

Rosneft oil company and Siberian federal university partnership

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The article discusses a unique experience of a major corporation and a federal university cooperation in personnel training for oil and gas industry.

Key words: *private and state partnership in education, oil and gas, professional competence.*



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Today there is a problem of collaboration between the labor market and higher education. It should be recognized that modern universities are often distanced from industry and do not form labor market and employers are poorly involved in the development and implementation of educational programs for training specialists in the field of engineering and technology. Figure 1 shows the lack of feedback and tools for its realization between the labor market and higher education. However, described feedback mechanism makes us consider the following functional roles of employers: development of professional standards, definition of requirements to graduate competence, participation in the development of new concepts of state educational standards, involvement in independent higher education quality assessment, universities ranking. To implement such feedback mechanism on a larger scale «Concept of strategic partnership of the Siberian Federal University with technology clusters» was developed in Siberian Federal University. The main goal of the concept is

to identify ways and instruments of private and state partnership of business, regional authorities and the university in the formation of a new profile of the regional economic system. The following issues are concerned in the concept: factors that predetermine need of strategic partnership between SFU and technology clusters, university positioning, goals and logic for collaboration with strategic partners, instruments for strategic partnerships development, targets and system results of partnership. Obviously, the concept realization is impossible without additional financial resources and political will business leaders and regional administrations.

Siberian Federal University is actively cooperating with many large industrial enterprises. First of all, fruitful cooperation with developing companies, which has recently started working on the territory of Eastern Siberia should be noted. One of such companies is OJSC NK Rosneft, actively exploring new major oil and gas province within Krasnoyarsk, Irkutsk and Yakutia regions. Development of oil reserves in Eastern Siberia could have a very

significant impact on the economy and education system in the regions where mining, processing and transportation of hydrocarbon resources takes place. So, with coming of OJSC «Rosneft» in the Krasnoyarsk region and putting into operation Vankor oil and gas field (with average four thousand tons of oil daily capacity) dramatically accelerated the development of training and research for the oil and gas branch. The need to provide the oil company Rosneft with advanced engineering staff that can develop innovations and work in difficult climatic and geographical conditions of Siberia has led to the decision of developing a system of continuous education, which includes a set of preliminary training, targeted practical training of students, additional education and retraining in Siberian Federal University. The first step was the organization of professionally oriented «Rosneft-class» in the public schools of Krasnoyarsk, Igarka, Turukhansk, Boguchany, Achinsk. Students of the 10th grade are recruited on a competitive basis. The educational program is designed and implemented in two- year period. SFU professors and teachers are actively involved in the educational process. They not only teach students basic subjects

(mathematics, chemistry, physics), but also are engaged in broad vocational guidance and educational activities, support the research work of students. According to statistics, more than 60% of graduates of «Rosneft-class» enter universities choosing oil and gas departments.

Along with this the oil company Rosneft has initiated the development of private and state partnership for constructing new training and laboratory building of the Oil and Gas Institute at Siberian Federal University. The project on designing, construction and commissioning of the Institute's building was implemented in accordance with an agreement «on cooperation in education and science» signed on December 29, 2008 between the Ministry of Education and Science, Government of Krasnoyarsk Krai, OJSC «NK» Rosneft «and Siberian Federal University ' to finance the project. The oil company Rosneft allocated 890 million rubles, the Government of the Krasnoyarsk Krai - 125 million rubles, the Ministry of Education and Science through the Development Program of SFU - 740 million rubles. The project of private and state partnership was successfully completed, and on September 1, 2010 in the presence of Prime Minister

Fig. 1.

