Creation of a strategic planning system for the socio-economic and innovative development of organizations of higher education

Alexander Evmenov¹, Eduard Krolivetsky¹,*, Lyubov Sazneva², and Taisiya Sorvina¹

¹St. Petersburg State Institute of Cinema and Television, 13, ul. Pravdi st., St. Petersburg, Russia
²St. Petersburg National Research University of Information Technologies, Mechanics and Optics, Kronverksky pr., 49, lit. A., 197101, St. Petersburg, Russia

Abstract. The article reveals the theoretical and methodological provisions for the formation of the composition of technological elements of the strategic planning system, their interaction with the resource components of the organization of higher education (on the example of Voronezh and St.Petersburg universities) to achieve generalizing and specific targets of quantitative and qualitative nature of the strategic goal of long-term development of a higher education institution. The concepts of "strategy", "strategic vision", "mission of the organization of higher education" are defined. The possibility of optimizing resource consumption in the process of implementing complex measures within the framework of federal, regional, sectoral and local programs and projects of social, economic and innovative development of higher education organizations is substantiated. The priority directions in the development strategy of the analyzed universities are highlighted. The necessity of including such technological elements as strategic analysis, mission, strategic vision, strategic goal, generalizing (basic) strategy, functional (private) strategies in the system of strategic planning of socio-economic and innovative development of the studied universities is substantiated.

1 Introduction

The development of a technology for the strategic orientation of a higher educational institution to achieve the set economic and social results in the medium and long term, in our opinion, should be based not only on the available resource potential, the use of strategic planning procedures, but also on the formation of a toolkit for individual and comprehensive implementation of each of procedural components of the strategic orientation of the development of the research object, taking into account the peculiarities of their functional purposes and structural-share influence on the achievement of strategic qualitative and quantitative targets.

Technological procedures for strategic orientation towards achieving the necessary results of the activities of institutions (organizations) of higher education, used and being updated at present in the Russian Federation, include mainly the mission, the strategic goal

* Corresponding author: getman-greta@mail.ru

© The Authors, published by EDP Sciences. This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (http://creativecommons.org/licenses/by/4.0/).
and its main integrated indicators, their partial quantitative characteristics, controlled in the
dynamics of their changes in order to carry out a comparative analysis with competitors -
higher education organizations, universities.

The criterion for the strategic target orientation of higher education institutions, in
accordance with the current Concept for the implementation of national goals in higher
education until 2030 (hereinafter - the Concept), is the implementation of at least 50% of
the subjects of the Russian Federation of existing programs for the development of higher
education and science for satisfying the needs of the industrial, social sphere and
technological transformation of the country by qualified personnel [1]. At the same time,
the targets declared by the Concept for the implementation of national goals in the field of
higher education until 2030 (hereinafter referred to as the Concept) are achieved by such
innovative and organizational structures as the research and educational center
implementing the federal program "Development of scientific and scientific-industrial
cooperation" , and at the regional level - the implementation of the regional project
"Development of the scientific and educational center" in accordance with the world
scientific and educational achievements in this area.

2 Applied methodology, research materials

The research methods are based on the hypothesis about the possibility of forming a
balanced strategic target orientation of higher education institutions. The methodological
basis of the research was formed by the principles of system analysis, a comparative
analysis of a number of existing strategies of universities was made, elements of structural
and cluster analysis were used, the method of forming a system of interrelated indicators.

2.1 The main technological elements of strategic planning for the long-term
development of Russian higher education institutions

Achievement of the set targets of the system of strategic planning of socio-economic and
innovative development of higher education organizations in the medium- and long-term
periods of time within the framework of the Concept is envisaged within the framework of
the Program of Strategic Academic Leadership, the criterion-target reference of which is
characterized by an increase in the number of foreign citizens studying in educational
institutions of higher education and scientific organizations, as well as the implementation
of a set of measures to employ the best of them in the Russian Federation. The specified
criterion-target benchmark in the Strategic Academic Leadership Program is substantially
dependent on the implementation of such federal programs as: "Young Professionals"
aimed at supporting the global competitiveness of universities that provide training for the
basic industries of the production and social spheres; “New Opportunities for Everyone”,
which provides for an increase in the number of trainees in additional professional
education programs; "Export of Education" focused on attracting talented foreign
applicants.

