

Russian Companies and Higher Education

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Abstract

During the period of transition from Soviet to market economy, Russian companies became profoundly disinterested in cooperation with universities. This trend is reversing progressively under the influence of two factors: firstly, a lack of highly skilled personnel in the country and, secondly, the higher education reforms initiated by the Government since the mid-2000s.

Historical Background

In Soviet times, the relationship between universities and companies was relatively close. It was organized essentially around three axes: work placements during studies, company sponsorship for some students with a guarantee of their recruitment (*tseleviki*) and imposed appointments of all graduates for an obligatory three-year period. As part of the general plan, the number of specialists trained in each field was determined “from below” by industries in the different economic sectors. Several universities were under the direct control of their respective branch ministries.

Universities were primarily places of learning, while fundamental research was mainly carried out in the system of the USSR Academy of Sciences, applied research and development (R&D) was undertaken in special institutes subordinated to the technical ministries. Thus, education, R&D and production were compartmentalized. However, there was one notable exception to this rule: the “common chairs” (*bazovye kafedry*). There was close cooperation between some engineering schools with an Academy of Sciences research institute, an industrial company or an engineering and design office, which developed prototypes mainly for the military-industrial complex. This form of cooperation emerged in the aftermath of the Second World War due to shortages of skilled labor and the development of new economic sectors, such as nuclear and space. “Common chairs” existed, for example, at the Moscow Institute of Physics and Technology and at the Bauman Institute. The best graduates could pursue a research career in partner institutes and laboratories.

After the demise of the USSR, Russian companies lost interest in cooperating with universities. Employers criticized universities for their disconnection from economic reality, outdated teaching methods and low quality of graduates. According to the Levada Center’s polls from successive years during this period, the level of training of young graduates was frequently judged to be insufficient by employers. Disappointed by the traditional higher-education system, the biggest public and private companies (Severstal, Lukoil, RusHydro, Gazprom, RusAl) preferred to invest in internal training systems (“corporate universities”).

However, since the mid-2000s the centrifugal trend is gradually reversing under the influence of two main factors: the lack of qualified labor and the reforms initiated by the Government in the field of higher education. This obvious trend, however, has limits.

Lack of Qualified Labor

All polls and studies show that Russian firms consider the lack of qualified labor to be one of the most important risks for business, along with bureaucratic complexity and corruption. Competition between companies for labor is increasing due to demographic pressures: according to the Federal State Statistics Service (Rosstat), the working population fell by more than 2.7 million people between 2008 and 2012. As for the younger generation, the number of those aged between 14 and 19 years, for example, decreased during the same period from 10.5 million to 7.6 million.

This situation is a challenge for all national sectors: the military, universities and businesses. It explains growing competition between companies to “capture” young candidates as soon as possible (sometimes, during their second or third year of study). Cooperation with universities in undergraduate training (with a possible recruitment later) is becoming more common. For example, about thirty students from the Technical University of Lipetsk are granted a scholarship every year by Vladimir Lisin, the general director of the steel company NLMK: winners have priority in company recruitment programs and NLMK currently employs about 120 alumni.

Until recently, it was rare to see Russian employers participate directly in the design of university programs and creation of new curricula. Today, there has undoubtedly been progress in this area, even if the path is not easy: university rectors see this trend as the “insidious privatization” of universities. In 2009, the Moscow State University of Steel and Alloys (MISiS) and the Unified Metallurgical Company (OMK) created a two-year Master of “Cooperative Learning” program for engineers. Students spend half of their time at the company and each student has two tutors, a teacher from MISiS and a representative of OMK. The company can influence the

content of the program according to its needs and also has the ability to check the quality of training directly.

Trilateral contracts between the university, company and student, as well as “common chairs” are making a triumphant return. The latter now cover not only the traditional industrial sectors, but also high-tech companies. Thus, Yandex has opened two “common chairs,” at Bauman University and the Higher School of Economics. Another example is that, since 2011, the CEO of the state corporation Rosnano, Anatoly Chubais, has been in charge of a newly created chair of Technological Entrepreneurship at the Moscow Institute of Physics and Technology: its aim is to train young researchers in applied mathematics and physics, and teach them to develop and commercialize the results of their research.

Large public companies, such as Gazprom, Rosneft and Rosatom are becoming more active in cooperation with universities in their specialist areas. For example, Gazprom finances the Gubkin University of Oil and Gas and other universities in the hydrocarbon sector. This involves grants and scholarships bearing the company name for students, PhD candidates or junior faculty members; equipment for conference rooms, laboratories and libraries etc. Universities are very fond of these “strategic partnerships” with big sponsors that both improve their financial situation and increase their prestige. Some of these companies are calling for the return of imposed appointments of graduates as was the case in Soviet times. Such a proposal was made by some deputies of the State Duma, but this idea was rejected in August 2013 by Vladimir Putin as unrealistic in a market economy.

The case of the cooperation between the state corporation for the nuclear sector, Rosatom, and the National Nuclear University (MIFI) is special. In exchange for financial support from Rosatom, MIFI and its branches in the regions are becoming Rosatom’s major, even exclusive suppliers of manpower, displacing other technical institutions. *De facto*, Rosatom has assimilated the University within its structure, but this kind of “integrated cooperation” remains unique.

