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EDITORIAL

Papers in this monothematic issue are focused on management and development of human capital in different contexts of regional development. The main aim of the issue is to describe different point of view in theory and practice of regional development. Papers are based on the results of three internal grant projects from The College of Regional Development - Opinions of graduates and students to apply the acquired knowledge and competence in praxis, IGA_Z9_02_2015, Employment opportunities in regions, IGA_Z8_02_2015, Intercultural Management - the phenomenon of the early 21st century IGA_Z4_01_2016 and the cooperation with universities in Poland – Czestochowa University of Technology, Russia Moscow Polytechnic University and University of Technology, Korolev and from Czech Republic – University of Economics, Prague, Masaryk Institute of Advanced Studies, Czech Technical University in Prague, The Institute of Technology and Business in České Budějovice. All papers were presented at 1st International conference Human Resources in Regional Development that was held on September 7, 2016 realised at The College of Regional Development, Prague.

The themes are human resources in regional development, in organisations and enterprises with relationship to regional labour market, approaches of management to human capital, diversity management, changes in educational structure of employees in regions, in relation to technology changes in fourth industrial revolution and creativity management. The regional aspect is becoming from Central Europe as Czech Republic, Slovak Republic, Poland, and Eastern Europe as Russia.

Mikhail Abraskin and Martin Šikýř describe “Crises in personnel management in High-tech enterprises”. For high-tech enterprises the personnel management strategy should be adapted to the unstable economic growth, the turbulence of the environment, instability of the conjuncture. Therefore, the main tools of optimization of staff should act soft measures to reduce personnel in the crisis.

Anna E. Gorokhova, Ivan A. Chikharev, Vladimir D. Sekerin, Elena S. Samoylova describe in “Problems and prospects of innovative business development in Russia” a transfer of innovations in the Russian economy and approximations to foreign level, especially a transfer of innovations; to create branch infrastructure of innovative process; to increase the level of public financing of research works and the social status of scientists-researchers.

Vladimir D. Sekerin, Ivan A. Chikharev, Anna E. Gorokhova in “Influence of the innovative environment on efficiency of the russian industrial enterprises” focus on effective realization of innovative production what is possible only as a result of activation by the organizations of the available internal potential in a combination to the developed external opportunities.

Vladimir D. Sekerin, Anna E. Gorokhova in “Policy of the russian federation and foreign countries in the sphere of utilization and recycling of waste” consider that in Russia at a modern level of development of technology from 9% to 25% of initial raw materials finally goes to waste, at the existing and again opened enterprises it is necessary to introduce a complex control system of rational use of secondary raw materials. The directions of increase of efficiency of industrial production as a result of processing of production wastes of basalt fibres are revealed.

Jana M. Šafránková, Martin Šikýř in “The job prospects of university students on the regional labour markets” discuss the possible job prospects of university students on the regional labour markets

in terms of their professional knowledge and skills, work and social habits, development potential and personal aspirations based on the analysis of available secondary data and the results of the authors' questionnaire survey. The results support the assumption that the students potentially have a good chance to succeed on the labour market due to their broader knowledge, skills and abilities, but they should be prepared for continuous learning and should not expect rapid career.

Klára Šimonová in “Working conditions in regions as important motivation factor” discuss working conditions and working environment are on the basis for satisfactory performance of employees and working conditions. Current changes on the labour market are not reflected by companies in terms of improving the working conditions. So far it seems that only companies in two biggest Czech cities compete for both fresh and experienced workforce, while regional companies stick to traditional ways of employing people.

Radka Vaníčková in „Prediction of the needs of the labour market in the south region 2015-2020“ analyses forecasts the needs of the labour market in the South Region 2015 - 2020 examines the current situation on the regional labour market in the South Region. The analysis focuses on the possibility of starting or intensifying cooperation between business and educational sphere in the sense of improving the quality of vocational training

Bogusława Ziółkowska in “Age management as an element of diversity management of human capital innovation and regional development strategy.” describes situation in Poland in population ageing. At the level of national economy the concept of age management is generally understood as systemic, administrative and legal solving of problems resulting from the process of employees' ageing by means of a state policy and employment rights.

CRISIS PERSONNEL MANAGEMENT IN HIGH-TECH ENTERPRISES

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Abstract:

High-tech enterprises play a big role in the scientific and technological development of the Russian economy. In spite of many help from the government, they are increasingly faced with the challenges of the crisis, which are caused by unfavourable environmental factors. For their successful functioning and development requires a reorientation of approaches to a variety of management areas, one of which acts as personnel management. It is from the effectiveness of human resource management strategy depends the formation of the competitiveness of high-tech enterprises, the ability to achieve long-term goals and implementation of the overall strategy. For high-tech enterprises the personnel management strategy should be adapted to the unstable economic growth, the turbulence of the environment, instability of the conjuncture. It should also take into account the specifics of these companies, the high costs of research and development, innovations in production technologies and the final product. Therefore, the main tools of optimization of staff should act soft measures to reduce personnel in the crisis.

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Introduction

The aim is to generalize the theoretical foundations and practices of systematization the methods of crisis management personnel in the high-tech enterprises and analysis of the existing models of implementation of HR strategies. It is proposed to build the technology of building mutually beneficial relationships between the staff of high-tech enterprise and its management in the crisis in Russia.

Today, the speed and scale of the economic and geopolitical changes indicate the need for adequate adaptation of personnel management model to the needs of the company's development, strengthening and enhancement of its potential in terms of turbulence and volatility in market conditions, the limited human, technological and financial resources, as well as the extremely unfavourable external economic environment. It requires the formation of new rules of formation and functioning of personnel management strategies it as a system in a crisis.

The purpose of the publication is based on the analysis of available scientific literature and the results of human resource management practices in Russia and abroad. The study is based on systematic and dialectical approaches, general scientific and special methods. The principles of

evolution will act as the main methodological principles. The theoretical significance of this work is due to a subject novelty and to the lack of analogues of the conducted researches. The empirical framework used in this research work, can be used as a historiographical material in the further development of the issue of profound problems. In this work were used statistical data of the Russian Statistical Agency, the materials monographs author of the article, such as "Innovative activity in Russia: strategic directions and mechanisms", "Modern enterprise in the innovation economy: theory and practice", "Innovative Processes in the Russian Economy", "Features of human capital management in the interests of innovation development of economy of the region" and the article "Justification of reorganization of work measurement system as a factor in improving productivity and sustainable economic development".

As an empirical basis of research acted major Russian science-intensive enterprises science Korolev city. Among them PJSC "Rocket and Space Corporation "Energia"" and Corporation "Corporation Tactical Missiles". Information on their activities and work with the staff was taken from open sources of information and also on the basis of the results of research graduates bachelors and specialists, prepared the final work by the author of the article.

1. High-end enterprise: essence, management features, problems and prospects of development

An analysis of global trends shows that the high-tech and high-tech manufacturing now occupy a decisive role in the scientific and technological development of the economies of most countries. They materialize the main part of the results of research and development and thus formed the demand for achievement on the part of consumers of science and technology. The scale of the high-tech and knowledge-intensive sectors is largely characterized by scientific, technical and economic potentials of the country. In addition the state high-tech industries are becoming one of the conditions for successful integration of any country in the emerging global system of world economic relations. Given the trend of reorientation of the Russian economy from the export of hydrocarbons to the creation of high-tech, there is need for a reorientation of approaches to knowledge-based production management.

Problems of development and distribution of high technologies are relevant because of their special importance for the sustained development of economy and society, as they contribute to and deliver improved living standards due to the intensive factors: labour productivity growth, reducing the relative level of consumption and more efficient use of non-renewable natural resources.

Belonging to the category of industries it is characterized by high-tech science-intensive production index, determined by the ratio of the volume of R & D expenditure (VR&D) to the volume of gross output of the industry (Vgoi):

$$(VR\&D / V_{goi}) \cdot 100\%. (1)$$

It is believed that indicator for high-tech industries should be 1.2-1.5 times or greater than the average for the manufacturing industry. The world statistics industries and enterprises are classified into high-, medium- and low-technology-based coefficient data values. An important role in the classification of industries and enterprises took the Organisation for Economic Cooperation and Development. To date, there is absolutely accurate classification of industries by the degree of technological and research intensity, so in this study will be used by the approaches proposed by the OECD. In this classification are used two main approaches:

1. Classification by sectors of high technology. The main criterion - the intensity of innovation in the production process.
2. Classification of manufactured products. The main criterion - the research intensity of the final product. Both of these classifications are often do not coincide with each other.

Due to shortage of analytical materials about the high technology enterprises in Russia and the lack of uniform criteria for classifying enterprises into this category, it seems appropriate to consider the general trends in the innovative development of the country. The share of innovative products, works and services in the total volume of shipped goods, works and services amounted to 8% in 2015, and intellectual property valued at more than 400 billion roubles (see table 1). However, despite the positive value growth of a number of indicators characterizing innovation, there are deep-seated problems of scientific and technical sphere.

Table 1: *Main innovation indicators of the Russian Federation*

№	Index	2012	2013	2014	2015
1	Innovative activity of organizations (the proportion of organizations implementing technological, organizational and marketing innovations in the reporting year, the total number of surveyed companies), percent	9,3	9,5	10,4	10,3
2	Share of organizations implementing technological innovations in the reporting year in the total number of surveyed companies, percent	7,7	7,9	8,9	9,1
3	Shipped goods of own production, works and services by own forces, billion roubles, including innovative products, works and services billion roubles	20,711 934,59	25,794 1243,71	33,407 2106,74	35,944 2872,26 7
4	The share of innovative products, works and services in the total volume of shipped goods, works, services, percent	4,5	4,8	6,3	8,0
5	Expenditure on technological innovation, billion roubles: - At current prices - In constant 2000 prices	399,12 114,99	400,80 101,12	733,82 160,29	904,56 182,12
6	The share of expenditure on technological innovation in the total volume of shipped goods, works, services, percent	1,9	1,6	2,2	2,5
7	The proportion of organizations implementing organizational innovations in the reporting year in the total number of surveyed companies, percent	3,2	3,2	3,3	3,0
8	The proportion of organizations implementing marketing innovations in the reporting year in the total number of surveyed companies, percent	2,1	2,2	2,3	1,9
9	The proportion of organizations implementing environmental innovations in the reporting year in the total number of surveyed companies, percent	1,5	4,7	5,7	2,7

Source: calculated by the author according to the State Statistics Committee Russia

It should be borne in mind that at the present time there is industrial development VI technological structure, which includes nanoelectronics, genetic engineering of animals, interactive multimedia information systems, high-temperature superconductivity, etc. At the same time due to the general low technological level of the production base, the impossibility

of manufacturing many kinds of high technology industrial products, for which there is strong domestic demand, increases dependence on foreign supplies of finished products. This problem is exacerbated by the depressed state of science and the low level of innovation activity. This imbalance between the volume of production of high-tech products and technologies and their imports are great even in the strategically important regions of the country.

Given the importance of knowledge-intensive enterprises to the country's economy remains an open question about the data management features of the economic entities. Despite the existence of common approaches to the management there is the specific characteristic of the management of R & D (Khrustalev, 2002), namely:

- The complex nature of management, allowing to solve all the problems of the creation of technology from research and development work to production and operation.
- Management of high scientific and technical level of production, which has no foreign analogues or inferior to them.
- A large amount of R & D carried out by research institutes, design bureaus and plants, with the result that the last significant manufacturing capacity loading performance of experimental samples of the products, their fine-tuning during the time of production because of the design changes and modifications. This pattern of production requires the establishment of strong links between the actors of the art, an organic compound into a unified business structure.
- The dominance of technology changes in the process over a fixed production and the consequent need for regular updating of fixed assets, the development of research and experimental base.
- A significant length of the full life cycle of technology, reaching for some types of its more than 20 years, making it difficult production management because of the lag time effect control actions and increases responsibility for the choice of development strategy.
- The diversity of research and development and diversification of production.
- High dynamics of development of production, manifested in the constant renewal of its elements (objects of research, development and production, technology, circuit design and structural design, information flows, etc.), changing the qualitative and quantitative indicators, improving research and production structure and management. Dynamic time release products complicate the task even load and the use of production capacity.
- Extensive intra- and inter-sectoral co-operation due to the complexity of high-tech products and specialization of enterprises and organizations.
- A high degree of uncertainty (entropy) in the management of the latest developments, in which decision-making used by predictive estimates technologies of the future.
- The creation of qualitatively new products, as a rule, carried out in parallel with the development of the main components (circuit design and design decisions, physical principles, technologies, etc.).
- Intensive investment process - a key factor in achieving the goals of research and development of high scientific and technological level, accompanying the implementation of major projects.
- The presence of unique collectives with a large proportion of scientists and highly qualified engineering and technical personnel and production and industrial employment in total employment in the development and production.

Thus, the high-tech enterprises have a number of features of management, and in particular, human resources management as the main resource of the formation of new development, R &

D and technology. Given the current trends in the onset of the crisis requires a reorientation of approaches to personnel management for building a path of sustainable development of these enterprises.

2. The approaches to crisis management personnel of high-tech enterprises

Crisis management is the process of forms, methods and procedures aimed at socioeconomic rehabilitation of financial and economic activities of the enterprise, establishment and development of the conditions for exit from the crisis. It comprises a body of knowledge and analysis of practical experience, aimed at optimizing the mechanisms of regulation systems, identification of hidden resources, and the potential development on a complex stage of development. As rightly pointed scientist Arutyunov Yu, crisis management specifics associated with the need to make complex management decisions in conditions of limited financial resources, a large degree of uncertainty and risk (Arutyunov, 2015).

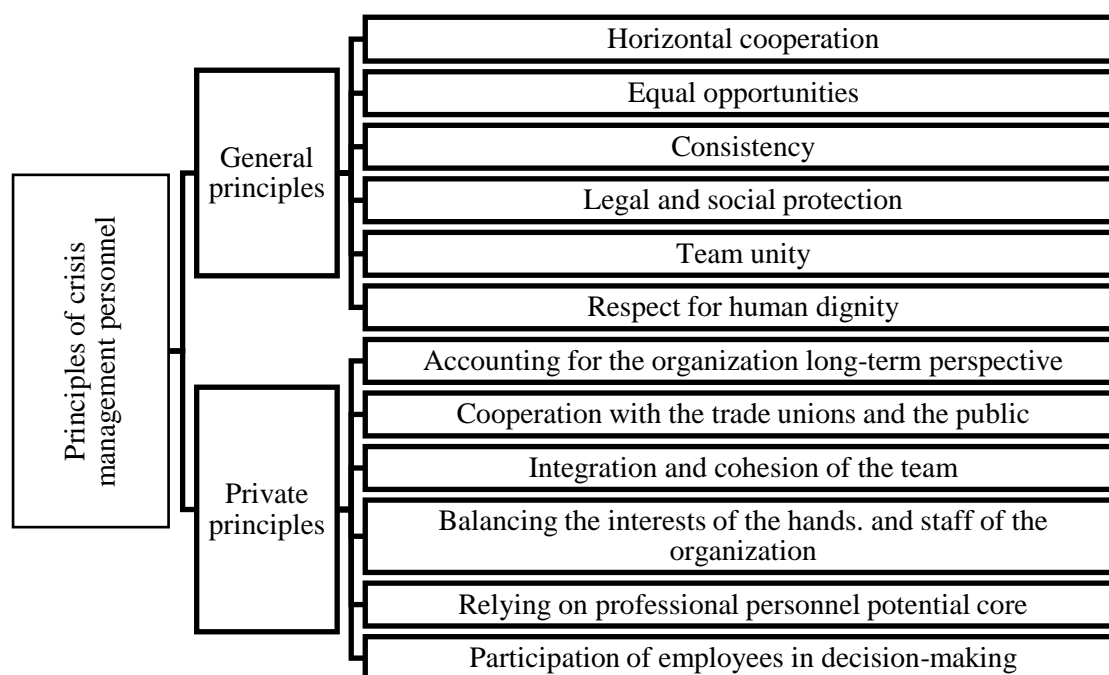
Polysemy of the economic, especially the managerial understanding of crisis management is due to the dual nature of any crisis, which simultaneously creates and destroys, forms preconditions and prepares conditions for further development and release from the old business strategy (Bezdenzhnykh & Galai, 2015). Overcoming crises arising in the enterprise is impossible without an active work with the staff and building an adequate strategy for personnel management. The activities of personnel services at this stage include: diagnosis of the staff of the company, reorganization strategies and personnel support program reorganization, reduction of staff, programs to improve productivity, resolve conflicts, especially aggravated during this period. Currently, during the crisis, companies can count on the patience of the staff willingness to help the most of their company to overcome this difficult situation (Bazarov, 2012).

In crisis management role of human capital is manifested in the following factors. Firstly, in the prophylaxis of crisis situations, the quality of human capital affects the number and nature of the errors in decisions on their perception of the temporal development of cyclic signals, objective assessment of the situation, the design of anti-crisis activities. In the presence of the human capital the likelihood of a deep and devastating of crisis declines. Secondly, during the crisis, human capital acts as a stabilizing factor. Educated people deeper understanding of the events surrounding reality and, therefore, react to them with fewer elements of panic, slackness, indiscipline. Many believe that this is determined by the individual's nature, his character. Agreeing in part with this, it is obvious that many personality traits, such as confidence, self-discipline, efficiency, generated in the process of acquisition of professionalism, the implementation of education, manifestation of corporate culture, ie, all that reflects the concept and the reality of human capital. Thirdly, when you exit the crisis, human capital plays a significant role in accelerating this process. There are important such its features as professionalism, enthusiasm, future-oriented thinking, which provides general education, innovation.

In the crisis management is very important harmony of the two qualities of human capital: its role as an object and as a management tool. In an effort to alleviate the crisis or to resolve it in favour of the development of the organization, it is necessary to promote the development of human capital, to invest in education, healthy lifestyle, and so on., to motivate creativity work, to create social and psychological conditions, to form the traditions and values, to contribute to the accumulation of experience, to improve the level of corporate culture (Belyaev and Korotkov, 2015). One of the main problems of modern management is to determine the crisis

personnel management principles. Principles of human resources management - rules, provisions and norms to be followed by managers and specialists in the management process - reflect objective tendencies, social and economic laws, scientific advice of social psychology, theory of management and organization. According to the author, the principles are effective when they interact and complement each other, when integrated into a coherent system, shown in figure 1. Thus, human resources management in a crisis state of organization is a versatile, well-planned and thoughtful work, based on a system of scientific principles, art and savvy entrepreneurs and managers.

Figure 1: *System principles of crisis personnel management*



Source: Rybkin, 2014

Personnel management tasks in crisis (Rybkin, 2014):

- The formation of the team managers who can develop and implement a program for the survival and development of the enterprise.
- The preservation of personnel potential of the nucleus of the organization: managers, professionals, workers, of particular importance for the enterprise.
- Restructuring human resource capacity of the enterprise in connection with the organizational changes in the course of restructuring, the implementation of innovative investment projects, diversification of production and the reorganization of the company.
- Reduction of socio-psychological tension in the team.
- Social protection and employment of redundant workers.

HR management methods in a crisis at the enterprise aimed at overcoming resistance to change on the part of staff. The most common methods of work with the staff in the conditions of crisis management are the following: forced, adaptive, resistance, control, crisis, and combinations thereof. Comparative characteristics of methods are shown in table 2.

