# 2018

# 2017

## Bataev, A. V. (2017). Analysis of the Use of Cloud Services and Assessment the Possibilities of Introducing in Russian Financial Institutions. Proceedings of the 29th International Business Information Management Association Conference - Education Excellence and Innovation Management through Vision 2020: From Regional Development Sustainability to Global Economic Growth, IBIMA 2017, p. 25 – 35.

### **Annotation.**

The article is devoted to innovative ways of development in the Russian banking sector, associated with the perspective of the implementation of cloud computing in financial institutions. The stages of cloud computing development in the world are determined and analyzed. Key parameters, presentation methods and kind of the used cloud computing are researched. The analysis of the Russian market of cloud computing is carried out, on the basis of which the tendencies of further development of cloud services in Russia are revealed. The possibility of the use of cloud technologies in financial institutions of Russia are assessed.

## Bataev, A. V. (2017). Implementation of Cloud Automated Banking Systems Innovative Way of Financial Institutions. Proceedings of the 29th International Business Information Management Association Conference - Education Excellence and Innovation Management through Vision 2020: From Regional Development Sustainability to Global Economic Growth, p. 36 – 43.

### **Annotation.**

The article deals with possibility of introducing cloud automated banking systems in financial institutions. Tendencies of development of the global and Russian market of cloud computing are analyzed. Based on the carried-out analysis the comparative characteristic on rates of development of the world and Russian cloud computing market is provided. The study of development of the automated banking systems connected with opportunity of transition to cloud computing is made. Advantages and disadvantages of the cloud automated banking systems are evaluated. Researches in the field of implementation of the cloud automated banking systems at financial institutions of Russia are conducted.

1. Demidenko, D. S., Gorovoy, A.A., & Malevskaya-Malevich, E. D. (2017). The new elements of risk classification. Proceedings of the 29th International Business Information Management Association Conference - Education Excellence and Innovation Management through Vision 2020: From Regional Development Sustainability to Global Economic Growth, p. 2217-2221.

### **Annotation.**

The environment in which companies have to operate is subjected to significant changes and is characterized by instability. Thereby, new opportunities appear for companies, but at the same time they are exposed to new risks and more uncertainty. There are various sources of uncertainty, but the major contribution is made by economic factors. The paper is devoted to the identification of new types of risks that are relevant to the modern enterprise. In addition, some methods for assessing the selected specific types of risk are proposed.

1. Demidenko, D. S., Gorovoy, A.A., & Malevskaya-Malevich, E. D. (2017). Specifics of Indicative Macroeconomic Planning. Proceedings of the 29th International Business Information Management Association Conference - Education Excellence and Innovation Management through Vision 2020: From Regional Development Sustainability to Global Economic Growth, p. 2222-2227.

### **Annotation.**

The so-called indicative plans are often used in macroeconomic planning and forecasting today. The intensification of economic activity of the economic system objectively involves accelerated transformation of the traditional administrative control mechanisms into the new, more democratic, market-based forms of regulation. Indicative plans have this very nature. An indicative plan is a tool used by the business sector to select the most efficient ways of development. An indicative plan includes the development of measures affecting economic processes in order to achieve the established indicators. The paper sees into the mathematical formulation of the indicative plan optimization problem. An integral three-factor model with the multiplicative form of objective function, functional relationships between the variables and parameters of the restrictions, given in tabular form is examined as an example of construction of an indicative development plan of economic system. An optimal solution is found using a dynamic programming method and is presented in the paper in the tentative example.

1. Goncharova, N., Goncharov, S., Zaborovskaya, O, (2017). Assessment of Business Competitiveness for High-Priority Regional Funding. Proceedings of the 29th International Business Information Management Association Conference - Education Excellence and Innovation Management through Vision 2020: From Regional Development Sustainability to Global Economic Growth, p. 2718-2724.

### **Annotation.**

The paper considers development trends of modern economy in the conditions of continuously strengthening competition in domestic and international markets. The principles for assessing competitiveness of regional business structures are stated clearly. Using these principles in managerial decisions will help to reveal possible sources of finance support on the part of regions. The methods and optimization mathematical model are shown, which will allow regional governmental structures to objectively and reliably decide on allocation of financial resources based on statistical data about the activities of business structures. An example is given for defining an integral indicator of business structures' competitiveness by nine priority branches in St. Petersburg. The paper defines the objectives solved by regions when applying the proposed methods and models, which are related both to the need for import substitution in the domestic market and massive launch of regional products in international markets, including those ones where Russian products have not been previously presented. The proposed research topics will allow expanding and specifying the use of the principles ensuring competitiveness of regional business structures.

1. Goncharova, N.A., Karlova, L.V., Zavyalova, M.P., (2017). An Interdisciplinary project in the engineering education: Obstacles in practice and evaluation criteria. Source of the Document Proceedings of the 27th International Business Information Management Association Conference - Innovation Management and Education Excellence Vision 2020: From Regional Development Sustainability to Global Economic Growth, IBIMA 2016, p. 568-571.

### **Annotation.**

The paper considers a sketch map technique as a supplementary method that in a complex with structured surveys captures the components of a destination image from the visitors' point of view. The scope of research is the sketch map technique used to define the tourist image of Tomsk among Tomsk polytechnic university (TPU) international students. The paper reports on the results of the top named landmarks, paths and districts of Tomsk in the sketch maps and the questionnaires filled by the international students. The results of the sketch maps of the city and the questionnaires indicated that Tomsk is perceived as "friendly", "pleasant", "dynamic", "favorable", "fresh" city whereas the campus area of the TPU is students' personal downtown of Tomsk.

1. Goncharova, N.A., Kiriyanova, L.G., Korobov, E.V., (2017). Tomsk's destination image (Russia) as perceived by the international students of Tomsk polytechnic university: A sketchmap technique. Proceedings of the 28th International Business Information Management Association Conference - Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth, p. 4241-4247.

### **Annotation.**

The paper considers a sketch map technique as a supplementary method that in a complex with structured surveys captures the components of a destination image from the visitors' point of view. The scope of research is the sketch map technique used to define the tourist image of Tomsk among Tomsk polytechnic university (TPU) international students. The paper reports on the results of the top named landmarks, paths and districts of Tomsk in the sketch maps and the questionnaires filled by the international students. The results of the sketch maps of the city and the questionnaires indicated that Tomsk is perceived as "friendly", "pleasant", "dynamic", "favorable", "fresh" city whereas the campus area of the TPU is students' personal downtown of Tomsk.

## Kudryavtseva, T. J., & Kovalenko, I. V. (2017). Analysis of the State and Dynamics of Chemical Industry in Russia. In Financial Environment and Business Development (p. 1147-1158). Springer International Publishing.

### **Annotation.**

The article presents the results of industry cluster structure research of the St. Petersburg economy. There were found significant cluster groups, which include "Biopharmaceutical", "Trade", "Information Technology", "Scientific research". "Analytical Tools", "Communication equipment", "Plastic", "Leather", "Aerospace". All clusters are evaluated from the point of view of uniqueness, coherence and economic effectiveness for the level of wages criteria, profits and investments. Group "Biopharmaceuticals", "Analytical tools" and "Communication equipment" are the most unique in the city, i.e. they are poorly represented or absent in other regions of the North-West Federal District. Cluster "Biopharmaceuticals" leads by the connectivity index with other cluster groups in the region and enterprises of the cluster are characterized by the maximum level of profits, wages and investments.

## Kudryavtseva, T.J., Ivanova, E.A., Kozlova, E.A., Skhvediani, A.E., (2017). Pricing and assessment of competitiveness of innovative medical devices in the context of commercialization strategy. Academy of Strategic Management Journal16 (Specialissue1), p. 110-122.

### **Annotation.**

The purpose of the study is to assess the competitiveness and to define the indifference price of the innovative medical device in order to substantiate its commercialization strategy in the context of import substitution in Russia. Individual methods and elements of the commercialization strategy were tested. They can help determine a reasonable price for the device for a consumer, calculated using the "indifference price" method and taking into account the competitiveness factor by the example of a mobile device for express diagnosis of myocardial infarction biomarkers developed in SPbSETU "LETI". The study revealed the areas of adjustment of technical and consumer characteristics of the device, due to which the competitive position of the device on the market will change. The conclusion was made that the assessment of competitiveness should be carried out at all stages of the development and launch of the device on the market with the purpose of implementation of a successful commercialization strategy.