Other initiatives are less directly “interested” and come close to corporate patronage. Through their private foundations, some Russian “oligarchs,” such as Vladimir Potanin (Norilsk Nickel) and Oleg Deripaska (RusAl), are actively involved in charitable activities designed to support higher education. These are not linked to the business needs of the companies in question, but improve higher education in general and create better conditions for students. In this context, it should be noted that Russian companies do not benefit from tax exemptions when they fund studies.

Other notable changes can be observed. For example, professionals are now more often invited to lecture

at universities or to sit on exam boards. Representatives of companies are now part of the supervisory boards at universities that have autonomous status (for example, all federal universities), although the role of these councils still remains limited.

Foreign companies in Russia are fully aware of the issues and contribute to original projects (such as the proposal to create a university for the automotive sector in the free economic zone of Kaluga).

Pressure from Public Authorities and Sector Reforms

Since 2004–2005, the Russian government has encouraged the integration of education, R&D and innovation. In line with global trends, a new model of higher education is advocated, which is centered on developing a full cycle of innovation in universities, from basic research to marketing of the final innovative products. The model often cited by Russian authorities is Stanford University and Silicon Valley. During his electoral campaign, in January 2012, Vladimir Putin declared that “restoring the innovative nature of the economy should begin with universities—which should be seen as both centers for fundamental science and resources for innovative people.” In addition to the economic benefits at the national level, this would ensure Russia a better position in international university rankings and therefore would increase its part on the global market for educational services and improve its international image.

Between 2006 and 2011, about forty universities were selected on a competitive basis with the explicit aim of establishing this model. These “national research universities” and “federal universities” have received substantial public funding and have ambitious development programs, which include many quantitative indicators for R&D and innovation.

For their part, Russian companies are also under pressure: the term “obligation to innovate” is even used. Fifty major companies (Gazprom, Rosneft, Russian Railways, Aeroflot) had to adopt innovative development programs up to 2015, including mandatory cooperation with universities in various forms: joint research, shared laboratories, etc. Directors for innovation were appointed in these companies as well as in universities.

In 2010, in order to promote integration between education and research, the government launched a tender (“Government Decree 218”) that proposes to co-finance 50% of R&D, if the company collaborates with a university. This approach is unprecedented in Russia: the Russian State assumes a part of the risk, simultaneously stimulating both demand for R&D and its supply. A total of 158 projects are currently being funded, representing more than 28 billion rubles (700 million

euros) of the federal budget.

Financial reasons explain the government's promotion of university-industry cooperation. According to the OECD, in Russia only 8% of higher education funding comes from companies, with the majority being provided by the federal budget (64.6%) and households (27.4%). The contribution of the State is close to the average of OECD countries (70%), but the situation is different in the United States (38.1% from the State, 45.3% from households and 16.6% from companies), whose model inspires the Russian government. Private capital is expected to play an increased role, thereby reducing the burden on the public budget. While they are undoubtedly generous, all recent public tenders for universities require a contribution (of 20 to 50%) from their own funds (coming from companies, regional authorities, the sale of the products of university R&D, etc.). Pushed in this direction, many regional universities now conduct annual surveys of the expectations and the economic needs of regional businesses. The most prestigious have established endowments and alumni networks.

Limits of cooperation

The financial crisis of 2008–2009 led many companies to scale down their plans for cooperation with universities: according to a recent survey by the Levada Center, the proportion of companies that cooperate with universities fell between 2008 and 2012 from 44% to 33%. In the wake of the crisis, the situation is gradually improving and returning to the 2008 level, but the growth in cooperation is largely due to the “passive” forms that require less financial investment by the companies (participation of companies in “open days”, “job fairs”, etc).

If cooperation in initial training seems to be developing naturally and corresponds to the needs of both parties, R&D cooperation encounters more problems, despite pressure from the government. Due to the legacy of the Soviet era (separation between research and teaching) and transition period (under-funding and brain drain both abroad and into other domestic sectors), the level of research in universities is weak and there is a lack of skills to meet the needs of businesses. The Russian Academy of Sciences is often excluded from public tenders for universities.

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Cooperation on R&D often has a formal character. The hidden goal of both partners is to gain access to public funding and their minds are often far from the declared goal (to bring closer teaching and research). It is rarely a truly common research project, conducted jointly by the company and the university research unit, whose results would be systematically integrated into teaching. For companies, it is an opportunity of “outsourcing” funded in part with public money. Thus, the formal criteria of R&D development in universities can be met, but the spirit of reforms is not respected. In fact, the division between teaching and research/innovation persists; even when it comes to salary calculations in universities, teaching and research are counted separately.

As noted earlier, universities intend to become a link between fundamental science and industry and they are active in this field by creating business-incubators; technological parks; centers of intellectual property, expertise and certification; and start-ups. However, few innovations in universities are really competitive; the innovative character of their products and services is sometimes questionable, while the annual turnover of start-ups is negligible.

Finally, one should note the important role of the State in fostering such cooperation through public financially attractive tenders. The deliberate policy of the State in the sector is subject to multiple interpretations in Russia. For some, it is justified and there is no alternative to this impetus from the top. For others, there is a risk of dependence upon budgetary resources that could be detrimental to the natural development of horizontal links.

The rapprochement between universities and enterprises in Russia is part of a global trend, observed in both developed and emerging countries, which consists of developing R&D in universities, raising funds from companies, etc. This approach has progressively been accepted by the majority of the social partners in Russia and is now perceived as a better way to meet the challenges of the modern economy and the globalized world. There is an understanding that universities and businesses increasingly need to build lasting relationships to increase their attractiveness and competitive advantage. However, more efficient national models of interaction have yet to be invented.