Table 2: *Comparison of methods of overcoming resistance*

Method	Benefits	Disadvantages	Conditions of use
Forced	Speed changes	Big resistance	Most of urgency
Resistance management	Weak resistance	Complexity	The average maturity
Crisis	Weak resistance	Hard shortage of time. The risk of failure	The existence of threat
Adaptive	Weak resistance	Slowness	Partly urgency
The combination of techniques	Adapting to conditions	Difficulty in managing	Combination

Source: author

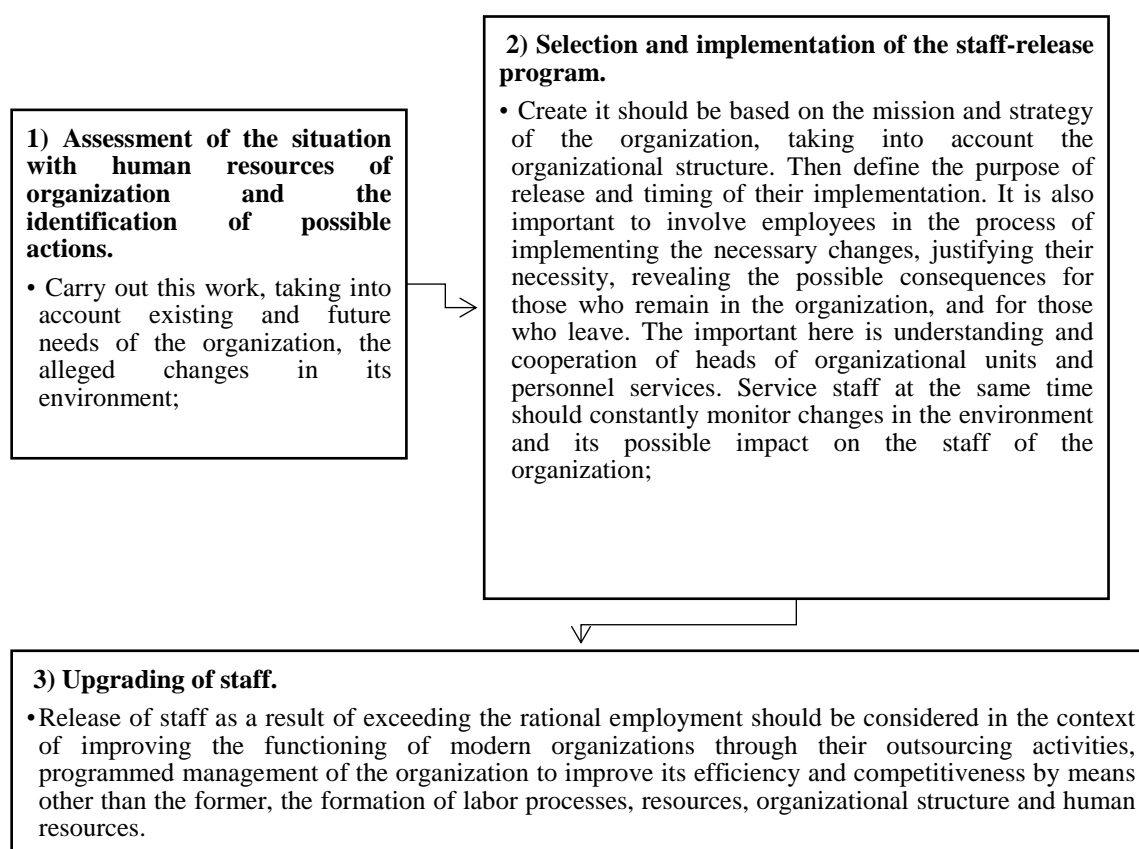
In the process of diagnosis of the condition by choosing a particular method, in addition to these areas of their effective application is necessary to consider two main parameters: time horizon and professional, psychological, technical readiness of personnel to strategic changes in the organization. In order to ensure a proper level of crisis management personnel, managers need to pay attention to the planning and development of human resources strategies when working with him. The main measures are attracting new employees and professionals, re-training of employees in connection with the use of new programs and technologies, development of the guarantee system (social, legal, etc.) or organization system of employment of employees at realigning the company.

Of particular importance in the system of anti-crisis measures of personnel management processes play a release of staff and management of the program. The main stages of human resources programs, taking into account the scientists proposed models Bychkov reflected in figure 2 (Bychkov, 2012).

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The release of the staff, especially if it is part of a broader program (outsourcing), creates the conditions for the introduction of new methods of work organization, promoting creativity of employees; enhance employee motivation to work; expanding the scope of communications; the introduction of new staff selection system; an objective evaluation of staff; investing in staff development. Therefore, the release of the personnel is not simple reduction of number of employees by their mechanical dismissal. This is a much more complex process that should organically fit into the strategy of development of the organization (Bychkov 2012).

In the formation of readiness of the personnel to anti-crisis measures two interconnected aspects are important: the formation of skills, knowledge and experience activities (the willingness of staff to act in crisis situations is often more important than professional experience in general) and the formation of psychological readiness. Thus, an important factor in the company out of crisis is a systematic approach to human resources management, which finds itself in the distribution of functions and powers in the selection of crisis management principles in the development of a new human resources policy, in the development and implementation of management decisions.

Figure 2: *System principles of crisis personnel management**Source: author*

3. Directions headcount optimization of high-tech enterprises in the conditions of crisis

As an empirical basis of research were major Russian science-intensive enterprises science city Korolev. Among them PJSC "Rocket and Space Corporation "Energia"" and Corporation "Corporation Tactical Missiles ". Information on their activities and work with the staff was taken from open sources of information and also on the basis of the results of research graduates bachelors and specialists, prepared the final work by the author of the article.

On these knowledge-intensive enterprises marked decline in the number of personnel. So, in PJSC "Rocket and Space Corporation "Energia"", in 2011 the number of employees amounted to 15201 people, in 2012 - 14955, 2013 - 14409, 2014 - 14356, and in 2015 reached the mark of 14157 people. In spite of the progressive development of these enterprises, notes the changes HR strategies. The most relevant areas within the areas of headcount optimization in terms of crisis prevention and rapid control headcount appears in several versions, which are limited to the specific features of macro-factors and internal environment of the organization.

The author has analysed the main areas of anti-crisis activities and high technology enterprises risk (for example, Russian space industry mechanical engineering) and the potential for changes in headcount. The analysis showed that most of the crisis factors associated with increased competition and unstable situation leads to a decrease in the number of employees, on the other hand, the increase in demand and the availability of advanced development may help increase. One of the new types of risk stands the risk of a black swan, which is characterized by unpredictable place new processes. In the works of many scientists and experts, authoritative

in the field of personnel management (Genkin & Nikitina, 2013), the calculation of the labour force (Sinyavets, 2011) of headcount optimization (Vesnina, 2015) There are many strategies for building a crisis management personnel strategy, however, as the analysis shows the enterprise, available technologies poorly applied in relation to the RSC "Energy" and JSC "Corporation" Tactical Missiles "" for several reasons, among which are such as having unique positions, the need to maintain and continuously replenish scarce highly skilled personnel, high the degree of safety and protection of confidential information leaks, the presence of objects of high security on a national scale, strong links and co-operation organizations, which is part of the organization, and others. Thus, the tools associated with the outsourcing and out staffing personnel, reduction and elimination of the number of staff are at variance with strategic objectives of the corporation and may lead to high economic cost and expenses. Therefore, the most urgent, in my opinion, it is the identification of reserves to improve productivity and internal factors of an intensification of production, which would allow to keep the staff at the instability of the economy of the country and the continuity of the processes of diversification of products and the search for new consumer niche consumer products and services in the field of technologies for space exploration.

The author believes that the disclosure of internal reserves to increase productivity is impossible without a reorientation of approaches to regulation of labour system. The last 20 years of this system at these enterprises has been neglected. Specialized units have been disbanded and abolished, altered function setters and labour norms engineer, stopped work on the creation of local regulations on labour, excessive force, decentralization of data units in the organization. Thus, RSC "Energy" and Corporation "Corporation Tactical Missiles" and other large high-tech companies have the greatest interest in the improvement of work measurement system that can be realized through the introduction of a number of activities. According to the author, the most practical application can get the following actions:

- policy formation on labour management in the valuation of high-tech enterprises;
- improvement of the organizational and functional system of regulation of labour management structure of high-tech enterprises;
- development and implementation of integrated programs to improve the performance of high-tech enterprises units in order not to reduce the staff on the basis of the valuation of labour.

The proposed anti-crisis measures in the framework of human resources management strategies and improvement productivity, as the author suggests, will contribute to a positive effect and will lead to greater efficiency. After the improvement of work measurement system of high-tech companies need to work out the "soft" approach by reducing staff more loyal manner without the direct involvement of the administration. The organization creates certain conditions when the dismissal becomes a necessary step. Soft types of cuts that are most applicable in the RSC "Energy":

1. Exclusion of the "natural" way.
2. Soft "contractile action.
3. The number of employees fired without management.

With natural attrition own staff resigns, the task of the corporation serves to prepare the conditions for such measures. It is necessary to introduce the practice of "freezing vacancies" or method of time limit recruitment of new employees. At this time, some workers can retire, thus there will be a natural reduction in staff. If we talk about the soft reduction against RSC "Energiya", here the most useful the following methods:

1. The use of pre-term benefits for employees close to retirement age.

2. Transfer of the employees in the subsidiaries.
3. The Corporation may promise to lay off workers in the future prospects of a good compensation and subsequent employment.

Thus, the main focus is the optimization of the staff to improve the work system of regulation of labour management services and the use of soft measures reducing staff.

Conclusion

One of the essential components in the crisis is the formation of the personnel management system high-tech enterprises, providing its transition from the critical state in a competitive. Status of human resources, including managers, is often essential, explicit or disguised restriction to solve the problems faced by organizations. On this basis, the personnel management system, formed in the transitional period for the enterprise, should allow timely identification of potential problems and opportunities associated with the state of human resources; reasonably plan activities; to carry out the operational management of their implementation. Also, the presence of a system of crisis personnel management to talk about is a solid enterprise management style, which is in a state of crisis, when it is necessary to accept and carry out risk management solutions. Thus, as a result of the study revealed that in the framework of crisis management personnel the most effective instrument of regulation and optimization the number of staff acts as the improvement of work measurement systems, and the use of soft measures of reduction of workers.

References

Arutyunov, Y. (2015). *Crisis Management: textbook*. Moscow: Unity-Dana.

Bazarov, T. (2012). *Personnel management. Workshop [electronic resource]: studies. allowance for students studying in the field of "Human Resources", "Management of organization"*. Moscow: Unity-Dana.

Bezdenzhnykh, V., & Galai, A. (2015). *Crisis Management - Theory and Practice: A Training Manual*. Moscow: Altair, MGA VT.

Belyaev, A., & Korotkov, E. (2015). *Crisis Management: textbook*. Moscow: Unity-Dana.

Bychkov, V. (2016). *Human Resources: Textbook*. Moscow: Norma: SIC INFRA-M.

Genkin, B., & Nikitin, I. (2013). *Human Resource Management: Textbook*. Norma: SIC INFRA-M.

Khrustalev, E. (2001). The problems of organization and management in high-tech sectors of the Russian economy. *Management in Russia and abroad*, 32(1), 12-18.

Rybkin, M. (2014). *Crisis management of the enterprise: teaching practical manual*. Ulyanovsk: Ulstu.

Sinyavets, T. (2011). Theoretical aspects of optimization of personnel management system. *Bulletin of Omsk University. Series: the economy. Publisher: Omsk State University*, 24 (2), 78-84

State Statistics Committee Russia. Retrieved from <http://www.gks.ru>.

Vesnin, V. (2015). *Human Resource Management. Theory and practice: the textbook for high schools*. Moscow: Prospect.

PROBLEMS AND PROSPECTS OF INNOVATIVE BUSINESS DEVELOPMENT IN RUSSIA

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Business, innovative process, investments into innovative development

Abstract:

In the paper, modern problems of the Russian innovative business development, specific features of the Russian innovative sphere are revealed, the main models of innovative business development are investigated and directions of Russian innovative business development are proved. For development of a transfer of innovations in the Russian economy and approximations to foreign level it is expedient in Russia first of all: to add legislative and regulatory base with the documents necessary for stimulation of innovative activity, especially a transfer of innovations; to create branch infrastructure of innovative process; to increase the level of public financing of research works and the social status of scientists-researchers.

Introduction

In modern conditions for Russia problems of negative consequences overcoming of world financial and economic crisis become the most priority. One of the most important strategic factors of domestic economy post-crisis recovery, its rise and the solution of many social problems is formation of civilized modern business in economic space of Russia.

Business is inherently directed on innovative activity, after all to businessmen the risk, eccentricity of thinking in the organization of production and management are peculiar to them, therefore, the Russian science probably needs to stake on cooperation with these representatives of a business community as the state and its government still will have no long time of means and opportunities to remove science in the advanced branch.

It is known that economic, social and political power of the modern state is based on application in its economy of high technologies. But a question not so much in innovative technologies, not so much in ability of economy subjects continuously to generate them, how many in abilities and ability to bring them to the market, quickly to turn into production necessary to consumers and services (Boyko, Sekerin & Šafránková, 2014). The modern concept of the new technologies commercialization mechanism consists that diffusion of technologies from the scientific sphere in industrial is effective only at active interaction and cooperation of all subjects of innovative activity (scientists, developers, investors, businessmen, the government and consumers) and full realization by the developer and inventor of intellectual property right (Dudin et al., 2014).

As one of forms of realization of this right small knowledge-intensive business, small innovative business acts. Small business enterprises, being the most important subjects of innovations, can make the significant contribution to development of production in technically advanced areas (Zhang & Yang, 2013).

1. Problems of development of the Russian innovative business

It is possible to allocate the following problems of innovative business development in the Russian Federation (Sekerin & Gorokhova, 2013a):

- Low demand from real sector of economy for perspective results of scientific and technical activity is observed. It is explained by a lack of own means at the organizations and businessmen of real sector of economy, the high cost of innovations, high level of economic risk in the course of commercialization of innovations, long payback periods of innovations.
- Low extent of development of regulatory legal base for implementation of innovative activity is noted, and also there are no measures for its state support (in Russia from 90th years of the XX century there was an essential weakening of cooperation communications between the scientific organizations, educational institutions, manufacturing enterprises).
- Low level of development of average and small innovative business subjects takes place.

For the Russian innovative sphere are characteristic now:

- Low innovative activity of considerable part of subjects of real sector of economy.
- Imbalance of development and lack of economic interaction between separate elements of innovative infrastructure, are applied inefficient mechanisms of a transfer of knowledge and new technologies on the internal and external markets.
- Low extent of capitalization of scientific results, insignificant appeal of the scientific organizations and innovation-active enterprises as objects of investment and crediting.
- Backwardness of economic and legal mechanisms of commercialization of results of intellectual activity.

2. Models of innovative business

Innovative business can be carried out at research, production and design institutes or associations, in establishments of high school science, directly in the innovative enterprises, in the venture organizations, and also certain individual inventors, designers, technologists and scientists. As a result of innovative business by these subjects, innovations in the form of goods, services, the performed works, technical means and technologies are created (Carayannies & Grigoroudis, 2014). Innovations are also new social, ecological, organizational, economic development, methods of management and information support of economic activity (Šikýř, 2011).

Foreign scientists-economists allocated three models of innovative business depending on a way of the organization of innovative process:

- The innovative business based on the internal organization at which the innovation is created and accustoms in the company its specialized divisions by means of planning and monitoring of their interaction on the innovative project.

- The innovative business which is based on the external organization by means of contracts at which the order for creation and (or) development of an innovation is placed between the third-party organizations.
- The innovative business which is based on the external organization with use of venture funds when the company for implementation of the innovative project establishes the affiliated venture firms raising additional third-party resources.

In Russia the second model of innovative business is generally applied, that is the enterprise or the organization place the order for development of innovations, and master them by own forces (generally complex orders of "turnkey" type aren't placed). The first model is used rather seldom because of the insufficient potential of "factory science" (Sekerin & Gorokhova, 2013b). Considering complexity of innovative processes, the special innovative infrastructure for creation of the favourable environment is required. In the developed countries it develops with active state support. Techno park structures have key value for innovative activity (Sun, 2015).

3. Directions of development of the Russian innovative business

Foreign experience of the innovative activity organization and stimulation shows that the state scientific and technical policy of economically developed countries is based on realization of a complex of the organizational and legislative measures directed on creation and support of favourable innovative climate. The most important mechanisms of innovative development stimulation in economy are: development of specialized innovative programs and projects with the high level of their budgetary financing, functioning of preferential crediting systems, the taxation and insurance of research and development, the accelerated depreciation and write-off of costs part of the used technical means. Practically the private sector and universities actively participate in all countries in innovative process, in many of them the research centres function, cooperation of sciences with the industry is developed, information support and service of innovations users is effectively organized (Kucharčíková, 2014).

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For development of a transfer of innovations in the Russian economy and approximations to foreign level it is expedient in Russia first of all:

- to add legislative and regulatory base with the documents necessary for stimulation of innovative activity, especially a transfer of innovations;
- to create branch infrastructure of innovative process;
- to increase the level of public financing of research works and the social status of scientists-researchers.

Now in the Russian Federation the control system of innovative activity of the organizations, effective mechanisms of its stimulation aren't created yet. Generally formation of innovative system is conducted in the regions having scientific and technical potential. At the federal level generally at management administrative measures are applied, conceptual provisions and the directions of innovative activity development in a complex of scientific and technical and developmental base aren't developed.

For development of innovative activity it is necessary to involve all available scientific and personnel potential in the Russian Federation, to develop scientific and technical cooperation with foreign scientific centres, and also with the scientific organizations of the leading scientific centres (Lyasnikov et al., 2014). Modernization of productions of the organizations and enterprises can be implemented at the initial stages on the basis of use of more effective technical means and the equipment of the developed countries. Value of information and methodical providing in the solution of this task consists in market researches of the market of innovations of the foreign states.

Concentration of innovative activity in large scientific centres of Russian regions that will have impact on development of the most scientific potential is very perspective, will allow to orient research teams on performance of applied researches taking into account specific conditions of production, market requirements and a condition of advanced technologies and the latest knowledge, technical and technological development, and also on development of forms of business of innovative type, especially small enterprise structures. It is expedient to investigate stimulation and activation of innovative activity from positions of individual share in profit, application of sanctions or surcharges depending on the end result of the financial and economic activity realized with application of innovations, innovations. It is possible to allocate the following main mechanisms of realization of a state policy in the sphere of formation and development of regional innovative systems of business:

- Formation and improvement of standard and legal base of the innovative activity regulating creation, functioning and regulation of advance in business competitive scientific and scientific and technical products, goods and services.
- Optimization of regional innovative systems infrastructure.
- Analysis of a state and forecasting of innovative and technological development of branches and productions of the region.
- Coordination of development and implementation of regional interdepartmental and interindustry target programs and projects of social and economic, scientific and technological and innovative development.

It is also important to consider possibilities of interaction of the government and enterprise institutions in development of innovative and investment activity, participation of large corporations in formation of the knowledge-intensive production of small business. When forming such relations of the state with the private capital, there have to be the principles of self-sufficiency, recoverability, urgency, participation financing and competition.

Conclusion

Problems of intellectual (innovative) business need to be developed taking into account a modern social and economic situation of regions of Russia. It is possible to allocate the following directions of business development for overcoming of the existing negative inertial tendencies and acceleration of innovative development of the Russian economy.

It is necessary:

- to increase appeal of investments into areas of innovations commercialization.
- to create the conditions providing the maximum susceptibility of economy subjects to innovations (the actions directed on formation of favourable investment climate, including tax regime, customs policy; to liquidate the existing gaps in an innovative cycle and upon transition from basic researches through a stage of applied researches and development to commercial technologies);

- to provide support of rational innovative dynamics by means of periodic modernization and updating of technologies;
- to reform the Russian legislation for the purpose of feigning innovative activity;
- to develop and realize actions for formation and development of innovative infrastructure, including it is necessary to change considerably current situation in the field of commercialization of advanced technologies when are abroad delivered knowledge at the lowest level of export of technologies.

References

Boyko, J., Sekerin, V., & Šafránková, J. M. (2014) New Approaches to Efficiency Estimation in Strategic Planning. In Loster, T. Pavelka, T. (Eds.), *The 8th International Days of Statistics and Economics* (pp. 161-170). Retrieved from http://msed.vse.cz/msed_2014/article/454-Boyko-Julia-paper.pdf

Carayannis, E., & Grigoroudis, E. (2014). Linking innovation, productivity, and competitiveness: implications for policy and practice. *Journal of Technology Transfer*, 39(2), 199-218.

Dudin, M. N., Lyasnikov, N. V., Veselovsky, M. Y., Sekerin, V. D., & Aleksakhina, V. G. (2014). The problem of forecasting and modeling of the innovative development of social-economic systems and structures. *Life Science Journal*, 11(8), 549-552.

Kucharčíková, A. (2014). Investment in the human capital as the source of economic growth. *Periodica Polytechnica: social and management sciences*, 22(1), 29-35.

Lyasnikov, N. V., Dudin, M. N., Sekerin, V. D., Veselovsky, M. Y., & Aleksakhina, V. G. (2014). The national innovation system: The conditions of its making and factors in its development. *Life Science Journal*, 11(6), 535-538.

Sekerin, V. D., & Gorokhova A. E. (2013a). *Оценка инвестиций: Монография / Investment Appraisal: Monograph* (1 ed.). Moscow: ARGAMAK-MEDIA.

Sekerin, V. D., & Gorokhova A. E. (2013b). Виды эффекта от реализации инноваций / Types of effects of implementation of innovations. *Известия МГТУ «МАМИ»*, 15(1), 258-263.

Šikýř, M. (2011). Determinants of employee performance: how to achieve sustained competitive advantage. In Loster, T. Pavelka, T. (Eds.), *The 5th International Days of Statistics and Economics* (pp. 606-614). Retrieved from <http://msed.vse.cz/files/2011/Sikyr.pdf>

Sun, Z. (2015). Technology innovation and entrepreneurial state: the development of China's high-speed rail industry. *Technology Analysis & Strategic Management*, 27(6), 646-659.

Zhang, Z. Y., & Yang, Z. (2013). Interaction Mechanism between Enterprises' Business Model Innovation and Technology Innovation. *Psychology, Management and Social Science*, 15, 282-289.