1. Mednikov, M.D., Sokolitsyna, N.A., Sokolitsyn, A.S., Semenov, V.P. (2017). Game theory model of forming enterprise development strategy in market environment uncertainty. Proceedings of 2017 20th IEEE International Conference on Soft Computing and Measurements, SCM 2017, p. 876-878.
   1. **Annotation**

Suggests a game theory model of forming enterprise development strategy in market environment uncertainty for increasing enterprise market share. The model uses the following assumptions-game is pair, finite, non-coalition and antagonistic. The game base is payoff matrix, formed with market researches. For considered example there are optimal mixed strategies for both analyzed enterprise and his rival, corresponding to several market situations. There are basic improvement destinations of forming enterprise development strategy with game theory.

## Nikolova, L. V., Rodionov, D. G., & Afanasyeva, N. V. (2017). Impact of Globalization on Innovation project Risks Estimation. European Research Studies, 20 (2), р. 396-410.

### **Annotation.**

The impact of globalization on macro-economic processes is undisputable. However, it has an indirect impact on macro-economic processes, too. The current stage of the globalization development differs from the previous ones by the increased role and independence in managing innovative processes. It requires changes in approaches and methods of estimating the innovation project risks. The existing methods and ways to estimate risks of an innovation project do not allow defining the impact of globalization on its efficiency. That is why there is a need to develop new approaches and methods that take into account the state of the market, and to apply new financial instruments and strategies. The work researches the impact of globalization on estimating risks of the innovation project. For this purpose the selection of a regulation type -An integrated corporate structure (ICS) to solve international problems, terms and conditions of forming it and stable functioning model were stipulated. The research novelty is related to the stipulation of the hypothetic model of ICS and innovation project in the form of the system formed by using three interdependent systems: ICS system, risks system, and system of conditionally defined stages of implementation. It allowed revealing the impact of globalization on the estimation of the innovation project risks. The aggregate of these systems is a model of globalization (ICS) and the real innovation project. In order to solve this task, we used the system approach to analyzing and estimating processes, the factorial analysis of many-stage processes, decision-making techniques, and the S. Pontriagin's analytical method. The research resulted in forming the model to estimate the ICS impact on risks of the innovation project.

## Rodionov, D. G., Rudskaia, I. A., Degtereva, V.A., (2017). Assessment of the effectiveness of regional innovation systems in Russia. Proceedings of the 29th International Business Information Management Association Conference - Education Excellence and Innovation Management through Vision 2020: From Regional Development Sustainability to Global Economic Growth, p. 3437-3450.

### **Annotation.**

The purpose of this paper is to find an approach to evaluating the effectiveness of the functioning of regional innovation systems, free from subjective assessments. Since there is no common understanding of the essence of regional innovation systems in the literature, one can note the considerable diversity inherent in approaches to assessing the effectiveness of their functioning. However, there is a prevailing approach associated with the identification of different groups of indicators that characterize the innovative potential of the region and the calculation of the integral indicator as an average weighted estimate. The difference of the proposed approach is that weighted mean values are not set subjectively and are not a output of the normalization to the total number of indicators, but are determined as a output of solving optimization problems for each region, which allows us to determine the regions not the best in the traditional sense, but efficient, which are using the resources of innovative activity to the utmost.

## Rodionov, D. G., Rudskaia, I. A., Degtereva, V.A., (2017). Regional Foresight as a Technology for Development of The Regional Innovation System. Proceedings of the 29th International Business Information Management Association Conference - Education Excellence and Innovation Management through Vision 2020: From Regional Development Sustainability to Global Economic Growth, p. 2699-2706.

### **Annotation.**

This paper looks into the basic aspects of regional foresight development and its connection with regional innovation systems. On the basis of literature analysis, some particular features of regional foresight and its tools are marked out; the practice of regional foresight in foreign countries and in a number of Russian regions is summarized.

1. Semenov, V.P., Sokolitsyn, A.S., Sokolitsyna, N.A. (2017). Forming production program with homogenous product in market environment uncertainty. Source of the Document 2016 IEEE 5th Forum Strategic Partnership of Universities and Enterprises of Hi-Tech Branches, Science. Education. Innovations 2016, p. 76-78.
   1. **Annotation**

This work has elaborated economically-mathematical models of forming production program with homogenous product taking into account market demand, average labor of product, transferred mature product stocks, free store volume and other basic resources, realized with both own means and credit under simple interests, allowing optimal coordinating material flows and presenting enterprise financial resources in considered plan time.

## Shabunina, T.V., Shchelkina, S.P., Rodionov, D.G. (2017). An innovative approach to the transformation of eco-economic space of a region based on the green economy principles. Academy of Strategic Management Journal, 16 (Specialissue1), p. 176-185.

### **Annotation.**

The article proposes an integrated approach to the transformation of eco-economic space of the region based on eco-efficiency tools and management methods, as well as analyzes the impediments that hinder the process of development, implementation, and dissemination of ecoinnovation, highlights the areas of innovative activity regulation mechanism on the principles of green economy. The authors propose to assess the impact of innovation on the transformation of eco-economic space of a region based on the dynamic analysis of the main environmental quality index and population health indicator as well as the ecologized human development index. The article presents the insights of statistical indicators of the environment and public health in the constituent entities of the North-West Federal District (NWFD) of the Russian Federation (RF) for the period of 2000-2014, which has shown the nonoccurrence of positive dynamics in efficiency of innovations. The authors carried out calculations of the ecologized human development index in the constituent entities of the NWFD of the RF for the period of 2005-2014, whose trend allows assessing the human development index in the region with due consideration of environmental component, as well as provides the possibility to compare the success in the development of the region under study with other regions of the RF in terms of eco-innovations.

1. Sokolitsyn, A. S., Ivanov, M.V., Sokolitsyna, N. A., (2017). Corporate Governance: Estimating Resource Providing Corporative Industrial Organization. Proceedings of the 29th International Business Information Management Association Conference - Education Excellence and Innovation Management through Vision 2020: From Regional Development Sustainability to Global Economic Growth, p. 191-200.

### **Annotation.**

This article is about setting effective production-household links and proportions between industrial corporation enterprises on base of forming materially-financial flows balance to improve their financial sustainability and competitiveness. On this balance base there is economically-mathematical model on defining resource providing industrial corporation activity. This model realization allows setting rational production-household links and proportions between corporative firm enterprises with calculating the following figures: relation of consumed and produced (gross) product in corporative firm, realized product share in firm specialization on corresponding product, supplied product share in total consumption of corresponding product, supplied product and interfirm production roles in interfirm consumption, realized product role in economies of the firm and other countries range. Therefore, elaborated economically-mathematical model specify is calculating and analyzing figures, characterizing product production and distribution in corporation, and also estimation each enterprise role in total corporative household activity results.

1. Sokolitsyn, A. S., Ivanov, M.V., Sokolitsyna, N. A., (2017). Financial Policy: Defining Short-Term Credit under Fixed and Circulating Capital for Providing Financial Sustainability of Industrial Enterprise Development. Proceedings of the 29th International Business Information Management Association Conference - Education Excellence and Innovation Management through Vision 2020: From Regional Development Sustainability to Global Economic Growth, p. 201-215.

### **Annotation.**

This article considers defining short-term credit for providing sustainable industrial enterprise development with elaborating generalized balance scheme with borrowing short-term credit under fixed and circulating capital. On this balance base there is economically-mathematical model on effective economic relation between enterprise activity diversification and its financial sustainability. This model is realized with forming strategies, providing both effective enterprise activity diversification and its financial sustainability. Suggested model realization uses iterative algorithm, differing with simultaneous calculating credit and set of unknown, modelled and exogenous parameters, which allows getting sufficient dozen of effective product diversification management strategies. Because most effective (optimal) product diversification strategy choice is concerned with risk management problem, optimization criterion is profit maximum taking into account stochastic product realization estimation. For researched St-Petersburg fuel-energy complex machine-making enterprise, according to the elaborated algorithm of modeling product diversification processes, there are basic activity financial figures in short-term crediting on optimistic, most probable and pessimistic strategies and their comparison economic analysis. Suggested optimization criterion shows the most effective enterprise product diversification strategy.

