rather than as a constant concept. This process leads to a new-world creation through a shift towards the increased level of integrations with a free-market economic system and removed barriers between the countries in hope of achieving the common goal of a stable economic growth and development. The term “new-world” implies a modern form of society, which significantly differs from the historical understanding of the world. The diffusion of ideologies, modification of norms and values, elimination of barriers and creation of one global system, which members are closely interacted within, characterizes the contemporary state of society. In contrast, the olden days were very different. Before the technological progress, there were a strict separation of the states and much less trade flows. From the sociological perspective, the traditions and norms, suggested by the society, were indisputable and highly valued.

As it is a process, which passes through all of the measures of modern society, the most appropriate way of exploring globalisation is through the investigation of political, economical and social aspects of life and how those are linked together.

One of the main aspects of globalisation – economical – may be enlightened through the study of capitalistic theories and ideas. According to Marxism, economic relations are the basis of all the processes occurring in the society (Marx et al. 1962, p. 488). Therefore, it is possible to conclude that history of globalisation starts with the expansion of capitalistic ideas and attitudes – the freedom of labour mobility and the desire for the maximization of the profit. The process of globalisation became extra-noticeable in 1980s. The rational reasoning for this is the spread of advanced technological inventions, such as Internet and communication devices. This has opened workers for the wider basin of better opportunities, such as higher wages or benefits, and has increased the overall levels of labour mobility across the globe. So, one of the methods is to reallocate the labour in the countries with the lower average labour costs, such as China, India or Pakistan (eg. call centers, manufacturing). The spread of multinational corporations, which are definitely to be identified as a feature of a new world, also may be explained through the notions of capitalism – in hope of maximizing the profit (Hubbard et al. 2015, p.236), it is essential to reduce the costs of inputs, which is labour considered to be a part of.

Another part of economical aspect to be discussed is a liberalization of trade flows between the countries. Referring to the rule of comparative advantage (Borland 2013, p. 122), countries start gaining more profit through the specialization of the goods produced and trading, rather than relying on their own resources. This results in the increased trade flows, removal of barriers and introduction of intra- and inter-regional organizations or trade blocks (eg. EU, APEC, NAFTA), which allow free flows of capital and labour between the member-

countries. However, some economists argue that the emergence of those organizations lead to trade divergence (Riley 2014, p. 33), as countries prefer to trade with other member-states of the same association (more benefits to be received), thus giving them more opportunities to develop their national economies. Often, those organizations consist of already advanced economies, but lacks the third world countries. This supports the idea of Marx, that the dominant ideology serves the ruling class's interests. "The ideas of the ruling class are in every epoch the ruling ideas" (Marx & Engels 1970 p.64). In hope of increasing the profit revenue, it is worthwhile to avoid trading with the developing countries, as the quality of production is relatively weak, the price may be higher and the time taken is longer, due to the lack of technological advances. So, globalisation, from an economic perspective, has a little effect on the third world countries.

Next aspect, which I would like to put under the discussion, is a political side of it. Comparing to the past, when each state had a strong sense of sovereignty and would be mostly independent, modern political situation is different. As states do depend on the levels of interaction between them, it is more appropriate to analyze it at the global system and sub-system (regional) levels. A variety of regulatory organizations were invented in hope of controlling those interactions through the establishment of universal international law. Examples, at the global system level, are WTO, International Courte of Justice World Bank, and IMF. Those international institutions are essential, as they focus on the stable international relations, controlling the balance of power and concerned with justice, development and rights (Baylis et al. 2014, p. 515). However, the global political arena is still considered to be under the anarchy (Hans 2005, p. 154), as there is no chief person or organization, which could imply a universal regime for the whole world. From the realistic perspective, it is impossible to have one, as it causes disputes and arguments to choose who is going to become a member. So, at the political level, globalisation has mostly negative sides. Other disadvantages include the overload of information by the independent media. Governments try to control the level of information transparency, but the process of globalisation complicates this task. This results in the all issues, such as terrorism or domestic crimes, to be revealed and put under the public's considerations and discussions.

Globalisation also had an effect on the sociological aspect of life. As the world has experienced a significant modification, the social order has also reflexively changed. Before the globalisation stepped into place, as it was mentioned above, traditions were highly valued and the values were shared across the smaller groups of societies, such as between the members of the same cultural background or same social status. This was the result of a high dependence on others. Family structure could be brought as a valid example, as family is "an essential part of the social order in that it adapted every individual to conform to authority"(Van Krieken et al. 2014, p. 107). A typical family used to consist of two parents and many children. As the children grow up, they were considered as a part of domestic labour(Van Krieken et al. 2014, p. 107) in order to maintain a certain level of living standards within the family. Due to globalisation, this ideology has disappeared and now individualism dominates. Risen independence of individuals is a result of that person does not need a support from the outer society to be able to secure and maintain their life standards. Capitalism and the desire for the profit also have an impact of risen egoism (Murphy 2007, p.135). Thus, a connection between people are no longer that strong as it was before.

Nowadays, nothing can be associated with the "typical family" term. Family diversity, which has arisen through the spread of information, change in norms and migration, is manifested through the appearance of different family types, such same-sex and single-parent families(Van Krieken et al. 2014, p. 116). Another family structure, which is considered to be relatively new, is partners from different cultural backgrounds. This is one of the most evident



consequences of liberalization of barriers between the countries and cultures. Mixed ideologies and traditions are the signs of new-world structure.

In conclusion, globalisation has a significant role in a new-world establishment. All of the spheres of the modern society, including economical, political and social, are influenced and modified over time. This was inevitable, because of the increased inter-state and inter-sphere connections. So, contemporary world can be considered as being a global society, which is formed out of different unique groups constantly interacting with each other. Thus, adoption and sharing of similar values, norms and strategies as well as blurring of the barriers are the characteristics of the new-world.

#### Reference list

1. Baylis, J, Smith, S & Owens, P 2014, *The globalization of world politics*, 6<sup>th</sup> edn, Oxford University Press, Oxford, United Kingdom.
2. Borland, J 2013, *Microeconomics: Case Studies and Applications*, 2<sup>nd</sup> edn, Cengage Learning, South Melbourne, VIC.
3. Hans, JM 2005, *Politics Among Nations*, McGraw Hill, New York, NY.
4. Hubbard, RG, Garnett AM, Lewis, P & O'Brien, AP 2015, *Microeconomics*, 3<sup>rd</sup> edn, Pearson Australia, Frenchs Forest, NSW.
5. Marx, K & Engels, F 1951, *Selected Works*, Vol. 1, Foreign Languages Publishing House, Moscow.
6. Murphy, RP 2007, *The Politically Incorrect Guide to Capitalism*, Regnery Publishing, Washington, DC.
7. Van Krieken, R, Habibis, D, Smith, S, Hutchins, B, Martin, G & Maton, K 2014, *Sociology*, 5<sup>th</sup> edn, Pearson Australia, Frenchs Forest, NSW.
8. Riley, T 2014, *Year 12 Economics*, 15<sup>th</sup> edn, Tim Riley Publications, Dee Why, NSW.



**CHALLENGES OF FRESH WATER SHORTAGE****Kharakhonova O.V,****Language supervisor candidate of Philological Sciences Gavrulina L. E.***Siberian Federal University*

The paper is devoted to a contemporary issue of global modern economy – fresh water shortage. Water scarcity is an abstract concept to many and a stark reality for others. It is the result of myriad environmental, political, economic, and social forces. The problem of water scarcity is a growing one. As more people put ever-increasing demands on limited supplies, the cost and effort to build or even maintain access to water will increase. And water's importance to political and social stability will only grow with the crisis. It's hard for most of us to imagine that clean, safe water is not something that can be taken for granted. But, in the developing world, finding a reliable source of safe water is often time-consuming and expensive. This is known as economic scarcity. Water can be found...it simply requires more resources to do it. In other areas, the lack of water is a more profound problem. The phenomenon when there simply isn't enough water is known as physical scarcity. Freshwater makes up a very small fraction of all water on the planet. While nearly 70 percent of the world is covered by water, only 2.5 percent of it is fresh. The rest is saline and ocean-based. Even then, just 1 percent of our freshwater is easily accessible, with much of it trapped in glaciers and snowfields. In essence, only 0.007 percent of the planet's water is available to fuel and feed its 6.8 billion people.

Wherever we are, people need water to survive. Not only the human body has 80 percent of water, the resource is also essential for producing food, clothing, and computers, moving our waste stream, and keeping us and the environment healthy. Unfortunately, humans have proved to be inefficient water users. (The average hamburger takes 2,400 liters, or 630 gallons, of water to produce, and many water-intensive crops, such as cotton, are grown in arid regions). According to the United Nations, water use has grown at more than twice the rate of population increase in the last century. By 2025, an estimated 1.8 billion people will live in areas plagued by water scarcity, with two-thirds of the world's population living in water-stressed regions as a result of use, growth, and climate change.

Currently in the world there is The Water Project, Inc. which is a non-profit organization unlocking human potential by providing reliable water projects to communities in sub-Saharan Africa who suffer needlessly from a lack of access to clean water and proper sanitation. For over seven years, they have been helping communities gain access to clean, safe water by providing training, expertise and financial support for water project construction through our staff and implementing partners.

**Freshwater hero: Sandra Postel**

Sandra Postel, founder of the Global Water Policy Project, is recognized as one of the world's most respected authorities on freshwater issues and is hailed for her "inspiring, innovative, and practical approach" to promoting the preservation and sustainable use of Earth's freshwater. She is a Freshwater Fellow at National Geographic and co-creator of Change the Course, a national freshwater conservation and restoration campaign.

For more than 25 years, Postel has lectured, taught, and written prolifically on the geography of water stress and the implications for food and agriculture, rivers and wetlands, and regional peace and security. She views the world through a water lens and is often asked to provide the "big picture" in her talks—from the likely impacts of climate change on water supplies and of dams on freshwater biodiversity to groundwater depletion, water wars, food



security, and the critical importance of conservation and better management to solving the world's water problems.

### **Why fresh water shortages will cause the next great global crisis**

Water is the driving force of all nature, Leonardo da Vinci claimed. Unfortunately for our planet, supplies are now running dry – at an alarming rate. The world's population continues to soar but that rise in numbers has not been matched by an accompanying increase in supplies of fresh water.

