

HERB

Higher Education in Russia and Beyond



University Mergers and Collaborations in Higher Education



ISSUE

1 (15)

SPRING

2018

Dear colleagues,

The new issue of HERB is devoted to mergers and collaborations in higher education. Tremendous movement towards consolidation in higher education emerged in different regions of Europe in the last two decades. Intensification of internationalization and expansion of new standards of world-class and ranked universities along with the demand for cost optimization and enhancing effectiveness facilitated new forms of collaboration, mergers and alliances. More than 150 university mergers and acquisitions occurred across Eurasia. Consolidation processes in higher education take different forms and follow regional and status patterns of university networking. They also challenge traditional patterns of governance, teaching and research expecting new skills and qualities from administrators, academicians and students.

In this new issue we present papers devoted to the causes and consequences of mergers and collaborations in higher education. We have divided all articles into cases and analytics to present reflections on practical experiences of consolidation from university managers on the one side and more general reflections given by higher education researchers on the other side. Cases include descriptions of leading Russian universities' collaboration through the Association of Global Universities, presentations of higher education mergers from Samara, Far-Eastern regions and Moscow. More than 50 university mergers have occurred in Russia in the last 10 years. University administrators as agents and witnesses of merger processes give their visions of their causes and consequences, discuss benefits and problems. The case of Samara University presents an interesting discussion based on the results of a survey for both sides of the process which proves that mergers should be evaluated in more than one dimension. Analytics presented in the second part of the volume starts with the discussion of types of associations of higher education institutions and recent trends in regional and international university collaborations. The remaining part is devoted to the discussion of organizational merger consequences for students and faculty. Considering a merger as a part of general organizational change process, the authors emphasize the importance of its cultural aspect. The discussion of organizational effects is followed by a bibliometric comparison of post-merger Russian federal universities with universities representing 5Top100 and C9 (Russian and Chinese national academic excellence projects), as well as the Ivy League.

***'Higher Education in Russia
and Beyond' editorial team***



National Research University Higher School of Economics

National Research University Higher School of Economics is the largest center of socio-economic studies and one of the top-ranked higher education institutions in Eastern Europe. The University efficiently carries out fundamental and applied research projects in such fields as computer science, management, sociology, political science, philosophy, international relations, mathematics, Oriental studies, and journalism, which all come together on grounds of basic principles of modern economics. HSE professors and researchers contribute to the elaboration of social and economic reforms in Russia as experts. The University transmits up-to-date economic knowledge to the government, business community and civil society through system analysis and complex interdisciplinary research.

Higher School of Economics incorporates 97 research centers and 32 international laboratories, which are involved in fundamental and applied research. Higher education studies are one of the University's key priorities. This research field consolidates intellectual efforts of several research groups, whose work fully complies highest world standards. Experts in economics, sociology, psychology and management from Russia and other countries work together on comparative projects. The main research spheres include: analysis of global and Russian higher education system development, transformation of the academic profession, effective contract in higher education, developing educational standards and HEI evaluation models, etc.

Center for Institutional Studies

The Center for Institutional Studies is one of HSE's research centers. CInSt focuses on fundamental and applied interdisciplinary researches in the field of institutional analysis, economics and sociology of science and higher education. Researchers are working in the center strictly adhere to the world's top academic standards.

The Center for Institutional Studies is integrated into international higher education research networks. The center cooperates with foreign experts through joint comparative projects that cover the problems of higher education development and education policy. As part of our long-term cooperation with the Boston College Center of International Higher Education, CInSt has taken up the publication of the Russian version of the "International Higher Education" newsletter.

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University Cooperation within the Association of Global Universities

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Academic cooperation at individual level and at the level of research teams is very common in global academia. University associations, united for various reasons, present good examples of institutional cooperation.

Background

In 2013, the government of Russia launched Project 5-100 that aims at having at least five Russian universities in the top 100 of World universities rankings by 2020. 15 universities were originally selected to participate in the project. 6 more joined in 2015.

All the participating universities faced similar problems that were easier to tackle by joining forces, such as relatively low bibliometric indicators and academic reputation, which are important for university rankings, or the number of international students and faculty, which was way below international standards.