THE JOB PROSPECTS OF UNIVERSITY STUDENTS ON THE REGIONAL LABOUR MARKETS

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Keywords:

Higher education, job requirements, labour market

Abstract:

The goal of the paper is to discuss the possible job prospects of university students on the regional labour markets in terms of their professional knowledge and skills, work and social habits, development potential and personal aspirations. The paper is based on the analysis of available secondary data and the results of the authors' questionnaire survey among students of the College of Regional Development in Prague and the Masaryk Institute of Advanced Studies of the Czech Technical University in Prague that was focused on students' motivation to study at university and their ideas about the future career. The survey was conducted from February to April 2016. The relevant data were obtained from 374 students. The results support the assumption that the students potentially have a good chance to succeed on the labour market due to their broader knowledge, skills and abilities, but they should be prepared for continuous learning and should not expect rapid career.

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Introduction

As the Czech economy has grown and the unemployment has fallen since 2015, many Czech employers have experienced a serious shortage of skilled workers with both secondary education (e.g. lathe operators, welders, electricians, programmers, etc.) and higher education (e.g. specialists in transport and logistics, mechanical engineers, civil engineers, electrical engineers, etc.). The problem is that the professional and personal qualities of applicants often do not meet the requirements of employers.

From the perspective of common job requirements, suitable job applicants must demonstrate: relevant professional knowledge and skills, suitable work and social habits, and appropriate development potential for successful performance, professional growth and career advancement (Šikýř & Bušina, 2014). However, to find such applicants on today's Czech labour market is not easy. A common problem of employing students and graduates is that they lack relevant professional skills and social habits (Cutillas, Monfort & Tortajada, 2011). Many students and graduates have better theoretical knowledge than practical experience (Stanciu & Banciu, 2012). Some students and graduates also have no real idea about their future career, but often require positions that do not match their abilities, just to get a job promising them high earnings and rapid career (Garcia-Aricál & Van der Velden, 2008). This leads to the fact that employers tend to hire experienced workers than students and graduates with inadequate experience and unreal expectations.

1. Goal and method

The goal of the paper is to discuss the possible job prospects of university students on the regional labour markets in terms of their professional knowledge and skills, work and social habits, development potential and personal aspirations.

Achieving the goal of the paper is based on both the analysis of available secondary data (especially the empirical data available in the scientific literature and the statistical data provided by the Ministry of Labour and Social Affairs of the Czech Republic and the Ministry of Education, Youth and Sports of the Czech Republic) and the results of the authors' questionnaire survey among students of the College of Regional Development in Prague (Urban and Regional Development Management and Security and Safety Management in Regions) and the Masaryk Institute of Advanced Studies of the Czech Technical University in Prague that was focused on students' motivation to study at university and their ideas about the future career.

The survey was conducted from February to April 2016. The questionnaire included twenty two multiple choice questions focused on the motivation to study at university and the ideas about the future career. The questionnaire was distributed to bachelor's students. The relevant data were obtained from 374 students. The respondents were characterized by gender (30% male, 70% female), age (6% less than 20 years, 75% 20-24 years, 5% 25-29 years, 4% 30-34 years, 8% 35-49 years, 1% more than 50 years), years of work experience (49% less than 1 year, 22% 1-2 years, 13% 3-5 years, 5% 6-10 years, 4% 11-15 years, 3% 16-19 years, 4% more than 20 years), form of study (80% full-time, 20% combined), and year of study (50% first year, 31% second year, 19% third year).

The data analysis was based on the calculation of relative frequencies and the evaluation of the dependence of responses on gender and year of study using contingency tables, chi-square tests of independence and sign schemes.

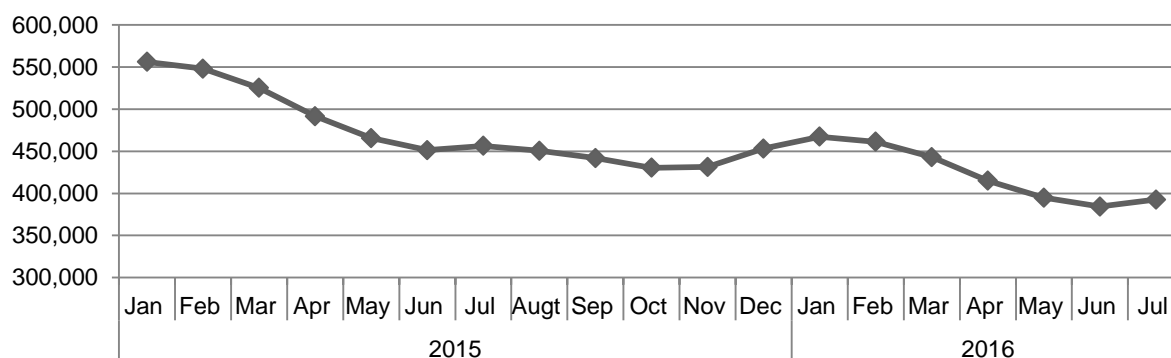
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2. Results and discussion

The recovery and growth of the Czech economy is accompanied by a decrease in unemployment and by an increase in vacancies. Based on the data of the Ministry of Labour and Social Affairs of the Czech Republic (MPSV, 2016), the figure 1 shows the number of job seekers registered by job offices from January 2015 to July 2016 and the figure 2 shows the number of vacancies registered by job offices from January 2015 to July 2016. By July 31, 2016 job offices registered altogether 392,667 job seekers and 135,758 vacancies. There were 2.9 job seekers for one vacancy at average. The share of unemployed persons (the ratio of available job seekers aged 15 to 64 years in the population of the same age) in the Czech Republic was 5.4%. The highest share of unemployed was in Usti region (8.3%). The lowest share of unemployed was in Plzen region (3.8%). The most vacancies were in Prague (19,189). The least vacancies were in Karlovy Vary region (3,764). In comparison, by July 31, 2015 job offices registered altogether 456,341 job seekers and 98,055 vacancies. There were 4.7 job seekers for one vacancy at average. The share of unemployed persons in the Czech Republic was 6.3%. The highest share of unemployed was in Usti region (9.4%). The lowest share of unemployed was in Plzen region, South Bohemia region and Prague (4.6%). The most vacancies were in Central Bohemia region (12,657). The least vacancies were in Karlovy Vary region (3,071).

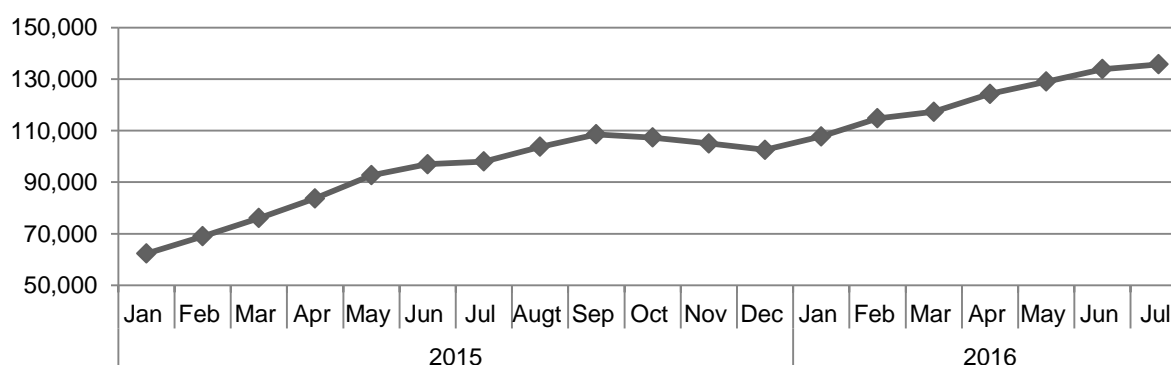
In general, among the unemployed on the Czech labour market are mainly - and constantly - unskilled workers, young people aged 20 to 29 and people aged 50 and over. Especially long-term unemployment among young people and people aged 50 and over seems to be a serious social problem that is associated with significant costs in the Czech Republic as well as in the other European countries (Širůček & Pavelka, 2013).

Figure 1: *The number of job seekers registered by job offices*



Source: authors based on the data from MPSV (2016)

Figure 2: *The number of vacancies registered by job offices*



Source: authors based on the data from MPSV (2016)

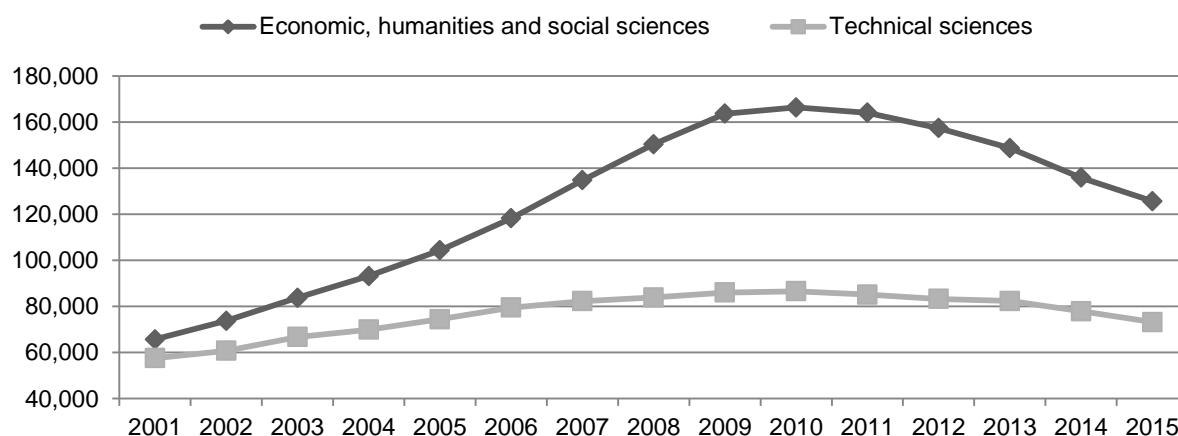
In today's developed countries, people with higher education are seen as the most important source (Kucharčíková, 2013) that determines the future prosperity and competitiveness of the society (Pavlin & Svetlicic, 2014). People with higher education also significantly increase their chances on the labour market to reach a satisfying and rewarding career (Livanos & Nunez, 2016). However, the competition among graduates is strong and the requirements of employers are high (Mocanu, Zamfir & Maer-Matei, 2014).

Based on the date of the Ministry of Education, Youth and Sports of the Czech Republic (MSMT, 2016), the figure 3 shows the number of students of economic, humanities, social and technical sciences in the Czech Republic from 2001 to 2015. The data show that the number of students of economic, humanities and social sciences is consistently higher than the number of students of technical sciences. The increasing quantity of university students raises questions about their professional and personal qualities, especially in relation to the needs of the labour market and the requirements of employers.

One of the important conditions for successful graduation is definitely the motivation of students to study at university. The students themselves must want to learn and adopt necessary knowledge, skills and abilities. According to the authors' survey results, 72% of students stated

that they are motivated to study at university by an effort to increase their chances on the labour market. In this context, 92% of students agreed that higher education gives them more chances to succeed on the labour market. On the other hand, 76% of students stated that they see their chances on the labour market as medium. They are afraid of the strong competition and the lack of work experience. The data analysis showed a significant difference between male and female students ($p < 0.05$). The male students estimated their chances on the labour market as much higher than the female students.

Figure 3: *The number of students of economic, humanities, social and technical sciences in the Czech Republic*



Source: authors based on the data from MSMT (2016)

The common problems that students meet on the labour market are related to the following points:

- Students lack relevant professional skills, even if they worked during their studies, but every employer has specific requirements. 83% of students stated that they work during the academic year to earn money and get experience, but only 22% of them stated that they work in the field of study. Of course, every work is good to get needed work and social habits, but in some cases it is better to focus on the study than on the work that has no added value. The data analysis showed no significant difference between male and female students.
- Students do not want to start from scratch, overestimate themselves and require positions that do not match their abilities. 65% of students stated that they want to be managers (manage people), which is normal when they study to become managers, but they forget that it is a long way and that they have a lot to learn. The data analysis showed no significant difference between male and female students.
- Students do not have needed work and social habits and are not ready for the hard work at the beginning of their career, including learning and adopting necessary professional knowledge, skills and abilities. 57% of students stated that they want to work in the field of study and 80% of students stated that they are ready for further education in the field of study. The data analysis showed a significant difference between male and female students ($p < 0.05$). The female students wanted to work in the field of study more frequently than the male students.
- Students are not willing to commute to work. 50% of students stated that they want to work in their place of residence, 34% of students stated that they are willing to commute to work, and 16% of students stated that they are willing to move for work. The data analysis showed no significant difference between male and female students.

- Students expect higher wages than employers can offer to newcomers with the lack of relevant work experience. 56% of students stated that after graduation they expect the net monthly income between CZK 20,000 and CZK 29,000 (approximately between EUR 740 and EUR 1,072). According to the data of the Czech Statistical Office (CZSO, 2016), in Q1 2016, the average gross monthly nominal wage was CZK 26,480 (approximately EUR 980). The data analysis showed a significant difference between male and female students ($p < 0.05$). The male students expected a higher net monthly income than the female students.

The expectations of students about their jobs include meaningful work, self-fulfilment, friendly team, fair wages, favourable environment, job security, professional management, personal development, employee benefits or career prospects. It is obvious that expectations of students are great and that it is relatively difficult to fulfil all these expectations in one job or at one company. Despite all the expectations, students are aware of the fact that the success on the labour market is determined by their abilities. According to students, the most important abilities necessary for the success on the labour market include the ability to communicate with people (79%), the ability to solve problems (76%), the ability of team work (57%), the ability to apply own knowledge (57%), or the ability to acquire new knowledge (55%). Generally, students should continually improve their knowledge of foreign languages, their computer skills or their knowledge of management, economics, psychology, sociology, marketing, informatics or law.

Conclusion

Although the current results of the questionnaire survey on students' motivation to study at university and their ideas about the future career do not allow authors to draw general conclusions, they confirm main findings of earlier studies cited above and they show some interesting tendencies in the students' attitudes to the study and the career. These tendencies lie in the fact that students complain of theoretical subjects without obvious connections and practical applications. This dissatisfaction can reduce the motivation of students to study. Many students do not attend the university to learn something new, but to take the test or pass the exam. They go to work rather than to school to earn money and get experience. This seems to be a big challenge for many other universities to deal with similar problems.

The increasing quantity of various university students raises questions about their professional and personal qualities, especially in relation to the needs of the labour market and the requirements of employers. The authors' survey results support the assumption that the students potentially have a good chance to succeed on the labour market due to their broader knowledge, skills and abilities, but they should change their attitude to the preparation for the future career. The students are afraid of the strong competition and the lack of work experience. These fears may be justified, but the way is not to replace the study by the work during the academic year that has no added value. Instead, the way is to focus on the systematic development of necessary professional knowledge, skills and abilities, including knowledge of foreign languages, computer skills or leadership abilities. The students should be ready to start from scratch. They should not overestimate themselves and require positions that do not match their abilities. They should be ready for the hard work at the beginning of their career. On the other hand, the universities should be able to provide students with relevant theoretical knowledge and practical applications, ideally in collaboration with potential employers. The employers should learn to create appropriate and attractive employment opportunities for students and graduates to ensure the effective development of their potential.

These issues open up new possibilities for further research in the field of the employability of university students. The authors' survey represents the first step in the authors' research on the motivation of university students to study and their attitudes to the future career. The results should bring proposals to improve the education process at universities.

References

Cutillas, I. C., Monfort, J. H., & Tortajada, P. E. (2011). Labour Market Access of Graduates in Law: Teaching and Learning of Skills and Abilities in the European Higher Education Area. In Chova, L. G., Torres, I. C., Martinez, A. L. (Eds.), *5th International Technology, Education and Development Conference* (pp. 328-332).

CZSO (2016). *Průměrné mzdy - 1. čtvrtletí 2016*. Retrieved from: <https://www.czso.cz/csu/czso/cr/prumerne-mzdy-1-ctvrtleti-2016>

Garcia-Aracil, A., & Van der Velden, R. (2008). Competencies for young European higher education graduates: labor market mismatches and their payoffs. *Higher Education*, 55(2), 219-239.

Kucharčíková, A. (2013). Science, research and education in Slovakia and the European Union. In Slavickova, P. (Eds.), *International Scientific Conference on Knowledge for Market Practice* (pp. 289-297).

Livanos, I., & Nunez, I. (2016). Better safe than sorry? The role of stratification and quality of higher education in the labour market outcomes of graduates across Europe. *Economic and industrial democracy*, 37(2), 345-372.

Mocanu, C., Zamfir, A. M., & Maer-Matei, M. M. (2014). Skills and employability of higher education graduates from Romania and Bulgaria: The employers' perspective. *Psychology and Psychiatry, Sociology and Healthcare, Education*, III, 809-816.

MPSV (2016). *Unemployment in the Czech Republic*. Retrieved from: <http://www.mpsv.cz/en/1614>

MSMT (2016). *Data o studentech, poprvé zapsaných a absolventech vysokých škol*. Retrieved from: <http://www.msmt.cz/vzdelavani/skolstvi-v-cr/statistika-skolstvi/data-o-studentech-popr-ve-zapsanych-a-absolventech-vysokych>.

Pavlin, S., & Svetlicic, M. (2014). Employability of higher education graduates in Europe. *International Journal of Manpower*, 35(4), 418-424.

Širůček, P., & Pavelka, T. (2013). Youth Unemployment in the Czech Republic and the Impact of Economic Crisis. In Loster, T., Pavelka, T. (Eds.), *The 7th International Days of Statistics and Economics*, (pp. 1278-1287). Retrieved from: <http://msed.vse.cz/files/2013/229-Pavelka-Tomas-paper.pdf>.

Stanciu, S., & Banciu, V. (2012). Quality of higher education in Romania: are graduates prepared for the labour market? In Bekirogullari, Z. (Eds.), *3rd International Conference on Education and Educational Psychology* (pp. 821-827).

Šikýř, M., & Bušina, F. (2014). Human Resource Management in the Czech and Slovak Building Industry. In Loster, T., Pavelka, T. (Eds.), *The 8th International Days of Statistics and Economics*, (pp. 1477-1486). Retrieved from: http://msed.vse.cz/msed_2014/article/255-Sikyr-Martin-paper.pdf.

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POLICY OF THE RUSSIAN FEDERATION AND FOREIGN COUNTRIES IN THE SPHERE OF UTILIZATION AND RECYCLING OF WASTE

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Keywords:

Waste, recycling of waste, efficiency of processing of waste

Abstract:

In paper experience of foreign countries in the sphere of utilization and a recycling of waste is investigated, its positive components for the purpose of their adaptation to modern Russian realities are revealed. Considering that in Russia at a modern level of development of technology from 9% to 25% of initial raw materials finally goes to waste, at the existing and again opened enterprises it is necessary to introduce a complex control system of rational use of secondary raw materials. The complex system has to include actions of scientific and technical character, economic; ecological. The importance of research of ways of recycling of production of basalt fibres, mineral fibre, metallurgy and development of technology of briquetting of waste of basalt fibres with various physical and mechanical characteristics with application of the binding is proved in the press way. The directions of increase of efficiency of industrial production as a result of processing of production wastes of basalt fibres are revealed.

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Introduction

"In chemistry, there is no waste, and there are unused raw materials" (D. I. Mendeleyev). The main problem of the XXI century is the level of natural resources use and degradation of environment. The ecological researches moved many countries showed that today the problem of waste which poses threat to the basis of existence of the person is especially distinguished from environmental problems (Babikova et al., 2014). The task of ensuring the sustainable economic, social and ecological development assuming reasonable use of resources of the nature for an exception of global environmental disaster is set for all states of the world.

In Russian territories of about 7 billion tons of solid waste of metallurgical, machine-building, mining and chemical productions, and also waste of fuel and energy complex are annually formed. Accumulation, storage and recycling of industrial productions on grounds and dumps conduct to dangerous environmental pollution, irrational use of natural resources and, as a result, to significant economic damage. Officially in the Russian Federation under grounds and dumps of solid industrial wastes about 10 thousand hectares of lands, suitable for use, are annually allocated. Unfortunately, there is also huge number of unauthorized dumps (www.gks.ru).

On volumes, structure and the maintenance of useful components the saved-up waste is comparable with the used fields of natural minerals. The created scientific and technical potential in the circumstances shows need of competent raw reorientation of metallurgical, machine-building, mining and chemical industry, and also fuel and energy complex.

1. The analysis of foreign policy in the sphere of utilization and a recycling of waste

The general installations of the European Union on environmental issues and resources consumptions (to which also the address with waste belongs) are stated in the foundation agreement of the EU of 1957 in the section "Environment". According to this contract, one of the key tasks facing the EU "assistance to the high level of protection and improvement of quality of environment" is.

In the mid-seventies of the XX century in Western Europe and North America started applying the principle of integrated management of utilization and a recycling of industrial productions waste, world-wide recognized today. At the All-European meeting on cooperation in environmental protection in Geneva in 1979 "The declaration on low-waste and waste-free technology and use of waste" where in rather full look the concept waste-free technology is formulated is adopted special. At a meeting of the working group in 1989 definition of pure production was given: "this production which is characterized by continuous and full application to processes and products of the nature protection strategy preventing environmental pollution so that to lower risk for mankind and environment".