The consequences are proving to be profound. Across the globe, reports reveal huge areas in crisis today as reservoirs and aquifers dry up. More than a billion individuals – one in seven people on the planet – now lack access to safe drinking water. The global nature of the crisis is underlined in similar reports from other regions. In south Asia, for example, there have been massive losses of groundwater, which has been pumped up with reckless lack of control over the past decade. About 600 million people live on the 2,000 sq km area that extends from eastern Pakistan, across the hot dry plains of northern India and into Bangladesh, and the land is the most intensely irrigated in the world. Up to 75% of farmers rely on pumped groundwater to water their crops and water use is intensifying – at the same time that satellite images shows supplies are shrinking alarmingly. The nature of the problem is revealed by US Geological Survey figures, which show that the total amount of fresh water on Earth comes to about 10.6m cubic km. Combined into a single droplet, this would produce a sphere with a diameter of about 272 km. However, 99% of that sphere would be made up of groundwater, much of which is not accessible. By contrast, the total volume from lakes and rivers, humanity's main source of fresh water, produces a sphere that is a mere 56 km in diameter. That little blue droplet sustains most of the people on Earth – and it is under increasing assault as the planet heats up.

Market mechanisms do not automatically lead to the sustainable use of water resources. Two market failures are particularly notable for transboundary issues. Firstly, preventing users from accessing water resources through institutional and physical means is difficult, resulting in overuse and under-investment. Secondly, water consumption by upstream users reduces the quantity and sometimes the quality of water for downstream users.

### **Policy failures**

Policy interventions frequently create or aggravate environmental problems, such as establishing inappropriate subsidies that encourage the overexploitation of water. The subsidies and trade distortions of the United States and EU severely impact agriculture and the water economy of developing countries. The failure of governments to take action can also affect international waters. For example, in the Yellow Sea/34 region investment in pollution prevention and wastewater treatment, and stronger enforcement of regulations may have averted some of the social and economic costs caused by pollution.

Policies implemented by governments in the Aral Sea/24 Basin failed to reduce water withdrawals for cotton farms, causing the Aral Sea to shrink to a fraction of its former size.

The policy failures include:

- inadequate use of scientific information in the decision-making process;
- the lack of a clearly formulated legal framework;
- water prices that do not reflect the full costs of water use;
- the absence of a regional water strategy.

Prices, subsidies and taxes often inadvertently discourage efficient water use. Governments in developing countries give out 75% of the world's water subsidies, amounting to 45 billion USD annually (Pearce 2002). Irrigation farmers are the main recipients and in many GIVA regions in the southern hemisphere they are not charged for this water. Subsidized irrigation water is a problem in the majority of the GIVA causal chain analyses of freshwater shortage, including the Aral Sea/24, Gulf of California/27, Canary Current/41,



Lake Chad/43 and Bengali Current/44. Water subsidies allow farmers to grow water-intensive crops, like alfalfa, citrus or rice, in water scarce regions, and gives them no incentive to invest in water saving devices and new technologies. Furthermore, irrigation subsidies also tend to favor wealthier rather than poorer farmers and consumers. The GIWA experts who prepared the Guinea Current/42 regional report stressed the importance of demand and management. Specific action recommended for the urban water sector included: 1) minimizing distribution losses 2) encouraging industries to introduce water saving technologies and practices 3) optimizing reservoir management.

Demand management aims to change the way people and institutions use water in order to improve efficiency and reduce the need for expensive infrastructure development. The GIWA regional teams identified demand and management as an alternative or complement to the conventional approach of increasing supply by expanding infrastructure. At the international level, there is a need for a harmonized strategy for the implementation of conventions and declarations related to water. The GIWA regional assessments confirm the need for greater cooperation between riparian countries. A cooperative management framework is absent in 60% of international basins, and in many GIWA regions water allocation agreements do not exist or have not been implemented. In the Lake Chad experts recommended the creation of the water allocation agreement, which would provide a legal framework for the equitable sharing of the Basins water resources.

At present, it is necessary to strengthen the global efforts creating sustainable freshwater management. A new generation of scientists and managers is needed to address freshwater shortages and the other water problems. To develop and implement integrated concepts, natural and social scientists, and policy makers, need to cooperate locally and regionally. Existing expertise has to be enhanced and coordinated. However, in most parts of the world there are insufficient human resources. According to the GIWA assessments, scientific and technical capacity regarding water research and management needs strengthening. Training programmes should instill an understanding and appreciation of the complex interactions between freshwater shortage, climate change, pollution, overfishing and habitat modification.

### Reference list

1. "Water Scarcity. International Decade for Action 'Water for Life' 2005–2015". *un.org*. Retrieved 20 October 2013.
2. Freshwater: lifeblood of the planet. *peopleandplanet.net* (11 November 2002). Retrieved on 27 August 2013.



**CUSTOMER CHOICE AND DECISION MAKING: THE HUMAN BRAIN AS  
A MAJOR ENGINE.**

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Recently, a new boom towards applying neuroscience in the economic theories and market research is gaining a huge interest by researchers. In this paper we will introduce you with an overview about the decision making process from an economic prospective. We will also introduce the decision making process from the neuroscience prospective. We will spotlight on the two concepts of neuroeconomics and neuromarketing. And we will be ending up with the advantages and disadvantages of neuroeconomics and neuromarketing.

In our time, it is a constant struggle for the consumer to find high quality products amid the huge amounts of different available products.

So, how do people make a decision to buy something. Let's discuss this together.

From an economic point of view the seller can influence the buyer. He influences the customer through 5 steps. These are: attention, interest, desire, belief and action. These five stages are implemented in advertisements, public relations, advertising and promotion, and also in the personal contact with clients. At first the seller attracts the customer attention. Next, he tries to develop an interest then this interest generates a desire, later the seller starts to drag a belief that the product is needed to the consumer, after that he persuade the customer to make the purchase.

From the other direction, the buyer takes the decision through asking himself five logical questions. These questions are:

1. Why shall I make a purchase? (need)
2. What shall I buy? (product)
3. From where shall I buy a product? (a source)
4. What is the real price of the goods? (price)
5. When shall I buy a product? (time)

If the requirements are met the buyer will buy the product. (Klyucharev, 2016)

As neuroscience is a branch of biology that represents the scientific study of the nervous system; a blend of economics, psychology, and neuroscience are emerging nowadays into a unified and unique discipline that is called neuroeconomics.

Neuroeconomics or Neuroscience of decision making aims to connect sensation and action by revealing the neurobiological mechanisms by which decisions are made to understand human behavior. (Klucharev, 2014)

However, we need to ask ourselves, how our brain behaves during the decision-making process? How does he make decisions? What regions are affected during the decision-making process?

Neuroscience studies have firstly appeared on animals before 2000. The first neuroeconomics studies were conducted on monkeys by a scientist from the United States that was William Nyusom.

A very important concept to be considered in the decision making process is the diffusion model of decision-making. This model suggests that when choosing between two alternatives, we





accumulate information in favor of alternative A or alternative B; when the evidence in favor of one of the alternatives to reach a certain threshold, we take this or that decision. With this model it is possible to describe the activity of neurons in the brain. At the moment of the decision-making the neuron increases gradually its activation (frequency of bits per second) then it reaches a threshold value. At this moment we know exactly what decision do we want to take is it A or B. (Klyucharev, 2016)

There are many regions in the brain that are affected by the decision making process. One of these regions is the nucleus accumbens, and this region is called the reward center or the pleasure center that is important for the evaluation process as it encodes our expected values during the decision making.

Accordingly, nucleus accumbens link different areas of the brain during the decision making and calculate values for our decisions. (Klyucharev, 2014)

Moreover, the bit of frontal cortex is considered as the key structure in decision making. As nucleus accumbens is involved into the calculation of the anticipated gain magnitude, the orbitofrontal cortex is critical for the comparison of different options and choice. But what is the functional role of the orbitofrontal cortex? The Orbitofrontal cortex is involved in the evaluation process (choice preferences).

Orbitofrontal cortex neurons encode relative values of the available options (Relative preferences). So the neurons in the bit of frontal cortex are particularly active when a person prefer one option to the second option. So orbitofrontal cortex integrates multiple sources of information, it compares different options and arrive of final various thing.

Another important region that is closely linked to the orbitofrontal cortex region, it is the prefrontal cortex; a region that is involved in cognitive control and is modulated by marketing as when the price of a product affects our expectations about the quality of the product.

In general, decisions may have potential costs and benefits. Anticipated gains as discussed previously are coded in the ventral striatum. However, potential costs of decisions are coded in a region that is called Amygdala. So when a certain choice is associated with potential costs, Amygdala is activated. Hence, orbitofrontal cortex compares the inputs from cost related and benefits related brain regions. And if these costs or benefits exceed one another, we make a decision.

Dorsolateral prefrontal cortex is other regions that is critical for the decision making. It usually involves into more rational estimation of their expected outcomes of our decisions.(Klyucharev, 2014)

From another prospective, the merger between cognitive neuroscience and marketing has resulted in creating a new field of marketing that is called neuromarketing or consumer neuroscience. Accordingly, we can define Neuromarketing “the application of neuroscientific methods to analyze and understand human behavior in relation to markets and marketing exchanges”. (Mostafa, 2014) neuromarketing promotes the value of looking at consumer behavior from a brain perspective.

Neuromarketing research has many goals. These are pricing, product design and brand choice and promotions and advertising.

One of these goals is the pricing strategy. Few fMRI studies have investigated neural correlates of pricing. One experiment examined the influence of pricing on the neural activity and perceived reward. Participants rated the pleasantness of samples of wines while being presented with their corresponding prices. The results showed increased activation in reward-related areas in the subjects’ brains such as the medial prefrontal cortex and the rostral anterior cingulate cortex when participants thought that they were drinking more expensive wines, even though all



wines were the same in reality. As a conclusion, a product's utility does not only depend on intrinsic factors as composition or thirst, but also on extrinsic factors that can be easily manipulated by marketers. (Mostafa, 2014)

Brand choice and product design are also considered as a critical aspect in neuromarketing.

Through using fMRI techniques (Functional Magnetic Resource imaging), a study has examined how brand information affects taste perception of sensorily similar products. During the study respondents were offered coke and Pepsi and brands were hidden from respondents. The majority of respondents selected Coke over Pepsi in a blind tasting test.

