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Formation of innovation human capacity at the enterprises of Kazakhstan Republic

The article proves the necessity of research of human capacity innovation perspective. The authors present the results of analysis of works by foreign and local scholars on the issue of the formation and development of human potential. It was defined theoretical basis of essence of the concept «innovation». The article presents the role of training human resources capacity, the need to manage human capacity through the existing system. Also the authors attempts distinction between two notions as «human capacity» and «employment potential». It was given original examples of training competitive employee in the field of industrial-and-innovative development of the country, as well as outlines the key competencies required for future specialists. Also the authors studied the experience of Western and Eastern countries in the field of human capacity development, and define the tendencies and prospects of development of the investigated phenomenon.

Keywords: modernization, innovation, human capacity, market model, innovative activity, competitiveness of labor market, innovative personnel, lifelong learning, management of human capacity, industrial-and-innovative development.

Qualitative changes in the world economy, which are associated with globalization, uneven development, increasing of competition between countries, regions and firms affect the economy of any country and contribute to the fact that the producers' competitiveness becomes the strength and power of economic development of the country.

Mobilization of investment in the form of innovation, based on the achievements in the fields of microelectronics, computer science, nano — and biotechnology, genetic engineering, bionics, etc., can lead to a new quality of economic development of the Republic of Kazakhstan. No wonder President Nursultan Nazarbayev, in his message to the people of Kazakhstan, Strategy «Kazakhstan – 2050: the new policy of established state», said: «... we need a plan for the next phase of industrialization. Two years later, the first five-year plan of realization of the Program of forced industrialization of innovation is completely implemented. The government should create a detailed plan for the next phase of industrialization. It is required the scenario of promising technological directions development» [1, 11]. Innovative economy is a social reproduction which is based on knowledge, innovation, science and perception generating new ideas, the prerequisites and the willingness to create the system technology, the ability of their implementation in enterprise production systems and in different spheres of human activity. The leading role and priority in this economy belongs to scientific knowledge and innovation. With this in mind, the State program of forced industrial-and-innovative development of Kazakhstan [2; 2–14] assumes a systematic approach in four directions. The first direction — changes in legislation involving the adoption of laws on special economic zones and investment on energy efficiency and conservation, an industrial innovation, as well as simplification of the licensing system for business development. The second direction — government incentives, is the adoption of regional and republican cards of industrialization, application schemes of rational distribution of production facilities, as well as the introduction of more than a hundred measures of state support for business. The third direction is the adoption of thirteen industrial, sixteen and nine functional territorial development programs, as well as strategic plans for all state agencies. As a fourth direction it can be distinguished the development and adoption support programs, including: Business Roadmap, Program for Export Development and Investment, Program of enterprises improvement an Program «Efficiency – 2020».

The implementation of the Program of forced industrial-and-innovative development of Kazakhstan does not only required radical innovation, renewal of fixed capital investment of significant investment in innovation, but also to create their own minimum necessary scientific and human potential for the development of new technological paradigms. High Tech 5 and 6 orders require highly skilled personnel and adaptability. The change of scientific paradigms and technological structures, especially in the conditions of the economy and society based on knowledge, suggests generational shift workers, radical changes in the structure and level of qualification of labor used — researchers, designers, engineers, technologists, managers and workers. Particularly acute problem is in the regions of Kazakhstan. It should be considered not only the quantity but also the quality of human resource capacity, his attitude to radical innovations associated with a

significant risk in the event of the successful formation and development of innovative new market niches, innovative thinking workers.

From this perspective, we can say that in Kazakhstan and its regions has not yet developed human resources, ensuring transition to an innovative economy. Moreover, for the current period of economic development of the country regions there is the problem of an acute shortage of personnel capable of efficiently design, develop, produce and exploit of new technologies. We are talking about the staff at all levels of the process chain:

- Scientists — researchers;
- Designers and developers in the field of research and development;
- Engineers, technicians, skilled workers in high-tech industries;
- Managers, government officials, who organize and manage in the field of scientific research and experimental development and high-tech industries.

Predominant in science and education in the areas of engineering and business training system of scientific, engineering and workers focused only on partial improvement of industrial technology whose time is coming to an end. The excessive commercialization of science and education narrows training opportunities for the innovation economy reduces the scope of bold scientific research. Deteriorating conditions of reproduction, the new challenges of the XXI century require a large-scale, high-starting capital development of post-industrial technological innovation mode of production. As you know, this is impossible without a breakthrough innovation oriented to it, a new generation of active frames, without innovative partnership between government, business, science and education.