1. Sokolitsyn, A.S., Kovalenko, I.I., Zvontsov, A.V. (2017). Production risk economic assessment based on the fuzzy logic approaches. Proceedings of 2017 20th IEEE International Conference on Soft Computing and Measurements, SCM 2017, p 834-836.
   1. **Annotation**

Has elaborated economically-mathematical model of assessing the production risk associated with occupational injuries, based on the Mamdani's fuzzy inference method. The model includes assessment of risk associated with workers' safety and the risk assessment of the production profitability reducing due to occupational injuries. The practical application of the model can improve the effectiveness of decisions taken to manage risk.

# 2016

## Chernogorskiy, S., Shvetsov, K., & Zherelo, A. (2016). Mathematical Model of the Controlled Sustainable Development of the Region. NONLINEAR PHENOMENA IN COMPLEX SYSTEMS, 19(3), p. 295-302.

### **Annotation.**

A new approach to regional management is based on an inverse solution, which reveals a constructive capability of applying “management by objectives” methods and models to guarantee the achievement of a regional management’s objective. At the level of model implementation, the government’s task is, based on special techniques, to develop and implement corresponding factors in a system of nonlinear equations so as to eventually achieve a management objective. The model helps to build the region’s vital processes and guarantees achieving its development indicators on the basis of adequate management impact. The proposed concept is the fundamental condition for sustainable socio-economic development of a region in the interest of people, economy, and favorable environment. It is based on a synthesized model of government administration. The paper identifies the conditions for guaranteed sustainable management of a region based on a new dynamic model.

## Degtereva, V.A., Zaborovskaia, O.V., Sharafanova, E.E. (2016). Innovations in healthcare: The risks of regional development. Proceedings of the 28th International Business Information Management Association Conference - Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth, р. 3504-3512.

### **Annotation.**

The main issues considered in this paper are: spatial spread of innovations during a healthcare reform; social results of disproportions in healthcare development and their impact on human capital; capabilities of spatial redistribution of innovations.

## Demidenko, D. S., & Malevskaya-Malevich, E. D. (2016). Features of enterprise's optimal innovation strategy development. Actual Problems in Economics, 186 (12), р. 130-137.

### **Annotation.**

This paper reveals a need for new models with relevant approaches to economic mechanism functioning in the context of recession. The authors show that making a profit and increasing the market value of a company can be possible if production costs reduce faster than sales. It can be reached by means of a fundamental neoclassical principle of “decreasing marginal cost efficiency”. The authors suggest the use of new economic models which are more resistant to growing risks and uncertainties working under the “falling markets” principle.

## Demidenko, D. S., & Malevskaya-Malevich, E. D. (2016). Features of optimal control of dynamic processes in enterprise economics. Proceedings of the 27th International Business Information Management Association Conference - Innovation Management and Education Excellence Vision 2020: From Regional Development Sustainability to Global Economic Growth, IBIMA 2016, р. 1606-1612.

### **Annotation.**

The majority of processes in economic systems are dynamic, i.e. they are realized within several (more than one) periods of time. At the same time, in economic theory and generally in practice, as Braely and Myers (2004) mentioned they are described and studied as static processes which do not change in time, and, as a rule, their modeling does not consider a "time factor" variable, as in the book by Bellman (2013) is written. This can impede the optimality of solutions in economic management of real processes, and the time factor treatment is the most important in cash flows management and capital investment efficiency assessment as Forrester (1997) mentioned. The economic dynamics model given in the present article is an element of the cost approach to analysis and management at the enterprise. To describe innovation processes the team of authors suggest using Von Neumann's "economic dynamics model" (Von Neumann (1971)). There are no special methods for finding dynamic optimization models solutions, but the authors recommend to use the universal Lagrangian method, described by Lancaster (2012). The statement of the dynamic optimization problem suggested by the authors demonstrates that, depending on the sequence of redistributions at intermediate steps, there can be achieved different outcomes. It has been proved that the whole sequence of redistributions is important for finding the optimal (maximum) eventual outcome. Copyright

## Demidenko, D. S., & Malevskaya-Malevich, E. D. (2016). Resource management in enterprise's production process. Proceedings of the 28th International Business Information Management Association Conference - Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth, р. 3789-3793.

### **Annotation.**

Waste which is inevitably generated in the process of manufacturing at an enterprise, can be a source of secondary resources: fuel, energy and material (Bilitewski et all (1997), Krutilla & Fisher (1985)). Nevertheless, according to the statistical reports (Karlik et all (1996), Moskvin & Emel'yanova (2009)) analysis for St. Petersburg and the Leningrad region, the products of recycled resources are almost never used as energy source, and not more than 10% of the total waste amount is used as recyclable materials, which proves that there is a certain necessity in developing a huge waste processing industry. Today there is no consistent approach to the methods of waste management in production process of an industrial enterprise. As Ekvall et all (2007) mentioned, so cold, Life-cycle assessment (LCA) is a technique to assess environmental impacts associated with all the stages of a product's life from raw material extraction through materials processing, manufacture, distribution, use, repair and maintenance, and disposal or recycling (Morrissey & Browne (2004)). LCA consider the mechanism of waste "management" at all stages of the enterprise's production process. Nowadays on condition that the enterprise are working under resource limits the notion of a "new life" for waste becomes even more relevant.

## Demidenko, D. S., & Malevskaya-Malevich, E. D. (2016). Risk management system application efficiency on enterprise, Proceedings of the 28th International Business Information Management Association Conference - Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth, р. 2046-2051.

### **Annotation.**

Questions of determination, classification and quantitative risk measurement are always on a key place in the economic science - because of the risk is primarily the probability of occurrence of an event in the future, as it the classic work of Frank Night (2012) defines. In the present context, risk analysis and risk management at industrial enterprises are of great importance in the field of management decision-making and implementation of management solutions (Rodionov et al (2014)). Nowadays, we can say this branch of management science has been formed and is successfully developing both in theoretical and applied aspects (Flanagan & Norman (1993)), (Jorion (1997)), (Dowd (1998)).

## Guzikova, L. A., & Lyukevich, I. N. (2016). How to stop the flight of Russian capital? Actual Problems in Economics, 186 (12), р. 51-61.

### **Annotation.**

The objective of this paper is to trace the ways by which capital leaves Russia and to determine the measures to reduce the scale of this phenomenon. It was identified that now in Russia capital export is really a significant problem for the investment process and economic development overall which can be characterized as the flight of capital. Two main aspects of the problem are revealed and correspondingly two types of methods are suggested to prevent the undue export of capital.

## Kudryavtseva, T., Rodionov, D., Kravchenko, V., Maryta, V. (2016). Special economic zones as an instrument of industrial policy pharmaceutical clusters in Russia. Proceedings of the 28th International Business Information Management Association Conference - Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth, р.1008-1018.

### **Annotation.**

Special economic zones as new tool of industry policy should positive influence on the number of employees and wages of employees, foreign investments and production. This article estimates the effect from special economic zones on the development of main indicators of region using one of the statistical method difference in difference analyze. The results suggest that foreign investments and production develop are faster in the regions with special economic zones. However, growth of number of employees and their salaries are higher in the regions that were not under treatment of this economic tool.

## Mednikov, M. D., Sokolitsyn, N. A., Sokolitsyn, A. S., & Semenov, V. P. (2016, May). Corporative structures participants economic interests coordination models. In Soft Computing and Measurements (SCM), 2016 XIX IEEE International Conference on (pp. 459-461). IEEE.

### **Annotation.**

The article aim is to study possibility of mathematical methods and models usage in several types' corporative structures participants' business-units economic interests coordination. It shows that realizing suggested models complex, taking into account specialties of forming and distributing between participants corporative costs on development aims and revenue (profits) provides maximal activity effectiveness with using centralized or decentralized development foundations. Got corporative revenue and costs distribution optimization tasks settings can be used in industrial type vertically-integrated structures corporative management practice.

## Melnikov, A.V., Nadezhina, O.S., Rudskaya, I.A. (2016). Improvement of the mechanism ensuring innovative development of the oil sector in times of crisis. Proceedings of the 28th International Business Information Management Association Conference - Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth, р. 2201-2209.