However, when the brand name was revealed to respondents, around 75 per cent of the respondents preferred Pepsi. (Mostafa, 2014)

The results have explained that if you tell people that they will get something distasteful, they are likely to experience it as distasteful. (Trzaskowski, 2010)

This choice of coke over Pepsi has showed a strong brain activation in areas such as the hippocampus and the prefrontal cortex areas responsible for memory and higher cognition functions. (Mostafa, 2014)

From a biological point of view, fMRI results showed that taste as considered a functional preference can be overridden by brand preferences retrieved from consumers' long-term memory at the choice moment (Mostafa, 2014).

From another prospective, neuromarketing can effectively enhance promotional practices and influences consumers' brain activity. Studies pointed out that products that are paired with celebrities more activate the medial orbitofrontal cortex, an area associated with coding value in comparison with classical advertising methods. (Stanton et. al, 2016)

Another magnetoencephalography (MEG) – based study has investigated consumers' recall of affective (i.e. drama, suspense and humor) versus cognitive (infomercial) TV commercials. Researchers found that affect-related stimuli in TV advertisements activated consumer's anterior and posterior cingulate cortex. Most importantly, affective advertisements elicited greater activation in the ventromedial frontal lobes and increased the recall rate three weeks after viewing. In the other hand, a similar experimental MEG study found that cognitive-related commercial stimuli greatly activated posterior parietal and superior prefrontal cortices, while affect-related commercial stimuli greatly activate brain emotion regions such as the amygdala and the orbitofrontal cortices.

The most critical ethical consideration regarding using neuroscience is the fear among consumers that neuromarketing can be used to go beyond prediction and influence consumer choice. (Stanton et. al, 2016)

In conclusion, researchers must recognize the importance of the use of neuroeconomics and neuromarketing. As these have provided us with unique, accurate and modern methods of research. Accordingly, there is no need to ask the people about their feelings regarding a certain behavior, but rather the brain activity investigate different intervening variables with more observable and accurate method. (Kenning et. al, 2007)

However, it is very important to consider some ethical standards during performing neuromarketing or neuroeconomics experiments. These could be as risks of harms and violations of rights as the privacy of consumers' data, and dignity during testing.

The most critical ethical consideration regarding using neuroscience is the fear among consumers that neuromarketing can be used to go beyond prediction and influence consumer choice. (Stanton, 2016)



## References

1. Kenning, P.& Plassmann, H.& Ahlert, D., (2007), Applications of functional magnetic resonance imaging for market research, *Qualitative Market Research: An International Journal*, 10 (2), (135 – 152)
2. Klucharev, V. (2014, April 10). Introduction to Neuroeconomics: How the Brain Makes Decisions[Video File]. Retrieved from: <https://www.coursera.org/learn/neuroeconomics/home/welcome>.
3. Klyucharev, B. (2016, April 120). Diffusion model of decision-making, research, Brian Knutson and the theory of ordinal values in the economy [Video File]. Retrieved from:<http://postnauka.ru/video/51488>
4. Mostafa, M., (2014), Functional neuroimaging applications in marketing: some methodological and statistical considerations, *Qualitative Market Research: An International Journal*, 17 (4), (343 – 372)
5. Stanton, S.& Sinnott-Armstrong, W. & Huettel, S. A. (2016). *Neuromarketing: Ethical Implications of its Use and Potential Misuse*. Springer Science+BusinessMedia Dordrecht. (1-13)
6. Trzaskowski, J. (2010). *Behavioural Economics, Neuroscience, and the Unfair Commercial Practises Directive*. Springer Science+Business Media Dordrecht. (377-393)



## SPACECRAFT TEST LANGUAGES

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Scientific advisor Ph.D. in Technical Science K. Safonov

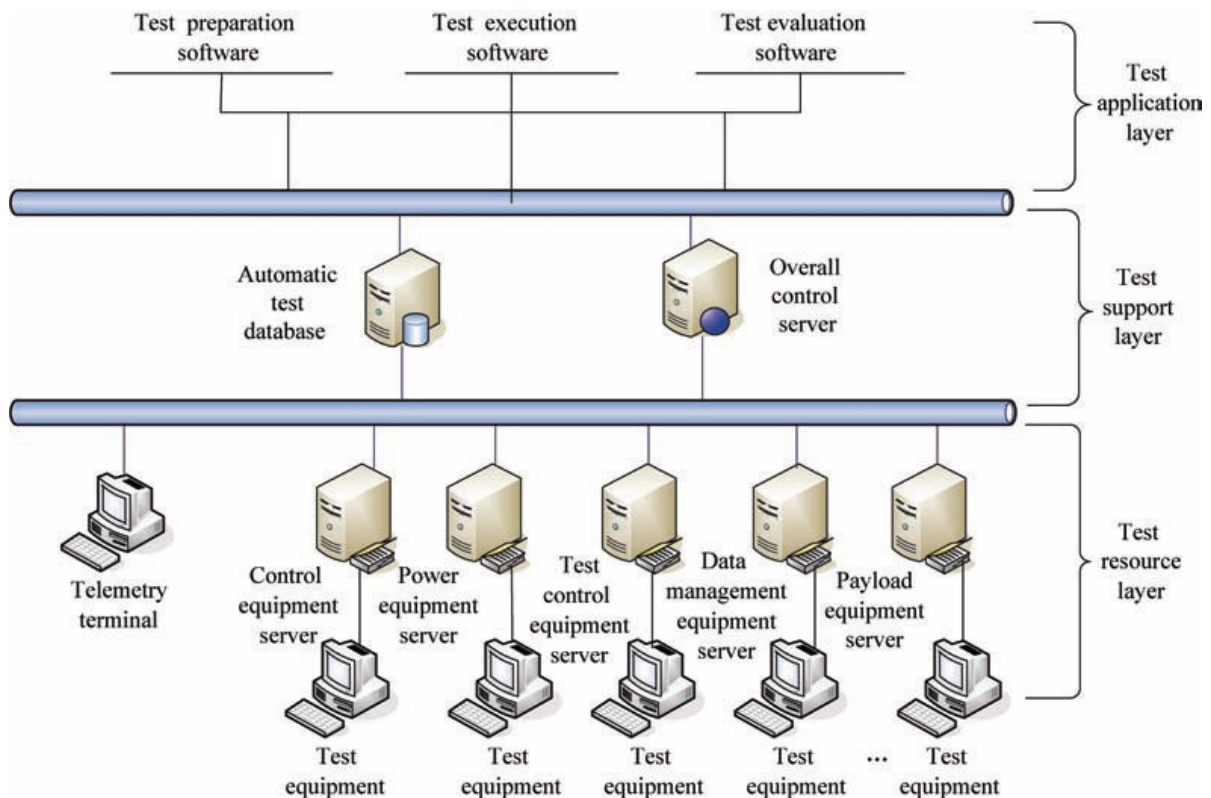
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The spacecraft producing process includes a great number of projecting, assembling and testing operations. In each of them workers use modern devices and software which decrease time needed for operation and the development of support equipment is one of serious tasks in aerospace sector.

Testing process includes following steps: logical (mathematic) model creating, initial data preparing, testing algorithms composing, tests making and analyzing result data. So the spacecraft automatic test system must provide support on all stages of testing.

Basically automatic test systems use three-layer architecture (Fig.1.):



*Fig.1 - Architecture of spacecraft automatic test system*

The first layer is the test resource layer, which deploys the equipment servers related to the sub-systems. These servers connect the general or special test equipment, receive and execute the commands from the above layer and manage the basic equipment. Meanwhile these servers receive the test data collected from the special test equipment and command execution information and return these data and information to the above layer. The basic operation for the test equipment is completed in this layer.

The second layer is the test support layer, which deploys the overall control server. The server is responsible for transferring the data and command to test resource layer, storing the test data automatically and monitoring the test processes. All the test application software

can send the telecontrol commands, get the telemetry data and manage the test equipment when connecting the overall control server.

The third layer is the test application layer. As Fig.1 shows, the application process is composed of three stages, including the test preparation, test execution and test evaluation. The spacecraft automatic test system takes the test data resources as the core, organizes the test processes for the planning, and completes the test work with the test application software.

It is common practice to create test algorithms using different languages, at different development and integration stages. To avoid such “re-creation” effort, the solution is the standardization of the procedures using only one language. Once standardized, a single procedure could be applied in different scenarios.

Because of the disunity among companies in aerospace sector the development direction of automatic test systems could be various. To verify the correctness of the statement the information about three automatic test systems from different countries was compared:

- China - CATOL (language CATOL-PR)
- Russia - RASKAT (language Dipol)
- Brazil - STEPS (language PLUTO)

The results of comparison are ambiguous:

- all compared systems moved to multi-module structure that means increasing portability of different parts of the system;
- most of them use XML-like format to store data;
- methods of data administration used by Graphical User Interface (GUI) are totally different in each system (algorithm code writing, UML diagrams charting, table filling).

All these automatic test systems fully achieve the goal of testing spacecraft and its components. Their differences depend on used test hardware and technical equipment. General evolution in the sector of spacecraft tests systems is impossible for the reason that there is no conferencing in this theme among states.

### References

1. YU Dan, MA Shilong, “Design and Implementation of Spacecraft Automatic Test Language”, 287-298, Chinese Journal of Aeronautics, 2011.
2. T. D. Pereira, M. G. V. Ferreira, F. N. Kucinskis, “Using the PLUTO language on functional tests of a Brazilian Satellite’s On-Board Data Handling Computer”, Brazilian National Institute for Space Research Jornal, 2012.



**THE IMPACT OF TEACHING**  
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There are many professions in this world that have been administered which are responsible for the enhancement of the life of a human being. Without a doubt every profession is subjected with some kind of perception and psychology. Understanding these two aspects can really lead one to the core of many discoveries that our planet has witnessed so far. But have you ever thought about the question as to what is the best way to pass and circulate the knowledge of these discoveries from one generation to others in order not to keep the future generations deprived of these very discoveries that have enlightened this world? The answer to this question lies universally in the profession known as Teaching- a disguised process where this very knowledge comes along with the progress and revolutionary developments. Since the era of the Theory of Evolution by Charles Darwin came into the limelight of the world, our planet has witnessed lot of drastic changes and immense number of discoveries and inventions, historical moments that had revolutionized our civilization and life. And as the new generations keep on coming, it becomes an obligation to pass onto them the knowledge of all of these documented inventions, moments and historical acts that administer the origin of our lifestyles and personalities. So how do we do pass onto them? We need the ability to speak a language and the art of delivering, which is where the concept of teaching comes into the play. Teaching is an art of feeding the human mind with the ability to understand the difference between different things and resources that are produced by the nature and by the human himself. Imagine a newly born baby brought into the limelight of this world, it is a body with an empty mind which is like a machine deprived of the software to operate it.



