



IGIP Co-Plenary - Public-Private Partnership in Professional Education: Experience of the Research University

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Was born in USSR. Graduated from Kazan State University in 1983. Doctor of law. Honored Worker of Higher Professional Education. From 1986 work in Kazan State Technological University - now it's became Kazan national research technological university. Specialist in Educational Law, a participant in lot of government commissions for perfection of Educational legislation. Modern interests are comparative research in the sphere of teachers' and students' rights. During many years prof. Barabanova has been researches different aspects of engineering education too, especially questions of additional professional training. Active member of IGIP, took part in annual conferences. Have a daughter - MA in Digital Film and Television Production (York University, GB). Hobby - travel, cats and books.

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Public-Private Partnership in Professional Education: Experience of a Russian Research University

In the context of the modernization and formation of an innovation-driven economy in Russia, many social and economic problems have come to light, especially in the labor market. Nonconformance of the labor force, the educational level of professionals and quickly evolving business requirements represent 3 aspects that have hindered this evolution. There has been a long-felt need to modernize the professional education system, particularly because Russia, as well as many other countries, lacks skilled engineers. One potential solution to help solve this problem is to develop new approaches to engineering education.

The Socio-Economic Development Plan of the Russian Federation which enunciates the goals of the educational system to the year 2020 includes establishing world-class research and education centers that integrate advanced research and educational programs to staff and develop national innovation projects. Other important goal includes establishing a national qualification structure designed to meet the potential demands for innovation-driven advanced economic growth and occupational mobility, reforming national educational standards and modernizing educational programs, while taking into account required qualifications. Common features of the rapidly changing university environment require higher learning institutions to show business initiative.

Successful achievement of the goals is possible provided government and businesses join forces in Public-Private Partnerships (PPPs).

In Guidelines for Successful Public-Private Partnerships, the Green Paper on Public-Private Partnerships and Community Law on Public Contracts and Concessions, the term PPPs refers to the cooperation between public authorities and the business world whose aim is to ensure the funding, construction, renovation, and management or maintenance of infrastructure or the provision of a service. Typical features of PPPs include the relatively long duration of the relationship, the complete or partial funding from the private sector, the defining role of the private partner and the sharing of risks between the public and private partners. PPPs in education occur as the mutually beneficial cooperation of public authorities, educational institutions and business entities in partnership to implement state educational, social and economic policies, based on legislative acts and special agreements in government funded sectors.

PPP projects are necessary to create and develop universities that are more closely linked among themselves and with research institutions and private enterprise. This cooperation between different actors permit universities to increase both the efficiency and quality of the educational process, to improve such areas of activity as applied research, and to make the most effective use of brainpower, material, information and human resources in the areas of education, science and business, with the goals of training specialists, carrying out research and designing innovative projects.

Basics laws and regulations for PPPs in Russia include:

1. Participation Rules for Employers' Associations in the Development and Realization of the State Policy for Professional Education; approved by the Government of the Russian Federation on 12/24/2008, No. 1015.
2. Rules for the Development and Approval of the Federal State Educational Standards; approved by the Government of the Russian Federation on 02/24/2009, No.142.
3. Regulations for Qualification Assessment and Certification of Professional Education Institution Graduates and Other Categories of Citizens Professionally Trained in Different

Formats; approved by The Ministry of Education and Science of the Russian Federation and President of the Russian Union of Industrialists and Entrepreneurs on 07/31/2009.

4. Regulation for Formation of the Quality Evaluation System of Professional Education; approved by The Ministry of Education and Science of the Russian Federation and President of the Russian Union of Industrialists and Entrepreneurs on 07/31/2009.

A traditional assessment of economic-law can be summarized by stating that current law does not promote the development of the PPPs in education. However, the activity of national research universities, including the Kazan National Research Technological University (KNRTU), aims to promote the development of PPPs in addition professional education, which is based on the existing legislative framework and can be considered successful in promoting relationships between education and business. There are many examples of this new model of cooperation among Russian innovative universities.