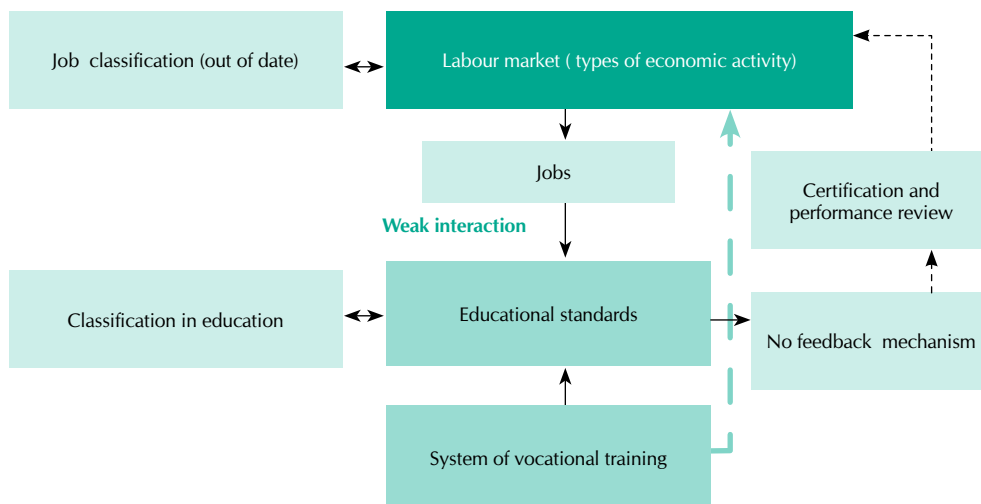


Fig. 2.



Vladimir Putin grand opening of the new teaching and laboratory building took place (Fig. 2).

Start-up of new building equipped with all required facilities and involvement of leading experts of the company in the teaching process allowed to introduce educational programs in all areas and specialties of oil and gas industry. The project was not finished with that building but was further developed. Technology of strategic partnership development between the university and the company is described in the form of a diagram in Fig 3. Rosneft and Siberian Federal University assert the Institute of Oil and Gas as a modern scientific and educational complex for practically oriented training of professionals at all levels for oil and gas industry in Eastern Siberia and the Far East. This positioning is based on the fact that the company has developed and submitted a set of competencies, which Institute graduates should have. The list includes the requirements for graduate readiness to decision-making and management processes in difficult climatic and geographical conditions, to applying modern tools and information and communication technologies

to improve the competitiveness of enterprises, etc. Generally the set of competencies can be concerned as a unique experience in defining industry requirements including foreign companies to future professionals [1]. This approach required by from the institution faculty hard work on the modernization of basic educational programs, curriculum and test materials. In line with such modifications the educational process was also adjusted: the number of hands-on labs with the latest information technology and modern tools was increased. For training oil and gas industry professionals teaching and research laboratories and classrooms for special disciplines were equipped with modern and unique instruments and equipment, including: oil and gas geology, geophysics and field wells, core analysis and reservoir fluids, drilling equipment and tools, oil and gas refining technology, research, laboratory test on oil and petroleum products, oil and gas transport, automation and control equipment, fire protection oil production facilities, oil and gas storage and transportation. All purchased equipment and devices had been ex-

amined and previously approved by the experts of the oil company Rosneft.

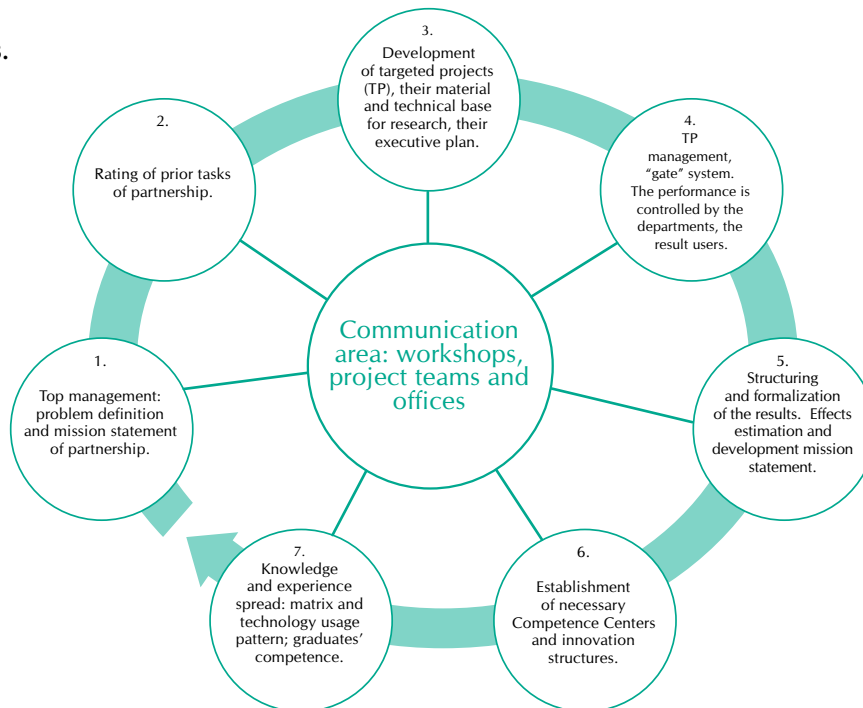
Further steps in the development of practically oriented training entailed structural changes in the Institute of Oil and Gas. Together with companies different industry-based departments were established: on the base of JSC Achinsk refinery - Department of Chemical technology of hydrocarbons, on the base of JSK Eniseygeofizika - Department of Geophysical methods, on the base of JSC Vankorneft and KrasnoyarskNIPineft - Department of Development and operation of oil and gas fields, jointly with the Institute of Catalysis SB RAS and the Institute of Chemistry and Chemical Engineering SB RAS - Scientific and educational center for research and development in the field of catalysis and petrochemistry was founded. These structural changes were aimed at creating conditions to bring research results to industrial designs and commercial products, testing and implementation of technical and technological innovations for the benefit of oil companies.