Soon the participants of the project decided to combine forces on the path towards improving their international competitive standing and to create the Association of Global Universities (globaluni.ru).

In the Beginning

Cooperation within the association started with sharing experience because of the universities' very diverse backgrounds. One of their first activities was establishing working groups where representatives of different universities could discuss their issues, exchange good practices and identify the tasks that needed to be solved in order to overcome all the normative and organizational barriers that were impeding their advancement towards the goals set in Project 5-100. In the first year, there were four such groups, and all the members of the association were represented there. These groups focused on e-learning at universities, on performance-based academic contracts, on the stimulation of English-language environment at universities, and on studying the atmosphere within universities and its reaction to change. The association also launched an inter-university research on student trajectories.

During that period the working groups would gather every 2-3 months and in the end produced recommendations that helped guide the universities towards Project 5-100 goals. Over the first four years, the association's working

groups produced over 40 documents that were sent to various ministries and governmental agencies, including 3 suggested amendments to Russian laws, all of which were quickly adopted.

Expanding the Profile

After such a successful start the association decided to expand its profile. New working groups on the following issues were created: academic contracts that would take into account various faculty functions, such as teaching, research and administration; support for international staff; performance-based contract as an incentive plan; developing academic talent pools at universities; cooperation with international partners.

Ideas initiated by the association originate from practical experience and help solve various issues that are relevant not only for Project 5-100 members but for all Russian universities. The association uses various means to transmit the experiences of its working group members into the Russian higher education system: everything is published on the association's website, it regularly hosts events where other Russian higher education institutions are invited and arranges advanced trainings and internships for representatives of non-member HEIs.

Having worked together for five years, the members of the association have developed some recommendations regarding common standards based on each other's experience, which helps their global progress. One such example is the association's voluntary standard on support for international staff developed by a working group of the same name. Of course, this does not imply any commitments from universities. Nevertheless, this standard has become a reference point for universities in terms of the conditions and services they should provide to prospective international employees. Moreover, the working group has also provided guidelines on how to solve common legal issues and social guarantees problems. All members of the association participated in these discussions, thus shedding light on regional differences and universities' varying financial possibilities, as well as on the quality of translated visual materials for international employees, including non-native English speakers. This voluntary standard is based on the best practices from global universities with traditionally very international faculty.

The working group on performance-based academic contracts is another example of successful cooperation between universities. Developing and maintaining a relevant faculty incentive plan is one of the most important tasks for university leadership both in Russia and globally. Upon joining Project 5-100 its participants ran into new challenges caused by strict requirements regarding publication activity and faculty engagement in the implementation of new institutional strategies aimed at global competition. So, this working group became one of the key actors at the early stages of the project. Its participants started in different initial conditions and they were not equally equipped to face new challenges. For example, Higher School of Economics had by that time already gained four years of experience

with introducing academic bonuses and had seen certain effect. Federal universities (namely, Ural Federal University, Kazan Federal University and Far Eastern Federal University) had gone through mergers and restructuring and had introduced comprehensive faculty evaluation systems and performance-based incentive plans by the time Project 5-100 was launched. Therefore, everyone was very interested in exchanging best practices. Coordinators of the working group rotated based on their universities' 'maturity' in terms of the implementation of performance-based academic contracts: Higher School of Economics was the first coordinator, succeeded by Tomsk Polytechnic University two years later. The working group continuously gave feedback on participating universities' faculty incentive plans and provided annual evaluation of the effects. Members of the association agreed that they could not use the same incentive plan since each university had its own vision, its ambitious goals, its own financial and geographical conditions. The working group's annual meetings allow the participants to make sure they are on the same page, exchange news, discuss challenges and possible solutions to them. The working group's goal for the coming year is to develop a shared view of an incentive plan for administrative staff.

Foreign university associations have also shown interest towards the Association of Global Universities, so it has signed agreements with the Conference of Italian University Rectors (CRUI), Brazilian Association for International Education (FAUBAI) and Korean Association of Foreign Student Administrators (KAFSA).