***Pic 1.- Introducing to the World***

Here is when the existence and the importance of a humanly civilization starts taking place. Teaching starts with the idea of introducing the software to operate a life which is technically done by getting the empty brain married with the knowledge of existence of all what we see around us.

As we all know foundation (basics) of anything is a vital organ of any establishment, if the base is weak, the entire establishment becomes vulnerable and in the same way it is extremely important to be aware about what exactly are you exposing a child to? It is very

important to pay attention to the significant questions like what does he see? What does he listen to? What does he feel and sense? At this very point the concept of 'Nurture' emerges out. It is an act of presiding over the child. This is the stage where a child is subjected with all sorts of needs that he or she requires to grow and the way in which he or she perceives it. It all depends on the way you preside regardless of your role- whether you are a teacher or you are a parent.

Talking about nurture, I would like to draw your attention towards the fact that nurture isn't the only aspect on which the entire process of teaching is dependent but there is another aspect which is complementary to the nurture itself and that is called 'Nature'. Many of the philosophers and psychologists have administered wonderful debates about Nature vs Nurture. The fact to the matter is that the coalition of these 2 aspects is what turns an empty mind into a human personality that is considered to be a divine creation of Almighty.



*Pic.2.-Nature & Nurture*

Civilization of future generations can't be possibly come to an existence without this very profession. It is imbued with the ability to radicalize a human life and his or her very lifestyle through whom a particular nation is defined. It is one and only profession in this world where existence and the derivation of the norms like Develop, Progress, Innovation, Creation and motivation are administered. These are the norms which decorate and define the dynamicity of a human mind and his actions. Teaching can also be defined as an art of creation of the world around you.



*Pic.4.-Teaching is an Art*



***Pic.4.-Teaching decorates an empty mind***

Have you ever thought about the question as to how would you define a Teacher? Of course! Many of you may come up with a very convention answer: Teacher is a person who teaches. But in my views, I would like to enlighten all of my readers with a fact that a Teacher is a person in whose lap Creation and Destruction play. He or she is one of those human on whom many civilizations are dependent whether it be existing ones or whether it be the future ones. Today whatever we see around, whatever we use, whatever we are influenced with, to whatever we are susceptible with, all of these are highly documented by a human mind. Teaching holds the power to control and to a bridge a gap between the actions and creations. This is the profession that can be portrayed as a soul of civilization and the creation around you. Today capitalism dominates our lives at a colossal scale. But this very profession is like a shield that doesn't allow a human to be suppressed by it. It makes you impervious to all the anti- social elements that infects like a plague in terms of your bad deeds and actions. Therefore teaching represents the core of our lifestyle and mentality which determines the future of the world.

Specifications of Teaching:

- It exposes a mind to the surroundings
- It enlightens the mind with the phenomenon classified as natural, biological and psychological
- It establishes a process of using your body in order to express your emotions
- It certifies you with knowledge, wisdom and creation that further shapes a particular environment
- It is like a universal donor that donates the psychological needs to all other professions that are registered as complete when merged with this much esteemed profession (Teaching)
- It decodes the complexities of a subject that becomes easy for a human mind to perceive and understand it effectively.
- It is way to preserve our origin of our civilization, inventions and many other aspects that today define us and our planet.
- It is Ubiquitous that can exists in every elements of our lives.

***“A teacher is like a candle- it consumes itself to light the way for other”***





## CONFLICT MANAGEMENT: PREVENTION AND RESOLUTION

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Conflict management is very important in our life. The problems of the origin and resolution of conflicts are of great interest not only for psychologists but also politicians, leaders, teachers, social workers, etc. They play important role in social life, in interpersonal relationships, as well as in group interaction.

What is the conflict?

The word "conflict" is derived from the Latin "conflictus" – collision. The characteristics of the conflict are following:

- state of open, often protracted struggle; battle or war;
- state disharmony between people, ideas and interests;
- Mental struggle;
- Confrontation of characters or forces.

It is important to understand that there are different types of conflicts.

- personal (there is no agreement between the various psychological factors of the internal world of the individual)
- interpersonal (this clash of personalities with different goals, character, attitudes, etc.)
- intergroup (the conflict between formal and (or) informal groups)
- inter-company (it happens when someone from the group violates the rules of conduct or communication).

I would like to talk about the most common form of conflict-interpersonal. How can we determine the situation as a conflict? It is when

- one person acts knowingly and actively to the detriment of another person (his opponent) while under the influence of how we understand the physical movements and the transfer of information (word of mouth, print, television, etc.);
- second enemy is aware that these actions are directed again his interests;
- therefore he himself is taking active retaliatory action against the first participant.

If you understand that you are in a conflict situation and you would like to resolve it, then you should decide on a strategy of conflict resolution.

The strategy of «competition» is the open struggle for its own interests, the stubborn defense of their position. It is effective when the result is important for both sides, and their interests are opposed, or when you need to fundamentally solve the problem. This style is tough, in which the principle of "who" and dangerous, because there is a risk of losing.

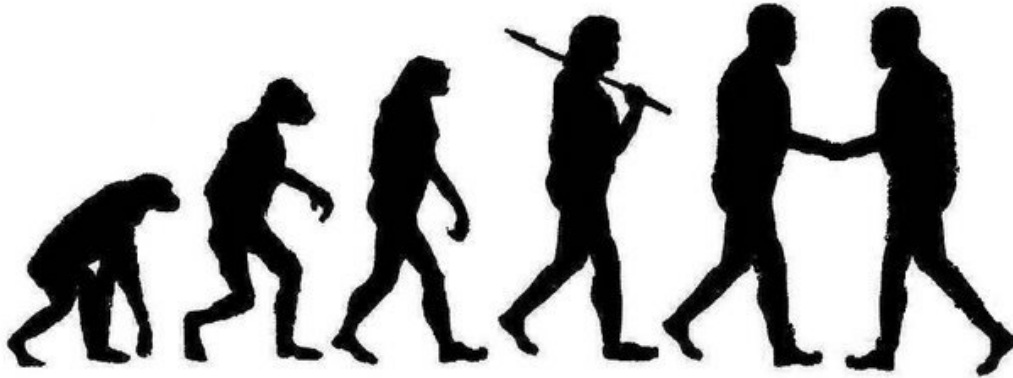
The strategy of «ignoring, avoidance of conflict» the desire to get out of a conflict situation, without eliminating its causes. It is effective when you want to transfer the solution to the problem at a later time to more seriously study the situation or find the necessary evidence and arguments.

The strategy of "device" is a change of position, the restructuring of conduct smoothing of contradictions, sometimes sacrificing their own interests. Outwardly, it might look like that you take and share your opponent's position. It is close to "neglect" strategy.

The strategy of "cooperation" is a joint development of solutions satisfying the interests of all parties, albeit a long and consists of several stages, but going to benefit the cause. The most open and honest style that involves active participation in the solution of the

conflict, taking into account their interests and opponent. It is often used to address public and protracted conflicts.

"Compromise" strategy is the regulation of differences through mutual concessions. Preferably in the case where it is impossible to simultaneously perform what they want both sides. Options for a compromise are the adoption of an interim solution, the adjustment of the original objectives, obtaining certain parts in order to avoid losing everything.



Wikipedia.com

*Fig.1*

After determining the strategy one must take into account the rules of behavior and response to conflict.

- It is impossible to completely deny anyone's opinion does not coincide with your opinion;
- Manifestation of attention and kindness to the interlocutor;
- Trying to be reserved, to control their movement, speech, facial expressions.
- To speak with an opponent you need a language he understands, slowly and correctly.
- You cannot hurry with the response. It is best to maintain a pause.
- It is desirable to express their feelings, conditions caused by his words.
- You should avoid closed positions, for example, do not put your hands on your chest.

## THE INFLUENCE OF CULTURE ON ECONOMIC DEVELOPMENT IN MODERN RUSSIA

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Russia is a special country. It is not like any other country in the world. The centuries-old Russian culture is a combination of opposites, the clash of Eastern and Western cultures. For many centuries in Russia, it formed its own, distinctive eastern structure. However, over the past 300 years, Western culture has penetrated and taken roots in our minds. Moreover, nowadays-Russian culture - is both Eastern and Western culture, it is masculine and feminine at the same time. The problem is that these principles are not connected; they are rushing to extremes in Russian soul. Russian people are unpredictable and contradictory, causing among other cultures either love or hate. For the Western people, Russia is transcendental country, attracting with its mysteriousness and repelling because of barbarism.

Russia's economy in the current conditions cannot occupy the leading position in the world. A major role in this is the mentality of Russian people. Russians cannot work effectively following Western model (or rules) due to the big influence of native culture. In Western Europe, culture is defined, executed, distributed by categories and has the result. At the same time, Russian culture is more addressed to infinity and uncertainty. Western culture is masculine, which helps economy to move forward, to build the rule of law and to create good life conditions. On the west, the most important thing is a person, his rights and individuality. This gives rise to the development of business and science, which allows you to create benefit. Because the Western people is able to work alone, without forgetting about the benefits of cooperation, the West economy is a world leader for the past two centuries.

Russian culture is feminine - soft, passive and submissive. Russia is collective country, devoid of consciousness of individual rights and protecting the dignity of the individual. The development of Russian economy cannot be based on Western development model. The reason for it is a lack of development and non-disclosure of individual consciousness. For Russian - profit, luxury and power is not the end goal, because they are considering it as something dirty and unspiritual. Dependence on material wealth and life is rejected as well. Russian culture is based on collectivism and austerity, so the majority of the population prefers to work in budgetary institutions for pre-specified salary.

In the context of globalization and merging of cultures, Russia need to find its niche in the international division of labor, its own way of economic growth. Of course, we adopting the experience of developed countries, and therefore we are more close to the West. However, this model - a model to copy and catch-up - has repeatedly shown to be ineffective.

Modern Russia needs to find new ways to build a working process. Business's development programs do not give the desired result, as it implies individual thinking and activity of the population. Russian culture is a collective culture, so it is better to build a job some other way. For example, by creating teams projects, professional communities. It is also important to develop a tutoring institute. In Russia, people are more likely to start a business if they have a team of associates and experienced mentor.

Therefore, the current Russian original culture has a great influence on the economy. Structural changes in the global division of labor and globalization confront us with serious development problems. We cannot fully adopt the experience of building the economy of developed countries; therefore, we need to seriously evaluate the Russian mentality and culture for effective interventions, contributing to economic growth.