For the purpose of making a system of practically oriented training of professionals ready for research

and innovation and in order to create multidisciplinary research teams the president of JSC NK Rosneft Mr. E. Yu. Hodaynatov approved a joint plan of action and effective cooperation to implement the Company program of innovative development and signed an order to establish on the base of the SFU Institute of Oil and Gas Rosneft Innovation Center and Center of excellence in the field of petroleum refining. Currently, a long-term perspective target order was formed by the company to conduct research and development activities at the university.

Subsidiaries of the oil company Rosneft provide motivated and successful students the opportunity to undergo practical training from Novorossiysk to the Far East. The company pays great attention to promote successful learning and research activities of students and young teachers. In view of this there are annual corporate scholarships and grants, funding programs for academic mobility of talented students from foreign universities. In order to attract professors from leading Russian and foreign universities to work at SFU Rosneft has been earmarked donation to the university to purchase a comfort-

Fig. 3.



able dwelling (6 apartments). Rosneft has been also investing funds in the development of the Institute of Oil and Gas through cooperation in the field of retraining and skills development, training courses for trade qualifications at university training ground as well. The above listed examples of large-scale and systematic technical and financial support of the University by one company are rarely met not only in Russia but also in Europe [2].

Partnership with Rosneft has allowed the university to join two Russian technology platforms «Technology of production and use of hydrocarbons» and «Deep processing of hydrocarbon resources», as well as regional technology platform «Technology of extracting and processing of hydrocarbon resources». The main purpose of these technology platforms is providing the transition from resource-based economy to an innovative development of oil and gas industry. The company has initiated the development of cooperation with leading international oil and gas companies and universities to invite visiting professors, transfer of educational technologies, to be aware of the latest technologies in the oil and gas sector, the academic exchange of students and teachers. Agreements on cooperation and (or) memorandum of understanding were signed with such companies as Schlumberger (USA) and Heinemann Oil (Austria), Weatherford (USA), GexCon (Norway), Vinci Technologies (USA), French Institute of Petroleum, National Polytechnic Institute of Toulouse (France), University of Texas at Austin (USA), Agriculture and

technology university of Texas (USA, Houston), etc.

Today with the support of Rosneft a non-profit partnership «National Institute of Oil and Gas» is established in Russia by analogy with the French Institute of Petroleum. The founders are presented by 16 universities (including SFU), which train specialists for the oil and gas industry, 4 Institutes of Russian Academy of Science and LLC «All-Russia Research and Design Institute of Oil Refining and Petrochemical Industry». The goal of the Institute is the coordination of educational programs in Russia, research, development of new technologies, consolidation of information and human resources for the benefit of oil and gas industry. The interaction between Rosneft and Siberian Federal University has many different aspects - from the cooperation in educating the next generation of professionals in the oil and gas field to the partnership in basic and applied research aimed at solving the problems of tomorrow. Thus, the company is considering the University not only as a worthy partner for staff training, but also as an important source of new knowledge and innovative thinking. Positive experience of private and state partnership between the oil company Rosneft, the Government of the Krasnoyarsk Krai and Siberian Federal University, high-quality and timely implementation of the project represents a good practice that would be useful for further collaboration of the university with other companies as well as for all Higher Education in Russia.

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