In the process of improving the market economy model, priority should be given to the modernization, reconstruction and development of production on a new technical basis, foster innovation to translate the results of research and development to production, creating new processes and restructuring on the scientific and technological basis of all branches of material manufacturing and service sectors. Integration of scientific and technical areas in the processes of economic and social development is the formation of a system of institutions that create powerful incentives to generate a steady stream of effective innovations that can create new markets of high technology products, providing effective demand [1; 4].

Any company in the market of goods and services can be successfully competing only if the use of new technologies and production processes. Such activities have innovative nature and play a key role in his life. Sharpening of competition and reducing of the competitiveness of domestic enterprises necessitate their innovative development. Today the significant role in the development of modern economies plays information, intelligence, knowledge and innovation, which is the carrier of country human capacity. That's why the weighty factors in the formation of the personnel component of innovative economic development is to train innovative personnel — experienced workers, who are capable to the creativity, professional development, introduction of high technologies on the basis of the continuous development of lifelong learning. It is necessary to focus on the assessment and management of innovative potential of its development [2].

The research of innovative human resource capacity issues received considerable attention in the work of scientists and researchers of the Commonwealth of Independent States and foreign countries. It should be noted that for the first time the term «innovation» was introduced by J.Schumpeter, believing that it is the main source of profit. He described innovation as part of the «invention — innovation — diffusion» [3; 149].

Innovation is the result of a process, which is regularly and repeatedly carried out various types of activity. This is, for example, organizational changes, activities in the sphere of supply, market research or formation.

The most comprehensive definition of innovation gives B.Santo in his famous book «Innovation as a means of economic development» in which he presents the notion in the following interpretation «... innovation is a social — technical — economic process, which leads to the creation of the best on the properties of products, technologies, through the use of practical ideas and inventions, and if it focuses on the economic benefits and income, its appearance on the market can bring additional income. Therefore, innovation covers the whole range of activities — from research and development to marketing» [4; 24].

According to E.Lebedeva, innovations affect the orientation of the target organization, violate the existing order interactions of various elements of the organization and initiate the process of organizational change, which is expressed in «disturbance of the balance» [5; 25]. In understanding of S.Pokropivnii: «...innovative processes are initiated by individual branches of science, personnel, and completed in manufacturing, promoting progressive changes the last one. Effective technical, managerial, organizational and economic innovation, the development of innovative human resource capacity of the enterprise lead to significant positive changes in the organization of social processes» [2]. N.Kuzmina presents human resources

management through systems: competence management, training and career management business [6; 47]. Thus, it should be noted that the management of human resources is a laborious and lengthy process that requires management companies using the system approach to human resources management.

Innovative development of the economy is impossible without the formation of high-quality human resources capacity and efficiency of its use. Basis for the development of innovative enterprises is the use of labor, which is a career with a high degree of intellectual, scientific, artistic components and which is able to meet the public needs to be more useful effect.

The concept of «human resources capacity» is close to the meaning of «employment potential» from the position of «resource approach». Nevertheless, despite of the proximity of these two concepts, «employment potential» can't be replaced by the term «human resources capacity». Employment potential is the ability to work, individually or collectively. Thus, the category of «employment potential» can be used in the characterization of the individual. The category of «human resources capacity» can't be applied to a single individual. This is generalized description of the system of formation, distribution and use of frames, which are included as employed in social production and unemployed but able to work in the best of their ability. It was established that human resources capacity of social and economic system presents the aggregate of the staff and its ability to achieve the objectives of social and economic system [7; 9].

The formation of human capacity for innovation sphere provides for the creation of favorable conditions and advanced training of specialists in accordance with the state classifier in occupations that are related to innovative businesses. It should be noted that the formation of innovative human resource capacity is based not only on a high level of professional training, the level of their knowledge, but also on special «innovative abilities». These include, above all, the ability to develop their own innovation in the workplace, as well as to be open to everything new, evaluate and act on the environment, to learn from the experience of other companies, and on the basis of all this, to be able to build your own business and the enterprise development prospects.

Creativity is one of the components of the innovation potential, which is based on the human and material and technical components, as well as scientific and technical and intellectual property. But the most important part is still the presence of professionals and scientists who provide innovative process new knowledge, ideas, inventions, know-how and new technologies. Exactly this component of the innovation potential as human resources should be given the great importance.