## ADVERTISING STRATEGIES FOR SOCIAL NETWORKING SERVICES

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The relevance of this report is currently advertising an integral part of people's life. It is the most effective way of implementation and promotion of various goods and services. But few people know about the possibilities of advertising strategies in social networks. I want to describe the advertising market and its opportunities in social networking services.

In this report, the subject of research is advertising on social networking services. The purpose of research - to describe a relatively new advertising market. This objective implies the formulation and solution of the following tasks:

- Consider the characteristics of creation and promotion of advertising in social networks.
- Make clarify the specifics of advertising in social networks
- Make the analysis of particular advertising for accommodation in social networks

How did the advertising in social networking services appear? What is the purpose of this advertising?

Social media advertising has come a long way in a relatively short period of time. Social media advertising helps businesses find new potential clients by using users' own shared information to identify interest. Rather than reactively targeting users who search a certain term, social media advertising proactively targets relevant users before they even begin their search.

What networking services use advertising?

I want to talk about a few social networks that use advertising:

1. Facebook. The advantage of using Facebook advertising is to leverage its data and low costs. Facebook allows you to pinpoint exact buyer better than any social media platform. You can pinpoint by age, gender, income, job position, relationship status, and much more. Facebook knows where you work, where you went to school, and what type of home you own.

2. Twitter. People come to Twitter to discover what's happening in the world right now, to share information instantly, and to connect with people and businesses around the globe. With hundreds of millions of users and over 500 million Tweets being sent each day, there is a great opportunity for businesses to reach a global audience of new and existing customers.

3. Pinterest. Pinterest advertising is the most exciting advertising platform out right now. A Majority of its users are women and a good portion of its users are considered to have high income. Brands that will have the most success with Pinterest advertising will be ones that focus on their interests. This includes health, household items, food, holidays, clothing, fashion trends, hair, and more.

4. LinkedIn. LinkedIn Ads is a self-service advertising product that allows advertisers to reach a targeted professional audience of their choosing. And this advertising is a powerful platform for companies which to target the key executives of companies in certain industries.

5. Youtube. YouTube has shown in popular culture that it can serve as much more than just a way to share adorable kitten videos – it has become a highly effective venue for accessing massive audiences through online advertising. YouTube is social network by which new musicians and performers become superstar.

6. Odnoklassniki. Being the largest Russian social network, Odnoklassniki is the least flexible when it comes to advertising possibilities. They only offer banner advertising. Available targeting options are gender, age and location. Text ads on Odnoklassniki are powered by Yandex.Direct and Begun, on CPC basis, but without social targeting.

7. VK. Being a Facebook clone, vKontakte also has a similar advertising platform. The ads look somewhat similar to Facebook's. Vkontakte targeted ads offer 4 types of products: community, apps on VK, videos or external websites. As stated on the VK Ads section, targeted ads consist of a header, a small image and a short text.

What are the efficiency and benefits of advertising in social networking services?

- The advertising in social networking has a few benefits:
- Firstly, advertisers can reach users who are interested in their products.
- Allows for detailed analysis and reporting.
- The information collected is real, not from statistical projections.
- Does not access IP-Addresses of the users.

People who use social networks store various information about themselves including, but not limited to, their age, gender, interests, and location. This stored information allows advertisers to create specific target groups and individualize their advertisements. The advantage for advertisers is that their ads can reach people who are interested in the product or service. The advantage for users is that they can see ads that appeal to them.

Interesting facts about advertising in social networking services:

1. More than half of marketers who have used social media marketing for over 3 years reported an increase in sales over that period.

2. When Facebook launched its first advertising option in May 2005, no one could have predicted that social media advertising revenue would be estimated to reach \$8.4 billion in 2015, just ten years later.

3. More than half (52%) of marketers say Facebook is "the most important social network they use to grow and market their business." LinkedIn came in second place with 21%, followed by Twitter, YouTube and other.

I think that at the moment advertising in social networks is gaining a lot of popularity and growth among advertisers. Social networks are a good option for advertisers because of the additional targeting, conversion tracking, reliable, and the prevalence of mobile devices. These advanced options increase ad's relevance to your users and provide a level of personalization that is not achievable on other advertising channels.

### References

1. [https://en.wikipedia.org/wiki/Social\\_network\\_advertising#Application](https://en.wikipedia.org/wiki/Social_network_advertising#Application)
2. <http://marketingland.com/social-media-advertising-set-explode-next-3-years-121691>
3. <https://books.google.ru/books?id=lnwwCuyvBMcC&pg=PA61&lpg=PA61&dq=Advertising+opportunities+of+modern+social+networks&source=bl&ots=hJi5VSBhWK&sig=E7Qnk1lyZ4bMM9QrFInzhllu76w&hl=ru&sa=X&ved=0ahUKEwjuyf7zu4bMAhVzb5oKHRK8CjMQ6AEITzAH#v=onepage&q=Advertising%20opportunities%20of%20modern%20social%20networks&f=false>
4. <http://www.likeable.com/blog/2013/09/7-reasons-why-social-media-is-an-absolute-must-for-business-branding>



**MAKE A SUPER HERO OUT OF ME. POWERED EXOSKELETON****Skvortsova A.****Scientific supervisor: Senior Lecturer V. N. Yurdanova***Siberian Federal University*

In childish dreams, almost every boy wanted to be a hero. It isn't hard to do. You need shining armor, fast white horse, sharp sword and superhuman strength, so these items make all girls in the yard become yours. However, when you are only five years old, you can smash the mountain only in your own dream. In fact, laws of physics won't be on your side, and the imperfection of the human body will strengthen your despair. Even when you turn 20, there is no guarantee that you will be able to defeat the dragon, a fortiori, you won't be able to hold a heavy sword. We have come to the question: "So, is it possible to have a superpower?" Is it possible to become a super-hero without radiation or precision of genetic modification?

Apparently, Russian self-taught scientist, Nicholas Yagn, often asked such questions. In 1890, Nicholas Yagn presented a curious device called "Apparatus for facilitating walking" to the Russian public. Apparatus presented a spring system fixed on the human body with cords, and it should have been used to strengthen the leg movements during walking or jumping. Yagn believed that inculcation of "Apparatus for facilitating walking" would strengthen the imperial army, but Alexander III had another opinion, and he sent Yagn with his Apparatus back in Syzran. After 70 years, Robert Heinlein, American science fiction writer, published a novel «Starship Troopers» (1959), which introduced the invincible soldier, whose body was clad in metal armor, which allowed them to survive in the vacuum of space and strange atmosphere; moved in huge jumps and used with special backpacks that connects disparate soldiers in a combat unit. At the same time, this armor carried the huge stock of weapons, including nuclear missiles. Therefore, there is no surprise, that the first attempt to create such armor was made as soon as possible.

Moreover, at the beginning of 60<sup>th</sup>, first exoskeleton was developed. General Electric was first, who took up exoskeleton creation. Yes, exactly that General Electric, which was founded by Thomas Edison. The first exoskeleton, Hardiman, represented the aluminum-steel frame on which were mounted pneumatic actuators that provided the skeleton movement and powerful battery for each drive. However, design was far from perfect. The exoskeleton weighed as much as 680 kg, provided capacity about 100 kg. The exoskeleton was awkward and clumsy, and it behaved inaccurate by pneumatically controller. Couple of years passed away and tireless General Electric constructed exohand already weighing 640 kg and controlled by hydraulic drive (which contained half of this weight). Hand operated successfully and efficiently, but a huge weight didn't allow it to get popularity and come in a wide production. Researches continued. More than 50 years scientists all over the world have thought how to improve the effectiveness of the exoskeleton. Nowadays different exoskeleton models exist in theory and in practice. Special construction would make possibility to create a stable and armored exoskeleton. For example, firm Lockheed Martin created a universal exoskeleton named HULK, which is able to lift a load of about 100 kg and cover the distance of 20 km, without any owners' effort. However, even such a modern prototype still has bad weight characteristics. The lightest exoskeleton weighs 100 kg.

Despite all the difficulties, exoskeleton found its place even in social ordinary life. Exactly in life of paralyzed people. Miomir Vukobratovic, Yugoslavian scientist, showed the first power walking bio-exoskeleton in the middle of 70<sup>th</sup>. In addition, its task was to provide opportunity to walk.. The design is simple, flexible and bio-exoskeleton is very easy to use. It weighs about 10-20



kg. Unlike military exoskeleton, bio-exoskeleton does not require enormous energy, and its aim is wonderful: - to give new hope to disabled people to walk. Science knows today different solution of such problem as bioprostheses, mind control or neuro control. Among these methods, exoskeleton is the most affordable solution. The bioprosthesis requires chip implantation in human body and directly mount of the prosthesis. Mind control is very complex and poorly explored even today and therefore, the most imperfect. Neuro control must include connection with the complete human neural networks, which is not always possible. In this way, exoskeleton performs itself as human outerwear, which does not require complex manipulation of the human body and mind.

If we expand the hypothetical exoskeleton into components, we will have a power supply, mechanical skeleton and software. The first exoskeletons had aluminum and steel frames, on which hydraulic drive is secured with heavy battery. Nowadays engineers have created different and light constructions beginning with separable modules and ending with solidsuits which are equipped with multiple electric and powerful power supply. Exoskeleton design aims to be convenient and flexible to emit human movement and not to cause unnecessary discomfort to the owner of the skeleton.

Based on structural features exoskeleton has four very important issues: 1) choice of material, 2) choice of economical driving, 3) energy supply and 4) the equilibrium search. As noted above, the first exoskeletons had aluminum steel frames. Perhaps aluminum and steel are the most common materials. However, steel is heavy and very uncomfortable. Therefore, scientists are working today on the introduction of composite materials and titanium-based compositions. Because modern materials, which are used in exoskeleton today, are extremely expensive. Second specific problem is in drives. Hydraulic and pneumatic actuators require volume infrastructure, pumps, hoses, tubes, which are inappropriate for compact structure, such as exoskeleton. However, the development of new actuators on an electronic basis, which might use magnets and provide a responsive motion, consuming minimum energy and being small. Nevertheless, with modern technology and progress choosing material and drive isn't so hard, as provision of the right amount of power. Any of modern compact power supplies of exoskeleton could provide a few hours of battery life, or exoskeleton forced to be powered by the network, which would deprive it of mobility. Oddly enough, the most likely way to solve the fuel problem for the future exoskeletons can become the most impossible: a wireless energy transfer. It can solve so much technological questions, but the main question is: how it can be done? The question is still open. Moreover, exoskeleton is very specific installation that requires training. A particular problem is to create an exoskeleton control excessive and unwanted efforts. In addition, some of bio-exoskeletons are unable to hold its owner in a balance, which requires additional support in the form of two crutches or canes, which would not allow human to fall.