### **Annotation.**

Innovative development of the oil sector can be ensured only based on improved organization of the activities of all the stakeholders of the innovative process, which makes it possible: to use, in the best way, the available sources of innovations in the changing external environment, consider economic specifics of enterprises in this sector, possibilities for interaction between big and small businesses so as to reduce risks, distribute the limited volume of investment resources among market participants in order to obtain the maximum effect. This research lays down methodological guidelines for improving the organizational and economic mechanism ensuring innovative development of the oil sector of the Russian economy in the conditions of adverse changes in the external environment.

## Moiseeva, S.S., Kudryavtseva, T.J., Nadezhina, O.S., (2016). Connectivity matrix of region’s subpotentials as a tool for managing its competitiveness. Actual Problems of Economics, 185 (11), p. 437-446.

### **Annotation.**

This paper suggests a scientific and methodological approach to identifying the prospective directions in increasing region’s competitiveness, based on determining the connections between goal-setting and goal-achieving subpotentials of competitiveness and formation of the connectivity matrix. This methodology is tested on evaluating the connectivity of Leningrad region’s subpotentials (its territorial characteristics are comparable to those of some European countries) and, in the authors’ opinion, can be successfully used for shaping an effective regional policy

## Naidenova, X. A., Parkhomenko, V., Shvetsov, K., Yusupov, V., & Kuzina, R. (2016). Modification of Good Tests in Dynamic Contexts: Application to Modeling Intellectual Development of Cadets. In SCAKD@ CLA (pp. 51-62).

### **Annotation.**

An approach to incremental learning of Good Maximally Re-dundant Diagnostic Tests (GMRTs) is considered. GMRT is a special formal concept in Formal Concept Analysis. Mining GMRTs from data is based on Galois lattice construction. Four situations of learning GM-RTs are considered: inserting an object (value) and deleting an object (value). An application to modeling intellectual development of cadets is proposed.We explore two datasets of female medical cadets. First dataset is formed at the moment of admission to academy, and another is formed at the end of second year of learning. Classification attribute (dynamics of cadets' intellectual development) is based on analysis of psychological questionnaire invented by M.M. Reshetnikov and B.V. Kulagin. Struc-tural model attributes are based on MMPI questionnaire adopted by L.N. Sobchik.

## Naidenova, X., Parkhomenko, V., & Shvetsov, K. (2016, March). New approaches to incremental learning good classification tests. In Information Technology for Organizations Development (IT4OD), 2016 International Conference on (pp. 1-6). IEEE.

### **Annotation.**

The paper is devoted to incremental inferring of a special kind of logical classification rules called good tests. They are "good" because they cover the largest possible number of objects w.r.t. inclusion relation on the set of all subsets of objects. Moreover we are interested in such good tests which are maximally redundant (GMRTs), i.e. their subsets of attributes are closed. Incremental learning allows to have more flexible control of GMRTs inferring than a usual (batch) case of learning. We develop two new generic approaches to infer GMRTs. First approach provides learning with a use of pattern recognition-like processes. Second approach implements an object taxonomic organisation. All considerations are supplied with running examples.

## Nikolova, L. V., Rodionov, D. G., & Mottaeva, A. B. (2016). Securitization of bank assets as a source of financing the innovation activity. International Journal of Economics and Financial Issues 6 (2), р. 246-252.

### **Annotation.**

The paper justifies the features of securitization of bank assets (SBA) as a process and as a source of financing of innovation activity. The place of securitization among financial innovation instruments is defined for this purpose, the basic distinctive features of the securitization model from other financing models are set out, peculiarities of application of three models of securitization (classical, synthetic, corporate) in solving problems of optimization of bank assets and reduction in the risks of banks and in financing of innovation are established. The efficiency of using the model of SBA is defined. It is justified that not only the bank that manages credit risk receives the new possibilities in securitization operations, but also so does the client who is interested in reducing the cost of the loan funds used, as well as the investor who receives a highly profitable and at the same time low-risk financial instrument in the implementation of innovative projects at their disposal.

## Niyazova, S.R., Kuporov, J.Ju., Nadezhina, O.S. (2016). Development of an adaptive management model for innovative activities of an enterprise. Proceedings of the 28th International Business Information Management Association Conference - Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth, р. 2210-2222.

### **Annotation.**

This research is focused on developing some adaptive management models for innovative activities of an enterprise, which would allow justifying managerial decisions about the time and price of an innovative product for the options of the enterprise's monopolistic position, interaction with the buying enterprise, advent of competitors, as well as testing through simulation modeling.

## Plotnikova, E.V., Pavlova, D.I. (2016). Assessment of housing stock and its influence on Sustainable regional development management. Proceedings of the 28th International Business Information Management Association Conference - Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth, р. 2639-2648.

### **Annotation.**

Sustainable development of the regions of the Russian Federation involves the balance between social and economic objectives in the context of resource constraints and is based on the principles of satisfaction needs and improve the quality of population life. One of the most difficult socio-economic problems that have a negative impact on sustainable development of the regions of the Russian Federation, is the condition of the housing stock. Housing is a crucial element of life support of the population, which is a determinant of many socioeconomic processes impacting on sustainable development regions. Conceptual approach presented in the article is aimed at the analysis of unequal spatial distribution and qualitative inhomogeneity of housing stock. This approach suggests systematic solution of housing problem in Russian regions. Spatial distribution of housing stock as an economic resource was investigated in this research. Comparative analysis of a regional differentiation by structural, quantitative and qualitative indicators of housing stock as an economic resource was conducted. Housing is interpreted as a base for stable and balanced development of the regions which leads to national economy competitiveness increase on both national and regional levels and also will raise its investment attractiveness.

## Rodionov, D. G., & Kudryavtseva, T. J. (2016). Factors of the Effective Development of the St. Petersburg Instrument Engineering Cluster. International Journal of Economics and Financial Issues, 6(2), р. 298-306.

### **Annotation.**

The study analyzed the effectiveness of the cluster policy in the field of instrument engineering. Based on the study of theoretical and practical provisions, the identification of the main problems of the development of cluster projects was made; the concept of knowledge transfer was discussed and its relevance for the implementation of the cluster policy in the field of instrument engineering was determined; the methodology for assessing the effectiveness of the cluster policy was analyzed; the factors of the effectiveness of the development of the instrument engineering cluster were evaluated on the basis of the multiple correlation analysis. The study resulted in a direct correlation between the dynamics of the development of the instrument engineering cluster of St. Petersburg and the wages of employees of the enterprises in the cluster.

## Rodionov, D. G., Fersman, N. G., & Kushneva, O. A. (2016). Russian Universities: Towards Ambitious Goals. International Journal of Environmental and Science Education, 11 (8), р. 2207-2222.

### **Annotation.**

An increased competition in the world market of educational services has brought about new tools to raise the prestige of higher education institutions in the opinion of students and employers. The most important of these tools are the rankings of the best universities in the world, regularly compiled by well-known foreign agencies. The Russian leadership pays focused attention to the ranking positions of our universities, which resulted in the development of the national program "5-100-2020" in 2013, the implementation of which should allow at least five Russian universities to occupy positions in a leading hundred of the QS World University Ranking in 2020. The article discusses the way the rating positions of the leading Russian universities have changed over the past year. The importance of advancements in international rankings is illustrated by the success of foreign universities in terms of advertising and attraction of a large number of international students. Particular attention is given to an increasingly larger role of distance learning in extending the coverage of the global student audience. A comparative geographical analysis of the regions of residence of international students, attracted both to national and foreign universities, has been conducted. The problems of raising the international prestige of Russian high school in the world educational space have been considered, the causes of unreasonably low rating of Russian universities according to leading rating agencies have been identified. The author has proved the importance of enhancing the mobility of students within Russia, taking into account the regional diversity of scientific schools.

## Rodionov, D., Nikolova, L., Velikova, M., Kalubi, R.D.M. (2016). Competitive strength of a concession integration model of labour market to education market interaction. Proceedings of the 28th International Business Information Management Association Conference - Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth, р. 689-699.