The real contribution to the implementation of the Strategic Academic Leadership
Program in this case, in contrast to the logical-verbal formulation of the criterion-target
benchmark under consideration, is determined by specific indicators: the level of resource
provision and the growth of income of a higher educational institution; increasing research,
human resources; transfer of knowledge and technology to the real sector of the economy;
growing attractiveness of Russian education and science abroad.

However, the Concept for the implementation of national goals in the system of higher
education and science, revealing a set of necessary organizational, economic and scientific
and innovative measures implemented to achieve the set criterion-target guidelines, social
and economic identifiers through national and regional projects, does not give a proper understanding, based on its functional purpose is to determine the possibility and reality of achieving the set targets for socially significant performance in the system of higher education and science, on the level of systematization of medium- and long-term development of higher education and science institutions at the federal level within the framework of strategic planning technology [2, 3].

This kind of integration of the processes and stages of achieving the set targets in the field of higher education and science, in our opinion, requires a systemic unity of the use of strategic planning technology, connecting the sequence of its individual components, aimed at achieving its specific contribution to the quantitative and qualitative indicators characterizing the strategic goal of developing educational institutions of higher education.

In this regard, it should be noted that the systemic integration of technological elements of strategic planning for the long-term development of Russian higher education organizations in economic literature and regulatory legal acts is carried out in some cases based on their understanding of the definition of "strategy" [4, 5] or achievement of the set strategic goals [6]. In this case, the disclosed concept of "strategy" is a complex of organizational and economic, financial, investment, scientific and innovative measures necessary to achieve medium- and long-term targets [5] or measures as responses to various global and local challenges of our time [7, 8, 9].

So, for example, the current Strategy of Voronezh State University for the period 2017-2030 serves as the basis for its developers for drawing up and establishing qualitative and quantitative parameters of medium- and long-term university development programs and organizational and innovative projects implemented at faculties (institutes), as well as the university as a whole. A feature of the Strategy of Voronezh State University, implemented in the period 2017-2030, is that for the formed complex activities that are not included in the programs and projects of the strategic development of the university, its faculties (institutes), the fundamental sections of the Strategy are program documents implemented in the current operation of the university through the issued and executed orders and orders [4].

The Strategy for the Development of St. Petersburg State University until 2030 is also based on the University Transformation Program, which really takes into account the availability of intellectual, personnel, material and technical and infrastructural potential, as well as traditions, the current state and the need for innovative transformations of the university. In general, the strategic target orientation of St. Petersburg State University provides for the achievement of the main qualitative and quantitative characteristics of the set goal in 2030 within the framework of the Development Program activities that provide for the innovative transformation of educational programs, expert and research activities, the available infrastructures and management of the scientific and educational complex. mechanism of interaction with Russian and international partners.

The definition of strategic targets for the long-term development of St. Petersburg State University was carried out on the basis of the basic Development Strategy of the Russian Federation, sectoral and regional strategies, which are the basis for program and project actions to achieve the goals of long-term scientific, innovative and socio-economic development of the university [10].
2.2 Features of the concept of "strategy" within the relation to the strategy formation of medium-, long-term development of higher education organizations

The presentation of the strategy of medium-, long-term development of higher education organizations only as the achievement of the main targets in the process of implementing specific federal, regional and sectoral programs and projects for the innovative transformation of knowledge and technology, infrastructure of higher educational institutions (universities), compliance with priority development directions, taking into account their current trends within the framework of the high-tech digital economy being created, the increasing demands for the training of highly qualified specialists, the creation of new technologies, the market requirements for the provision of high-quality educational services, the growing needs of the social sphere in socio-cultural, educational and museum services, in our opinion, is devoid of the principle of consistency disclosure of the concept of "strategy".

This concept in relation to the strategy of medium-, long-term development of higher education organizations, despite the non-systemic, individual declaration - a generalizing dominant in the program and project organizational and economic, socio-cultural, scientific and innovative, financial and investment transformations of current activities and the prospective development of higher education organizations education, is one of the technological elements of such an organizational innovation as strategic planning [11, 12, 13].