Disadvantages seem to be very serious that you begin to doubt about the future of exoskeletons. However, nowadays exoskeletons are gradually strengthened in our lives. Since 2011, bio-exoskeleton produced by company REWALK allows paralyzed people to walk again. This exoskeleton supports three action modes: standing, sitting and walking. Japanese exoskeleton HAL, which looks more like futuristic space suit, captured European market in health care sphere. In Russian universities very interesting exoskeletons with unusual tasks are developed. For example, there was invented an exoskeleton for the Ministry of Emergency Situations needs. It could retain his balance on the inclined surface and withstand overload three times of its own weight. In the field of rehabilitation appeared exoskeleton ekzoAthlet serving for the rehabilitation of patients with lower limb injuries. It is used to maintain vertical posture and improving mobility and patients self-service. So, despite all described above difficulties and seemingly "impossible" exoskeleton continues to evolve. And one day, who knows, we'll get a real super-heroes who would



whale any comics character away with both fits. A terrible injury and paralysis will cease to be the verdict.

### **References**

1. Yagin, Nicholas. "Apparatus for Facilitating Walking". US patent 440684 filed February 11, 1890 and issued November 18, 1890.
2. Feature: Can we build an 'Iron Man' suit that gives soldiers a robotic boost? <http://www.sciencemag.org/news/2015/10/feature-can-we-build-iron-man-suit-gives-soldiers-robotic-boost>
3. Robert A. Heinlein, Starship Troopers, May 15, 1987, Kindle eBook





## **OPPORTUNITIES AND PERSPECTIVES OF CROWDFUNDING IN THE GLOBAL WORLD**

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Technological development has changed the world for the last 10 years. New models and methods of interaction were developed so fast, that we don't have enough time to analyze them to see their potential and embed it into our lives. Relevance of researching new technologies is caused by this fact.

Mankind has a lot of unsolved problems. Analyzing of the innovative approaches, we make a step towards to their solution. Historically, people unite to solve their problems. In last century we observed the strong globalization trend. Nowadays it manifests in the virtual reality and crowd-technologies are one of the brightest demonstration of this trend. What is the outlook it promises for the individuals and society: that is the question?

We should pay attention to crowdfunding in order to answer this question. This technology represents an alternative form of raising money by involving morally or financially interested people, called sponsors, for the implementation of idea.

Martin Zwilling distinguishes five models of crowdfunding:[1]

The first model is a rewards model. It includes sponsors reward, which correlates with the size of donation. For example: the recent successful company "Film "Bears of Kamchatka. Home life"" [2] on planeta.ru. Sponsors who sacrificed 500 rubles receive digital postcards set, for 7000 rubles - the book "My Kamchatka neighbors" with author signature and many more pleasant things. Sponsors be able take part in the film expedition personally for 100000 rubles.

The second model is a product pre-order model. The project initiator suggests his product early, at a cheaper price, in exchange for a pledge.

Those models are combined usually. Kickstarter.com and Inigogo.com are most popular Crowdfunding platforms for such projects in the world. As for Russia, Planeta.ru and Boomstarter.ru are quite used.

The third model is a donation good-cause model. It is used for charity, personal and creative projects that doesn't include financial profits. People take part to help and get emotional satisfaction. For insist, Justgiving.com is based on this model.

The fourth is a interest on debt model as known as crowdlending. It is lending by individuals. Advantage of this model is lower interest rates called social lending model. Moreover it has unique options such as "a forgivable loan", which must be return even when the company will become profitable. It was applied by zopa.com in 2005 first time. Now LendingClub.com is one of the most popular platforms.

And the last is a startup equity model calls crowdinvesting. Investing in the company, a sponsor obtains a percentage of the profit or become a shareholder of startup. That model is implemented by Seedrs.com platform and equitynet.com.

The last two models are also called finance.

Besides model, platforms differ by subjects. Often they are divided into 3 groups [3]:

1. Specialized platforms provide only one type of project: only for recording of music or for game developers.
2. Activity-specific platforms provide a range of similar types for example creative projects or technology.
3. General Purpose platforms have no restrictions on theme of project.

Success of company depends on correct choose of type. For example, You can run personal project on universal Kickstarter.com but it would be much more comfortable to use specialized for this purpose GoFundMe.com.

Crowdfunding has been applying efficiently in many branches for last years: from personal to technological projects. The potential of of this sphere is confirmed by the rapid growth of capital: according to report of the company Massolution Research [4], the world market of crowdfunding was 34.4 billion dollars in the end of 2015, which is two times more than last year.

Now crowdfunding is not only a way of raising capital, but also the profitability of financial instruments. It provides a more effective alternative to modern banking [5], extends investment opportunities, allows to buy shares at a stage of creation.

Using of non-financial models of crowdfunding for individual purposes has particular interest for research. On the one hand people solve their personal problems in real life: they collect money for celebrations, support in difficulty etc. It was common and rather productively. On the other hand the global information space permit to appeal not only to friends and relatives but also to a broad audience, , but also just not apathetic people.

Crowdfunding system has various categories of personal projects like travelings, treatments, celebrations, competitions or small business.

Well-told story can attract greatest human response in crowdfunding project. The "Let's give Karen Klein a vacation" project from Indiegogo.com collected 14063% from the planned amount [6]. Success of project depends on many factors, big part of projects finishes unsuccessfully, but tendention is really meaningful. For example, your education can be financed by strangers or corporations, like it happened some time ago when dr. Pepper company donate 65000 dollars for 14 projects from GoFundMe [7].

Indiegogo platform made generosity.com service for such projects. This service doesn't take money from collected amount for platform payment. Generosity.com refuse money profits and puts to the front its mission: «a platform for human goodness».

This area of humanity technology development is innovation on the one hand and expected on the other hand. There is a large number of projects aimed at solving social problems, creating a better world, help the needy or support local initiatives.

So the company Greek Bailout Fund demonstrates the global abilities of crowdfunding. It was started in June 2014 on the Indiegogo platform. The young Englishman Thom Feeney thought that every European may donate the cost of one pint of beer for solving the economic crisis in Greece. The company failed to collect targeted 1.6 billion euros, but closed at the impressive figure almost 2 million euros and more than 100000 sponsors [8].

Crowdfunding gives people a different way to look at their own abilities. Capital merger allows to solve serious problems in the social sphere. This technology could be extended to the state organization: we can imagine a system where the people decide how they want to spend their taxes. It is quite difficult with implementation and control positions, but this model of distribution of taxes would be fully consistent with the ideas of democracy. The people would have the opportunity to directly participate in economic decision-making, at both the municipal and the national level. This idea is very interesting in the context of the existence of large economic disparities: more people feel their most serious problems better than government, which often divorced from the socio-economic reality of state population. We can assume that people would be approached to solve problems consciously, it would be an effective system. However, at the moment this is only notional model.

Now the majority of social enterprises are charities, suggest collecting money and then sending them to solve the problem. A large number of companies which organize care for children, the disabled, very sick people. The classic charity project you can call the company "Special children: preparation for school in the CCP" on Planeta.ru [9].



Much less often we face with projects of social entrepreneurship, enterprise which aims its activity solution or mitigation of social problems. In its activities it uses economic and business models, and the profit is not the primary goal, and is embedded in the company's development.

Perhaps this is due so that the entrepreneurs are not sufficiently informed about such a possibility or not to trust the crowdfunding. There is also the problem of classification: rarely distinguish social entrepreneurship platform in a separate category, and the projects placed in any more appropriate.

Probably it is connected with unawareness of entrepreneur and distrust to crowdfunding. Also there is a problem of classification in most part of platforms. Those projects hasn't special category and lost in adjacent sections.

Nevertheless perspective of crowdfunding for social entrepreneurship are very high because of difficulty of engage start-up capital, as great part of investors refer to distrust to such undertaking. Well-organised company not only give start-up capital but tests interest of society and helps to establish links.

For charity projects crowdfunding is access to global audience. Also rewards model create new principle: company suggest rewards more insignificant than donation. This rewards renovate memories about help. It motivates people who wants to do good deal however not ready just to give away.

As for personal projects, the ability is very important. We used to have no technology to global communication which allows to share problems or dreams the world. Now person can find support from the most unexpected place on the map.

Financial crowdfunding is very interesting and profitable, but it's connected with risk. It is not understandable and forecastable so investors are careful about it. Moreover legal base is raw and need to be more reliable.

In general, the problem of crowdfunding is lack of informed people. In spite of the fact, that majority can use different models of crowdfunding for they purpose, most of people have only general view of it and application or even haven't it at all.

## References

1. Will These 5 Models of Crowdfunding Replace Angel and VC Investors?  
<http://www.entrepreneur.com/article/242767>
2. «Фильм «Медведи Камчатки. Начало жизни»»  
<https://planeta.ru/campaigns/14612>
3. Types of crowdfunding platforms. [http://crowdfunding.cmf-fmc.ca/facts\\_and\\_stats/types-of-crowdfunding-platforms](http://crowdfunding.cmf-fmc.ca/facts_and_stats/types-of-crowdfunding-platforms)
4. 2015CF – Crowdfunding Industry Report.  
<http://www.crowdsourcing.org/editorial/global-crowdfunding-market-to-reach-344b-in-2015-predicts-massolutions-2015cf-industry-report/45376>
5. Can P2P Lending Reinvent Banking?  
<http://www.morganstanley.com/ideas/p2p-marketplace-lending>
6. «Let's give Karen Klein a vacation» <https://www.indiegogo.com/projects/lets-give-karen-the-bus-monitor-h-klein-a-vacation--6#/>
7. Dr Pepper Makes College Dreams Come True
8. <https://www.gofundme.com/blog/2015/10/13/dr-pepper-makes-college-dreams-come-true/>
9. [Greek Bailout Fund <https://www.indiegogo.com/projects/greek-bailout-fund#/>]
10. «Особые дети: подготовка к школе в ЦЛП»  
[https://planeta.ru/campaigns/clp\\_school\\_01/](https://planeta.ru/campaigns/clp_school_01/)



## **MOBILE SERVICES ANALYSIS COMPARING RUSSIA AND ARGENTINA**

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In cellular communication and the sphere of mobile services there is very fast development, alternation of generations is expressed much more brightly, than in any other technical industry. For a short period, we have endured three generations: 1G is the analog communication working according to the NMT standard, 2G – generation of digital communication with circuit switching, working according to the GSM and CDMA standards, the third generation – 3G using the UMTS standard which along with circuit switching provides also a packet transmission of data. At present we live during an era 4G - it is the generation of mobile communication which is characterized by the high speed of data transmission and the increased quality of a voice communication.[1]

3G mobile communication is based on packet transmission of data. Networks of the third generation work at frequencies of decimeter range, as a rule in the range about 2 GHz, transferring data with speed up to 21 Mbps. They allow organizing video telecommunication, to watch video on the mobile phone without any trouble with delay, to use any Internet services at the greatest possible speed etc.