Human capacity of innovative enterprise depends not only on the quantitative composition of the staff, which is directly or indirectly connected with the innovation of the enterprise, as well as its qualitative characteristics, which are understood as assets personnel. The notion «actives of staff» understood as a set of collective knowledge of employees of the enterprise (organization), their creativity, problem-solving skills, and leadership skills, entrepreneurial and managerial skills. Also this includes psychometric data and information on the behavior of individuals in different situations.

Industrial and innovative development of the country implies high quality parameters workers. Naturally, the higher the quality of the expert, the more likely is the successful development of their sophisticated technology and technical equipment. Analysis of the labor situation shows that in Kazakhstan at the moment the level of professionalism of workers is not adequate to the modern scientific and technological developments that significantly impedes economic growth, inhibits innovation processes. Now some individual industries, for example, mechanical engineering, metal and others in the process of modernization and renewal of fixed capital are facing an acute lack of highly qualified professionals, which the national labor market still can't be offered. And that's why present foreign oil companies in Kazakhstan, which open new Western-style production with appropriate technologies, due to lack of staff involvement is widely practiced their specialists. It is clear that in sparsely neighbored Kazakhstan with a small domestic market to become one of the 30 most developed countries of the world is only possible due to the rapid human development and a high level of human capital accumulation. Especially because, unlike non-renewable natural resources human capital, being in constant dynamic development is inexhaustible. Actually the presence of rich natural resources can only help, but can't ensure sustainable economic growth. Moreover, they will bring the country to a high degree of dependence on world oil markets, metals, ores, etc. All this testifies that today the innovative activity in the country is partly supported with human capacity of innovative type.

Innovative frames are the part of company personnel and perform a variety of production and business functions, including functions related to the creation of intellectual activity. Initiatively, competence, creativity, independence, activity, innovation and originality in their work, all these are the opportunity to bring in-

novative ideas to the introduction, persistence and a high level of culture are their individual professional characteristics. However part of these features are on low level.

Experts estimate that only two quality parameter of workers assessed as sufficiently developed: seniority and experience, the level of formal professional training (due to the diploma). Such features as the knowledge of foreign languages, economic competence and culture, professional computer literacy and innovation are almost undeveloped.

Consequently, today the process of staffing the innovative economic development associated with two problems: insufficient formation of workers qualitative features which are necessary to create innovation and introducing them to life, the lack of favorable conditions for the effective use of human potential in the innovation process, namely: uselessness of creative initiatives; inefficient system of stimulating innovative activity in enterprises; imperfection state system of intellectual property rights. Thus, it has the great importance of the need for a comprehensive assessment of the innovation potential of enterprises and the management of its development. Professional training increases the sensitivity of people to the new developments, develops business skills and makes it resourceful. Also the basic role in the development of professional knowledge is a business entity whose main job is to train highly qualified specialists who are capable for solving non-standard tasks and make the right management decisions in complex market transformations.

The study of foreign experience of innovative development of Japan, Germany, Britain, France, and South Korea shows that these countries pay special attention to fundamental and applied research and training for the production of high-tech and knowledge intensive products. Just new and high technologies are crucial in the development of the export potential of these countries. It should be noted that Kazakhstan has great potential for the production and export of high-tech and knowledge intensive products. High innovative enterprises in our country can largely determine the country's export potential.

A certain positive role in the development of science-intensive industries can play young workers and professionals who potentially have great creativity compared to older age groups. Therefore, scientific and technical creativity of youth should focus on the development and implementation of domestic new and high technologies. Attempts to use foreign technology development, equipment and machinery in the process of restructuring and modernization of material production at a number of companies in the country are expensive and do not always lead to the desired results. It is obvious that the training of human resources capacity, who is able to engage in innovation activities necessary to study not only domestic but also foreign experience. The basic attention should be given to the establishment of national technology transfer centers and industrial parks, where young scientists can work successfully.

It is advisable to define more clearly the interaction parameters of the contracting parties and to establish mutual responsibility both developers and customers innovative product. Copyright scientific research, especially applied research, are being introduced into production, must be protected from both the state and international organizations, including the World Intellectual Property Organization.

On the ability of employees to act in different situations affect the volume and quality of the knowledge and skills, based on their qualifications, experience, general level of culture, attitude towards partners and clients. Fundamental elements of successful innovation and knowledge presented continuing education. Integration into the world community is not possible without frames, trained to a new level, in line with international standards. It is clear that the implementation of the Concept of Kazakhstan's joining the 30 most developed countries of the world is at the level of the knowledge economy, the main criterion of which is the ability to translate ideas and technologies available in specific products and services, which is typically for leaders. In Kazakhstan, today formed a national model of education, the modernization process tends to substantially conform to international standards. From year to year, funding the education sector increased by 40 % in 2007, if it is compared with the previous year and doubled against 2005. By 2009 the industry funding was increased to 540 billion tenge [8].