The systemic integration of such components of the medium- and long-term development of the analyzed state universities, such as strategic analysis, vision, mission, strategic goal, generalizing (basic) and functional strategies, in our opinion, will allow: to increase the level of resistance and neutralize the influence of negative factors as external and the internal environment; achieve the qualitative and quantitative characteristics of the strategic goal of universities; more efficiently use the available labor, material and technical resources within the framework of the programs and projects for the development of higher educational institutions; reduce the risks of implemented management decisions, programs and projects for transforming digital infrastructure, digital transformations of educational processes.

The need to use such a technological component of strategic planning as strategic analysis is dictated by a set of targets set for the achievement of targets for the development of higher education institutions in the long term. Therefore, the orientation, for example, of Voronezh State University in the period 2017-2030 to ensure such areas of its activities as: training of specialists capable of using and creating new knowledge in the production and social spheres of the national economy; implementation of research and development results in high-tech sectors of the national economy; achieving a high level of social responsibility, stimulating the socio-cultural development of a constituent entity of the federation, the country, in turn, for the purposes of efficient consumption of resources in the process of implementing program and project activities to target the development of the university requires a comprehensive analysis of the influence of factors of an unstable external environment, internal activity on the long-term development of the organization of higher education.

The main factors of the strategic analysis of the state of the external environment, which significantly affect the activities of a higher educational institution, are such complex groups as regulatory and political, economic, socio-cultural, innovative (technological, organizational, product). A detailed analysis of this group of factors, numerous in terms of classification, should be focused on obtaining the results of interaction and influence on the activities of a higher educational institution and, in general, on the development of Russian
education of such logical-verbal criteria and parametric characteristics of the external and internal environments, such as:

- demographic situation and migration in the country;
- low rates of economic growth (gross domestic product);
- the unevenness of scientific and innovative changes, creating technological inequality in the education system, in higher education institutions, in the relations of students, at the level of households and individual citizens [14];
- the increasing level of globalization, which determines the need for employees of higher education institutions to carry out their activities in multilingual and multicultural environments [15];
- the introduction of digital technologies in the educational process, contributing to a change in the educational level of employees of higher education, their career advancement [16];
- transformation of the traditions of the functioning of the family and the development of family relations, acting as a social factor in the acquisition of education (including higher education) by family members, their upbringing in overcoming infantilism and social isolation, in introducing the student to the work and memory of previous generations;
- a decrease in the scope of human activity due to the introduction of artificial intelligence, robotization, automation and the transition of most industrial sectors to creative activity, a decrease in the number of communication competencies, levels of emotional intelligence in higher education institutions [1, 17].

Ultimately, a strategic analysis of the influence of negative and positive factors of the external and internal environments with an expert generalization of the strengths and weaknesses, opportunities and emerging threats in the activities of higher educational institutions (their groups) should give individual expert assessments and logical-verbal criteria, which in unity is determined by the real possibilities of maintaining the level of competitiveness of the national economy in the context of the global competition of high-tech economies based on knowledge of the growth of the innovative level of higher education organizations in the medium and long term. In our opinion, strategic analysis, which is a technological element of the system of strategic planning for the development of higher education, does not only the results of the analysis of an individual and generalizing nature, but also allows to gradually and in time distribute intellectual, labor and material and technical resources in the activities of a higher educational institution, in the Program for a long time urgent development on an effective basis to achieve the designated targets in the strategic planning system.

At the same time, the adoption of the formulated vision of the socio-economic and scientific-innovative level of the organization of higher education by the majority of its employees (first of all, the teaching staff) contributes to the strengthening of labor discipline, an increase in labor productivity, an increase in the quality of educational services, a faster update of professorial knowledge. - the teaching staff, encouraged to be elected by competition and to work in a higher educational institution during the final stage in time of the expert scenario vision. At the same time, concepts such as: strategic vision, creativity, human capital, risk management [18, 19, 20] are able to act as collectively transmitted ideas of the strategic transformation of the socio-economic and scientific-innovative development of higher education.

2.3 Features of the formation of strategic development programs of St. Petersburg State University and Voronezh State University

The presentation of the vision of the socio-economic development of St. Petersburg State University in the period up to 2030 is presented in the draft Development Program of St.
Petersburg State University as effectively contributing to the construction of an inclusive society based on democratic values and human rights, on preserving the memory of ancestors and a unique heritage of the multinational people of the Russian Federation, whose policy is aimed at creating conditions that ensure a decent life and free development of man [17, p. 16]. At the same time, the social mission of St. Petersburg State University is focused on a specific person (student, graduate student, teacher) in a certain period of time directly or indirectly associated with the university. The implementation of the university's mission is based on solving complex socio-economic, scientific-innovative and organizational tasks through the effective use of the intellectual, cultural, scientific, educational potential of the university teaching staff and other university employees.