### **Annotation.**

Recent research has proved that the factor of sustainable economic development of a country is the growth of education market based on its reciprocal integration with the market of labour. One of the promising forms of education market to labour market interaction is an educational public-private partnership (EPPP) shaped as a cluster whose nature allows us to build a competitive integration model relying on factor analysis of serial processes. The substantiation of our methodological framework was done using system and economic analysis, the method of scientific observation and generalization, and comparative analysis. The methodological significance of our study relies on the fact that its findings can be applied to the task of building up a methodology of shaping educational market clusters and, particularly, to new approaches to the improvement of labour market and educational market models, to the shaping of a strategy of establishing partnerships between educational institutions and their business partners. Scientific novelty of the study is the proposed substantiation of competitive ability of a concessionary integrative model of interaction between labour market and education market using factor analysis of serial processes, in order to improve the competitive strength of public and private educational institutions both federally and regionally, and to prove that collaboration between the education sector and its business partners can be effective.

## Semenov, V. P., Sokolitsyn, A. S., & Sokolitsyna, N. A. (2016, November). Forming production program with homogenous product in market environment uncertainty. In Strategic Partnership of Universities and Enterprises of Hi-Tech Branches (Science. Education. Innovations), 2016 IEEE V Forum (pp. 76-78). IEEE.

### **Annotation.**

This work has elaborated economically-mathematical models of forming production program with homogenous product taking into account market demand, average labor of product, transferred mature product stocks, free store volume and other basic resources, realized with both own means and credit under simple interests, allowing optimal coordinating material flows and presenting enterprise financial resources in considered plan time.

## Sokolitsyn, A. S., Ivanov, M. V., Sokolitsyna, N. A. (2016) Investment policy: Determining short-term credit under circulating capital. Proceedings of the 28th International Business Information Management Association Conference - Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth, р. 2130-2144

### **Annotation.**

This article is about determining short-term credit under enterprise circulating capital with forming generalized enterprise balance scheme for setting relation between product diversification and financial sustainability. This generalized balance scheme is the base for forming economicallymathematical model, describing this relation in widening enterprise activity with borrowing shortterm credits under circulating capital. This model realization allows forming effective management strategies for product diversification and enterprise financial sustainability. The suggested model is the base for forming iteration algorithm of modeling management processes for product diversification and financial sustainability in short-term crediting, differing with simultaneous calculating credit and set of unknown, modelled and exogenous parameters, which allows getting sufficient dozen of effective product diversification management strategies. Because most effective (optimal) product diversification strategy choice is concerned with risk management problem, optimization criterion is profit maximum taking into account stochastic product realization estimation. For researched St-Petersburg fuel-energy complex machine-making enterprise, according to the elaborated algorithm of modeling product diversification processes, there are basic activity financial figures in short-term crediting on optimistic, most probable and pessimistic strategies and their comparison economic analysis. Suggested optimization criterion shows the most effective enterprise product diversification strategy.

## Sokolitsyn, A. S., Ivanov, M. V., Sokolitsyna, N. A. (2016). Optimal financial means and profit distribution between public and private partners in PPP project realization. Proceedings of the 28th International Business Information Management Association Conference - Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth, р. 2122-212.

### **Annotation.**

The work sets and solves task of optimizing finance distribution between public and private partners in PPP-project realization with forming centralized foundation by both private and public partners. Centralized foundation financial resources can be used in several development destinations, providing several end figures and having several effectiveness figures. Therefore PPP-project participants have a problem of optimal distribution variant for foundation financial resources and got profit. It need elaborating some possible PPP-project realization variants and, for each participant, defining dependence between used investments and potential profit increase, defined as nonlinear function. At result, such formulated task is nonlinear programming task, which solution can be got with dynamic programming. There are elaborated redistribution procedures of optimal profit, got with system effect, between PPP-project realization participants taking into account their financial resources volumes and their effectiveness definition. These procedures take into account possibility of setting payments from participants for financial resources and these payments absence. There are shown practice results of optimal profit distribution and effectiveness calculation both not taking into account payments for given resources and taking them into account, i.e. forms PPP-projects realization effectiveness increase mechanism.

## Sokolitsyn, A. S., Ivanov, M. V., Sokolitsyna, N. A., & Semenov, V. P. (2016). Corporative structures participants economic interests coordination models. Proceedings of the 19th International Conference on Soft Computing and Measurements, SCM 2016, p. 459-461.

### **Annotation.**

The article aim is to study possibility of mathematical methods and models usage in several types' corporative structures participants' business-units economic interests coordination. It shows that realizing suggested models complex, taking into account specialties of forming and distributing between participants corporative costs on development aims and revenue (profits) provides maximal activity effectiveness with using centralized or decentralized development foundations. Got corporative revenue and costs distribution optimization tasks settings can be used in industrial type vertically-integrated structures corporative management practice.

## Ulitin, V. V., Chernogorskiy, S. A., & Shvetsov, K. V. (2016). Technical and economic substantiation construction methods on frozen soils in the face of global warming. Materials Physics and Mechanics, 26 (1), p. 89-92.

### **Annotation.**

The article is devoted to the substantiation of construction methods on frozen soils in the face of global warming. In the article, we analyze with the help of modern computer methods the principles of the use of soils as foundation structures, and propose a methodology for technical and economic substantiation of the choice of the most appropriate and effective of construction **methods.**

## Yuryevna, K.T., Erastievich, S.A., Vitalievna, Z.O. (2016). Important commercialization issues of innovative medical devices in the conditions of import substitution. Proceedings of the 28th International Business Information Management Association Conference - Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth, p. 4052-4056.

### **Annotation.**

One of the major objectives of the Russian Federation in today's economic and political situation is to provide national self-sufficiency in the field of manufacturing medical goods which are meant for diagnostics, treatment and rehabilitation of patients suffering from various diseases and injuries. To reach this objective it is necessary to reestablish connections between universities and business in terms of commercialization of inventions. The project of the research, presented below, aims to describe conceptual statements and methods based on them, which will make possible to assess potential of commercialization of new medical devices and possible social and economic effects from its introduction to the market.

## Zaborovskaia, O.V., Plotnikova, E.V. (2016). Assessment of the housing stock condition as an element for estimating the conditions for human capital development in the regions of the Russian Federation. Proceedings of the 28th International Business Information Management Association Conference - Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth, р. 1218-1225.

### **Annotation.**

The paper puts forward an improved method for evaluating the conditions for human capital development in the regions of the Russian Federation given the estimation of the housing facilities. Such estimation includes 22 individual indicators reflecting various abilities of man which appear during continuous improvement of health, housing, education and culture capital. The indicators measure deviations of the existing conditions for human capital formation and development in the RF regions from the best ones achieved in some other Russian region. The official statistics presented by the government bodies over the period of 2009-2013 serves as the information data-base for calculations. The research ends up defining the regions having the most and least favorable conditions in terms of human capital. A fact has also been revealed that if the quality of housing facilities is considered, the final values of an indicator worsen, on average, by 10-12 per cent. Based on the values of the assessed conditions for human capital development for the year 2013, the territorial units have been typologically grouped and five types of regions have been identified. Dynamic analysis of estimations has shown their growth in most regions in the period of 2009-2012 and a slight decline in 2013. The level of estimation of the regions is diverse and, hence, when taking managerial decisions, it is necessary to consider not only the regions' individual features but also focus on common development objectives of the country.

# 2015

## Babkin, A.V., Kudryavtseva, T.J. (2015). Identification and analysis of instrument industry cluster on the territory of the Russian Federation. Modern Applied Science, 9 (1), p. 109-118.

### **Annotation.**

In this paper the role of clusters in industrial policy of regions is regarded. The main approaches to the identification of industrial clusters have been analyzed and the reasoning of the use of these approaches' tools has been given by the example of the instrumentation industry cluster of Saint Petersburg. The results of the formation of the cluster structure of instrument industry by the types of economic activity have been presented. The structure of the instrument industry cluster has been analyzed. The results of the calculation of the cluster forces by the statistics of employment in the territory of Russia have been presented. The peculiarities of the structure of the Russian instrument industry cluster have been formulated and regions of its localization have been defined.

## Bataev, A. V. (2015). Analysis of cloud technologies use in financial institutions. Actual Problems in Economics, 166 (4), р. 404-413.