Systems 4G are based on package protocols of data transmission. For transfer of data the IPv4 protocol is used, and at present time there are already tests of work 4G on the basis of the IPv6 protocol. It is accepted to refer the perspective technologies allowing to carry out data transmission with a speed exceeding 100mbit/page to the fourth generation. And here we already are on the threshold of technology of the fifth generation, but whether it is necessary for simple users of mobile communication?

To answer this question it is worth looking in the past, and for the objective analysis of this information we will consider this question on the example of two countries which are on absolutely opposite sides of the globe. Russia and Argentina.

It has historically developed that in Russia the greatest distribution was gained by GSM standard networks (the second generation – 2G). Still the possibility of transfer not only a voice traffic, but also data has been provided in the basic standard. From the point of view of practical use, in territories of such a big country as Russia, it was the most optimal solution. It was used despite all its shortcomings from which restriction of the maximum speed of data transmission which made only 9,6 Kbps was most distinguished. Besides, sessions of data transmission were rated to similarly voice calls owing to what service it has turned out, to put it mildly, expensive. The situation has changed with introduction of the GPRS service (General Packet Radio Service) which as a consequence has developed to the advanced version, the service known by the name EDGE (Enhanced Data for Global Evolution). Due to use of advanced system of modulation of a signal of EDGE provides data transmission speed gain to 385 Kbps.

Today in Russia, networks of the second generation are still actively used by mobile operators. It is related to the fact that their expansion doesn't demand big expenses, and radius cells of such network can reach 35 kilometers that considerably surpasses newer standards. Networks of the second generation cover nearly 100% of all settlements of the Russian Federation, even the most remote from civilization places. In 2015 the technology 2G provided communication for 52% of mobile devices and connections. Its parameters of bandwidth and delays still suit owners of ordinary phones (not smartphones) to whose share in 2015 51% of all devices fell. By 2017 the relative share of devices and connections with

support 3G will also exceed a share of 2G devices. According to forecasts, their relative shares will make, respectively, 36% and 38% by then. In other words, the technology 2G still remains the favourite, besides the only thing in many territories. And this is its indisputable advantage. Where it is enough for people rather just to contact the family and isn't important for them to download favourite series to the mobile device with high speed. Networks of the second generation are irreplaceable, and will not go out of use soon.

Argentina's scenario is not very different from Russia, but in a smaller scale. It is a big country with a great percentage of rural areas and infrastructure is not keeping up with consumer's demand. As regards 2G technology, introduced in the 90's, it still remains strong representing 47% of the communication technologies. Although is true telcos are trying to change permanently to 3G this transition is not foreseeable at least in a short term scale. EDGE and GPRS technologies are the cornerstone for IoT solutions, mobile modules are manufactured supporting this technology and a big economic and logistic effort must be made if this is to be changed. 3G was launched in Nov 2007, when the country was recovering from a great inflation crisis which took place in 2001, with an annual 8% PBI growth that helped the telecommunications industry grow at an exponential rate. Nowadays, 3G represents more than 50% of the communication technologies with 40% of the non-computer IP traffic in the country. Forecasts state it will be up to 57% for 2018.

In Russia the standard 3G of time is at present the basic for most of consumers in large settlements. Generally it is because the network of the third generation provides higher speed of data transmission up to 21mbit/sec. Such capacity is enough for free work on the Internet. That is an essential part of many people's life in big cities in the modern world. Also higher speed of data transmission in combination with bigger efficiency of a frequency range use allowed operators to lower costs for transfer, both a voice traffic, and data is important.

Top of technological thought in today mobile networks is 4G. The main advantages to the ordinary user are quite obvious. first higher speed of data transmission which reaches 100 Mbps and in actual practice of big load of a network is equal to 10-20 Mbps. Second the delay of transfer of packages to the LTE networks is equal only to 10 microseconds that allows using this technology not only for data transmission, but also for work with stream types of information. Third, and this, probably, is the most important advantage of this technology. It exempts people from the need to be attached to the particular place and if they want to use the high-speed Internet, they can do it practically anywhere.

Not less than 234 LTE networks provide services in 83 regions of Russia, as a rule, in the regional centers, but there are networks and in other cities of regions. Level of the operator competition LTE is quite high, to fall on average 2,8 LTE networks on the region.

In Argentina the LTE technology is penetrating the market at a high rate but still lacks infrastructure and this can be corroborated in Table 1, stating that 4G represents only 1% of the communication technologies. There are two main causes of this low percentage which are, little initial investment in infrastructure and the high prices of terminals which people couldn't afford. Since 2014 companies have made great efforts to try to keep up with the demand, increasing infrastructure investments from 300 Million USD\$ in 2013 to 1000 Million USD\$ in 2015. However, spectrum is only strong in the main cities and needs to expand towards low demographic areas.

Table 1 - % using communication technology in Russia and Argentina

Technology	% using in Russia	% using in Argentina
2G	52	47
3G	36	52
4G	12	1

What situation do we have now? How can we improve that? RF resource is very limited and in the foreseeable future frequency spectrum is probably exhausted. These restrictions will not be overcome with the use of innovative technologies such as MIMO (multiple input, multiple output) and AAS (Adaptive Antenna Systems). These technologies allow a little time to buy. In mobile networks capacity expansion is possible by increasing spectral efficiency and frequency reuse in the spectrum cellular mobile radio systems. Ultimately, this means reducing cell size and increasing their number. Alternative networks with smaller size cells simply do not exist. Instead of using a small number of large wide-range base stations, that usually requires high cost, in the future it will be necessary to do extra planning, building, connecting and operating a large number of small, low-cost cells.

In addition to small cells, which will be mainly used outdoors, the end users (indoor) will have to a WiFi-router with an Internet connection as an option for unloading. For that it will be necessary to install the so-called 3G / 4G femtocells with the possibilities of self-organizing network to optimize the coordination of possible interference. At the same time all of these technologies may require operators to bear additional costs associated with infrastructure, development and integration. In the future, the routers that are used by end users may combine both LTE and WiFi-modems. But all of these devices are outside the control area network operators.[2] Technologies of the fifth generation will be the following stage in development of mobile communication. 5G should be launched by 2020 to meet business and consumer demands. In addition to providing simply faster speeds, they predict that 5G networks also will need to meet new use cases, such as the Internet of Things (network equipment in buildings or vehicles for web access) as well as broadcast-like services and lifeline communication in times of natural disaster.[3]

The NGMNA defines the following requirements for 5G networks:

- Data rates of tens of megabits per second should be supported for tens thousands of users
- 1 gigabit per second is to be offered simultaneously to many workers on the same office floor
- Several hundreds of thousands of simultaneous connections needs to be supported for massive sensor deployments
- Spectral efficiency should be significantly enhanced compared to 4G
- Coverage should be improved
- Signalling efficiency should be enhanced
- Latency should be reduced significantly compared to LTE.

Certainly, we have to seek for development of technologies, but in our opinion the technology 4G still has insufficiently extended in Russia and even more in Argentina. And for common residents of our countries it will be just unclear why this new technology is necessary.

In general the way of development in the countries that seem so different, is very similar and it isn't surprising. People, despite different nationalities, absolutely different climate types, and the complete antithesis of seasons need the same. They need fast and convenient Internet connection for their device and an opportunity to be always in touch with the family. And we as experts in the field of telecommunications will be promoting technologies to be of the maximum comfort and the best communication quality for future generations.

### References

1. Beyond IMT-2000. ITU. Document 8F/INFO/ 4-E, 6 March 2000.
2. Future telco. Detecon International GmbH / Cologne 2014.
3. Tikhvinskiy V.O., Bochechka G.S. Conceptual aspects of 5G construction / Electrosvyaz, 2013. №10.



## IMPORTANCE OF TRANSFORMER CONDITION EVALUATION

Tyuryumina A. V.

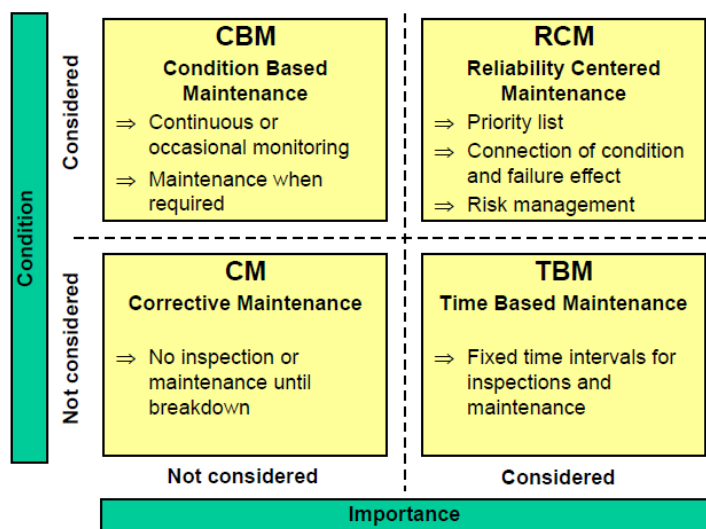
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Power transformers are considered to be one of the major factors which influence reliability of power supply to consumers. Therefore, transformer management is one of the most important equipment asset managements in a power system. However, the majority of transformers have been installed 30 and even more years ago. Therefore, the global task of utilities and electric power industry is to manage and prolong their service ability. Age increases risks of unexpected failures and outages, which can be catastrophic in many cases. Metwally (2011) established that 50% of transformer failures occur at the age of 50 years. [1]

To prolong transformer service utilities use different maintenance strategies. One common way to classify maintenance strategies is to take into consideration the system's condition and importance. Figure 1 presents an overview of this classification. [2]



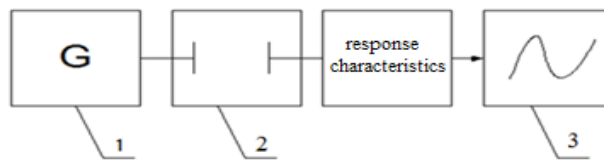
*Figure 1 - Classification of maintenance strategies[2]*

The application of each maintenance strategy requires reliable methods to determine the transformer condition. The most easily accessible and effective way is to use transformer oil as the diagnostic medium. It is the insulation system undergoes the greatest changes during the transformer service (aging), that is why transformer oil contains about 70% of the available diagnostic information.[3]

One of the reliable complex methods for online diagnostics is the acoustic emission (AE) method, which is widely applied to the oil-immersed power transformer partial discharge diagnostics.