In this regard, it should be noted that a number of economists have recommendations for the use in the strategic planning system of such a generalized technological element, which simultaneously combines the functional purpose of the strategic vision and the mission of the organization, as goal-setting, which summarizes the direction of development of a higher education organization in a certain period of time (for example, until 2030) and the positioned desire for the socio-ecological state, which must be achieved within the time established by the strategic plan [21, p. 123]. At the same time, the authors in the goal-setting of the main technological component of strategic management single out only the mission, which acts as the relevant code of the organization that determines the economic, social and planning-oriented component, as well as performance indicators, the quality of work, services, goods, the organization's reputation in the market, style and ideology, target orientation to achieve the final economic and social results in the established strategic plan, programs and projects for a period of time.

The presence of vagueness and ambiguity, the lack of individuality and independence of such a technological element of the strategic planning system as a vision of the state of the organization of higher education in the established long-term period of its socio-economic development, in our opinion, deprives strategic planning of ideological content about the real possibility of achieving targets and continuation of activities outside the established program and strategic plan for the development of the organization of higher education.

Other authors in the economic literature [22 - 26] believe that by formulating and promoting the strategic vision and mission of the organization among their employees, the developers of the strategic plan (managers) acquaint them with the targets for achieving and with the directions of long-term socio-economic development. At the same time, the presentation to employees of the strategic vision of the organization in the medium and long term as its state, activities in favorable conditions that satisfy their aspirations and the leadership of the organization looks more convincing.

In the process of developing the Strategy of Voronezh State University for 2017-2030, the mission of the university is presented as “preserving and developing the tradition of classical university education and science in all their diversity in the process of forming an intellectual and cultural environment and meeting the needs of the economy in highly qualified workers, innovative ideas and scientific-research developments” [4].

The formulated missions of the organization of higher education, taking into account the territorial (regional) characteristics of the functioning organizations of higher education, in our opinion, should be based on the experience and real achievements of activities in the retrospective period, carry in themselves the desire to ensure social responsibility, adherence to the principles of organizational socio-psychological stability, the balance of economic and social interests of a higher educational institution and specific consumers of its educational services, the results of scientific research. At the same time, the sphere of responsibility of the organization of higher education (university) should not be limited spatially and territorially only by the region, but should also be focused on the private
satisfaction of consumers of educational services in its federal district, country, and participants in the world market for educational services of higher education.

The formulation and substantiation of potential opportunities for providing resources for achieving the main qualitative and quantitative characteristics within the framework of the strategic goal as a dominant technological element of the strategic planning system for the long-term development of higher education organizations, in our opinion, should correspond with the composition of those selected for the implementation of priority areas of activity of the higher education organization ... At the same time, compliance with the achievement of the main criteria of the strategic goal with the socio-economic, scientific and innovative development of Voronezh State University in the period 2017-2030 is determined by the number of highly qualified specialists in the educational process, the management system, and available material and technical resources. When substantiating the real possibility of achieving the necessary qualitative and quantitative characteristics of the implementation of the projects "Campus", "Scientific equipment", "Competence of teachers and scientists", "Applicants", "Responsible students", "Research", "Community" Voronezh State the university should form an organizational and economic mechanism for optimizing the resources spent on programs and projects being executed.

For example, such projects in the process of achieving a strategic goal as "Campus", designed to create comfortable conditions for the educational process, in the existing spatial infrastructure of the university; "Scientific equipment" for the operation of modern and accessible scientific laboratories; “Competence of teachers and scientists” should purposefully create favorable conditions for the implementation of such projects (subprograms for achieving the parameters of the strategic goal of the university) as “Responsible students” receiving a high level of knowledge in the educational process, “Research” [4].

The strategic goal of long-term economic and social development of Voronezh State University, based on its status as a classical university, in order to achieve basic performance targets, excludes the possibility of implementing complex measures in functional (private) strategies that are aimed at significantly reducing non-core specializations, ensuring leadership in terms of costs, implementation educational process, followed by the transition to price competition.