Improvement of a control system of waste admits the main problem in the field of environmental protection today. The main steps were determined by the solution of this problem at the International conference on a sustainable development in Johannesburg in September, 2002. They include "prevention and minimization of waste and the maximum reuse, secondary processing of resources; and also the use of alternative ecologically safe materials assuming participation of the governments and all interested parties with the purpose to minimize an adverse effect on environment and to increase efficiency of resources" (<http://www.johannesburgsummit.org>).

The general task of the Ecological Action program of the EU is achievement "higher resource effectiveness and the best resource management and waste for providing steadier models of production and consumption; destroying interrelation between use of resources, formation of waste and level of economic growth. Finally, it is necessary to aspire to that consumption of renewable and non-renewable resources didn't exceed environment capacity".

2. Russian experience in the sphere of utilization and recycling of waste

The first state act of secondary raw materials in Russia is Peter I's decree of April 24, 1714 about collecting and use of waste of a canvas. For realization of norms and provisions of the Law "About Environmental Protection" in Russia the Resolution of the Government of the Russian Federation N 1098 created of 13.09.1996 the Federal target Waste program. A program task - to reach annual processing and use of 55 million tons of waste and economy of 20-25% of material resources, and also reduction of the area of the earth alienated under waste with prospect of creation of the capacious market of resource-saving, environmentally friendly and low-waste technologies, and also technologies on processing and a recycling of waste. This program is actual and in the next years.

In 1998 in Russia the special Federal law "About production wastes and consumption" is adopted. This law which is further development of the Law RSFSR "About protection of surrounding environment" defines a state policy in the field of the address with production wastes and consumption. The "Ecological doctrine of the Russian Federation" approved by the Order of the Government of the Russian Federation of August 31, 2002 No. 1225-r among the main, priority directions of a state policy in the field of ecology defines the direction of development systems of secondary resources use, including - processing of waste (recycling), and also introduction of resource-saving and waste-free technologies in all spheres of economic activity. Unfortunately, this document doesn't provide an integrated approach in questions of environmental protection and management of recycling process. The standard and legal base created on its basis still causes disagreements among experts. So far development of an effective state policy in the sphere of the address with waste isn't complete.

Basic strategic documents of the Russian Federation in the field of environmental protection and environmental management are: "Bases of a state policy in the field of ecological development of the Russian Federation for the period till 2030" (further – Bases), approved as the President of the Russian Federation on April 30, 2012; and the Plan of action on realization "Bases of a state policy in the field of ecological development of the Russian Federation for the period till 2030", N 2423-r approved by the order of the Government of the Russian Federation of December 18, 2012. On January 5, 2016 the Russian President Vladimir Putin signed the Decree on carrying out in 2017 in the Russian Federation Year of ecology. Its carrying out is planned for drawing attention of society to questions of ecological development of Russia, preservation of biological diversity and ensuring ecological safety. Since January 1, 2016 project documentation and results of engineering researches on objects of placement or neutralization of waste of the I-V classes of danger are subject to state examination.

3. The perspective directions of the Russian policy in the sphere of utilization and a recycling of waste

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The Russian Federation possesses one of the most powerful around the world industrial potential. Due to not faultlessness of technological processes at this stage inevitably negative impact of the industry on environment, industrial wastes as component of this influence. It is counted that at a modern level of development of technology 9%-25 of % of initial raw materials finally goes to waste. At the existing and again opened enterprises it is necessary to introduce a complex control system of rational use of secondary raw materials. Have to enter into complex system actions of scientific and technical character, economic (intraeconomic planning of education, collecting, use and realization of waste, establishment of the prices of these resources and products of their processing, material stimulation of their rational application, the complex account and the analysis of results of work with secondary raw materials); ecological (use of secondary raw materials taking into account aspects of environment protection) (Dudin et al., 2014).

Organizational and methodical, normative and technical and its legal basis are standards and certification of secondary resources. According to GOST 25916-83 "Resources material secondary (terms and definitions)", belong to production wastes: the remains of raw materials, materials, the semi-finished products formed at production or performance of work and the initial consumer properties which lost in whole or in part, and to consumption waste – the products and materials which lost the consumer properties as a result of physical or an obsolescence. The main tendency in the sphere of waste management at us and in the developed countries of the world is their minimization in the following ways (Zaytsev, 2012):

- prevention or reduction of formation of waste (i.e. waste-free or low-waste production);
- improvements of quality of the formed waste, including reduction of amount of toxic substances in them;
- recycling, restoration or extraction of useful components from them.

In the majority of the countries the following priority row in the address with waste is observed: prevention of formation of waste has a priority before their repeated use;

- the reuse or recycling in the same process is more preferable than external use;
- use of waste is more preferable than use of their energy (received, for example, by burning); however in Germany, Korea and Switzerland both directions have equal priority;
- in all countries the reuse or restoration (extraction) has an unconditional priority before warehousing or burial;
- in a number of the countries burning of waste belongs to the category "minimization", only in case of energy use.

Processing of industrial wastes has to be a component of technology on which they are formed. Basalt composite and hybrid materials and technologies are included in the section "New Materials and Chemical Products" "List of the priority directions of development of science and equipment and critical technologies of Federal level", approved by the Government commission on scientific and technical policy of the Russian Federation. In recent years in the industrial developed world considerable success in resource-saving and in the field of environmental protection is achieved. Despite prescription and a large number of researches in the field of environmentally friendly production, one of the most actual problems utilization of the industrial wastes posing serious ecological threat is now (Zhang & Yang, 2013). However, it is necessary to deal with a problem of utilization and processing of production wastes not only from a position of environmental protection, but also from the point of view of an economic benefit when waste is cheap raw materials (Šikýř, 2011).

While, for example, in the USA, Japan, Germany, countries of Western Europe processing of secondary raw materials allowed to create environmentally friendly technologies, to make restructuring of a number of industries, in Russia a share of use of such waste as secondary raw materials the very low. The complexes working abroad not only carry out important ecological and economic tasks of the state value, but also are the highly profitable enterprises. Their income consists of a payment for acceptance of material for processing (the supplier saves transportation costs on delivery to a place of a dump and a payment for a dump) and the income from sale of secondary material which is cheaper natural and sale is provided to it (Sun, 2015).

In Russia not enough attention is paid to resource-saving, the ecological situation considerably worsened. Steps taken recently on creation of "pure" productions and modernization of old capacities solve the problem only partly. Trying to reduce own expenses, the enterprises utilize the waste by their burial on special grounds. There is a classification of waste by their chemical nature, technological signs of education, opportunity to further processing and uses. In Russia harmful substances it is characterized on four classes of danger on what costs of processing and burial depend. Any waste can be considered as secondary material resources. They can be used in the economic purposes, or partially (i.e. as an additive), or completely replacing traditional types of material and raw and fuel and energy resources. Their considerable part represents commercial interest. There are productions on processing of the specified waste. Nevertheless, the considerable part of waste doesn't gather and isn't processed.

4. Value of technology on processing of production wastes of basalt

Object of this research are production wastes of basalt fibres of a number of the Russian plants. Because of a long-term disproportion between volumes formed (to 30% daily) and the liquidated waste a significant amount of dump masses in the form of basalt fibres of various thicknesses are collected. This waste is large-tonnage.

Producers of basalt and mineral fibres in Russia are domestic plants, and the branches of industrial concerns from other countries which developed shops in the Russian territory. Except the conventional leaders, the set of small enterprises on production of basalt and mineral-fibres heaters is about the country scattered, whose production is less known and demanded. The group of leaders in production of mineral-fibres heat-insulating materials in Russia includes some leading enterprises:

- TechnoNIKOL company – The Russian producer who placed the enterprises not only for all country but also in the neighbouring countries (the former partners across the USSR) and the countries of Europe. The distribution network has representations more than in 30 countries. Production is calculated on private and industrial application.
- The Rockwool concern (Denmark) – has an extensive network of the enterprises united in joint stock company "Mineral fibres ". Let out various mineral- fibres production for all elements designs, household and industrial function. Specialize on use of raw materials of basalt breeds.
- The Isolate company – a domestic production with foreign shareholders (100% foreign capital). Let out products from stone fibres at plant in Tambov, constructed in the eighties the last century and passed modernization.
- The company Ekover – the beginner in the sphere of production of basalt mineral- fibres heaters, whose production which is let out in the Urals wins the increasing popularity in all regions.

By estimates of analysts, in Russia, by the last calculations, more than 40 plants of the most various scale work with output more than 25000 thousand m³ a year. Because of low bulk density waste of these productions is large-tonnage and occupies the huge spaces of dumps and grounds. For example, a plant with the productivity up to 150 kg/h (per day about 100m³ at the density of 35 kg/m³) lets out per day to 35 m³ of waste of basalt fibres. Large producers have productivity of 1 ton per hour and above. Waste reaches 30% on some productions. In 2009 in Russia the Rockwool Concern (Denmark) developed technology of recycling of basalt fibres and constructed briquette plant in the territory of the enterprise to Vyborg, having enclosed in development of technology and the equipment of 8 million euros.

Now at all enterprises ROCKWOOL in Russia is exposed to secondary processing of 80% of waste. Actively in the Russian market offers the technology of utilization and the FAS Hansek GmbH & Co Company line KG, CEO Claus-Dieter Hansek. Chinese with the offers catch up. For example, the Polotsk plant of fiber glass (Republic of Belarus) applies experience of use of waste of basalt fibres, glass fibre in road construction and as additives at production of a brick. However at such use completely waste isn't utilized.

To a deep regret, today in Russia there is no enterprise making automatic transfer lines with a big productivity for processing of waste. Generally all lines arrive to us from abroad. Relevance of the organization of production of the high-performance line to utilization and a recycling of waste of industrial productions - is obvious. Ways of utilization of basalt waste Sakha-Yakutia and other plants look for the TechnoNIKOL Company, SMALLPOX of PTK "Sudogda", JSC Uralasbest, "Plant of basalt materials" (Sakha Basalt). Again opened plants buy foreign

technologies and lines on utilization. Nevertheless, these technologies have high cost and can't gain mass distribution. Domestic plants are interested in development of technology of recycling in vast scales, in development and selection of the domestic equipment.

Now in Russia results of former scientific development regarding use of production wastes in construction and production of construction materials poorly take root, new researches are slowly conducted. At the same time only in production of basalt and mineral fiber the exit of waste annually makes more than 10 million t. One of the main problems of recycling of basalt cotton wool, heterogeneity of structure of waste (firm, soft, eliminations and so forth) which can't almost be divided also their low bulk density is. The purpose of work is research of ways of recycling of production of basalt cotton wool, mineral fibre, metallurgy and development of technology of briquetting of waste of basalt cotton wool with various physical and mechanical characteristics in the press way with application binding. For achievement of a goal it is necessary to solve the following problems (Lyasnikov et al., 2014):

- to study domestic and foreign experience of recycling of production of basalt fibres, mineral fibre, metallurgical industry;
- to establish the existing problems and the directions of constructive and technological improvement;
- to investigate the general and specific regularities of process of formation of technogenic materials with various physical and mechanical characteristics, to develop technical ways for their realization;
- to conduct researches of chemical, mineralogical and particle size distribution of waste of basalt fibres;
- to investigate influence of humidity on processing of waste in briquettes;
- to investigate quality of a grinding of waste of basalt fibres on laboratory equipment;
- to investigate influence of type and the contents binding on durability of briquettes;
- to conduct researches of influence of processing of briquettes as secondary raw materials on productivity of production of basalt super thin fibre, basalt thin fibre;
- to develop manufacturing techniques of briquettes from basalt waste of basalt super thin fibre, basalt thin fibre on the basis of theoretical and pilot studies.

Practically all manufacturers of mineral, basalt, glass fibers still prefer to take out waste on grounds and dumps, thereby reducing the potential profit. Costs of collecting, transportation and placement in storages, and also on purchase of additional raw materials are added to costs of production. Besides, waste has destructive influence on environment and threatens health to the population. All formed basalt waste is located in close proximity to the enterprises doesn't demand huge costs of their investigation and development (Boyko, Sekerin & Šafránková, 2014). Their processing and on the squares and further recycling in production will allow increasing the production efficiency considerably:

- decrease in costs of purchase of raw materials to 30%;
- increase in productivity of installation to 15%;
- reduction of places of warehousing of waste in territories of the enterprises - producers;
- lack of costs of transportation and storage of waste on dumps;
- receiving the material which isn't conceding in the parameters to the existing analogies;
- decrease in electricity consumption when recycling raw materials;
- ecological safety;
- effect for the average enterprise can reach to 10 million rubbles a year.

Conclusion

Thus, in paper experience of foreign countries in the sphere of utilization and a recycling of waste is investigated, its positive components for the purpose of their adaptation to modern Russian realities are revealed. Considering that in Russia at a modern level of development of technology 9%-25 of % of initial raw materials finally goes to waste, at the existing and again opened enterprises it is necessary to introduce a complex control system of rational use of secondary raw materials. The complex system has to include actions of scientific and technical character, economic (planning of education, collecting, use and realization of waste, establishment of the prices of these resources and products of their processing, material stimulation of their rational application, the complex account and the analysis of results of work with secondary raw materials); ecological (use of secondary raw materials taking into account aspects of environment protection).

The importance of research of ways of recycling of production of basalt fibres, mineral fibre, metallurgy and development of technology of briquetting of waste of basalt fibres with various physical and mechanical characteristics with application of the binding is proved in the press way. The directions of increase of efficiency of industrial production as a result of processing of production wastes of basalt fibres are revealed.

References

Babikova, A. V. et al. (2012). *Экономическое обоснование инженерных проектов в инновационной экономике: Учебное пособие / Economic Justification of Engineering Projects in the Innovation Economy* (1 ed.). Moscow: INFRA-M.

Boyko, J., Sekerin, V., & Šafránková, J. M. (2014) New Approaches to Efficiency Estimation in Strategic Planning. In Loster, T. Pavelka, T. (Eds.), *The 8th International Days of Statistics and Economics* (pp. 161-170). Retrieved from http://msed.vse.cz/msed_2014/article/454-Boyko-Julia-paper.pdf

Dudin, M. N., Lyasnikov, N. V., Veselovsky, M. Y., Sekerin, V. D., & Aleksakhina, V. G. (2014). The problem of forecasting and modeling of the innovative development of social-economic systems and structures. *Life Science Journal*, 11(8), 549-552.

Goskomstat of Russia. Retrieved from <http://www.gks.ru>

Lyasnikov, N. V., Dudin, M. N., Sekerin, V. D., Veselovsky, M. Y., & Aleksakhina, V. G. (2014). The national innovation system: The conditions of its making and factors in its development. *Life Science Journal*, 11(6), 535-538.

Šikýř, M. (2011). Determinants of employee performance: how to achieve sustained competitive advantage. In Loster, T. Pavelka, T. (Eds.), *The 5th International Days of Statistics and Economics* (pp. 606-614). Retrieved from <http://msed.vse.cz/files/2011/Sikyr.pdf>

Sun, Z. (2015). Technology innovation and entrepreneurial state: the development of China's high-speed rail industry. *Technology Analysis & Strategic Management*, 27(6), 646-659.

Zaytsev V. A. (2012) *Промышленная экология / Industrial ecology: Textbook*. Moscow: BINOMIAL.

Zhang, Z. Y., & Yang, Z. (2013). Interaction Mechanism between Enterprises' Business Model Innovation and Technology Innovation. *Psychology, Management and Social Science*, 15, 282-289.

World Summit on Sustainable Development Plan of Implementation. Retrieved from http://www.johannesburgsummit.org/html/documents/summit_docs/2309_planfinal.htm.

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INFLUENCE OF THE INNOVATIVE ENVIRONMENT ON EFFICIENCY OF THE RUSSIAN INDUSTRIAL ENTERPRISES

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Keywords:

Innovative environment, efficiency of the industrial enterprises, innovative climate, innovative infrastructure

Abstract:

In article value of the innovative environment as factor of success of the Russian industrial enterprises activity is considered. Components of the innovative environment are the innovative capacity of the industrial enterprises and innovative climate. The directions of the state impact on formation of innovative climate are investigated: creation of innovative infrastructure, improvement of institutes of legal character, institutes of financial character. Influence on efficiency of the industrial enterprises of one of social character institutes – consumer loyalty is shown. In modern conditions of fierce competition effective realization of innovative production is possible only as a result of activation by the organizations of the available internal potential in a combination to the developed external opportunities. Introduction of innovations on the market the developed industrial companies carry out on the basis of the debugged mechanisms considering and using all features, both the organizations, and innovations as those.

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Introduction

Serious problem of modern Russian economy is the lack of innovative qualities and mechanisms without which decision it is impossible to pass to innovative economy. Questions of innovations commercialization efficiency are one of priority for innovative development in all world community (Carayannies & Grigoroudis, 2014). In modern conditions commercialization of innovations promoted achievement by many developed countries of the leading positions in the international market of the knowledge-intensive production, she acted as the main condition of successful introduction of innovative activity results in practice of the companies (Boyko, Sekerin & Šafránková, 2014).

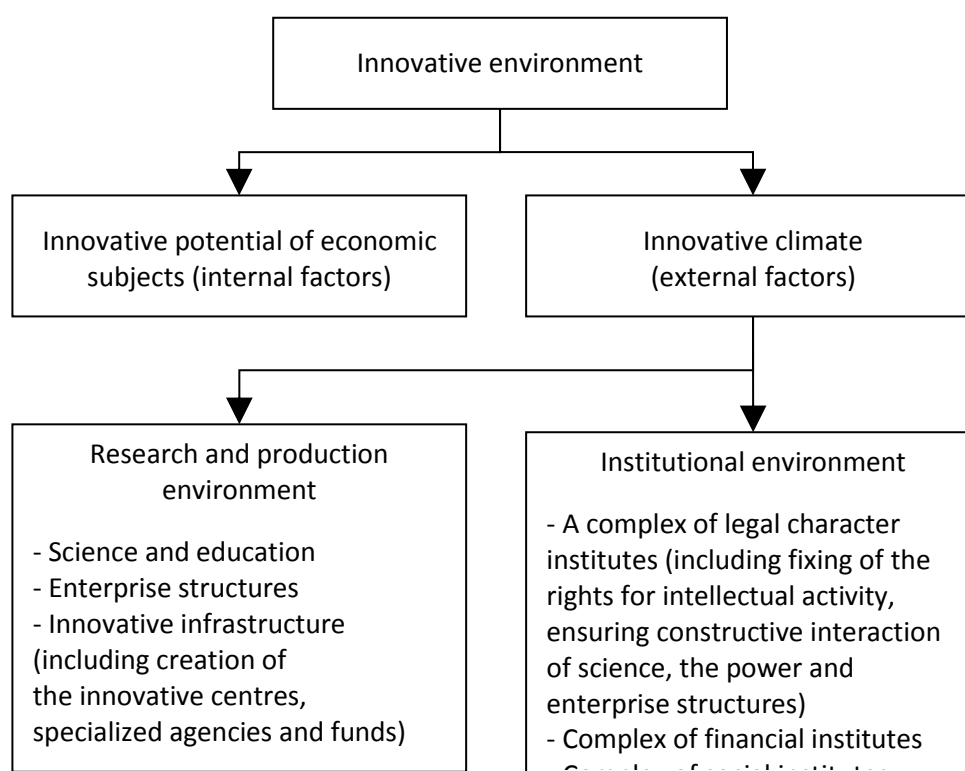
For optimization of the process of removal of innovations on the market in each of the developed countries own environment of commercialization was created (or the innovative environment as that). All developed countries differ from each other in a set of various institutional conditions, including political, economic, social and other factors, however the mechanisms of formation of the environment used by these countries were developed on the basis of universal experience therefore have the minimum distinctions.

In Russia the innovative environment promoting emergence and commercialization of innovative ideas isn't created yet. Therefore its formation is a significant factor of increase of efficiency of the Russian industrial enterprises.

1. The concept of "innovative environment"

There is a set of different approaches to definition of the contents of "innovative environment". Many scientists share opinion that the innovative environment reflects a measure of readiness to solve problems in the direction of achievement of the set innovative object, i.e. a measure of readiness for implementation of the innovative project or program of innovative transformations and, therefore, to introduction of innovations (Kucharčíková, 2014). Other definition of the innovative environment allows estimating it as set of different types of resources, including the material and production, financial, scientific and technical, intellectual and other resources necessary for implementation of innovative activity. Also understand set of all social and economic subsystems providing access to various resources and giving this or that support of participants of innovative activity as the innovative environment (Sekerin & Gorokhova, 2013a). The making concepts the innovative environment are reflected in fig. 1.