The activities of KNRTU are oriented towards the innovative development and establishment of new PPP mechanisms. The additional professional education system of the University is open to the experimentation with and integration of processes, testing the different forms of relevant interaction among all of the interested parties involved in training and advancing professional personnel to meet the highest demands of the modern labor market.

In 2008, KNRTU developed the target program called ‘Additional Education as a Factor of the Innovation-Driven Development of the University’. The aim of this program is to boost the university’s rating, its competitiveness and attractiveness on the market of the educational services, and to promote the university to the market of the additional education services. The program should secure the surpassing growth of the extra-budgetary funds that come from the university’s work in the sector of the additional professional education (APE), in comparison with the funds coming from the basic educational programs of the university.

The main objectives of the program are:

- to develop a regulatory system at KNRTU in the field of Additional Professional Education (APE) according to new targets of the institution as a research university;
- to establish a university system for the approval, maintenance and control of all additional education programs;
- to create an APE system comprised of all university departments, faculties, institutes and branches to develop and implement an intramural rating system to evaluate the APE activities of departments, faculties, institutes and branches;
- to coordinate institute, branch, faculty and department activities regarding the development and implementation of additional education programs, including military education, double diploma program, student additional education, double competence programs, and the training of executive managers and specialists of industrial enterprises;
- to improve the training of scientific and pedagogical workers (SPW) and the educational and methodical activities of departments, faculties, institutes and branches providing APE programs;
- to increase the number of the trainees who are enrolled in professional development, occupational retraining, student additional education, and second higher professional education programs;

- to establish educational centers to meet the needs of the large Russian petrochemical enterprises;
- to create and develop a bachelor degree training system which includes occupational standards to satisfy the professional requirements of employers;
- to develop international cooperation programs and partnerships within Russia, as well as with foreign countries;
- to increase the number of educational credits and investments to the APE system.

The program determines targets and the main objectives in APE, including executives in charge, benchmarks and fund sources. However, the basic value of the program is the enhancement of higher education and the development of new instruments for mutually advantageous cooperation with employers.

KNRTU, as the national research university, permanently increases the creative potential of the academic teaching staff, while creating an innovative scientific and academic environment. Traditionally, the university keeps in touch with industry providing partners with high level training and retraining of their executive managers and specialists. In turn, businesses contribute to the university funds according to long-term cooperation agreements in additional professional education.

Student project groups study special programs at KNRTU in cooperation with large enterprises such as OAO «Sibur», the newest fertilizer plant, OAO, «Ammoniy» in Mendeleevsk and OAO «Kazan Synthetic Rubber Plant». Graduates of the project groups are ready to operate these enterprises.

KNRTU concluded agreements with corporations as OAO «Gazprom», OAO «Sibur Holding», OAO «Tatneft», OOO «Management Company Tatneft-Neftehim», OAO «Nizhnekamskneftekhim», OAO «Kazanorgsintez», OAO «Nizhnekamskshina», OAO TANECO, OAO «Mendeleevsazot», OAO «Kazankompressormach», and OAO «Tatneftekhiminvest-holding», among others.

Since 2011, KNRTU is playing a key part in the programs of innovation-based development of the state corporations Rostech, Roatom, and of such major companies as Rosneft, Gazprom, Gazprom Neft, KAMAZ. KNRTU takes part in work of seven technological platforms created in Russia; it is the host of the platform 'Textile and Consumer Goods Industry'.

Kazan National Research Technological University (KNRTU) is one of the leading universities in the oil, gas and chemical educational cluster and in the educational cluster of the region's consumer goods industry. The university integrates elementary, secondary, higher, and additional professional education and innovative practices of the Tatarstan Republic in the aforementioned sectors. The intergovernmental agreements on advanced vocational training of staff of the future petrochemical complex between the Tatarstan Republic and the Republic of Kazakhstan, currently under construction in Altyrau, offers entirely new opportunities for the university and the additional professional education system.