However, the adoption and implementation of a functional strategy for diversification and moderate expansion due to the quality of educational services provided at Voronezh State University, in our opinion, should not exclude the development and implementation of functional strategies for educational, methodological, educational and research focus that meets the traditional specifics of the university's activities. ...

Generalizing criterion-target benchmarks (logical-verbal measures) in the technological element "strategic goal" of the system of strategic planning of socio-economic and scientific-innovative development of St. Petersburg State University are: obtaining, on the basis of scientific research, knowledge about the laws of functioning of nature (biosystems, human society in the interests of socio-economic, scientific and innovative, socio-cultural development of the national economy, ensuring the country's security; increasing the level of innovation and efficiency of scientific research and research developments; maintaining leadership among Russian universities, promoting classical universities in the world elite and consolidating the reputation Russian science, education, socio-cultural values in the world educational and scientific community.

The integration in the strategic planning system of the socio-economic and innovative development of St. Petersburg State University of the technological components of the strategic vision, mission, results of strategic analysis, strategic goal, basic strategy and functional (private) strategies, in our opinion, should comply with the principle of hierarchical formation of a strategic plan, in accordance with which not only the...
educational institution of higher education (university) in its development carries out its activities in accordance with the achievement of the targets of the Development Strategy of the Russian Federation until 2030, the Strategy of Scientific and Technological Development of the Russian Federation until 2035, national projects "Education" and "Science", but also taking into account the established priorities of the Program of socio-economic and innovative development until 2030 directly by St. Petersburg State University.

3 Results

Educational and research divisions of a higher educational institution, within the framework of the strategic plan, develop their functional strategies, determine their inherent and really achievable benchmarks of economic, social and research (innovative) performance both for individual periods of time and up to its established boundary (2030 year, for example) strategic planning. In our opinion, such functional strategies in the analyzed university, as in other institutions of higher education, can be strategies: focusing, characterized by a small segment of consumers of non-standard educational services; innovative changes, which are based on the creation of new educational services on a fundamentally different basis for their provision and assimilation; prompt response, which determines the timely achievement of success in the educational process, its effectiveness in time, the process of making managerial decisions that is ahead of similar actions of competitors - higher education organizations; diversification through the creation of joint educational structures, the acquisition or establishment of new institutions of higher education; international diversification based on ensuring the unity of action of a group of higher education organizations in various national markets of educational services.

The interaction of technological elements with resource elements in the system of strategic planning for the long-term development of higher education organizations in order to achieve a balance in achieving the set targets of economic, social performance, a high level of innovativeness should be based on the implementation of educational and technological projects, programs of higher educational institutions, which are based on the implementation of complex measures for:

• digitalization and internationalization of education;
• active participation of representatives of the real sector of the economy in the qualitative completion of both individual stages of the educational process, and in general;
• increasing the mobility and practical orientation of educational programs;
• use of distance and other technological teaching tools [4, 17].

The scheme of interaction of technological and resource elements of the strategic planning system for the socio-economic and innovative development of higher education organizations is shown in Figure 1.
Fig. 1. Scheme of interaction of technological and resource elements of the strategic planning system for socio-economic and innovative development of a higher education organization (HEO).

4 Conclusion

Thus, the systemic strategic planning of medium-, long-term socio-economic and scientific and innovative development in the conditions of an unstable state of the external and internal environment, acting as an organizational innovation in the current and future activities of higher education organizations, focused on achieving the planned results of their activities, uniting the interaction of such technological components of the system as strategic analysis, mission, vision, strategic goal, generalizing (basic) strategy and functional (private) strategies - strategies of departments of higher education organizations, provides counteraction, neutralization and leveling of negative influences of external and internal environments, co-acts to increase the level of innovation, the attractiveness of higher education organizations, the quality of their services, compliance with international standards of their provision, the growth of international recognition of the technologically transforming professional participants of the market of educational services of higher education.