Within a year after signing these agreements summer schools for students from four members of the Association of Global Universities and for Brazilian students were organized in Saint Petersburg and São Paulo, as well as an exchange of rectors' delegation between Russian and Italian universities. A joint international conference will take place in Tomsk in spring 2018. Such cooperation is beneficial for the development of cooperation between universities from these countries.

The Association of Global Universities pays special attention to all the aspects that help member universities reach the main goal of Project 5-100 — that is, to become globally competitive. In order to do so, they need to consistently undertake multi-faceted sets of actions. The association facilitates progress by clarifying the agenda and synchronizing member universities' actions.

As previously mentioned, according to presidential decree, Project 5-100 aims at having at least five Russian universities in the top 100 of global education rankings by 2020. This is why the association has created another working group which specifically focuses on advancement in international rankings. The group is led by National Research Nuclear University MEPhI, one of the country's leaders in terms of global rankings. This working group has thoroughly studied various ranking agencies' methodologies, regularly met with their experts and analysts, and discussed the applicability of these methodologies to Russian HEIs. Global rankings claim to be global because they

evaluate HEIs from all over the world. However, QS and THE league tables are developed in the UK, while ARWU, for example, in China, so their respective methodologists use the indicators they are used to and interpret raw data accordingly. Moreover, they heavily rely on reputational indicators assessed via surveying expert academics and employers and measuring citation counts. Thanks to the commitment of the working group, Russian experts have become full-fledged members of international conferences and workshops held by ranking agencies. Thus, specialists on ranking methodologies from different countries including Russia learn to better understand each other.

First Effects and New Priorities

Project 5-100, the Russian excellence initiative, is already showing unprecedented results that became possible thanks to comprehensive joint efforts on behalf of participating universities supported by the Association of Global Universities. Now, when the project is half-way, six Russian universities have already been listed among top-100 in 10 subject rankings compiled by QS, ARWU and THE. It was the first time that Russian HEIs were ranked so high in economics, sociology and political science. That is a good headstart since six other universities are listed among the top-200 in 18 subject rankings.

In 2017, Russian universities were listed in the tops of 61 subject rankings by QS, THE and ARWU out of 111. Members of the Association of Global Universities were listed in 42 subject rankings.

The association's strategy currently focuses on large-scale inter-university projects aimed at facilitating cooperation in administrative, research and educational spheres.

In 2017, 'Open Doors' intellectual competition for prospective international master's students was launched in Russia. It is a sophisticated, ambitious and costly project. All the members of the association have shown their support for it but not all of them dare commit to it. Nevertheless, more than half of them have teamed up into working groups by discipline, have developed competition design and are planning to discuss the first results in May 2018.

Another project, 'Academics Open Doors,' is to be launched in 2018. It will improve mobility opportunities for talented Russian researchers who would like to participate in leading universities' research projects and will give recent graduates and PhDs who are interested in academic careers a chance to fulfil their potential in the country's top universities. This can be an example of institutional cooperation among Russian universities that is based on the well-proven model used for engaging international specialists in Russian research projects.

The Association of Global Universities is a platform where many comprehensive issues that universities face can be solved, from ensuring administrative support for certain projects to finding appropriate partners for joint research and educational projects.



University Merger Case: Who Wins?

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The Idea of University Merger

In February 2015, the authorities of the Samara region announced their intention to merge the region's three oldest higher educational institutions, namely Samara State Aerospace University named after academician S.P. Korolev (SSAU), Samara State University (SSU), and Samara State Technical University (SSTU). Each university had its own history, schools of thought and traditions. According to media reports, N. Merkulov, the governor of the Samara region, was the initiator of the "Three Samara Universities Merger" project.

The merger was marketed as a temporary measure, and a massive campaign was launched to convince the universities' administrations of its efficiency. The governor held meetings with the universities' administrative and teaching staff, later followed by rallies and protest marches on behalf of the faculty who had started to collect signatures against the merger in order to defend university rights, their unique profiles and initiated projects.

Objectives of the Merger

SSAU participation in this project aimed at improving the competitiveness of Russian universities among the world's leading research and educational centers (Project 5-100) required a renewal of the university's development strategy. Primary development tasks focused on internationalization, which in its turn led to a more extensive range of courses and higher enrolment numbers. The complexity and diversity of the tasks assigned to these universities led to the decision to enlarge and to strengthen SSAU by merging it with SSU.