### **Annotation.**

The article considers the major characteristics, methods of provision and types of cloud technologies. The paper gives an overview of the global and domestic cloud-technologies markets. The key trends of cloud technologies implementation in banking are discussed. Perspectives of using cloud automated banking systems in financial institutions abroad and in Russia are analyzed.

## Bataev, A. V. (2015). Cost-effectiveness evaluation of smart cards introduction in financial institutions. Actual Problems in Economics, 170 (8), р. 395-401.

### **Annotation.**

The paper explores the perspectives of smart cards introduction in Russian financial institutions. Key methods of evaluating the effectiveness of financial investments in information projects are analyzed. Costs of bank plastic cards with magnetic stripe and bank smart cards are estimated by the method total cost of ownership. The comparative analysis of expenses for each type of cards is carried out subject to possible funds embezzlement from bank cards.

## Bataev, A. V. (2015). Economic efficiency estimation for automated banking systems outsourcing. Actual Problems in Economics, 172 (10), р. 419-426.

### **Annotation.**

The paper discusses the perspectives for introduction of cloud automated banking systems in financial institutions. Methods of evaluating the implementation of information systems are considered. The efficiency analysis technique of implementation and operation of cloud automation systems is offered. The efficiency estimate of introduction of the cloud automated banking systems (ABS) in comparison with conventional ABS on the basis of the proposed technique using the method of total cost of ownership is given.

## Bataev, A. V. (2015). Perspectives for development of the pension system in Russia on the basis of actuarial calculations. Actual Problems in Economics, 171 (9), р. 304-312.

### **Annotation.**

The article deals with the problems of pension provision in Russian Federation. The features of actuarial modelling of the pension systems development are considered. Construction order of the actuarial model of pension provision development in Russia is provided. Forecasts on Russian pensioner quantity, sizes of their labor and social pensions are presented on the basis of actuarial calculations for the perspective up to 2030. The forecast of the dynamics of Pension Fund deficit in Russian Federation, taking into account the pension reforms introduced in 2015 is given. The ways to improve the pension system in Russia are proposed basing on the analysis conclusions.

## Kudryavtseva, T. J., & Kuporov, J. J. (2015). Evaluation of Social and Economic Efficiency of Investments in Public Utility Services. Asian Social Science, 11(19), p. 151-158.

### **Annotation.**

This article substantiates theoretical approaches to evaluating the efficiency of investment projects in the field of public utility services, taking into account all elements of the system for public utility service delivery. The proposed methodology is based on the calculation of social, economic, and budgetary efficiency of the investments. Calculation of social efficiency is based on accounting lower prices as a result of cost savings arising due to the investments, and improving the quality of services. Calculation of budget efficiency savings assumes the costs of public utility services provision over the budgetary investments to economic efficiency of public utility services. The developed method has been tested at a Ukrainian public utility company.

## Naidenova, X., Parkhomenko, V., & Shvetsov, K. (2015, November). Context-dependent incremental learning of good maximally redundant tests. In SAI Intelligent Systems Conference (IntelliSys), 2015 (pp. 957-962). IEEE.

### **Annotation.**

A new approach to incremental learning of Good Maximally Redundant Diagnostic Tests (GMRTs) is advanced. A GMRT is a special formal concept in Formal Concept Analysis. Mining GMRTs from data is based on Galois' lattice construction. Four situations of learning are considered: inserting an object (value) and deleting an object (value). The approach proposed can be very useful for many information retrieval applications related to the changeable environment: mining logical rules from dynamic databases, intrusion detection, Web page classification, Web mining, constructing dynamic knowledge bases and many others.

## Nikolova, L. V., Kuporov, J. J., & Rodionov, D. G. (2015). Risk management of innovation projects in the context of globalization. International Journal of Economics and Financial Issues, 5 (3S), р. 68-72

### **Annotation.**

Globalization is becoming increasingly important in the economy. It strongly influences the advanced technologies and innovation processes. The present stage of economic development differs from the preceding one by the increased role and autonomy in the innovation processes management that has led to the need for change in the approach to the application and development of innovation project risk management methods and techniques. The existing methods and ways of assessing and managing innovation project risks do not allow obtaining the maximum effect from their implementation. Therefore there was a need to develop new methods and techniques that would take into account the market conditions and the use of new financial instruments and strategies. The article considers the application of the system optimization method when building a risk management model for innovation projects in the context of globalization. Scientific novelty includes the development of a method and a model to calculate limiting values of factors, which bring the target value of the corresponding criterion of the innovation project efficiency to critical limit at the solution to direct and inverse problems. As a result, the authors have built a model of innovation project sustainability region in the context of globalization, using MATHCAT software (computer algebra system from a class of computer-aided design, focused on preparation of interactive documents with computations and visual tracking).

## Rodionov, D., Yaluner, E., & Kushneva, O. (2015). Drag Race 5-100-2020 National Program. European Journal of Science and Theology, 11(4), р.199-212.

### **Annotation.**

Stiffer competition in global market of educational services gave rise to new instruments that help improving the authority of educational institutions with applicants and employees. The most important instrument is rankings of the world best universities that are periodically compiled by different agencies. Global acknowledgement becomes more and more important for universities of the world. Internationalization and globalization of high education as hot topics of today should be an object of targeted state policy. Russian authorities pay much attention to ratings of our high educational institutions that was manifested by working out of 5–100–2020 National Program. Realization of this program should support including of not less than five Russian Universities in Top 100 of QS World University Ranking. Authors analyze ratings of leading Russian universities in comparison with foreign universities of Top 100 of this ranking because this problem has a pressing character. Analysis of factors affecting ratings of higher educational institutions is the aim of this research. Pressing character of this character is conditioned by raising requirements to the quality of human capital in today world, growth of intellectual impact of Russia and sharp necessity to scale export of quality of educational services in long perspective. Authors analyze dynamics improvement of the positions of the most successful Russian Universities and make forecasts of their ratings provided existing rate of upward movement in the list are preserved. Visual comparison of scores of foreign and Russian universities by ranking indicators has been made with the help of visual diagrams. Problems of improvement of international authority of Russian school in global educational space have been analyzed, reasons of unreasonably low rating of Russian universities by versions of leading rating agencies have been revealed. Authors have ground the necessity of comprehensive support of Russian scientists to improve their publishing activity and consequently growth of publications‘ citation index.

## Rodionov, D., Yaluner, E., & Kushneva, O. (2015). Drag Race 5-100-2020 National Program. European Journal of Science and Theology, 11(4), р.199-212.

### **Annotation.**

Stiffer competition in global market of educational services gave rise to new instruments that help improving the authority of educational institutions with applicants and employees. The most important instrument is rankings of the world best universities that are periodically compiled by different agencies. Global acknowledgement becomes more and more important for universities of the world. Internationalization and globalization of high education as hot topics of today should be an object of targeted state policy. Russian authorities pay much attention to ratings of our high educational institutions that was manifested by working out of 5–100–2020 National Program. Realization of this program should support including of not less than five Russian Universities in Top 100 of QS World University Ranking. Authors analyze ratings of leading Russian universities in comparison with foreign universities of Top 100 of this ranking because this problem has a pressing character. Analysis of factors affecting ratings of higher educational institutions is the aim of this research. Pressing character of this character is conditioned by raising requirements to the quality of human capital in today world, growth of intellectual impact of Russia and sharp necessity to scale export of quality of educational services in long perspective. Authors analyze dynamics improvement of the positions of the most successful Russian Universities and make forecasts of their ratings provided existing rate of upward movement in the list are preserved. Visual comparison of scores of foreign and Russian universities by ranking indicators has been made with the help of visual diagrams. Problems of improvement of international authority of Russian school in global educational space have been analyzed, reasons of unreasonably low rating of Russian universities by versions of leading rating agencies have been revealed. Authors have ground the necessity of comprehensive support of Russian scientists to improve their publishing activity and consequently growth of publications‘ citation index.

## Zaborovskaya, O. V., Plotnikova, E. V., & Sharafanova, E. E. (2015). The Experience of Factor Analysis of Conditions for Human Capital Formation and Development in Regions of Russian Federation. International Journal of Economics and Financial Issues, 5(3S), р. 47-53.