References

1. On the Concept for the implementation of national goals in the field of higher education until 2030. Meeting of the Council for Strategic Development and National Projects (2020) http://www.kremlin.ru/events/councils/by-council/1029/63635
2. N.I. Evmenova, E.N. Krolivetsky, St. Petersburg Economic Journal 1, 15-20 (2020)
3. Ning Wu, ZuanKuo Liu, Technological Forecasting and Social Change 162, 120400 (2020) DOI: 10.1016/j.techfore.2020.120400
4. Strategy of Voronezh State University, https://www.vsu.ru/ru/university/docs/strateg_plan-project.pdf
5. E.S. Shlyonskova, The strategic management system for the development of the service sector (Publishing house "Studio" NP-Print", St. Petersburg, 2012)
6. A.T. Tooth, Strategic management: textbook (TK Welby, Moscow, 2008)
7. A. Lasakova, L. Bajzikova, I. Dedze, International Journal of Educational Development 55, 69-79 (2017) DOI: 10.1016/j.ijedudev.2017.06.002
8. V. Krolivetskaya, E. Krolivetsky, E3S Web Conf. 135, 04032 (2019) DOI: 10.1051/e3sconf/201913504032
9. M.E. Broome, A.M. Villarruel, H.J. Thompson, Journal of Professional Nursing 4 (2020) DOI: 10.1016/j.profnurs.2020.09.013
10. E.N. Krolivetskiy, L.P. Sazhneva, Problems of the modern economy 1(73), 181-183 (2020)
11. Rodrigo Arocena, Judith Sutz, Technological Forecasting and Social Change 162, 120399 (2020) DOI: 10.1016/j.techfore.2020.120399
12. E. Markovskaya, V. Holodkova, D. Radushinsky, O. Feoktistova, A. Borisova, MATEC Web of Conferences 170, 01047 (2018) DOI: 10.1051/matecconf/201817001047.html
13. S. Yanez, A. Uruburu, J. Lumbreras, Journal of Cleaner Production 207, 57-66 (2018) DOI: 10.1016/j.jclepro.2018.09.171
14. D. Radushinsky, A. Fedosina, T. Pokrovskaya, E3S Web Conf. 210, 13038 (2020) DOI: 10.1051/e3sconf/202021013038
15. I. Zhuravlyova, S. Zhuravlyov, Procedia - Social and Behavioral Sciences 206, 445-454 (2015) DOI: 10.1016/j.sbspro.2015.10.081
16. N.C. Jackson, Business Horizons 62(6), 761-772 (2019) DOI: doi.org/10.1016/j.bushor.2019.08.002
17. Explanatory note to the draft of Development Program of the Federal State Budgetary Educational Institution of Higher Education "St. Petersburg State University" until 2030, https://spbu.ru/sites/default/files/20200831_povestka_us_spbu_material_2.pdf
18. Rukhsar Sharif, Educational Research Review 28, 100287 (2019) DOI: 10.1016/j.edurev.2019.100287
19. T.M.H. Doan, V.L. Nguyen, D. Radushinsky, M. Gubankova, I. Kubrak, E3S Web of Conferences 135, 04054 (2019) DOI: 10.1051/e3sconf/20199105026
20. N.V. Syreyshchikova, D.Yu. Pimenov, L. Moldovan, Procedia Manufacturing 46, 256-262 (2020) DOI: 10.1016/j.promfg.2020.03.038
21. A. Mottaeva, J. Stepanova, N. Meshkova, G. Semenova, European Journal of Sustainable Development 10(1), 705-723 (2021) Doi: 10.14207/ejsd.2021.v10n1p705
22. A.A. Thompson, A.J. Strickland, Strategic management. The art of developing and implementing a strategy (Banks and Birzhi, UNITI, Moscow, 1998)
23. A. Evmenov, E. Krolivetsky, S. Krolivetskaya, T. Sorvina, E3S Web of Conferences 164, 10036 (2020) DOI: 10.1051/e3sconf/202016410036
24. E. Bagreeva, A. Mottaeva, E3S Web of Conferences 210, 17024 (2020) https://doi.org/10.1051/e3sconf/202021017024
25. Chokri Kooli, Evaluation and Program Planning 77, 101713 (2019) DOI: 10.1016/j.evalprogplan.2019.101713
26. P. Faure, M. Cho, G. Maeda, Acta Astronautica 148, 220-224 (2018)
27. O.N. Soboleva, T.A. Burtseva, E.A. Barmina, E.V. Ganebnykh, P.V. Tokareva, Contribution to Economics, 565-574 (2017) DOI: 10.1007/978-3-319-60696-5_71
28. E. Ganebnykh, I. Altsybeeva, E. Gurova, SHS Web of Conferences 35, 1029 (2017)