Figure 1: Elements of the innovative environment



Source: authors

1. Mechanisms of formation of the innovative environment

Formation of the innovative environment in the country has to be considered by the state as the major task promoting economic growth on the basis of introduction of research, scientific and technical activity results and developmental development (Sekerin & Gorokhova, 2013b).

Public authorities the actions can directly influence formation of the innovative environment in various ways. The most priority mechanisms are as follows:

- formation and development of innovative infrastructure;
- improvement of institutes of legal character;
- development of institutes of financial character.

As one of mechanisms of innovations commercialization environment formation in economically developed countries the infrastructure providing meaning creation of special organizational structures – the centres, agencies and funds intended acts for:

- rendering financial, marketing, legal, personnel, information services and the other help to developers;
- formation of favourable conditions of implementation of innovative activity and, as a result, commercialization of innovations;
- coordination of innovative activity, etc.

The innovative infrastructure can be classified by a range of services which is rendered being its part of the company (structure) – financial, material, information, personnel and expert and consulting (table 1).

Table 1: *Main areas of innovative infrastructure*

Infrastructure area	Characteristic of infrastructure
1. Financial	It consists of various investment, budgetary, venture funds, and also insurance funds and other financial institutions
2. Information	It is formed by various information, analytical and statistical centres (organizations), and also databases and knowledge, and the centres of access to them
3. Production and technological (or material)	It is presented by the centres of a transfer of technologies, science and technology parks, business incubators, research institutes or national research centres.
4. Personnel	Consists of the highest educational institutions, and also recruitment and recruiting agencies
5. Consulting and consulting	It is formed by consulting agencies, the centres of independent examination, etc.

Source: authors

As the second mechanism improvement of institutes of legal character which has to be directed acts on:

- stimulation and encouragement of development of process of commercialization and innovative activity;
- assistance of involvement of talented people in innovative activity;
- differentiation of interests (as which, first of all, understand a functioning framework) all participants of process of commercialization;
- establishment of an order of coordination of activity of participants;
- establishment of an order of fixing of the rights for intellectual property;
- introduction of an order, ways and norms of interaction of the state, science and subjects of business;
- establishment of standards of innovative production (quality, safety of use, compliance to environmental standards), etc.

In Russia innovative activity is regulated by the fourth part of the Civil Code. That is why it is necessary to build system legislative and the regulations stimulating innovative activity of economic subjects.

Table 2: *Measures of the state stimulation of innovative activity in the world*

Measures of support and stimulation	Country of application
1. Direct financing – subsidies, loans and loans, including on favourable terms without payment of percent and the gratuitous, reaching 50% for a covering of expenses of creation of innovations.	Great Britain, Germany, Denmark, India, People's Republic of China, Norway, USA, France, Sweden
2. Target grants and grants for research development.	Japan, Great Britain, People's Republic of China, USA, Austria, Germany, France, Greece, India, Ireland, Norway, Spain, Poland
3. Decrease in the state taxes for individual inventors, representation of tax privileges to them, and also granting delays or liberation from payment.	Great Britain, Germany, Greece, India, Ireland, Spain, People's Republic of China, Norway, Poland, USA, France, Austria, Japan
4. Permission civil servant who is to the staff of the state research institutes to participate in commercial activities for introduction of scientific development – to work part-time, to hold shares, to participate in management of the companies.	Great Britain, People's Republic of China, Greece, Denmark, France, Austria
5. Simplification of the taxation for the enterprises operating in the innovative sphere including an exception of the taxation of costs of research and development, the preferential taxation of universities.	USA, Great Britain, India, People's Republic of China, Japan
6. Providing (legislative) protection of intellectual property and copyright, and also creation of special infrastructure for their support and economic insurance.	Great Britain, Germany, Denmark, India, People's Republic of China, Norway, USA, France, Sweden
7. Creation and support of a network of scientific parks, business incubators and zones of technological development.	USA, Japan, Germany, Denmark, India, People's Republic of China, Sweden
8. Information and methodical support of participants of innovative activity, in the form of creation of the information resources explaining an order of receiving grants, creations of special databanks of the patented inventions, etc.	USA, Great Britain, the People's Republic of China, Germany, the EU, Sweden
9. Stimulation of patenting of the developed innovations.	USA, Germany, France, Sweden

Source: authors

The third mechanism of effective commercialization of innovations includes various methods of financial character, such as the state support and stimulation of innovative activity (Sun, 2015). It is expedient to classify now in use methods and instruments of stimulation in economically developed countries the next way on:

- character of means – tax and natural preferences; financial incentives;
- objects – stimulation of activity of small and medium-sized companies, contract scientific researches; support of researchers who generate scientific results.

The main forms of support and stimulation of innovative activity which developed in world practice are reflected in table 2.

In addition, as one of the most important instruments of stimulation and support of innovative activity in economically developed countries the state contracts signed with various companies for carrying out research activity act. These contracts promote careful coordination of all main conditions of the organization, carrying out and receiving result – since dates of performance and finishing with necessary costs of their execution, thus the customer guarantees acquisition of future results of work with their the subsequent removal on the market

3. Influence of institutes of social character on efficiency of the industrial enterprises

Lack of the favourable environment stimulating creation of innovative ideas of products and development of innovative processes is a fundamental problem at implementation of effective innovations in the industry. An important condition at implementation of innovative activity of the industrial enterprises is existence of a complex of material, infrastructure, intellectual, personnel, financial, information and other types of the resources acting as base for creation of innovative ideas and implementation of innovative projects (Lyasnikov et al., 2014).

Institutes of social character have impact on efficiency of commercialization of innovations in the industry also (Šikýř, 2011). As one of them consumer loyalty acts. Achievement and strengthening of consumer loyalty is at the same time a main goal of the concept of marketing of relationship (Dudin et al., 2014). Consumer loyalty is one of components of the institutional environment of innovative climate. In our opinion, it is necessary to understand the level of usefulness as innovative climate available research and production and institutional (first of all, social and economic) conditions to which it is possible to refer consumer loyalty for formation and development of innovative climate.

4. Role of the industrial enterprise in formation of the innovative environment

The industrial enterprise needs to develop the internal and external innovative environment for improvement of the innovative potential (Zhang & Yang, 2013). Existence of the developed innovative environment provides to the enterprise of opportunity for creation and a conclusion of innovations to the market. Formation and development of the innovative environment implies process of interaction and interdependent development of all its components. Creation of the atmosphere of trust, interrelation and interdependence between consumers, the personnel and innovators provides conditions for creation of favourable innovative climate. It is possible to carry out effective formation of the innovative environment of the enterprise in the presence of the purposeful efforts supporting innovative climate of the industrial enterprise, developing systems of interaction between innovative personnel structure of the enterprise and its consumers.

Introduction of the program of consumer loyalty allows not only to conduct monitoring of degree of satisfaction of consumers (Sekerin, 2012), but, developing system of feedback, to gain information on improvement of functioning and developments of the enterprise, ensuring its convenience to consumers and satisfaction of their needs (Babikova et al., 2014).

Conclusion

Thus, for effective commercialization of innovations at the industrial enterprises it is required to create the developed different complex of mechanisms. Thus the integral condition of formation and development of the effective innovative environment is participation of the state. Researches of foreign experience prove existence of potential of measures of state regulation of innovative activity in respect of its balance both owing to direct state participation, and as a result of actions of indirect support and development of innovative infrastructure.

However success of commercialization of innovations is determined not only the innovative environment, but also and actions of the companies. In modern conditions of fierce competition effective realization of innovative production is possible only as a result of activation by the organizations of the available internal potential in a combination to the developed external opportunities. Introduction of innovations on the market the developed industrial companies carry out on the basis of the debugged mechanisms considering and using all features, both the organizations, and innovations as those.

References

Babikova, A. V. et al. (2012). *Экономическое обоснование инженерных проектов в инновационной экономике: Учебное пособие / Economic Justification of Engineering Projects in the Innovation Economy: Textbook* (1 ed.). Moscow: INFRA-M.

Boyko, J., Sekerin, V., & Šafránková, J. M. (2014). New Approaches to Efficiency Estimation in Strategic Planning. In Loster, T. Pavelka, T. (Eds.), *The 8th International Days of Statistics and Economics* (pp. 161-170). Retrieved from http://msed.vse.cz/msed_2014/article/454-Boyko-Julia-paper.pdf

Carayannis, E., & Grigoroudis, E. (2014). Linking innovation, productivity, and competitiveness: implications for policy and practice. *Journal of Technology Transfer*, 39(2), 199-218.

Dudin, M. N., Lyasnikov, N. V., Veselovsky, M. Y., Sekerin, V. D., & Aleksakhina, V. G. (2014). The problem of forecasting and modeling of the innovative development of social-economic systems and structures. *Life Science Journal*, 11(8), 549-552.

Kucharčíková, A. (2014). Investment in the human capital as the source of economic growth. *Periodica Polytechnica: social and management sciences*, 22(1), 29-35.

Lyasnikov, N. V., Dudin, M. N., Sekerin, V. D., Veselovsky, M. Y., & Aleksakhina, V. G. (2014). The national innovation system: The conditions of its making and factors in its development. *Life Science Journal*, 11(6), 535-538.

Sekerin, V. D. (2012). *Инновационный маркетинг: Учебник / Innovative Marketing: Textbook* (1 ed.). Moscow: INFRA-M.

Sekerin, V. D., & Gorokhova A. E. (2013a). *Оценка инвестиций: Монография / Investment Appraisal: Monograph* (1 ed.). Moscow: ARGAMAK-MEDIA.

Sekerin, V. D., & Gorokhova A. E. (2013b). Виды эффекта от реализации инноваций / Types of effects of implementation of innovations. *Известия МГТУ «МАМИ»*, 15(1), 258-263.

Šikýř, M. (2011). Determinants of employee performance: how to achieve sustained competitive advantage. In Loster, T. Pavelka, T. (Eds.), *The 5th International Days of Statistics and Economics* (pp. 606-614). Retrieved from <http://msed.vse.cz/files/2011/Sikyr.pdf>

Sun, Z. (2015). Technology innovation and entrepreneurial state: the development of China's high-speed rail industry. *Technology Analysis & Strategic Management*, 27(6), 646-659.

Zhang, Z. Y., & Yang, Z. (2013). Interaction Mechanism between Enterprises' Business Model Innovation and Technology Innovation. *Psychology, Management and Social Science*, 15, 282-289.

WORKING CONDITIONS IN REGIONS AS IMPORTANT MOTIVATION FACTOR

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Keywords:

motivation; motivation theory; regions; working conditions; work environment

Abstract:

The paper focuses on working conditions and working environment, that are the basis for satisfactory performance of employees, and reminds of well-known motivation theories that point out working conditions. Current changes on the labour market are not reflected by companies in terms of improving the working conditions. Low rate of unemployment, generation Y with their specific demand on work-life balance, generation Z just entering the labour market and their specific preferences, people prematurely leaving the labour market, all these are the challenges companies should reflect. So far it seems that only companies in two biggest Czech cities compete for both fresh and experienced workforce, while regional companies stick to traditional ways of employing people.

Introduction

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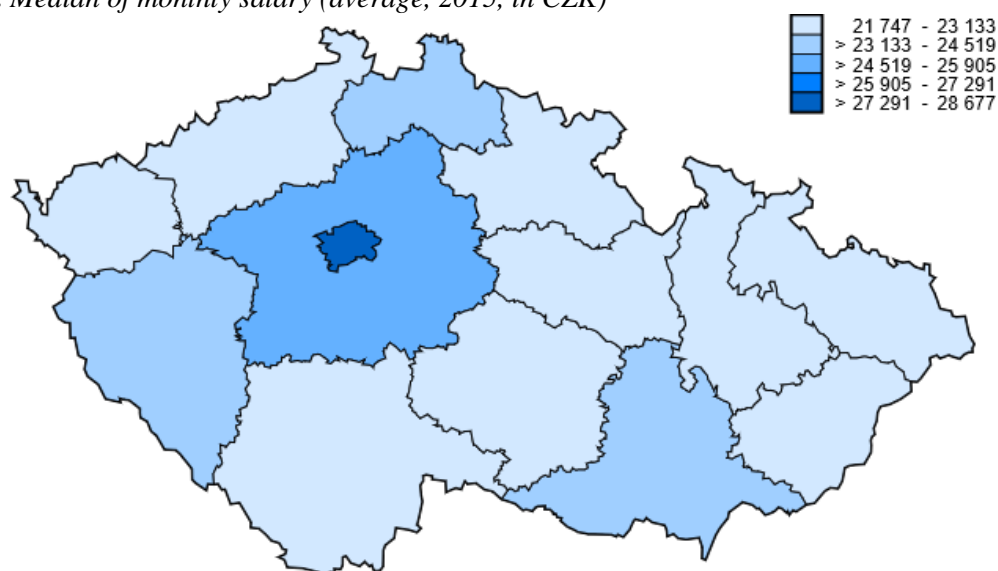
This paper uses statistical evidence that is linked to traditional motivation theories and serves as a reminder of basic aspects of the employment process, particularly the relationship between working conditions, working environment, employee satisfaction, performance, and motivation of employees. Working environment creates working conditions and favourable working conditions serve as basis for satisfactory performance of employees and also to some extent as a motivator. Unfavourable working conditions cause dissatisfaction with the job, which leads to reduced performance, and consequently to turnover of employees. Losing talented, skilled, key employees with some tacit knowledge always means a problem for a company, may also lead to reduced competitiveness on the market and as the worst consequence, if the company is unable to replace the key employees, to close up and dismissal of the rest of staff. On the other hand, if the working conditions are good, the employees can be naturally motivated by the working environment, the performance is stable or even improves, loyalty increases and the employees do not have a reason to leave the company, hence tacit knowledge remains in the company and serves as ground for innovations and changes necessary for competitiveness on the market. This time, when the recession is over, is the right time for companies to improve the working conditions.

1. Current situation on the labour market

We have been witnessing a great change in the Czech economy, and particularly on the labour market, during the last year. The crisis is over, the economy is recovering, industries are producing and exporting more goods, companies are hiring workers, the government is optimistic and promises an unprecedented rise of salaries of employees working in the public

sector (i.e. policemen, firemen, teachers, nurses, doctors, clerks, etc.). Both the private and the public sector are facing a problem of lack of qualified workers, therefore they take measures to increase the supply of labour force on the labour market, e.g. by bringing more foreign workers or by reducing demands on qualification (for example, nurses now have to hold at least bachelor degree, so the proposal of high-school education and a year's training as sufficient qualification is back in discussion, because the recent demand on university education was extensively criticised as excessive and made nurses scarce, and now pays back with interest. Though this working condition may positively affect the nurses' perception of job safety, i.e. they should not be dismissed due to low qualification, it would affect other working conditions such as intensive work-load, overtime work etc. only hypothetically and only in the long run. However, in the very long run the perception of job safety disappears because no one can be sure that the next government would not launch the condition of university education again). Though the opposition political parties do not agree with general increase in salaries, they would support increase based on performance. However, this should happen only in the private sector. Firemen definitely must not be rewarded for performance, when the society actually does not want any fires to happen. Teachers also have only a limited influence on intellectual capacities of their students, especially with the experiment of "inclusion" of handicapped children into normal schools that started this year. Thus measures of performance would be only in the hands of the manager, the director of the firemen department, the director of the school etc., and this brings us back to practices of private sector. Moreover, only a universal increase of salary will be distributed equally between regions. The salary in public sector should not be diversified according to regional level of average wages because the performance of public service (including healthcare, education, firemen etc.) should be equal everywhere, though the conditions may vary. However, this also means that public service is less attractive in regions with higher average income and hence less competitive. The distribution of monthly income in regions is illustrated in figure 1. For comparison, figure 2 provides regional overview of unemployment.

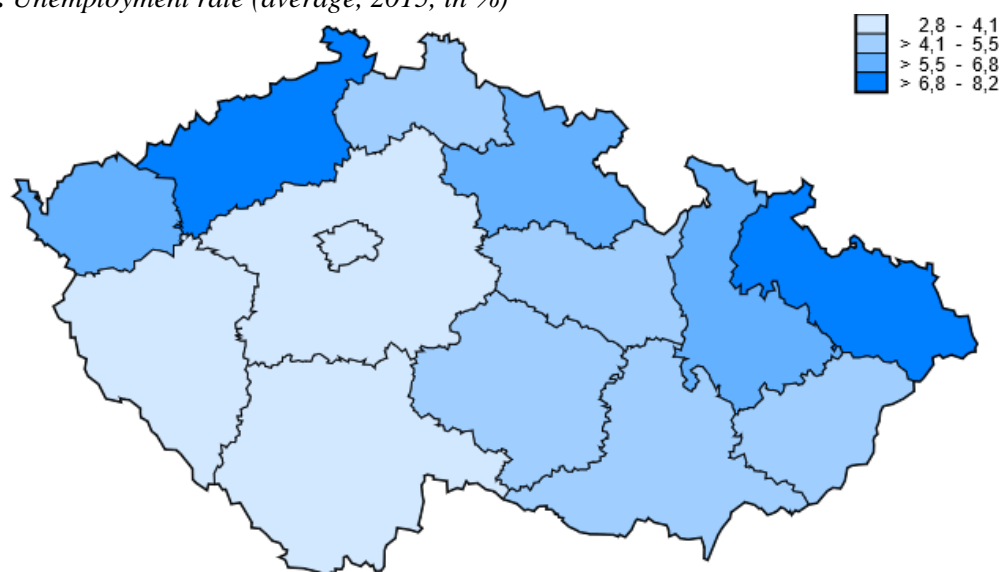
Figure 1: Median of monthly salary (average, 2015, in CZK)



Source: ČSÚ (2016)

The average rate of unemployment is 5 % for the Czech Republic as a whole but regional differences occur, traditionally the employment is the highest in Prague and surroundings and the lowest in Ústecký and Moravskoslezský regions.

Figure 2: *Unemployment rate (average, 2015, in %)*



Source: ČSÚ (2016)

There are so many books on management, so many scientific articles on management theories, so many texts on human resources management, but finally, common people are not happier. Employees are stressed, not satisfied, even in this time of low unemployment rate worried about their job security, disgusted from the relationships on the workplace, frustrated by the management of the company, and all these inner feelings they take with them into their private life, into their families, into their private relationships. Young self-confident unexperienced managers write manuals on what everything employees should do, without analysing the situation, without asking employees about feasibility, and without asking clients about necessity, but without any doubts. Without sympathy with human. Without considering the real life - and the working life gets longer, but the most productive age does not.

Is there something that can be done to change the situation? Yes. And now, it is the right time for a change. The economy is recovering, there are more diverse groups of people on the labour market than ever before, namely the generation Y or Z respectively and the 55+, and companies as well as the public sector can afford to be more concerned about working conditions, as the key factor of employee satisfaction. Employers tend to think of improvement of working conditions only in times of shortage of labour force on the labour market. The only part of the chain, which can be influenced by a single organization, is the part of working conditions, see figure 3.

Figure 3: Working conditions. A part of a chain

Source: author

Economic goals of companies are usually opposite to social goals that lead to employee satisfaction. However, any cut in investments into employees lead to worse performance of a company in the long run and subsequently to lower profit, which leads to reducing investments into employees etc. Moreover, companies that have not understood the difference here between costs and investments most probably have not understood the difference between human resources and human capital.

Better working conditions can then become also a part of companies' HR marketing strategy, which helps to attract new people, and frequently it is the working conditions, not the wages itself, what persuades a professional to change his or her job. Better working conditions consequently become a part of organizational culture, which helps to retain the skilled workers and reduce unnecessary turnover of employees.

Both the public and private sector should think about more possibilities of how to bring more labour force onto the labour market, before they take any measures as quick solutions. Yes, inviting cheap labour force from abroad is a politically nice and quick solution, because this can be done only if a position cannot be filled by a Czech citizen. But this also means that no one was interested in the position under the conditions the company set up, and this includes wages. Of course, if there is a great increase in wages in the whole economy, it leads to monetary inflation; however, very low unemployment rate has the same consequences no matter how many foreign workers are in the country. However, it is surprising that the government has not noticed the disproportion between the numbers of people leaving the labour market for retirement and the numbers of young people of generation Z just entering the labour market. The government has apparently resigned to its role in public life. There are more ways how to bring more workforces on the labour market, for example by making work more attractive – or more accessible, in other words. Since the jobs that are currently being offered are in vast majority full-time jobs (in technical or manual professions), it is not even possible even for those who would like to work to accept full-time employment, therefore stay outside. This is especially the case of students from generation Z, or mothers on parental leave, or professionals who have certain limitations due to health reasons, or perhaps also people who run their own small business but would also like to have a stable secured income, etc. There is also a question of retaining the workforce on the labour market. People frequently decide to leave their job and retire prematurely. Figure 4 shows the percentage of early old-age pension recipients in the total number of old-age pension recipients in the regions of the Czech Republic. Since this is a statistics and hence follows only the quantitative share and does not ask for explanations to leave a job prematurely, we can only speculate about the reasons. However, we can dare to speculate that these people struggled with working conditions, too. These numbers

are too high to be formed by health reasons, by perceived sufficient income already accessible, by family reasons. If the people (age 55+) were given better working conditions, including possibility of part-time job (without lower income being negatively reflected in future pension), including more sick days without the necessity to have it confirmed by a doctor, including job content suited to physiological changes of human organism and reflecting the skills and experience acquired during their career (not in terms of being obsolete, but transferring tacit knowledge to successors), it would be interesting to compare the rate of early old-pension recipients to current state. Moreover, it is surprising that more people leave their jobs in Vysočina and Pardubický regions than in Prague or Brno, the big cities, contrary to expectations, that local companies would be more sensitive to human aspect of work. This may be caused by generally more favourable working conditions in regions that both can afford to offer them and that have to compete for staff.