Since 2005, the JS Company Gazprom holds its annual package program of advanced vocational training in Kazan, Nizhny Novgorod, Moscow, and Germany. One of the modules in this program, Vacuum and Compressor Mechanic of Physical Mounts, is studied at the Institute of Additional Professional Education (IAPE) at the KNRTU. As a rule, the program is offered by

one of the top managers of the Corporate University.

IAPE KNRTU was included in the 2013 schedule of advanced vocational training and professional retraining for the JS Gazprom top managers and specialists. The Schedule was approved by the Deputy Chairman of Board of JS Gazprom, Sergey Homyakov, and includes one group that will study computer-aided tools for processes control, and proposals for twenty four study programs for up to five students.

As a result of the corporate competition, IAPE KNRTU has earned the right to teach seventy five specialists of the JS Gazprom in a professional retraining entitled “Psychological and Acmeological Training Support for Managerial Human Resources”, consisting of 504 academic hours and 14 credits).

Within the framework of the Presidential Program of Advanced Vocational Training of Engineers in 2012-2014, together with concerned businesses (i.e. the program participants that co-finance it), the university is developing training programs for this generation’s engineers. After the theoretical and the practical parts of the course conclude, the listeners, depending on their performance, become interns at Russian or foreign enterprises.

The current transitional state of the Russian economy, due to Russia’s accession to the Marrakesh Agreement and to the WTO, is becoming a new factor that provides diversification of the public-private partnership mechanisms. The university forms the development programs and sets its priorities, taking into account the fact that the modern strategy of development for the Russian economy lies in its integration into the world economy. Russia’s accession to the WTO means the beginning of a new stage in the development of the domestic economy, i.e. the stage of development of an open (global) market economy subject to the general WTO rules and guidelines. ‘The time of the national markets is over. The comfortable niches will cease to exist. There is only one market now - the global market’, stated the President of Russia, V. Putin in one of his campaign articles. The future of the region’s economy and of Russia, in general, depends on how fast and how well we learn the rules and the guidelines of international trade, how well we use practical tools protect the national market of goods and services, intellectual rights and investments, and how well we optimize Russian export potential.

In consequence of the systematic cooperation with manufacturing enterprises, IAPE KNRTU is known for its ambition to increase the competitive ability of its students by:

- its constantly updating and advancing vocational training programs and programs of additional education for its students;
- its innovative approach to the organization and the contents of the programs of the additional education (the module courses and the introduction of the credit system) that allow students to learn the lengthy programs of professional retraining through the shorter modules
- its constant commitment to intensify the cooperation between the educational sector and the productive sector.

In accordance with current business demands, the university follows the success of other regions and educational institutions in expanding its additional professional education options as it studies their experiences in promoting innovation. Popular research subjects at the KNRTU include:

- employing educational technologies in additional education;

- training the academic and teaching staff for the additional professional education system;
- dealing with problems and gaps in statutory regulations regarding additional education;
- studying issues of integration of standard and additional education programs;
- defining the conceptual foundations of the public-private partnership.

The programs of the KNRTU have contributed to defining a new approach to the management of the lifelong education. One important reason is the need for the university to fulfill a number of criteria regarding its work, including criteria regarding the number of the academicians and teaching staff who have participated in internships at other leading universities or research and educational centers.

The university's status as a research institution has determined its need to review a number of regulations concerning the organization of such work, as well as the need to create new forms and vectors for lifelong education, and the need to solve problems such as candidate selection for internships and the search for organizations to participate as partners, both in The Russian Federation and abroad. The university has developed innovative forms for both group and individual advanced vocational training and internships, and prepared a number of documents and regulations that are necessary to organize and structure internships or advanced vocational training.