### **Annotation.**

The article suggests a factor analysis procedure for assessment of conditions for human capital formation and development (CHCFD) in the Russian Federation (RF) for Russian environment. This assessment integrates 21 private index, which measures the deviation of the actual CHCFD in the RF and Federation constituent entities, from the best ones, achieved in any Russian region. Data base for calculations is the official statistics, presented in the period from 1999 to 2012. The factors are the irregularity coefficients of indices achievement, characterizing the CHCFD in the regions of the RF. The calculation results of influence of factors on the deviation of CHCFD in whole in RF are presented, and the analysis of territorial differences is carried out. There was determined the distribution of factor values, that influenced much on assessment of CHCFD, per Federal Districts (macroregions), different variation of factors was revealed. Intra-regional differences were analyzed based on distribution of factors that influenced much on the assessment of CHCFD, per the constituent entities of the Federation of the Northwestern Federal District. There were determined the regions, that had the most and the least favorable conditions from the positions of human capital. There was determined a possibility to collate the indices as per the share of influence on the assessment value, presenting the basis to determine the priorities in development of regional policy of human capital formation and development.

# 2014

## Arseniev, D. G., Rechinskiy, A. V., Shvetsov, K. V., Vatin, N. I., & Gamayunova, O. S. (2014). Activities of Civil Engineering Institute to attract foreign students for training in civil engineering programs. In Applied Mechanics and Materials (Vol. 635, pp. 2076-2080). Trans Tech Publications.

### **Annotation.**

Trans Tech Publications, Switzerland. St. Petersburg State Polytechnical University - Russian and world leader in higher engineering education. In 2010 he received the status of a national research university. In 2013, the Polytechnical University among the 15 universities of Russia, who won the competitive selection for the right to obtain a grant of the Ministry of Education and Science of Russia in order to increase their competitiveness among the world's leading research and education centers. Thanks to the activities of the Program “5-100-2020” St. Petersburg State Polytechnical University in 2020 should enter the top 100 QS World University Rankings. The article discusses one of the ranking criteria QS - the proportion of foreign students - on the basis of activities of the Program “5-100-2020” and activities Civil Engineering Institute of Polytechnical University on attracting foreign students. Considered activities such as increasing the number of international educational programs in English, participation Civil Engineering Institute in international educational exhibitions, partnerships with universities and abroad, primarily belonging to the rating of universities QS 500.

## Karlik, A. E., Demidenko, D. S., Iakovleva, E. A., & Gadzhiev, M. M. (2014). Russian practice of financial management of the enterprise. Life Science Journal, 11 (10), 86, р. 589-594.

### **Annotation**

## Kozlovskya, E.A., Putihin, I.E., Gadzhiev, M.M. (2014). Economic approaches to scientific potential evaluation of St. Petersburg state polytechnical university on the basis of value-oriented approach (Edwards-Bell-Ohlson model). Life Science Journal 11 (10), 89, p. 605-609.

### **Annotation.**

Today scientific papers pay a lot of attention to the issues of innovation potential evaluation in different economic systems. The issues of evaluation of SPbSPU scientific and research potential correspond to the objectives of the National Research University Program when educating higher qualification specialists. The article presents the research result of economic efficiency of SPbSPU on the basis of value-oriented approach by the Edwards-Bell-Ohlson valuation method. At the same time, one of the objectives for the potential evaluation is to increase motivation, which would stimulate investors (and the government) to support universities financially. Such motivation will become much more convincing if, following the results of the public assessment, it will be possible to build up university ratings according to their investment attractiveness and, consequently, value.

## Nikolova, L. V., Rodionov, D. G., & Mokeeva, T. V. (2014). The formation of the conflicts management models of the strategic alliances under the conditions of the globalization. Asian Social Science, 10 (19), р. 296-302.

### **Annotation.**

The processes of globalization led to the fact that the world markets began to create new business forms actively, one of which is a strategic alliance. The conditions of the strategic alliances functioning uncertainty associated with a complex system of management and organization, conflicts arising from the work dissatisfaction and high uncertainty of possible outcomes. Conflicts may lead to the dissolution of the alliance at any stage of its formation and development. The influence of conflict can be minimized by choosing the most stable forms of corporations’ interaction. Objective: to develop and substantiate models which allow managing conflicts of strategic alliances on conditions of uncertainty of the current globalization state stage. The result of this study is to construct two basic models of conflict management as a factor of the strategic alliances’ stability: the state model allows identifying and eliminating the causes of the dissolution of strategic alliances in the conflict environment and forecasting model of variant forms of the corporations’ interaction, leading to a stable development. For the formation and stability of the models a systematic approach is used as well as factor analysis and methods of the decisions’ making. To control the conflicts, is to control the stability of strategic alliances: to predict the result of the activities, plan the development, to eliminate the problem quickly. The models, formed within the work allow predicting the result of the strategic alliances’ activities: a stable development, consolidation or merger, dissolution.

## Nikolova, L. V., Sergeev, D. A., & Omelianenko, A. R. (2014). Risk management for securitization of bank assets. Life Science Journal, 11 (11), 103, с. 576-581.

### **Annotation.**

Bank transactions with securitization use represent a new approach in activity as regards the bank operating credit risks and the borrower pursuing the aim to minimize a payment for credit recourses and to provide necessary inflow of money. In this work the problems of traditional ways of financing are considered, the mechanism of securitization of bank assets is offered as solution to the problem and analyzed from the point of view of profitable approach. Existing ways of quantitative assessment of securitization risks are defined, a new approach on the basis of Wang transformation is offered. Ways and mechanisms of risk management of securitization are analyzed.

## Rodionov D. G., Guzikova L. A., Rudskaya I. A. (2014). Innovation potential of regions as a factor of national economy competitiveness // Actual problems in Economics. – 2014. –158 (8), р. 215-223

### **Annotation.**

The paper analyzes the concept of innovation potential. Its basic elements and approaches to their assessment are identified, key characteristics of regional innovation systems from the standpoint of innovation potential effective use are revealed, the feasibility of constructing a model of increasing the competitiveness of Russian economy based on regional innovation systems creation and development is substantiated.

## Rodionov, D. G., Fersman, N. G., & Kushneva, O. A. (2014). Credibility of the Russian higher education in the world: Problems and solutions. Life Science Journal, 10(11), 43-47.

### **Annotation.**

The attractiveness of university for students and the credibility of the diploma for employers are largely determined by ranking of the education institution. Rankings of the best universities in the world are regularly compiled by various agencies. Recognition of the education institution at the international level is becoming increasingly important for universities around the world. Due to the relevance of this issue, the article examines the main methodology of well-known international rankings, namely QS World University Ranking, developed by consulting company Quacquarelli Symonds, and THE World University Rankings, based on the methodology of the British «Times Higher Education» edition. The purpose of this study is to analyze the factors affecting the international credibility of the Russian higher education. The article analyzes the ranking system of the Russian universities and identifies university priority development areas in order to increase the international outlook of the Russian higher education, as well as to enhance competitiveness in the global market for education and to enter the international rankings. Authors consider the status of the Russian higher education in the world educational process and identify the causes of unreasonably low ranking of the Russian universities according to leading ranking agencies. Also, a comparative study of the Russian and foreign universities was conducted in the context of QS ranking factors, and the necessity of the state incitement for improving competiveness of Russian universities was revealed and substantiated. The feasibility of using the estimated quantitative performance indicator to assess the scientific merit of publications is considered as well. The authors propose a set of measures that will help to ensure university departments to increase the number of publications in international scientific journals, and as a result, raise science citation index of the articles published by the Russian scientists.

## Rodionov, D. G., Rudskaia, I. A., & Kushneva, O. A. (2014). How key Russian Universities advance to become leaders of worldwide education: Problem analysis and solving. World Applied Sciences Journal, 31(6), 1082-1089.

### **Annotation.**

The paper studies in detail and analyze local rankings by faculty and by subject according to the QS World University Ranking. The paper also suggests a method to clearly display a university status by faculty and by subject. A comparative analysis of leading world universities' performance has been done by faculty and by subject. The ways to increase performance of national universities by faculty and by subject are looked into, as well as the ways for them to advance in the world rankings.

## Rodionov, D. G., Rudskaia, I. A., & Kushneva, O. A. (2014). The importance of the university world rankings in the context of globalization. Life Science Journal, 11(10), 442-446.