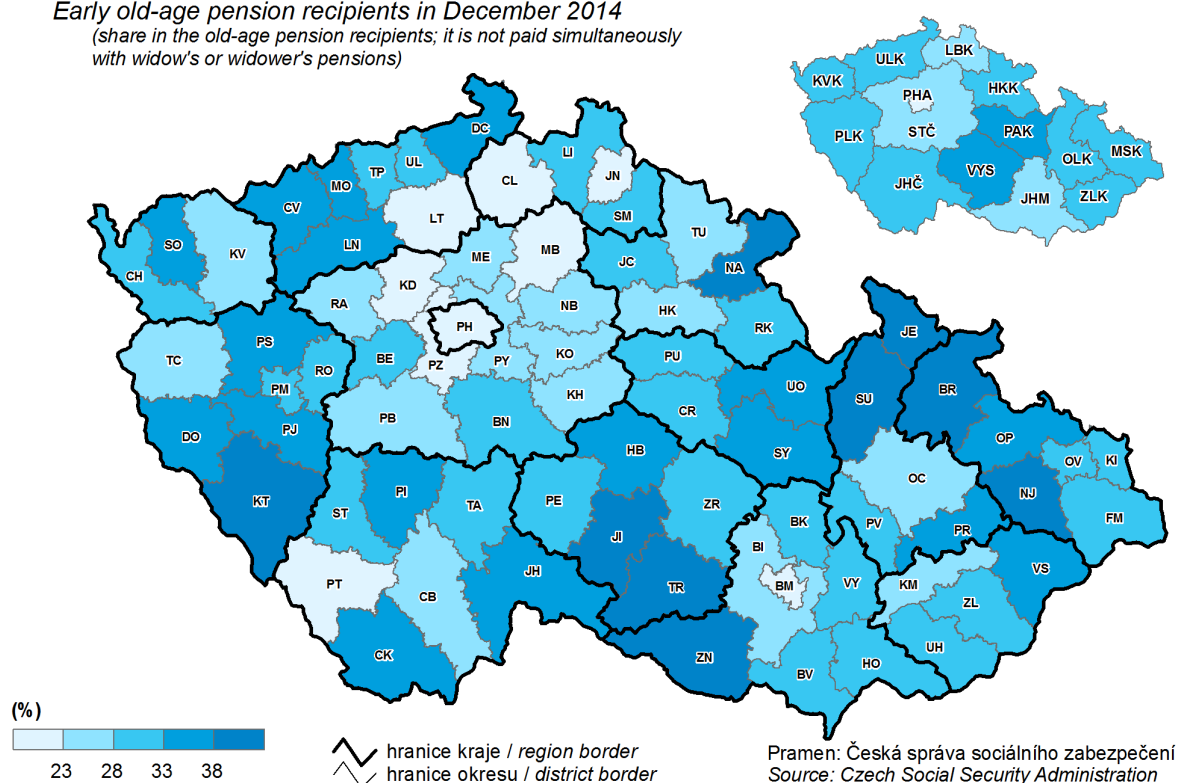
Figure 4: Early old-age pension recipients

19. Příjemci předčasného starobního důchodu v prosinci 2014

(podíl z příjemců starobního důchodu; bez souběhu s vdovským nebo vdovečným důchodem)

Early old-age pension recipients in December 2014

(share in the old-age pension recipients; it is not paid simultaneously with widow's or widower's pensions)



Source: ČSÚ (2016)

2. Work environment and working conditions

Work environment forms work conditions. Basically working conditions are regulated by law in order not to damage health of employees and to suit the performance of work. Organizations can create better conditions than required by law, and they often do so in order to contribute to better safety of employees in terms of protection of health and in order to stimulate productivity of labour. Organizations that create the best work conditions frequently advertise the employee-care as a part of organizational culture. Working conditions are, that is to say, not only physical conditions such as light, space, colours, noise etc.; conditions influence environment in terms of psychological well-being. Though work environment and work conditions are one of the

rudimental determinants of work performance, they are constantly underestimated by many organizations. Work environment, in a nutshell, not only contributes to higher performance of employees, but also influences motivation of employees.

Working environment influences a person in his/her work, work process, hence outcomes of work, interest in the outcomes, and frequently influences private life of a person as well. If organizations resign to constantly improve and positively influence the workers, working environment, work roles, relationships in the work groups and perhaps also the needs of workers, then they cannot expect the workers to achieve long-term quality outcomes.

2.1 Basic theories of work motivation

This article aims to stress out the basic, widespread motivational theories that seem to have lost their strength over time. They are a part of every management textbook, but the reality does not reflect their mission, or purpose, respectively. We can only speculate about the reasons why this did happen – is it the insufficient education of managers who leave schools without basic knowledge? Or is it the aversion of companies to spend a penny on employees? Or is it the fault of employees who do not fight for better work conditions and rather favour their sad deal of going to boring work they don't like, their fate of an overworked human of little meaning with only a small influence to change things?

Elton Mayo was one of the first researchers to investigate the relationship between working environment and effectivity of labour, or respectively between satisfaction of employees and behaviour of work groups in his later research. E. Mayo and F. S. Roethlisberg and their colleagues during the years 1929 to 1932 at Western Electric Company conducted a research that later came into general awareness as the so called Hawthorne studies. Results of the research caused a revolution in managerial approaches to managing people. In those times, under the influence of Taylorism, a man was considered as an isolated individual who only works for money and his/her performance is dependent on reachable financial remuneration or on sanctions for not meeting the norms. Gradually, the situation became changing and the psychological influences on performance and satisfaction of employees were recognized, as well as interpersonal relations and the influence of work group. A man is now considered as a part of a work group and that they interact; satisfaction of an employee is strongly influenced by membership in a group, performance of an employee is strongly affected by social norms of a group etc. The research also dealt with the issue of authority, managerial style and motivation. The performance of employees and satisfaction with required group work depends not only on the degree of integration of the group members and their ability to cooperate, but also on the management and the managerial style of the group manager.

The Hawthorne experiment followed the supposedly failed previous experiment that aimed to demonstrate the effect of working conditions on productivity of labour, which failed to prove the direct dependence. The first experiment was based on the assumption that efficiency and productivity will rise together with improvement of working conditions, and as a result will also mitigate turnover, which was the one of the main problems that Western Electric Company in Chicago faced at that time, and therefore invited Mayo and his team. However, Mayo was surprised by the results of the experiment and was convinced that there is something strange about the failure. Thus he repeated and modified the experiment in a longitudinal study on experimental and control groups. Every change in working conditions, such as changes in lighting, periods of work breaks, shortening of working hours, stimulation tools, wages and remunerations etc., caused an increase in productivity in both groups – not only in the experimental group, but also in the control group where no changes were made. Better working

conditions and then returning them back to original state did not lead to any significant change either in positive or negative correlation. Increased performance did happen only in correlation to attention – how much attention was devoted to the work group by the researchers, or the awareness of the group that they are being watched and a part of an experiment. In the second phase of the experiment, a work group consisting of six female blue-collar workers was earmarked and they had special working conditions and they were treated as colleagues of the researchers, which gave them a sense of importance and responsibility. Their productivity of labour increased enormously. Mayo therefore proved that workers protest if their working conditions are poor, and also proved the power of group and its influence on both performance and job satisfaction. He showed that productivity of labour is affected more by motivation of a person, by his/her job satisfaction, by satisfaction with the importance of one's work (how it is recognized by the manager), by belonging to a group, by satisfaction with management (resp. management effectiveness), and by social norms of the group he/she belongs to.

Unfortunately, organizations translated the results into the economic language, so that the working environment does not matter much and working conditions began to be misjudged. The role of material stimuli was underestimated while the role of moral factors was overestimated; there was no evidence that employee satisfaction had a measurable impact on productivity of labour or efficiency; the individuality of a person was underestimated while the impact of group on individual's behaviour was overestimated.

The results of Hawthorne studies can be summarized into four points:

1. People are basically motivated by their social needs and a person acquires his/her identity through relationships with other people;
2. Based on the industrial revolution and growing rationalization, work has been “freed from sense”, and people offset this by seeking social relations in the company;
3. Group, social norms and pressure from the group are greater motivation factor than inducements and control from manager or management;
4. A person can be influenced by management only to the extent to which the management meets his/her social needs, or how he/she can satisfy the needs. (Koontz, Weihrich, 1993, p. 51; Mullins, 1993, pp. 44-48)

Maslow's hierarchy of needs is a theory that stresses out working conditions more than any other theory. A person can satisfy his/her needs through work and the needs can be divided into five clusters. Physiological needs as the first and safety needs as the second steps in the hierarchy are, in fact, mainly about working conditions (and as to say, the upper three levels address working environment – the need of belonging to a group, the need of esteem and self-actualization need are dependent on pleasant working environment and other people). As concerns work, physiological needs include work regime, work hours, work breaks and time to rest, ergonomic and physiologic conditions of work etc. Though these are the very basic determinants of performance, they are also very often overlooked and underestimated by the employers. Safety and security need at work means not only safe workplace that does not endanger a person's life or health, but also safety of job in the psychological meaning, i.e. the fear from being dismissed, from suspension to lower position (and hand in hand lower income), fear from mobbing or bossing etc. can never improve either a person's performance or motivation. Safety of work environment also means a good orientation of a worker at the workplace, the knowledge of procedures and norms, predictability of the environment, and in particular confidence in oneself, i.e. regular assessment of a person's work, whether it meets the expectations of managers and accords to norms and standards; furthermore security also lays in communication – how people communicate with one another and how does the

management communicate with subordinates and whether the workers have subjective feeling of being well-informed about the current state and future plans of the company etc. (Armstrong, 2012, pp. 223-224, Mullins, 1993, pp. 451-455).

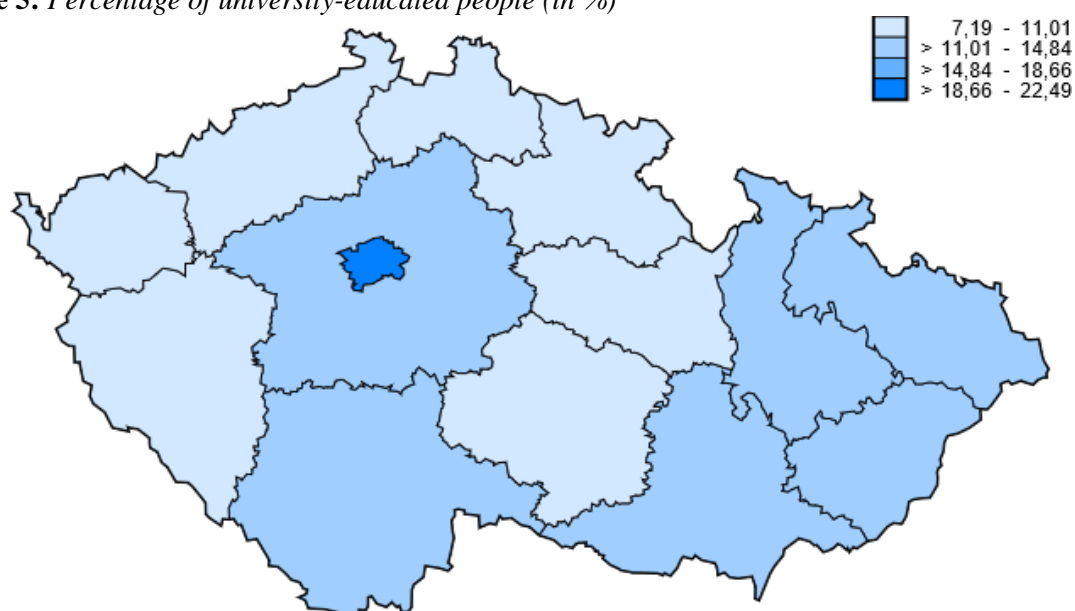
Recently, companies are facing a great problem concerning self-actualization needs. Traditionally, this need was either disregarded (because people can satisfy this need outside the company better) or treated as excessive luxury as concerns motivation factor. However, in the last decades this need was revived as one of the grounds of burnout syndrome. Finding an optimal balance between the level of actual activity at work and the level of competencies of a person, his/her values and preferences, accordance to social norms, goals, and expectations is actually very hard in reality. If the job is too demanding and the person's capabilities limited, the person is stressed, refuses to communicate with the group, fears taking responsibility and tasks and decisions, loses interest in work, lives in permanent tension and anxiety, and this mental state can lead to burnout. On the other hand, if the job is not demanding sufficiently and person's abilities are high, it leads to frustration, reduced performance and consequently to turnover. Nowadays companies have realised that generation Y has, in general, strong self-actualization need, but approached it differently. Companies that are led by usually older conservative managers insist on the idea that members of generation Y will one day get used to traditional conditions and will adjust, lose their talent and face a greater rate of turnover among young employees. Companies that give these people an opportunity with respect to their qualities and freedom, give them the possibility to participate in decision-making, they can in return expect interest in the work they do, higher level of loyalty than can be expected in disinterested staff, willingness to devote more time to work on special occasions, creative ideas, innovations, and commitment to both the work and the company. However, if work conditions change, loyalty and commitment can be lost extremely quickly.

2.2 Generations Y and Z

A strong self-actualization need is shared by both generation Y and generation Z. Members of the so-called Generation Y (also called the Millennials; people born approx. between 1980 – 1995) are said to be educated, ambitious, creative, talented, but also very self-confident, unstable, unwilling to be bound, with high demands and expectations. Generation Z that is now entering the labour market (also called the Net generation; people born approx. between 1995 – 2010) is yet very different from previous generations. Some authors (e.g. Mládková, 2015, p. 621) say that so far we do not know enough about the working habits but we know a lot about the environment the generation Z was growing up in, so we can drive conclusions analogically. Members of generation Z grew up with technologies and internet connection as something usual, therefore their communication is affected by the need to get and provide instant information quickly (they are online 24/7, i.e. 24 hours a day, 7 days a week), communicate through technologies rather than personally with strangers, and they use internet social networks (Facebook) for both private and work communication (thus seeking jobs there as well). Generation Z is, compared to previous generations when they were younger and entering the labour market, in general very self-confident and already well-off. When comparing generations Y and Z, there is a remarkable shift in perception of work-life balance – generation Y generally prefers home-office when working for one employer in a full-time job, generation Z would prefer freelancing or short work hours, but they generally refuse home-office and teleworking, because they need a clear cut between work life and private life, they need to dress up, go to a nice office, be in personal touch with friends, and leave the office and be off; moreover, home-office is a great temptation for scattered attention, consequently reduced performance and stress. Those members of generation Z who already work usually work part-

time, but they also study or run their own businesses (Hejnová, 2015, pp. 200-203, Kubátová, 2015, pp. 491-496). We can hypothesize that the trend of moving to big cities, particularly to the capital, will continue due to higher concentration of companies that are ready to provide opportunities to these specific people of generation Z. Previous generations were more resistant to moving, they preferred either commuting or adjusting to local labour market, but this has been slowly changing. More members of generations Y and Z than previous generations have university education (see figure 5) and their lifestyle matches the job opportunities of big cities. It is not very attractive for especially generation Z to work in a local factory from 6 am to 3 pm with specific task on an assembly line. All companies should think of making changes necessary to suit more diverse workforce, but especially companies in regions should take this as a challenge, otherwise their attractiveness and competitiveness on the labour market would deteriorate compared to more progressive companies. Of course, Prague as the capital will always lure the workforce from regions, but it is only in the hands of local businesses to compete.

Figure 5: *Percentage of university-educated people (in %)*



Source: ČSÚ (2016)

Discussion and conclusions

This paper aimed to rethink the importance of working conditions, which has been omitted recently, or on the other hand, some companies have been advertising their offer of perquisites as the main reason to work for them. Working conditions are a part of basic motivation theories that seem to be misunderstood or that have been losing their real message. Employers especially from regions should monitor the changes on the labour market and adapt their work environment to suit the different generations that now form the workforce, though it is extremely hard for a company (as well as for a single researcher) to statistically compare both measurable variables concerning working conditions, such as number of working hours, time or distance for commuting, wages plus financial benefits etc., and hardly measurable variables such as job content, overall atmosphere and communication in the company, opportunities given to talents etc.

References

Armstrong, M. (2012) *Řízení lidských zdrojů. Nejnovější trendy a postupy* (10 ed.) Praha: Grada Publishing. ISBN 978-80-247-1407-3.

Hejnová, V. (2015) Vstup generace Z na trh práce. In *Pavla Slavičková - Jaromír Tomčík (eds.), Znalosti pro tržní praxi 2015. Ženy-podnikatelky v minulosti a současnosti (pp. 199-208). Olomouc 2015. ISBN 978-80-87533-12-3.*

Koontz, H., Weihrich, H. (1993) *Management*. Praha: Victoria Publishing. ISBN 80-85605-45-7.

Kubátová, J. (2015) Predikce pracovního chování generace Z. In *Pavla Slavičková - Jaromír Tomčík (eds.), Znalosti pro tržní praxi 2015. Ženy-podnikatelky v minulosti a současnosti (pp. 490-503). Olomouc 2015. ISBN 978-80-87533-12-3.*

Mládková, L. (2015) Generation Z Students, Study From the University of Economics Prague. In *Pavla Slavičková - Jaromír Tomčík (eds.), Znalosti pro tržní praxi 2015. Ženy-podnikatelky v minulosti a současnosti (pp. 619-625). Olomouc 2015. ISBN 978-80-87533-12-3.*

Mullins, L. J. (1993) *Management and Organisational Behaviour* (3 ed.) London: Pitman Publishing. ISBN 0-273-60039-7.

PREDICTION OF THE NEEDS OF THE LABOUR MARKET IN THE SOUTH REGION 2015-2020

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Key words:

South Bohemian Region, regional labour market, needs of the labour market, labour supply and demand, human resources within individual professions

Abstract:

The analysis forecasts the needs of the labour market in the South Region 2015 - 2020 examines the current situation on the regional labour market in the South Region. The main objective of the analysis is to draw the conclusions and recommendations of measures, including a gradual reduction of the difference between supply and demand on the labour market. The analysis is based on a questionnaire survey among employers in the South Region, which implemented a South Bohemian Chamber in cooperation with the South Bohemian Society for Human Resources Development. Investigation was focused on the findings of the current and medium-term needs of human resources in those professions. The analysis is based on available statistical data, which express the prediction on the supply side of the labour market with respect to the amount and structure of graduates of educational institutions in the South Region. The secondary objective of the analysis was to define a graduate profile that matches the best idea interviewed employers, including property, practical skills and theoretical knowledge which should satisfy graduate. The analysis focuses on the possibility of starting or intensifying cooperation between business and educational sphere in the sense of improving the quality of vocational training.

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Introduction

Analysis of the needs assessment of the labour market in the South Region 2015 - 2020 examines the current situation on the regional labour market. The main objective of the analysis is the creation of conclusions and recommendations, including draft measures to reduce the difference between supply and demand in the labour market. Among the primary objectives of the analysis include mapping the needs of employers in the labour market in the South Region for the purpose of identification of professions work of the regional market, which is expected to strong demand in the short and medium term 2 to 5 years and verification, for which professions is demand for workers is saturated, i.e. employers do not foresee in the near future a large increase in vacancies. The analysis is based on survey among employers in the South Region, which implemented a South Bohemian Chamber in cooperation with the South Bohemian Society for Human Resources Development. Investigation was focused on the findings of the current and medium-term human resources needs of individual professions. The analysis is based on available statistical data, which express the prediction on the supply side of the labour market with respect to the amount and structure of graduates of educational institutions in the South Region. The secondary objective of the analysis was to define a graduate profile that matches to the best idea interviewed employers, including theoretical knowledge and practical skills for graduate should possess. The analysis focuses on the

possibility of starting or intensifying cooperation between the corporate and educational clients in terms of improving the quality of vocational training. The obtained data are the basis for negotiations with regional partners to flexible response to development in the labour market within individual professions with the support of co-operation of strategic, territorial partnerships the labour office of the Czech Republic, the regional self-government, trade unions, representatives of employers (e.g. the economic and agrarian chambers, social partners representing employers) and regional organizations (e.g. educational institutions, businesses, statutory cities, development agencies and non-state not-profit-making organizations).