The main goals presented by the initiative group at the early stage of the merging process concerned the consolidation of humanities at SSU in order to enhance the enlarged university's competitive ability. According to G. Kotelnikov, Chairman of Samara Council of Rectors, merger of a classical university with a technical one was the only way to retain the status of a research center as well as its position in the top-15 best Russian universities. Moreover,

merging scientific potentials would allow the new university to aspire for a position among the top-100 best universities in the world.

One of the key goals of the merger included financial performance improvement. Thus, according to financial forecasts, the unified budget was expected to reach 5bln rubles (nearly \$90mln) by 2016, including federal subsidies, tuition fees, research and development (R&D) contracts with enterprises as well as donations from prominent graduates of both universities.

Key Dates

February 2015: The idea of merging three higher educational institutions in Samara was presented by the regional administration.

April 2015: SSTU defended its right to function as a separate institution. The decision concerning the merger of SSAU and SSU was confirmed and signed. That was how the Samara region said 'good-bye' to the classical university.

December 2015: SSAU entered the rating of BRICS best universities (QS University Rankings: BRICS).

June 10, 2015: Special Commission meeting was held in Moscow with the focus on the merger of SSAU and SSU.

June 22, 2015: A decree on the reorganization of the two universities by joining SSU to SSAU as a structural unit was signed.

October 29, 2015: The Ministry of Education and Science of the Russian Federation signed a decree amending SSAU charter, according to which SSU units became part of SSAU.

August 17, 2016: The new university became officially known as Samara National Research University named after academician S.P. Korolev (Samara University).

2017: Samara University improved its performance by 58 positions and jumped to the 93rd place compared to its previous position within the 151-200 range (QS University Rankings: BRICS).

Results

The merger of SSAU and SSU went smoothly, without any shock for most faculty members, employees or students. The consolidation focus was confirmed by qualitative and quantitative changes. As part of the restructuring, there was a transition from faculties to institutes. Four institutes were created in 2015: Institute of Space Rocket Engineering; Institute of Aeronautical Engineering; Institute of Engine and Power Plant Engineering; Faculty of Electronics and Instrument Engineering. In February 2016, two more institutes were established: Institute of Economics and Management (former SSU and SSAU faculties of economics); Institute of Social Sciences and Humanities (uniting the former faculty of psychology, faculty of sociology, faculty of philology and journalism, faculty of history). Institute of Natural Sciences was established in June 2016 (uniting the former faculty of chemistry, faculty of physics, and faculty of biology).

However, the merger of various academic departments caused an unraveling of a number of schools of thought (e.g., V.A. Konev's school of social philosophy). Efficiency of education and research at departmental level decreased due to shifts in funding priorities. An attempt to replace university administration (by SSAU representatives) caused a scandal which badly influenced the newly formed university's image.

The restructuring goes on. Institutes are created in lines with educational and research activities. The formation of administrative apparatus continues too: new departments charged with different tasks are being established. The merger of the universities' public structures (student associations, faculty unions, etc.) has been completed.

It is really complicated, almost impossible, to say whether the situation changed for the better or for the worse after the merger. On the one hand, many young people got new positions at the new university. Former SSAU staff members got many opportunities for professional development. On the other hand, former SSU employees faced numerous layoffs and downsizing.

Discussion

There were a lot contradictory expert opinions during the merger process. Representatives of the Employers' Federation pointed out that the merger would bring synergetic effect. Basically, they believed that collaboration and cooperation between university departments would become more productive and that it would not only be internally beneficial but would also help build stronger ties between universities, business communities and schools. In fact, however, the process of unifying standards and objectives requires time and strong management.

Other experts said that it was a wrong decision to merge the two universities. They explained that after the merger there would be division within the new university, which would exist for a long period and would obstruct institutional development.

Today, three years later, one can still hear different opinions about the results and future potential of the merger. We conducted a poll among the representatives of former SSU and SSAU at the ratio of 50:50. The respondents included 100 students, 86 faculty members, and administrators (only SSAU representatives). All of them have different opinions about the current situation.