### **Annotation.**

In the context of rapidly growing demand for higher education, the relevance of the global rankings of the universities increases all over the world. Results of these rankings not only allow evaluation of the higher education quality, but also affect its competitiveness in the educational market. Recognition of the educational institution at the international level is becoming increasingly important for universities around the world. Due to the relevance of the issue, the paper explores the methodology of compiling international ranking, namely "QS World University Ranking". The authors conducted a quantitative analysis of the distribution of universities, represented in QS ranking, across the various countries. Application of ABC-analysis made it possible to demonstrate that the QS ranking, which originally was created as an instrument of competition of leading universities in the most developed countries in educational space, due to its broad advertising opportunities became attractive for universities of different countries in their efforts toward attracting the students. The priority areas for the university development are identified to raise the international credibility and competitiveness of the Russian higher education. To reach a new level, Russian universities need a breakthrough in every field. Three main vectors are highlighted as priority ones; these are scientific, innovative and international activities of universities. In the next 5-7 years every Russian university will face the challenge to create a new dynamic, globally competitive environment, which will attract both world-renowned scientists and talented students from all over the world. This environment will provide the opportunity to take part in the prestigious educational curriculums, research activities, and custom project developments for the global industry leaders, as well as communication in the international scientific and educational environment.

## Zaborovskaia, O. V., Plotnikova, E. V., & Sharafanova, E. E. (2014). Assessment of conditions for formation and development of human capital in the regions of the Russian federation. Asian Social Science, 10(21), р. 267-274

### **Annotation.**

The article suggests the method of assessment of conditions for formation and development of human capital (CFDHC) in a region for Russian conditions. This assessment is of integral character. It integrates 21 individual indices which measure deviations of the existing conditions for formation and development of human capital in the given region, from the best ones that have ever been achieved in any other Russian regions. Information base for calculations is an official statistics. There was suggested a scale for classification of regions according to the level of assessment (ranging from 0 to 1). The calculations of assessment of conditions for formation and development of human capital in all the regions of the Russian Federation for the period of 1999 - 2013 are presented in this article. The analysis of the assessments dynamics showed their growth in most regions and gradual approximation of indices to favourable ones. This means that the social policy of the federal centre and regions is correctly oriented. However the regions' assessment level is diverse, it needs the development of management decisions aimed at overcoming differentiations. Based on the assessment indices for 2012 there were distinguished three groups of regions - leaders, outsiders and neutral conditions regions. Separately there were conducted the analysis of assessments indices of conditions for formation and development of human capital for the region of Northwest Federal District which showed high assessments in St. Petersburg and low ones in other regions. The improvement of conditions for formation and development of human capital in these regions is possible only in case of active support of the federal centre, that's why the transfer of the centre of expenditures, connected with the social policy, to the level of constituent entities of the federation, is impossible with regard to these regions.

# 2013

## Babkin, A. V., Kudryavtseva, T. J., & Utkina, S. A. (2013). Identification and analysis of industrial cluster structure. World Applied Sciences Journal, 28(10), p. 1408-1413.

### **Annotation.**

The article gives reasons for the choice of management object of state cluster policy, the problems of realization of cluster policy are considered, its risks connected with information asymmetry, insufficiency of statistic information, absence of efficient tool for cluster and their prototypes' identification. Critical analysis of the existing approaches to definition of industrial enterprises' clusters is done, the author proposes his own sequential order to identify groups of interrelated enterprises with the aid of charts of potential clusters. Use of this approach allowed to identify the structure of industrial cluster and interrelation between its main participators, which are potential objects of state cluster policy.

## Lidija, L., & Liudmila, G. (2013). Problems of Management of Enterprise Development in the Sphere of Building Materials Production. World Applied Sciences Journal, 17 (4),р. 477-483.

### **Annotation.**

The paper gives a brief overview of the factors that determine the conditions for the development of the building materials industry enterprises. Growth management requires careful balancing of the objectives of companies in terms of sales and the effectiveness of its operation and financial resources of the model. The issue is to determine what level of sales growth is consistent with the actual situation of enterprises and financial markets. The most important objectives of most companies include maximizing profits and ensuring the long-term existence. However, the issue of maximizing profits in the short term can lead to a reduction of liquidity in the long term, while the desire to improve the liquidity may lead to lower profitability and, thus, efficiency. Therefore, when modeling the sustainable growth of companies, you must strive to: a) maintain a sustainable balance between liquidity and efficiency, if it was reached and b) approach it, if there is no such balance. In the first case, enterprises face the challenge of stable growth, in the second the sustainable growth. Thus, modeling the sustainable growth rate (SGR) enables to identify the companies' response to the effect of individual factors and to develop measures to offset the risks associated with the effect of these factors on the achievement of the planned growth. Further, the author justifies the use of the sustainable growth model for managing the development of enterprises. The tasks that can be solved on the basis of this model are analyzed as well

## Lidija, L., & Liudmila, G. (2013). Problems of Management of Enterprise Development in the Sphere of Building Materials Production. World Applied Sciences Journal, 26 (3), р. 382-388.

### **Annotation.**

The paper gives a brief overview of the factors that determine the conditions for the development of the building materials industry enterprises. Growth management requires careful balancing of the objectives of companies in terms of sales and the effectiveness of its operation and financial resources of the model. The issue is to determine what level of sales growth is consistent with the actual situation of enterprises and financial markets. The most important objectives of most companies include maximizing profits and ensuring the long-term existence. However, the issue of maximizing profits in the short term can lead to a reduction of liquidity in the long term, while the desire to improve the liquidity may lead to lower profitability and, thus, efficiency. Therefore, when modeling the sustainable growth of companies, you must strive to: a) maintain a sustainable balance between liquidity and efficiency, if it was reached and b) approach it, if there is no such balance. In the first case, enterprises face the challenge of stable growth, in the second - the sustainable growth. Thus, modeling the sustainable growth rate (SGR) enables to identify the companies' response to the effect of individual factors and to develop measures to offset the risks associated with the effect of these factors on the achievement of the planned growth. Further, the author justifies the use of the sustainable growth model for managing the development of enterprises. The tasks that can be solved on the basis of this model are analyzed as well.

# 2012 и ранее

## Vasil'ev, N.F., Loginov, A.L., Chmykhov, A.N., Bataev, A.V. (1995). Design circuit of the running gear for an electric invalid wheelchair with a complete drive Ministerstvo Elektricheskoi Promyshlennosti (12), р. 37-41.

### **Annotation.**

Three circuits of the running gear for an electric invalid wheelchair were considered. The first one was with uncontrollable wheels, the second one - with front controllable and rear uncontrollable wheels. The third circuit had all controllable wheels. All three circuits were calculated, and the calculation results are presented. Advantages and disadvantages of each circuit are discussed.

## Vasil'ev, N.F., Loginov, A.L., Chmykhov, A.N., Bataev, A.V. (1995). Design of a electric motor-wheel for a completely drived electric invalid wheelchair (IW) Ministerstvo Elektricheskoi Promyshlennosti (11), р. 40-42.

### **Annotation.**

The St. Petersburg state technical university is developing a IW with electric motor wheels of a special type. The kinematic layout of the wheel is shown. The wheel is a built in plane reducer with a swinging carrier and leading satellite, gear. As compared to traditional wheels, this motor-wheel can overcome obstacles, the height of which exceeds the radius of the motor-wheel. The scheme for overcoming obstacles is shown several equations are given to make necessary calculations. A conclusion is made that the use of the motor-wheel of this design gives the opportunity to reduce power of the motor by 25% as compared to the traditional wheel and to smooth out the unevenness of the road.

## Vasil'ev, N.F., Loginov, A.L., Bataev, A.V. (1994). A microprocessor control system for a full-driven electric invalid vehicle Ministerstvo Elektricheskoi Promyshlennosti (11), р. 32-34.

### **Annotation.**

A microprocessor control system to be developed by the state Technical University in St. Petersburgh has been considered. A functional scheme of the control system has been given, and principles of its operation have been described. The vehicle has four drive wheels actuated by thyratron motors. The vehicle is capable to move both over the plane and flights. The microprocessor control system is based on two microprocessors of the 1816VE51 type.