1. Rationale of necessity

Unemployment is one of the key phenomena of the market economy, currently represents one of the most serious problems of contemporary society. Unemployment is due to disproportion between labour demand and supply on the labour market (Němec, 2002). Krebs (2007), Malinová (2011) and Buchtová (2002) in their work describe unemployment as a complex phenomenon that cannot be assessed globally. Unemployment is becoming a global problem; it has an impact on the man himself, but also for the state and the state of its economy. The main factors that affect the status of current and past unemployment are regional differentiation, high proportion of long-term unemployed, the unemployment of young people (Staněk et al., 2002). Échaudemaison (1995) describes unemployment as a condition where a person or an entire household do not work, but do activities for getting a job. Graduates fall into the category of the risk groups on the labour market in particular because their application is complicated.

Graduates entering on the labour market have the disadvantage that they have not been involved in the proper work and their knowledge and abilities are rather theoretical than practical. Often they have fallacious ideas about their future professions, job description, but also financial rewards for their work. The second fundamental segment of the labour market is employers that in a greater extent request quality workforce (requiring after applicants and candidates for employment minimum experience of at least 1 year). When the unemployment rate increased the state become getting into cyclical problems, paid to unemployed individuals for unemployment benefits, which can vary according to the number of unemployed persons in range of billions of the Czech crowns and it is simultaneously deprived of revenues that would have cashed in income from health and social insurance and tax income, which pays the employee and the employer is legally compulsory. Another equally positive effect is the loss of purchasing power of unemployed persons in the sense of inclement weather the state money with minimal financial reserve (Řehoř, 2010). Since this situation is in long term, economically unsustainable, used state incentives within the active employment policy to promote the reintegration of job seekers into the workforce. As a result of the economic progress the company is not able to reconstruct the state of full employment (Mareš, 1994).

The analysis of forecast the needs of the labour market points to a state of almost zero existence of a central prediction system of forecast of labour market needs, which highlights the current and future needs of employers in terms of human resource planning. Intention of analysis is the need for human resources in companies operating in the territory of the South Bohemian region in order to propose measures in sense of the approach of the graduate real profile of education system of the Czech Republic according to the optimal needs of employers in terms of sectoral structure and the number of graduates by industry of regional market and graduates expertise competencies.

The unemployment in the South Region in comparison with other regions of the Czech Republic is in long-term low (5.07%), in the last 7 years, is one of the lowest, and in 2015 was the second lowest in the country. After the global financial crisis in 2008, the labour market situation gradually improves; the current situation is very satisfactory (Beran & Kratochvílová, 2016). According to surveys labour reached in 2014 the share of population with tertiary education in the total population fifteen years and older 14.7 % and the proportion of people with secondary education including higher of 34.2%. The largest number of unemployed people in the service sector, industry and agriculture. In the South Region occupies two public universities, the University of South Bohemia in the České Budějovice, which has more than 11,000 students in 200 fields of bachelor's, master's and doctoral programs and the Institute of Technology and Business in České Budějovice, which offers bachelor's and master's courses specializing in engineering, construction, transport and logistics, economy. Furthermore, there are two private universities, University of European and Regional Studies in the České Budějovice and the Film Academy of M. Ondříček in Písek. The program offers a number of other universities within the framework of established institutions, e.g. Faculty of Management, University of Economics in Prague with representation in Jindřichův Hradec and CEVRO Institute, obs. Prague in the Český Krumlov.

One of the factors that affect the low unemployment rate in the South Region, with a view to focus on the industrial sector of the region, is a strategic location with Austria and Germany, which enables investors to focus some production from the neighbouring countries to the region. It is also essential for the region diversified sectoral structure of the economy, which offers an extensive selection of labour opportunities. In the region there are numerous natural and architectural monuments, including monuments registered on the UNESCO list. Development of leisure activities promotes tourism and development services in the field of tourism. South Bohemia is typical for agriculture and fish farming, which offers a large number of jobs.

2. Methodology

In terms of creating an analysis predicting labour market needs in the South Region in the period 2015-2020 has been the primary source of data for survey made in selected companies of the South Bohemian region, in cooperation with the South Bohemian Chamber of Commerce. Were interviewed 1,200 businesses, an investigation was attended by 266 companies, i.e. almost one quarter specializing in mechanical engineering and manufacturing 19.8%, trade 12.5%, construction 8.3%, electrical engineering, telecommunication and IT 7.8%, textile and clothing manufacturing 6.8%. Firms were divided according to type of core business according to the National Qualifications Framework. In the survey they could provide more categories of business, which serves as a support tool for objectivity distribution of business by individual sectors, e.g. small enterprises (10-99 employees, 49%), micro enterprises (1-9 employees, 22%); small medium-sized enterprises (100-249 employees, 18%) and larger medium-sized companies (250-499 employees, 11%). Furthermore, the enterprises have been divided according to headquarter of the individual districts of South Bohemian region (České Budějovice (32%), Písek (17%), Tábor (14%), Český Krumlov (13%), Strakonice (11%), Jindřichův Hradec (10%) and Prachatice (3%). Into the questionnaire did not include businesses from the agriculture, food and forestry, whose support is the responsibility of the agrarian chamber.

3. Prediction of labour market needs in South Region

The labour market situation in 2015 reflects the current unemployment statistics in the South Region, which is one of the lowest in the country. This situation is favourable from the point of assessing job seekers, but in terms of assessing the employer with respect to the current need for skilled workers (64% of companies, i.e. 171 of 266 surveyed companies is currently looking for new employees), this condition is unfavourable due to the necessity of labour in horizon of 2 to 5 years, when companies are looking manpower to positions that have long been in short supply (Petráňová & Mejstřík, 2016). The remaining 95 companies stated that so far they do not have actual need to recruit new employees or the information (data) cannot evaluate.

The highest share of demand for employees has a field in mechanical engineering and metalwork, which is in South Bohemia developed. Another representation of the field is in electrical engineering, trade, textile manufacturing, construction and transport (Kratochvílová, 2015). Companies that participated in the questionnaire survey, expected in 2 years an increase in the number of new employees more than 2,270 jobs, of which more than half will be an engineering focus (1,240 new jobs), of which the most sought-after professions according to the number are the operator in production (227), the operation, programmer and setter CNC machines (124), metal tooler, turner (113), engineer, technician (100), a test engineer and technologist (61), process and development engineer (60). In the field of electrotechnology the companies expect in the period 2015 to 2017 to fill approximately 140 jobs by professions, e.g. electrotechnician (38), electrical fitter (20), a labourer in electrotechnology and electronic engineering (32), electrician (15). In the textile industry is due to the restructuring in recent years to increase production of goods and services and to the generation change among employees. Around towns Písek and Strakonice is currently employed in total 477 workers, of which 262 seamstresses and dressmakers when within 2 years, businesses will need an additional more than 53 dressmakers and seamstresses, representing a 20 percent increase in those working professions. Large increases in investment and demand for new employees also saw construction industry, which is affected largely by releasing funds from the EU structural funds to support the construction and infrastructure. In the structure of demanded the positions dominated by blue-collar workers, the construction foremen, surveyors and budget expert. Businesses are aware of this fact, that it cannot currently satisfy the demand of human resources needs, when it is increasingly difficult to get pupils of specialized classes and schools, so they initiative engaged in negotiations with representatives of secondary schools and education authorities and in cooperation with the South Bohemian Chamber of Commerce for order the reopening of the industry with specializing in textile production. Interesting is also the fact that in the five surveyed companies from the food industry in the next 2 years plans to fill 192 vacancies by blue-collar professions and operation of production facilities.

Estimating the needs of the labour market in the South Region in the next 3 to 5 years until 2020 seems to be quite readable, but ignores the possible risks and deviations caused by optimistic view of the companies themselves. In the industry with a high probability gets to extinction of certain occupations / sectors, and contrary to the creation of new jobs, e.g. in database administration, web design, working with large volumes of data, in cloud services, data protection and other areas of digital technology, when the changes the appearance of digitization, automation and optimization of production processes, internet business, social network, i.e. occupations critical for the industry are system architects, who combine traditional technical education with software excellence and creativity.

For small and medium businesses is no simple solution, but rather builds on the knowledge and skills of personnel department team. These managers must understand the basic economic principles and precepts, such as scaling efficiency, substitution effects, opportunity cost, basic financial management, business management and financial accounting, as well as to be familiar with everyday corporate practices (standards of project, process management and the principles of strategic management), information technology (from control office packages, accounting software to re-engineering and modelling of business processes and creating outputs in the module "Business Intelligence" in the enterprise information system) and last but not least, be in touch with the latest developments in the field of interdisciplinary approach to human resources management and management administration of personnel department (Straková a kol., 2016).

Other equally important professions are specialists in the field of robotics with an emphasis on mutually cooperating robots with people about the safety systems and the potential risks and its prevention. With the advent of so-called the fourth industrial revolution and the advent of the concept of Industry 4.0, it can assume a greater share of smart devices in the industry that encourages increased demands on the profession of qualified workers. The consequence of disproportion between supply and demand in the labour market come the state of lower unemployment, because companies will be forced to take even workers without professional qualifications, which will be teach or retrain according to their operational needs.

4. Graduates in the labour market

Definition of graduate is not consistent with the definition of job seekers. Group of graduates belong to categories for which must be raised various measures that help to their employment (Czech, 2004). According to the Labour Code (Czech, 2006) is a graduate defined as a person who with the assistance of achieved qualification, abilities and skills enter the labour market in the role of a new employee. Graduates however won't understand every individual who meets this criterion, but only one for which the total period of employment after successful completion of training duration does not exceed 2 years.

While in 2013 for fresh graduates without experience were very difficult to find job, currently in terms of lack of labour resources companies for graduates struggle and orient their recruitment activities towards them. Enterprise is much more focused on working with schools vocational, secondary and higher nature in the sense of defining the requirements for the ideal graduate profile that would fit the needs of the regional market. 175 polled companies in the survey responded that 66 % of employed graduates working at different levels. 34 % companies does or does not plan to graduates employ (currently not looking for any new employees, but cooperation with graduates in the future does not obstruct). Another important factor in the decision to accept or not to accept the job on a fresh graduate is high time demands on training and unreasonable financial demands of graduate without experience (Hitka, Hajduková & Balázová, 2014). Companies are realizing social responsibility in a broader context; enter into the process of education from the primary stage of education in primary schools. The most common reasons for not employing graduates are insufficient practical experience or vocational training or a low interest or unwillingness to adapt to the current job offer (Petráňová and Mejstřík, 2015). Highly valued are key competencies the type of team cooperation, the development of self-responsibility, willingness to learn, learn the basic work habits (Duchon & Šafránková, 2008).

To the question: „How satisfied are you with the newly employed graduates” answered 92 % of questioned companies positively (satisfied) and expressed their satisfaction with the comments. Only 8 % of respondents say they are dissatisfied with graduates.

Within realized questionnaire survey evaluated employers input competencies of received graduates from one to five, the best mark (1) and worst (5). The greatest extent been mentioned ability to assume responsibility, communication skills, ability to solve problems individually and make decisions, or the art of dealing with people, but also a willingness to continue learning. For less important employers consider knowledge of foreign languages, professional knowledge, practical training and general knowledge. One of the most frequently mentioned shortcomings of the graduates was a willingness to work manually, bear responsibility for the results and patience in career growth.

Systems for the training of new employees every company performs differently. In most cases, it is a basic introduction to running of the company, application seminars to improve professional knowledge through internal and external courses, training in the workplace or participation in conferences or seminars. Question whether companies have created a special system of training, responded positively 34% of respondents. 58% would embrace assistance in the administration or financially demanding activities. In specification the forms of assistance the companies most commonly reported help during choosing a suitable candidate itself through the assessment centre. Furthermore, companies would welcome the organization of exchanges of job opportunities, meeting employers with potential employees and job applicants or mediation of contact with that person, or contact an educational institution, which would have been agreed conditions of cooperation or offers professional practices. Also they would appreciate support from the state or subsidies from EU funds. Financial support in the recruitment / training of new employees would prefer especially smaller businesses due to lack of resources to create new jobs.

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In comparison with job seekers with work experience employers for graduates appreciate the willingness to learn, accept corporate culture, greater flexibility, and low workload of working habits from previous jobs or lower wages ranking (Šikýř, 2014).

During hiring workers, increasingly ignores at graduates insufficient or no practice, poor quality or structure of knowledge and skills, that does not match the demands associated with the performance of the required job positions, an unrealistic working content or inadequate wage assessment. Educational establishments and educational institutions are criticized that teaching quality does not match the standard of education levels according to various degrees, students are cut off from practice, and they have a low practical knowledge and experience (Šafránková, 2014). They have no interest in the studied subject, in which do not continuing training, do not investing in human capital into lifelong learning, do not follow new trends in the field.

As part of the active employment policy employment office can provide an employer contribution to the incorporation of graduate or young person in taking the job seeker. It is appropriate that this post was intentionally explained in accordance with its provision, not exploited for re-employment and dismissal of workers without long-term prospects for cooperation.

A government contributory organization of ministry of work and social stuff (MWSS) the Czech Republic, Fund continuing education, launched in 2012 in the month of September project placements in companies and internships for young people - education by practice,

which was funded from the operational program Education for Competitiveness (OPEC) under the auspices of the Ministry of education, youth and sports (MWSS, 2013-2014). Projects allow jobseekers (graduates or students and pupils) to get the required practice, to train potential employees by expertise knowledge in order to gain professional skills corresponding to the requirements of the employer (ESF, 2016). Internships in companies were intended for graduates without work experience, long-term unemployed, people returning to the labour market, but also for employed workers who wish to deepen skills. Internships for young people have been designed for pupils of secondary schools and students of higher technical schools and universities of the last two semesters, including students' annuals language schools, post-secondary studies. Tools for support from the state were businesses very positively evaluated; almost all companies in the survey would use these options again. The projects were completed in 2015 under the programming period of drawing funds from the EU Structural Funds 2007-2013 (Freibergová, 2009).

Marianne Thyssen in his article dated on the 22nd of January, 2016 (www.euraktiv.com) states that the employment situation in the labour markets across the European Union (EU) has improved and the unemployment rate has been steadily decreasing. It notes that in 2014 was in the EU employed 218 million people. In comparison with 2013 there was an increase of employees by more than 3 million, at young people aged 15-24 years there turn over the better. The employment rate for people in this category increased in 2014 by 0.4%. Thyssen assessed that see in young people and graduates progress in the re-functioning, when they began to pay more attention to education and training for future careers.

5. Forms analysis of practical training in South Region

In 2015, a survey was conducted of the current provision of practical training in schools and the implementation of training and professional practice of students in secondary schools. The result of the survey was the fact that the issue of ineffective practical training at the secondary school level is a long-term problem faced by most regions in the country. Inadequate are assessed even competencies of graduates of universities without work experience or very low practice. The professional practice and training for students normally provides school in collaboration with the organizations or pupils seek professional practice independently. Some schools also provide opportunities to gain practical skills through leadership fictitious company within the simulation work environment in the company or in school workshops. The part of the survey was identifying the scope of cooperation in South Bohemia businesses with schools in the region in which it operates. Of the 266 responses to the question: "Do you collaborate with high schools in the provision of professional practice / training" responded positively 45 % of respondents. A positive result is especially in comparison with the planned increase in capacity of pupils placed on the practice / vocational training in the company, which was an annual increase of almost 10% compared to the real state in 2015. A third of companies cooperate in different ways with the schools, mostly in the form of professional experience (23%) or training (14%). Very often the answer was to allow tours and workshops at workplaces of firm (16%). There were also including presentations at school (12%), school financial aid (7%) or the implementation of projects (6%). An interesting activity currently is competition for pupils. In some cases, companies can be involved in supporting talented students in the form of sponsoring or providing scholarships while studying. To a lesser extent, the practitioners are involved e.g. in evaluation of seminar theses or cooperation on the professional projects. Very few are used internships that enhance the experience of students and broaden their skills in favour of the international environment and culture.

Almost half of the companies that participated in the questionnaire does not provide professional practice / training and does not intend to offer it. The most common barrier, with which it faces almost all companies, is organizational and time-consuming (answered by 115 respondents of 244). Another equally important issue is the personal and material ensuring of instructor for training. Lack of interest from students (100 respondents), or profile specialization of schools with the required field (108 respondents), represents a significant barrier to cooperation with schools, where employers perceive this problem as the third strongest. As an example of partnership between schools and businesses can be state cooperation between companies in South Bohemia and South Bohemia University, opening the field of mechatronics, which ensures the University of South Bohemia in cooperation with the Faculty of Mechanical Engineering, Czech Technical University and Robert Bosch Company in České Budějovice. The purpose of the collaboration is to increase the proportion of theoretical and practical training in the operation of the production plant.

6. Proposals and measures

The fundamental lack of graduates of vocational schools, secondary schools and universities is the training and professional experience acquired during their studies. Most suggestions for improving the current situation, employers report a higher proportion of practice in the firm during the study (159 of 231 respondents), the cooperation of the company on the content of school educational programs (101 respondents) and ensure skilled workers through co-finance of technical training (89 respondents).

Companies have a clear idea of what is required and will require for new employees, so they should work closely with schools. Schools and educational institutions should appeal to a higher employability of its graduates, profile oriented, edit the contents of individual subjects according to partial specialization. It would be appropriate to incorporate fresh graduates into work processes so that they are thoroughly prepared during the study period.

One possible suggestion involvement of small businesses in providing experience and training is a longer period of time spent in a corporate environment of business practice (Jaroňová, 2008). In this context, the South Bohemian economic chamber offers help and support in the administration to provide practice and training of pupils and students in small companies in order to support small company in relation to the requirements of the regional market.

The analysis of forecasts the needs of the labour market in the South Region 2015-2020 highlighted from the perspective of human resources management in the South Region on the following measures. Setting up a systematic prediction of the labour market, in the coming years, at the regional level, in term of estimate the needs of the labour market in the South Region and implement the necessary measures resulting from the prediction. It is advisable to measure to human resources management discussed regional platform, e.g. the Tripartite, the employment Pact, which, in the framework of the strategic partnership of the labour office, the regional self-government, trade unions, employers' representatives (i.e. Economic and agrarian chambers, social partners representing employer), as well as regional organizations (e.g. educational institutions, businesses, statutory cities, development agencies, NGOs) assess the coordination of system setup of forecast of labour market needs and subsequent application in practice. Findings and data tailored to the needs of the labour market in terms of changes of the content of the training module according to the needs of employers.

Adapt to current instruments and forms of support, e.g. a system of career counselling, cooperation between schools and employers, expanding the scholarship program, support polytechnic teaching, popularization of perspective and studying programmes (even the emergence of new subsidies) to reduce the gap between supply and demand in the labour market in relation to structure and quality of graduates of education curriculum, low motivation to remain in the region, qualified advice when choosing a future profession, to raise awareness about the offer of the labour market and the interest in technical fields.

Conclusion

The current situation on the regional labour market in the South Region can be considered positively; however, with regard to the prediction of needs in the short and medium term 2 to 5 years, it is the adverse developments with respect to the need for skilled labour. Up to 64 % of the surveyed companies feel a shortage of skilled workers in of selected jobs, which are scarce in the long term.

The priority of functional partnership between the company and the school is a communication barrier. The survey showed that businesses would welcome assistance in search of selected schools in order to establish cooperation in the form of determination the graduate's profile, providing work experience and vocational training, participation in professional theoretical education, professional leadership and opposing of theses.

I think that the best way to solution is the employability of graduates in Southern Bohemia Region, is establish timely cooperation between schools and employers. I would recommend regular training seminars in the labour market. It is appropriate that the students acquainted with the labour market already during, the most preferably, between 12 to 15 years of age. Timely submitted information on the labour market, needs of employers and staff requirements may limit the subsequent completion of further education due to those elementary school pupils inappropriately chosen field of study and failing to continue it. I would recommend implementing workshops in primary and secondary schools in the region with the intention to familiarize pupils and students with problems in the labour market. Within these workshops, I would recommend the presence of representatives (most recruiters) of major employers in the region who would inform pupils and students, school leaders or even parents of students on the structure of the labour market in the region, wage demands in the region and the requirements of employers. According to the practical experience of the contribution author I mention that graduates do not have this information. They have unrealistic ideas about salary in various professions; do not know the workload in a single job, unable to understand the problems of the labour market. Because in Southern Bohemia are especially concentrated businesses of engineering focus and field of construction industry, it would be appropriate for employers to be able to determine what will be the trend with regard to the future. These workshops could be implemented under the auspices of the South Bohemian Chamber of Commerce in cooperation with the labour office, the contact centres of the South Bohemian Region.

Furthermore, I recommended performing professional practice under the supervision of an experienced mentor who would instruct a student at the time of selecting a suitable institution where is the practice occurred.