This paper describes the measurement of acoustic signals generated by impurities (water, cellulose, gas phase) in transformer oil and analyses their frequency spectrum to acquire the information about the transformer oil condition as an indicator of the transformer state.

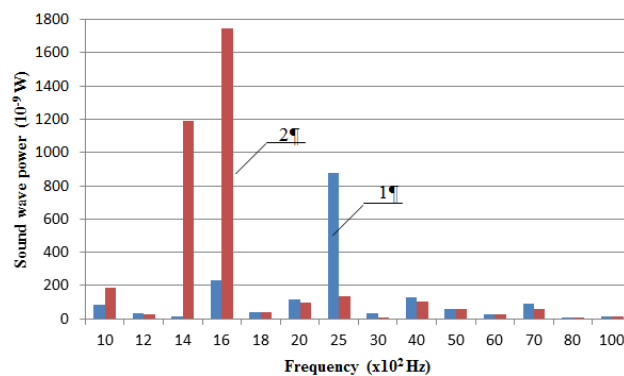
The measurement unit include a tank filled with oil of T-750 and T-1500 brands, and two electro-mechanical (piezoelectric) transducers, an AE signal generator, a PC with software. The principal scheme of acoustic signal processing is shown in Figure 2.



**Fig. 2 - Principal scheme of acoustic signal processing:  
1 frequency generator; 2 piezoelectric transducers (emitter), 3 measuring system**

Both the quantity of impurities in oil samples and generator frequency were considered to be the independent variables whereas the sound wave power value was an dependent variable.

To check the AE method sensitivity, first, a comparative analysis of new and aged transformer oils was performed (Figure 3). Therefore, this method can be used to determine the condition of transformers in service.



**Fig. 3 - Response characteristics of new and aged transformer oils:  
1 - new transformer oil, 2 - aged transformer oil**

A number of electrical, mechanical and chemical techniques for transformer diagnostics is available only for off-line periodic inspections, they require much time, incur financial and manpower costs. The acoustic emission (AE) method is a complex online diagnostics technique to identify evolving failures in the transformer using data concerning oil condition.

The advantages of the AE method are connected with the application of the same equipment to determine several transformer oil characteristics; its simplicity and cheapness, and the fact that it is less time-consuming compared to other methods.

Our method may contribute to the improvement of transformer diagnostics validity by accumulating and analyzing data. [3, 4] As a result it may simplify the procedure of transformer diagnostics, increase reliability of power supply and reduce energy costs for customers and enterprises.

### References

1. Metwally I.A.: Failures, Monitoring, and New Trends of Power Transformers. IEEE POTENTIALS. MAY/JUNE 2011. Digital Object Identifier 10.1109/MPOT.2011.94023
2. J. Schneider, A. Gaul, C. Neumann, J. Hogräfer, W. Wellßo, M. Schwan, Armin Schnettler ASSET MANAGEMENT TECHNIQUES 15th PSCC, Liege, 22-26 August 2005
3. Batrak A.P., Tyuryumina A.V., Nikitina A.V. The comparison of qualitative characteristics of transformer oils. Heavy engineering 2013. - № 3, p. 41-44
4. Batrak A.P., Tyuryumina A.V., Nikitina A.V. Acoustic analysis of transformer oil characteristics. Heavy engineering. 2014. - № 4-5. p. 45-46



## **WORKPLACE BULLYING: A CHALLENGE TO OVERCOME**

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Never be bullied into silence. Never allow yourself to be made a victim.  
Accept no one's definition of your life, but define yourself  
~ Harvey S. Firestone

Have you ever shouted at or being humiliated at workplace? Or are you being blamed without any truthful justification and evidence? Did you ever face unwanted and invalid criticism? Or ever being excessively monitored? Are you ever being target of practical jokes? If your answer is “yes” for any of the questions, be cautious you are bullied at your workplace.

There are certain groups and individuals in every organization who intentionally repeat aggressive behaviors within organizations to hurt people mentally and physically for the sole purpose of gaining power over them.

Studies conducted in United States (WBTI, 2003) and United Kingdom (Wilson, 2004) interestingly indicated that approximately half of the bullies in workplace are women contradicting the common assumption that only men bully. It is unfortunate that bullies cannot be identified easily within an organization as there is no standard profile for the workplace bully. In fact it is the behavioral pattern, which identifies a bully. Presumably, a bully may be victim's co-worker, customer or a supervisor.

It is very importance to understand the personality traits of the bullies. At times we term them as “opportunists” but many bullying behavior do exhibit the traits of psychopathy or sociopathy (O'Connor, 2004). One view is that bullies are weak, incompetent and immature (Wilson, 2004). But according to another point of view, bullies are very intelligent, clever and skilled at manipulating and misrepresenting facts (Peyton, 2003). On other hand, if we look closely it is not only the personality traits but it is often an organization's culture that creates an environment that allows, and may actually encourage, bullying (Randall, 2001). Irrespective of the difference of opinion, it is agreed upon that bullies are deficient in forming human relations and find satisfaction in suffering of the victims of bullying.

In order to find out the frequency of bullying, a study of over 1000 participants conducted in the United Kingdom found that 53% had experienced workplace bullying during their careers, and 77% had witnessed it happening to another employee during their careers (Rayner, 1997). Another study suggested that approximately 90% of the workforce suffers from a workplace bully at some point during their career (Glendinning, 2001). Moreover, it is estimated that one in four employees in the industrialized world is the victim of harassment, threats or physical attacks (Randall, 1997).

In another prevalence study of U.S. workers, 41.4% of respondents reported experiencing psychological aggression at work in the past year representing 47 million U.S. workers (Schat, Frone & Kelloway, 2006). Looking at the bullying statistics in countries like United Kingdom and United States, it leaves a huge question mark on the condition of South Asian countries in general and Pakistan in particular due to lack of awareness, education and related laws to crab menace like this.



When we talk about workplace bullying, it is considered as very complex issue which is often hidden within organizational cultures as well as protected by both employer and employee equally. A veil of silence too on the issue has barred considerable research and development on this issue. In fact many people have “turned a blind eye” on it and term it as communication problem, robust behavior, personality clash and a justified management tool.

Some people also mix it with “harassment” and even “retaliation”. In fact it is not only different due to repetitive and targeted nature but also it is far devastating than the later two. It has been recognized in recent times as significant health and safety issue as well as the most common cause of illness due to workplace related stress, anxiety, depression, irritation, psychological injuries, sleep disorders, digestive disorders and even workplace related suicides and committing murders at workplace.

It’s not only the victims who suffer from bullying but the organizations too have to pay the price. A study was conducted by the American Bureau of National Affairs found that \$5 billion-\$6 billion was lost by the organizations each year as a result of decreased productivity caused by actual or perceived employee abuse (Randall, 1997). Also it costs organizations in shape of:

- Increased absenteeism causing drop in productivity
- Reduced efficiency in the teams/groups
- Increased turnover and replacement costs
- Errors and accidents in workplace
- Expenses on litigations and settlements with victims
- And more importantly, poor and distorted public image.

Looking at the devastating nature for victims and organizations, the management must work to control bullying at workplace. In order to have a “bully free” organization, the commitment of the senior management is mandatory. It must be ensured in organizations that:

- “Zero tolerance” anti-bullying policy and code of conduct be implemented.
- Effective communication channels be placed
- Proper and formal policy and procedures be devised to handle complaints and be impartially investigated.

Employees are to be educated about bullying in workplace

- Mass awareness and training programs be initiated in organization
- Employee assistance programs be initiated for counseling of the victims of the bullying

On part of the individuals bullied , they need to ‘break the silence’ and report the incident on suitable forum within or outside workplace with consultation and advice of HR officer, union officials, Grievance officer or any impartial person within workplace. It is essential to keep an exact and accurate record of what else happened, date, time and person involved in bullying.

In order to overcome challenge of workplace bullying, we need not to focus individuals only, but have to look at the cultures and environments of our workplaces, as a disease cannot be cured without addressing its root cause.

“Bullying free” workplaces will not only ensure safety of the employees from harm but also will provide joyful, pleasant, healthy, and highly engaged workplace.



### References:

1. Glendinnig, P.M. (2001). Workplace bullying: Curing the cancer of the American workplace. *Public Personnel Management, Vol. 30*, pp. 269-285.
2. O'Connor, T. R. (2004). Antisocial personality, sociopathy, and psychopathy. Retrieved Jul. 24, 2011, from <http://faculty.ncwc.edu/toconnor/428/428lect16.htm>
3. Randall, P. (1997). *Adult bullying: perpetrators and victims*. London: Routledge.
4. Randall, P. (2001). *Bullying in adulthood: assessing the bullies and their victims*. New York: Brunner-Routledge.
5. Rayner, C. (1997). The incidence of workplace bullying. *Journal of Community & Applied Social Psychology, 7*, 199-208.
6. Wilson, B. (2004). Workplace bullying: a growing problem. *BBC News UK Edition*. Retrieved Jul 24, 2011, from <http://news.bbc.co.uk/1/hi/business/3442331.stm>
7. WBTI, (2003). Research from the workplace bullying & trauma institute. Retrieved Jul. 24,2011, from The Workplace Bullying & Trauma Institute Web site: <http://bullyinginstitute.org/home/twd/bb/res.html>
8. Workplace Bullying images/clip arts. Retrieved Jul.24, 2011, from <http://bullyingpictures.com/bullying-2/different-kind-of-workplace-bullies/> and <http://blog.naseeb.com/2007/03/bully-at-workplace/>