The country has activated the process of globalization of higher education. The good example of a strategic approach in terms of entry into the world educational space is the presidential program «Bolashak». So, from 1994 to 2013 it was awarded 9250 scholarships and 5714 graduates. Today on this program in high schools of 33 countries are studying 2796 scholars on the specialties, which are necessary in high-tech production of the domestic economy. Thus, those Kazakhs who trained on this program show the examples of high professional fulfillment. Many of them hold the positions of responsibility in the public service and in the national companies. In the public sector work hang over 20 % of all graduates in the national companies and state-owned companies — 21 % in private firms — 55 %, international organizations and non-governmental organizations — 4 %. Labor activity of scholarship holders work in such industry fields such

as space and IT — technology, engineering, art, health, oil and gas business, education, agriculture, transport and communications, economics and finance, and energy. In 22 companies of joint — stock company «National Welfare Fund «Samruk-Kazyna» work 324 graduates of the program work. Among them, for example, 117 persons in «KazMunaiGas» and 37 in «Kazakhstan Temir Joly». In the central office of the fund — 20 graduates of scholarship holders [9]. Great promise has launched an initiative to support the university business incubators, in which students, undergraduates, doctoral students and young scientists will be able to realize their ideas and turn them into commercial products.

In the condition of globalization education and science are the main components of sustainable economic growth and innovative development of the economy. Increasing development in the country receive scientific, educational and industrial complexes of a new type, using domestic and foreign experience and contribute to the integration of the education system of Kazakhstan into the world educational space. In particular, great interest in cooperation with East Kazakhstan State Technical University shows the representatives of Japan, South Korea and Germany in the field of nanotechnology and new materials. For example, according to the research and development of the university it was organized the serial production of technical ceramics based on compounds of rare metals. New products are export oriented and supplied to Russia, Ukraine, Belarus, Poland, Israel, and India. It was initiated by China the discussion of prospects of cooperation to create a fine technical ceramics. The promising in terms of education integration, science and production seems to be building complex of the National Center for Biotechnology innovation and educational composition of the consortium «Biotechnology» in cooperation with the Center for Biological Research, Eurasian National University, Kazakh Agro technical University, Kazakh State Medical Academy and etc.

As the rule, to the innovation cycle precede research, developmental or design work, the results of which are an innovation in the form of goods or services. Thus, the main criterion for innovative economic development seems to science, the successful development of which depends on the volume of investment. The country as on the development of science itself, and on the implementation of development projects and the development of new technologies means of annual volume in 2012 will be 350 billion, or more than 5 % of the gross domestic product (GDP) [8].

However, despite all this, the reality of today is such that no one locally developing national economy can withstand the global market, if it is not being an integrated part of a particular region. Clearly aware of this, Kazakhstan is actively involved in the work, being one of the initiators of such large integrated structures as the Eurasian Economic Community (EEC), the Conference on Interaction and Confidence Building Measures in Asia (CICA), the Shanghai Cooperation Organization (SCO), and others whose activities actions aimed at the integration of both economic and political issues in the context of regional cooperation.

When Kazakhstan's foreign economic strategy in the context of expansion of multilateral relations with many countries, particularly noteworthy relations with Russia not only in the framework of international and regional organizations, but also at the bilateral level. In modern conditions of dialogue between the two countries is becoming increasingly important, given the similarity of positions on many important issues in both economic and political aspects. In recent years, Kazakh-Russian relations, increased and focus on the implementation of innovative projects. It is, above all, on a series of space projects. In particular, the joint space exploration, the establishment at the cosmodrome Baikonur launch facility for rockets new generation of «Angara», the preparation of a series of satellites «KazSat»; cooperation in the use and development of a global navigation satellite system GLONASS. One of the priorities is cooperation in the field of nanotechnology and etc.

Closest ties are maintained in the areas of education, training highly qualified scientific cooperation. In Kazakhstan there are eight branches of Russian universities, including Moscow State University named after M.V.Lomonosov. 15 thousand young Kazakhstani citizens study in higher educational institutions of Russia.