Contributions to socially useful jobs in the active employment policy are certainly appropriate item in the context of reducing the unemployment rate (Šuplerová & Frýdková, 2014). To prevent inefficient gain of subscription for 6 months, I would recommend to contributions

approve only once and checking the progress of the previous applications for gain the contributions at the employer. It would be appropriate to enact the condition that the employer had a duty of employees upon depletion of allowance employ for a specified period with the participation of its own funds. This would prevent abuse of the system, while graduates gained at least one year experience that the majority of employers are required.

Internships are not yet in the Czech Republic so widespread like in Great Britain and other European Union member states, but it is another option that graduates can use to gain sufficient experience in the field and learn the necessary skills for their future profession.

Current offer of retraining courses is not copying needs of employers in the labour market. I do not think that recent graduates need retraining courses for their own labour market, but it would be appropriate to include the possibility of language courses, about which are job seekers (not only graduates) interested. Graduates would be through courses expanded expertise in foreign-language versions. Language courses could be classified according to the level of acquired knowledge for the application, e.g. in the technical field (intensive language course focused on technical terms and expressions).

In Great Britain, volunteering has become a national heritage, which has deep traditions. In the Czech Republic could be one of solution to increase the employability of graduates in the labour market through the involvement of pupils in primary schools and students of secondary schools, high technical schools or universities. As part of volunteering they would adopt the working habits, they would learn cooperates, negotiate and respect the authority. By completing vocational training, internships and volunteering help graduates build a good reputation in the labour market, gain contacts with potential employers and after graduation may have a real chance to getting a job in the field.

With regard to the future, the state strategy should be directed to effective measures that should be divided according to the needs of vulnerable groups in the labour market. Making measures should be adjusted across the board, but should be designed based on the individual needs of each region. For graduates I see the greatest deficiency in the lack of practice, without which it is for them the entry to the labour market difficult and further in financial promotion of the family, which has a negative effect on the activity of graduates in finding employment. Include graduate into employment as soon as possible after graduation, should be a priority. It should be noted that today's graduates are the future of the state and they are the main link that will affect the further development of the economic situation in the Czech Republic.

References

- Beran, J., & Kratochvílová, M. (2016). *Analysis of the state and labour market development in the South Region for 2015*. The regional branch LO CR in České Budějovice, February 2016.
- Buchtová, B. (2002). *Unemployment: psychological, economic and social problem*. Prague: Grada. ISBN 80-247-9006-8.
- Cook, T., & Elmer, N. (1999). Bottom-up versus top-down Evaluations of the Candidates' managerial potential: An experimental study. *Journal of Occupational and Organizational Psychology*. 72 (4), 423-439. ISSN 2044-8325.

Czech (2004). *Law no. 435 of 13 May 2004 on Employment as amended by Act 101/2014 Coll* [online]. [09/07/2015]. Available from: https://portal.mpsv.cz/sz/obecne/prav_predpisy/akt_zneni/ZOZ_PLATNE_ZNENI_OD_1.1.2016.

Czech (2006). Law no. 262 dated 21 April 2006 Labour Code. Ostrava: Sagit. ISBN 978-80-7488-129-9.

Duchoň, B., & Šafránková, J. (2008). *Management. The integration of hard and soft controls*. Prague: C. H. Beck. ISBN 978-80-7400-003-4.

Échaudemaison, C. D. (1995). *Dictionary of Economics and Social Sciences*. Prague: E. W. A. Edition. ISBN 80-85764-13-X.

European Social Fund in the Czech Republic (2016). Guarantees for young people in the South Region [online]. 2016 [Quote: 06-02-2016]. Available from: <http://www.esfcr.cz/projekty/zaruky-pro-mlade-v-jihoceskem-kraji?highlightWords=z%C3%A1ruky+pro+mlad%C3%A9>.

Euraktiv (2016). *Thyssen: Our fight against youth unemployment is for beginning to bear fruit* [online]. 2016 [25-01-2016]. Available from: <http://www.euractiv.com/section/social-europe-jobs/news/thyssen-our-fight-against-youth-unemployment-is-beginning-to-bear-fruit/>.

Freibergová, Z. et al. (2009). Sutor: Proceedings of suggestions for the implementation of individual action plans: MLSA research project no. HR182 / 09: *Application of individual action plans for employment services Czech Republic*. Prague: The Guidance Services Support National Education Fund.

Glicken, M. D., & Robinson, B. C. (2013). *Treating Worker Dissatisfaction During Economic Change*. Treating Worker Dissatisfaction During Economic Change. USA: Phoenix. 319 pp.

Hitka, M., Hajduková, A., & Balážová, Z. (2014). Impact of the Economic Crisis on the change in motivation of the Employees of woodworking industry enterprise. 1/2014 *Drvna industria*. 65 (1) University of Zagreb. 21-26. ISSN 0012-6772.

Infoabsolvent (2014). *Youth unemployment in the Czech Republic and the EU* [online]. [B. R.] [Quote: 03-01-2016]. Available from: <http://www.infoabsolvent.cz/Temata/ClanekAbsolventi/0-0-04/Nezamestnanost-mladych-v-CR-a-EU/12> (table for graduates of 2014).

Infoabsolvent (2015). *Unemployment of graduates* [online], [B. R.] [Quote: 17-02-2016]. Available from: <http://www.infoabsolvent.cz/Temata/ClanekAbsolventi/5-1-04/Nezamestnanost-absolventu>.

Jaroňová, K. et al. (2008). *Let's work! : Step by step to good work*. Bratislava: Profesia. ISBN 978-973-7714-34-3.

Konrad, A. M., Moore, M. E., Ng, E. W. P. et al. (2013). Temporary Work, underemployment and Workplace Accommodations: Relationship to Well-being for Workers with Disabilities. *British Journal of Management*. 24 (3), 367-382. ISSN 1467-8551.

Kratochvílová, M. (2015). *Analysis of the state and labour market development in the South Region for the year 2014. The regional branch LO CR in České Budějovice*, February 2015.

Krebs, V. (2007). *Social policy*. Prague: ASPI. ISBN 978-80-7357-276-1.

Maulwurf, A. (2011). *The new rules colliding employment from 1. 1. 2011 to make ends meet or to unemployment benefits may only those who asked to 31. 12. 2010*. Available from: <http://www.epravo.cz/top/clanky/nova-pravidla-nekolidujiciho-zamestnani-od-1-1-2011-cili-privydelavat-si-k-podpore-v-nezamestnanosti-muze-jen-ten-kdo-o-ni-pozadal-do-31-12-2010-70819.html>.

Malinová, L. (2011). *Career development*. Prague: Oeconomica. ISBN 978-80-245-1796-4.

McCabe, D. L., & Trevino, L. K. (1995). Cheating among business students: A challenge for business leaders and educators. *Journal of Management Education*. 19, 205-218. ISSN 1052-5629.

Monnat, S. M., & Chandler, R. F. (2015). Long-Term Physical Health Consequences of Adverse Childhood Experiences. *Sociological Quarterly*. 56 (4), 723-752.

Ministry of Labour and Social Affairs (2014). *Department of labour, 2015. Statistical Yearbook of the labour market in the Czech Republic in 2014*. Prague. ISBN: 978-80-7421-093-8.

Ministry of Labour and Social Affairs (2013). *Warranty program for youth* [online]. 06-12-2013 [Quote: 01-02-2015]. Available from: <http://www.mpsv.cz/cs/16867>.

Němec, O. (2002). *Human resources in the labour market*. Prague: Oeconomica. ISBN 80-245-0350-6.

Petráňová, M., & Mejstřík, B. (2015). Over a million workers does not use their qualifications. In: *Statistics and us*. pp. 34-35. Available from: <http://www.statistikaamy.cz/wp-content/uploads/2015/05/18041505.pdf>.

Petráňová, M., & Mejstřík, B. (2016). Youth employment in twenty years is minimal. *Statistics and us*. 32-33. ISSN 1804-7149.

Řehoř, P. (2010). *Methods for assessing the potential of the regions, focusing on the labour market*. Brno: CERM Academic Publishing. ISBN 978-80-7204-735-2.

Stanek, V. et al. (2002). *Social policy*. Bratislava: SPRINT. ISBN 80-88848-92-X.

Straková, J., Vokoun, M., Váchal J., Stellner, F., & Vaníčková, R. (2016). Human Resource Management. In Váchal, J. et al. (2016). *South Bohemian Region in the global economy*. Prague: Setoutbooks.cz. ISBN 978-80-86277-82-0.

Šafránková, J. (2014). Motivational training for current students. SCHOLA 2014. *Innovations in education. Trends in trade union didactics*. Dubnica nad Váhom: Dubnický Institute of Technology in Dubnica. Available at: <http://www.dti.sk/schola2014>.

Šikýř, M. (2014). *Best Practices in Human Resources Management*. Prague: Grada. ISBN 978-80-247-5212-9.

Šuplerová, P., & Frýdková, L. (2014). Serious grounds for termination of employment and lower unemployment. *Social work*. 33-36. ISSN 1213-6204.

AGE MANAGEMENT AS AN ELEMENT OF DIVERSITY MANAGEMENT OF HUMAN CAPITAL INNOVATION AND REGIONAL DEVELOPMENT STRATEGY

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Abstract:

Issues connected with population ageing are analysed at a number of levels, therefore the definition of the term "age management" is also determined by the scope of the selected research area: economy and organisation. At the level of national economy the concept of age management is generally understood as systemic, administrative and legal solving of problems resulting from the process of employees' ageing by means of a state policy and employment rights. The observed trend of systematic increase in the population of people at the post-working age and decrease in the number of young people is a worrying phenomenon and requires development of strategies and systemic solutions that will allow us to prepare for a new situation, different from that in which we have been functioning for years. The forecasts clearly show that increase in employment and work productivity are insufficient to meet demographic challenges.

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Introduction

Issues connected with population ageing are analysed at a number of levels, therefore the definition of the term "age management" is also determined by the scope of the selected research area: economy and organisation. At the level of national economy, age management should be related to the process of population ageing, unfavourable changes in population structure and as a consequence occurrence of threats/dangers connected with distortion of the proper relation of working-age people to the number of people outside working age, of retiring age, and related inefficiency of the existing retirement systems. Thus, at this level of analyses, the concept of age management is generally understood as systemic, administrative and legal solving of problems resulting from the process of employees' ageing by means of a state policy and employment rights.

Many societies are subject to new population processes referred to as the second demographic transition that is characterised, among other things, by: decrease in the number of marriages and births, increase of the average age of forming relationships and giving birth, as well as an increase in the number of informal relationships and divorces (Kotowska & Józwiak, 2012). These changes are global in character and have been present in European countries since mid-1960s. They result in reproduction remaining significantly below the generation replacement rate. A low fertility rate of 1.5, or even lower, continuing for a long period of time leads to a dangerous decrease of the birth rate and economically unfavourable changes in population

structure, disturbance of the demographic order as a result of the upsetting of proper relation between the size of generations of children, young people and working-age people and the number of people who are outside working age (Ziółkowska, 2016). These unfavourable demographic phenomena, caused by a low fertility rate and systematic increase of life expectancy, lead to irreversible changes in population structure and consequently decrease in the number of people. In Western Europe, this problem was noticed as early as in the 1980s and 1990s. Predicting economic and social negative effects of demographic changes and their impact on the existing retirement systems, taking into account their gradual inefficiency, actions were taken to reform retirement systems. As a result, many countries raised the retirement age, limited the possibility of early retirement and undertook actions to increase labour market participation of people over 50.

The process of population ageing has already started in some regions. This phenomenon refers in particular to such countries as Germany, Italy and Japan. OECD predictions show that over the years 2025-2030 this phenomenon will increase and cause a decrease in the global size of labour force by even 12 million people annually (Mendryk, 2013). Soon, it will increasingly affect national economies, with an increasingly smaller number of working people forced to maintain a growing number of people at retirement age

1. Human capital and its importance for enterprises and region

The author of the concept of human capital is regarded to be A. Smith, who already in the 18th century compared education and improvement of employee skills to investing in machines and claimed that human capital included everything that was contained in heads, hands and legs of a company's employees. Human capital involves employees' competencies resulting from their knowledge, experience and intellectual predisposition, their ability to apply knowledge and use talents for the benefit of an enterprise as well as willingness to fully commit themselves to activities performed for an enterprise, employees' attitudes and motivation.

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Human capital is an inseparable element of people living in a given region. It includes their knowledge, skills, experience, creativity, competencies and commitment arising from motivation to take actions resulting in a growth of an added value for the region. According to Marcinkowska (2004), the quality of human capital depends on employees' competencies, attitudes and intellect. Listwan (2002) points to the possibility of an enterprise's impact on the quality of human capital through proper recruitment, selection, assessment and care about employees' development.

Investing in human capital contributes to increase of its value in the future (Skowron Grabowska, 2013). However, as stressed by Sitko-Lutek (2004): "This form of capital is expected to be more profitable than physical capital." Residents' creativity as well as innovation-oriented behaviour and actions have a positive impact on the development potential of countries and regions; they enable their revival and adaptation to changes caused by technological, economic, social and organisational progress. That's why human capital is one of the most important elements in creation of regional development.

2. Premises for the necessity of implementing age management programmes in Poland

Based on analyses of demographic trends and the socio-economic situation, the Central Statistical Office developed four scenarios of demographic changes in Poland by 2050 depending on projected birth, death and migration levels. They were called low, medium, high and very high scenarios depending on an adopted fertility variant due to its dominant impact on the results of prediction. However, even the highest of these scenarios assumes fertility below the level that ensures simple generation replacement throughout the period of projection of fertility change variants. Regardless of an adopted scenario, we receive similar results in the area of future age structures of the Polish society. This is due to the fact that low fertility scenarios also include an assumption of a lower life expectancy. Table 1 shows forecast of the population structure in 2050 in each of the developed scenarios of demographic changes.

Table 1: Population structure by age groups in 2013 and 2015 (%)

Age	2013 actual data	the year 2050 estimate data			
		low	medium	high	very high
0-14.	15.0	11.3	12.1	13.2	14.2
15-64	70.3	55.6	55.2	54.8	54.5
65+	14.7	33.1	32.7	32.0	31.3
85+	1.6	5.9	6.1	6.0	6.1

Source: *Prognoza ludności na lata 2014-2050, Prognozy i Analizy Ekonomiczne, GUS, Warszawa 2014*

Each of the scenarios envisages that by 2050 the percentage of people aged 65 and over will have increased almost twice, i.e. from 15.8% in 2013 to 35.7% in the low scenario, and to 31.3% in the very high scenario. It is projected that in the same period the number of aged people (who are 85 and over) will increase almost five times. The developed scenarios show significant differences only in forecasts concerning the percentage of the youngest age group. Unfavourable changes in the demographic structure of population will be caused mainly by (Szymańczak, 2012):

- fall in the number of births,
- longer average life expectancy,
- intensified emigration of working-age people.

The medium scenario was selected as a base one, therefore results for this scenario are official forecast of the Central Statistical Office. The low and high scenarios are treated as recommended alternative scenarios. The very high scenario assumes implementation of the governmental, long-term development strategy included in "Long-term strategy for the country's development - Poland 2030. Third wave of modernity" (Ministerstwo Administracji i Cyfryzacji Warszawa, 2012).

3. Benefits and threats for enterprises and a region arising from age management

In the context of the present economic situation and the above-presented projected demographic changes, there is no doubt that age management is becoming inevitable and as such it should at least partially fulfil the hopes placed in it and bring expected benefits that can potentially include (Fryca & Majecka, 2010):

- maximisation of recruitment potential,
- prevention of employees' qualification shortages,
- longer participation of people in the labour market,
- preserving key competencies,
- longer period of return on investment in staff education and training.

For age management to bring positive effects it is necessary to early enough recognise the potential of population at different ages, identify areas and plan activities according to an individual procedure algorithm using appropriately selected tools for supporting age management in a region. It is necessary to preliminary categorise positions in organisations in which older employees can achieve the same results as their younger colleagues or even better ones. However, we cannot assume that age management aimed at increasing older employees' participation on the labour market will always be beneficial to the employer - owner. Thus, it is important that the government and regional authorities take initiative to develop and implement age management programmes, as this may bring benefits to employees and institutions (Cichorzewska et al., 2015).

Achievement of benefits by enterprises and the region as a result of investments in age management requires proper recognition of older employees' strengths, which usually include experience, knowledge and practical skills, reliability, patience, and correlation of these strengths with potentially weak points of this group of employees, such as lower productivity in the case of jobs requiring physical effort, limited adaptability to new technologies and lower ability to assimilate new knowledge. It is also necessary to be aware of the fact that population ageing in a region changes not only the age structure of employees but also that of potential customers, addressees of enterprises' offers. In light of the above, age management in a region should include this area as well, monitor needs of ageing buyers, loyal customers of a company and adapt the offer to the current needs.

Issues connected with employee recruitment and dismissal is a very important area of an age management programme, a key aspect in the short-term perspective and in terms of conducting current operations. At the stage of staff recruitment, in the process of selection, a threat may occur connected with discrimination on grounds of age, seniority or professional experience, which is often unconscious, irrational, and results from stereotypes in thinking. Hasty termination of employment with employees, e.g. for fear of their decreased performance as they get older, may cause decrease in employees' motivation, commitment and morale, and in the long term it may even lead to worsening of the economic-financial situation of enterprises, and consequently - slowdown or deceleration of regional development.

Flexible forms of employment can be a controversial area from the perspective of age management in a region, as older people are afraid of changes and are more in need of stabilisation, if only because of their limited mobility, which in case of some forms of cooperation may be problematic to both the parties. People at younger age are more willing to temporarily accept employment in the form of a contract of mandate. In contrast, older people usually expect a contract of employment and are not interested, even temporarily, in the former

solution. This may represent a serious problem for a region, contributing to an increase in unemployment rate and in the number of residents receiving social assistance. Another area where threats connected with age management in an organisation may appear is planning of tasks at work, creation of new posts, and reorganisation connected with transferring employees to other posts, to other organisational units. If an experienced employee who has worked in a company for a long period of time is put in a situation when new responsibilities and scope of tasks are entrusted to him/her, he/she may feel excluded, which undermines his/her morale, and in the long term - also motivation to work. If such situations occur in an enterprise, they can be interpreted as activities degrading older employees, change attitudes towards them and weaken self-esteem of the whole staff.

Conclusion

Demographic problems connected with population ageing should be perceived and solved at different levels of economic life, as they refer to changes in the functioning of whole national economies, individual regions and single economic entities, including enterprises. The observed trend of systematic increase in the population of people at the post-working age and decrease in the number of young people is a worrying phenomenon and requires development of strategies and systemic solutions that will allow us to prepare for a new situation, different from that in which we have been functioning for years. The forecasts clearly show that increase in employment and work productivity are insufficient to meet demographic challenges. Thus, it is necessary to undertake integrated activities to prepare ageing populations for living and functioning, though, among other things, developing and implementing a new approach to the problem of perceiving people and their possibilities resulting from the process of ageing, theory and practice of age management at the level of national economies and regions..

References

- Cichorzewska M., Mazur B., Niewiadomska A., Sobolewska-Poniedziałek E., Zimnoch K., Ziółkowska B., 2015. Zarządzanie wiekiem. Aspekt regionalny, instytucjonalny oraz organizacyjny, Politechnika Lubelska, Lublin.
- Długookresowa Strategia Rozwoju Kraju - Polska 2030. Trzecia fala nowoczesności, Ministerstwo Administracji i Cyfryzacji Warszawa 2012.
- Fryca J., Majecka B., 2010. Istota zarządzania wiekiem w przedsiębiorstwie, „Newsletter”, nr 8, Gdańsk.
- Kotowska I. E., Józwiak J., 2012. Nowa demografia Europy, Roczniki Kolegium Analiz Ekonomicznych, Zeszyt 28.
- Listwan T., 2002. Zarządzanie kadrami, Wydawnictwo C.H. Beck, Warszawa.
- Marcinkowska M., 2004. Kapitał intelektualny jako źródło przewagi konkurencyjnej [in:] A. Szablewski, R. Tuzimek (red.), Wycena i zarządzanie wartością firmy, Poltext, Warszawa.
- Mendryk I., 2013. Przesłanki wprowadzania polityki zarządzania wiekiem w polskich przedsiębiorstwach, Annales Universitatis Mariae Curie-Skłodowska Lublin-Polonia, Sectio H, Vol. XLVII/2.
- Sitko-Lutek A., 2004. Kulturowe uwarunkowania doskonalenia menedżerów, Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin.

Skowron_Grabowska B., 2013. Procesy innowacyjno-konkurencyjne w strategiach przedsiębiorstw, „Przegląd Organizacji”, nr 6.

Szymańczak J., 2012. Starzenie się polskiego społeczeństwa – wybrane aspekty demograficzne, [in:] Starzenie się społeczeństwa polskiego edited by G. Ciura and Wojciech Zgliczyński, Studia BA, nr 2(30), pp. 9 – 28, www.bas.sejm.gov.pl

Ziółkowska B., 2016. Conditions of Age Management in Enterprises, Zeszyty Naukowe Politechniki Śląskiej. Organizacja i Zarządzanie, nr 1948, z.88.

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