The KNRTU development strategy is based on its awareness of the fact that the system of the additional professional education is in very high demand within the critical concept of "Education throughout life". This strategy is the formula for the successful professional career for the young specialists, as well as for more experienced workers, who, together, must meet the challenges of innovative development in the public-private partnership in the Tatarstan Republic and in the Russian Federation.

The partnership pattern between private and governmental sectors is implemented successfully in some professional organizations and societies. The American Society of Engineering Education, ASEE, founded in 1883, is a good example of such interaction. In Europe, the International Society for Engineering Education (IGIP) aims to improve engineering education taking into account employer requirements and the continued development of professional training of international engineering educators. Having been founded in 1972 in Klagenfurt (Austria), it consolidates engineering researcher and educators of many countries worldwide and is one of the most authoritative international organizations in the field of higher engineering education. The Kazan National Research Technological University (KNRTU) is an active member of IGIP. Because of its cooperation with IGIP, KNRTU was one of the first institutions in Russia to establish a center for re-training and advanced training of engineering educators, which is accredited by IGIP as a training center for "International Engineering Educators" and conforms to IGIP's curriculum for engineering pedagogy. About 70 leading professors, including some university presidents, rectors and chancellors have completed this course. Professor Vasiliy G.Ivanov, the first Academic Vice-Rector of KNRTU, is a member of the IGIP Russian Monitoring Committee.

For many years now, the KNRTU team has been an active participant in IGIP events, including international annual conferences on engineering education, where delegates from all over the world discuss the most relevant and urgent issues related to improving the quality of engineering education and practicing professions who participate on a global level.

The KNRTU presently works alongside IGIP in:

- promoting engineering education;
- carrying out the joint events such as conferences, scientific schools and symposia;
- conducting research on engineering education, supporting introduction of innovations in the engineering training process;
- organizing the process of training engineer-educators in accordance to the IGIP's curriculum for engineering pedagogy;
- actively promoting IGIP ideas on all levels;
- cooperating internationally with other universities by participating in joint international projects and supporting academic mobility.

The meeting of the IGIP International Monitoring Committee, Executive Committee and the general assembly at the 42nd IGIP International Conference on Engineering Pedagogy, which will take place in Kazan at the Kazan National Research Technological University in September 2013 represents one of the most significant events in engineering education. Recognizing this, the State government bodies of the Tatarstan Republic and Russian Federation and will play active roles in all of the symposia of the event.

The leading enterprises of the Tatarstan Republic, representatives of small and medium-sized business will be given a unique possibility to demonstrate their achievements and samples of their products, establish business ties with international scientific, educational and industrial elite, and share their experiences in strengthening interaction with the engineering education system, all in an effort to better define and develop professional standards and the professional qualifications system.

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1. Guidelines for Successful Public-Private Partnerships // European Commission Directorate-General Regional Policy. March 2003.
 2. Green Paper on Public-Private Partnerships and Community Law on Public Contracts and Concessions. Commission of the European Communities. Brussels, 30.04.04
 3. V.G. Ivanov, S.V. Barabanova. The engineer in the system of additional training// Higher education in Russia. 2008. № 6. Pp. 40-43; G.S.Dyakonov, V.G. Ivanov, V.V. Kondratiev. Russian scientific-educational centre in the sphere of chemical technology // Higher education in Russia. 2012. № 11. Pp. 48-58; V. Ivanov, S. Barabanova. Characteristics of training and raising qualification of modern engineering university faculty: Experience of a Russian national research university//The ICL/IGIP international Conference 2012 on Engineering Pedagogy. Austria, 2012. Contribution 259; P. Sanger, V. Ivanov, S. Barabanova, J. Ziatdinova. Challenges of creating a new engineering model in Russia// 119 ASEE Annual conference & exposition. San-Antonio, USA. June 10-13, 2012. Conference proceeding DVD. AC 2012-4749.
 4. V.G. Ivanov, E.N. Parfiryeva, S.V. Barabanova. Russia in WTO: Possible perils for the system of education. Higher Education in Russia, 2012. #10. Pp. 39-47.