Formation of human capacity of innovative development necessitates the use of new scientific approaches in their educational institutions. One of such approach is educational management — a field of knowledge and activity, enabling the effective management of the process of preparation of highly qualified personnel in accordance with the real needs of business entities of various forms of ownership. Educational management allows achieving the goals, using motifs of cognitive activity of students, intellectual and professional work faculty members, work in other categories. The present system of management of higher educational institutions, unfortunately, has a very significant drawback — impersonality, when managers are more interested in overall performance, but not specific career prospects of graduates. Traditional measures of universities, such as the plan and receive the output of specialists, the composition of the teaching staff, budget and extra — budgetary funding, material and technical base, are certainly important, but not decisive

in the activities of management education. The study of the real needs and interests, values, life plans, motives and income studies at the university, the nature and content of the educational process, satisfaction level of teaching different disciplines (humanities, general science, technical, special) and several other aspects are extremely important in activities of educational institutions, especially in the context of the formation of a new paradigm of education, based on the principle of «education without borders, through life» [10].

The desire to innovate staff also provided an appropriate level of organization of personnel management, the promotion and incentive schemes. Work motivation to innovative activity is determined by many factors. Among them, one of the most important is the material of interest. In order to make the financial interest to be the motivation for taking part in innovation, the extent of remuneration should be related to the effectiveness of labor and thereby stimulate her.

Consequently, an important factor for innovative development of society is the human factor, its body of knowledge, skills, creativity and activity. Because the risk while financing the modernization and renovation of production is high enough, the scores of the company's innovative potential will enable potential investors to navigate in making decisions regarding the allocation of funds to implement innovative strategies. Innovative potential of the company is an important information resource in the management of its development. One of the key problems in innovative activity is to create the conditions and situations that develop the most creative activity personnel or human resources.

Thus, a prerequisite and an important component of any innovation is the innovative potential, because every business entity needs to know and understand the theoretical framework governing the process of formation, structure, source of growth, methods of assessment and direction of the effective use of this potential. The successful holding of scientific and technical and innovation policy in Kazakhstan is impossible without applying creativity and innovation, which, moreover, is associated with the development of both higher and vocational education.

In our opinion, the main objectives when determining the strategy of innovation management should be ensured through the establishment of necessary and sufficient conditions for the preservation of material human resource capacity of the innovation sphere, to prevent emigration of highly qualified scientists. Identifying needs and creating the conditions under which people can meet them at the same time fulfill its task will motivate efficiency innovation.

To implementation of public tasks of innovative development of Kazakhstan's economy accumulation innovative capacity is important and necessary. Innovative frames are a source of competitive advantages of the country, which are capable of their intellectual work to ensure economic growth of the entire economic complex.

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А.Н.Рамашова

Қазақстан Республикасы кәсіпорындарында инновациялық кадрлық әлеуеттің қалыптасуы

Мақалада кадрлық әлеует инновациялық зерттеудің қажеттілігі анықталды. Кадрлық әлеуетті қалыптастыру мен дамыту мәселесіне қатысты авторлар шетелдік және отандық ғалымдардың еңбегіне сараптама жүргізді. Теориялық тұрғыдан «инновация» ұғымына түсініктеме берілді. Қалыптасқан жүйе арқылы кадрлық әлеует басқарудың рөлі маңызды екендігі көрсетілді. Сонымен қатар «кадрлық әлеует» пен «еңбек әлеуеті» түсініктерінің айырмашылығы айқындалды. Мемлекеттің индустриалды-инновациялық дамуында бәсекеге қабілетті маман қандай қасиеттерге ие болу қажеттілігі көрсетілді. Автор Батыс Еуропа және Шығыс елдері кадрлық әлеуетінің тәжірибесінің қалыптасуын ескере отырып, зерттелген мәселенің болашағы мен даму үрдісін анықтады.

А.Н.Рамашова

Формирование инновационного кадрового потенциала на предприятиях Республики Казахстан

В статье обоснована необходимость исследования инновационной проблематики кадрового потенциала. Авторами представлены результаты анализа трудов зарубежных и отечественных ученых по проблеме формирования и развития кадрового потенциала. Определены теоретические основы сущности понятия «инновация». Обозначены роль подготовки кадрового потенциала, необходимость управления кадровым потенциалом через существующие системы. В статье сделана попытка разграничения понятий «кадровый потенциал» и «трудовой потенциал». Приведены оригинальные примеры подготовки конкурентоспособного работника в сфере индустриально-инновационного развития страны, а также обозначены основные компетенции, необходимые для будущего специалиста. Изучен опыт западноевропейских и восточных стран в области формирования и развития кадрового потенциала, представлены тенденции и перспективы развития исследуемого феномена.

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