The respondents were asked to name the advantages and disadvantages of the merger. Students said that the opportunities for studying abroad had increased. Faculty and administrators noted communication difficulties between the two campuses (SSU and SSAU) of the united university. This was caused by the fact that 90% of the former SSU administrative structures were abolished or became part of SSAU departments under the administrative control of SSAU.

Faculty gave some positive feedback on the merger: 12% of them mentioned 'salary increase', 17% of them mentioned 'international internships'; 54% mentioned improved opportunities for 'professional development'.

There was some negative and critical feedback as well: 80% of respondents talked about the 'us' vs. 'them' division within the university, or 'South campus' vs. 'North campus'; 53% complained about communication difficulties between university staff and between university departments; 48% mourned the destruction of humanities.

To sum up, it is not yet possible to clearly assess the results of the SSU-SSAU merger. Along with such positive trends as improving ranking positions one can observe certain difficulties of the transition period. The process of creating a major research university continues. Let's hope that the university leadership will find "the golden mean" and will maintain the classical university scholarly traditions and schools of thought, and that staff members will understand the status of Samara University will only upgrade by means of collaboration and mutual support.



On the Merger of Higher School of Economics and Moscow Institute of Electronics and Mathematics

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On December 30, 2011, the government of Russia issued a decree stipulating that Moscow Institute of Electronics and Mathematics (MIEM) was to become part of National Research University Higher School of Economics (HSE).

Moscow Institute of Electronics and Mathematics was established in 1962 by the decree of the Central Committee of the Communist Party of the USSR and the Soviet Council of Ministers 'On the Measures for Further Enhancement of Training Radio-electronic and Electronic Industry Specialists with Vocational and Higher Education.'

Before joining HSE, MIEM mainly produced engineers specializing in radio technology, electronics, applied mathematics and computer security. In the post-Soviet period it also provided training in such new fields as ICT and communications systems or nanotechnologies and microsystems technologies. Such leaders of telecommunications hardware and software production as Motorola, ZyXEL, Synopsys, Mentor Graphics and National Instruments also

opened their authorized centres at MIEM. Over the years, MIEM has trained in total over 40 000 highly qualified professionals.

In the 2000s, the government of Russia set a course for consolidation in the sphere of higher education, which resulted, among other things, in the creation of federal universities, such as Siberian Federal University and Southern Federal University.

By the time of the merger, MIEM was a relatively small higher education institution that served primarily Moscow and the Moscow Region because it did not have its own residential facilities for students. This was in a way a limiting factor for the institution considering Moscow's huge population and the number of HEIs. With so many HEIs in the city they have to compete for students, and technological HEIs struggled most when it came to the screening and admissions process. Nevertheless, MIEM experienced some positive dynamics: in 2011, for example, the first-year students' average for the Unified State Exam (which is used for admissions) grew by 4.5 points (out of the max of 100). MIEM also ranked among the country's top 20 technological HEIs according to the Federal Agency for Education.

Negotiations regarding the merger with HSE began a year before the government decree and caused debate within MIEM. The main idea behind the merger was to achieve synergistic effect. The two HEIs were meant to strengthen each other and to amplify the quality of both curriculum and research.

From the MIEM perspective, the advantages of joining a national research university like HSE are obvious. They include better access to the results of the latest studies, support of research, and access to residential facilities for students, which helps attract a wider range of applicants. It used to be a common problem for MIEM when motivated applicants from other regions had no other option but to choose other HEIs (which did have dorms) simply because they could not afford the rent in Moscow.

Some of MIEM students and faculty were concerned about the institute's future since such a merger involving

an economics-focused and a technological HEI had never taken place in Russia before. The main arguments against the merger were: fear of the dissolution of research teams and, therefore, schools of thought; discontinuation of ties with the industry; and, in the end, erosion of the MIEM brand. In other words, they were afraid that MIEM would gradually 'dissolve' within HSE and would cease to exist. The issue of brand preservation was crucial for MIEM staff, many of whom had been employed there for decades. Another important issue was research cooperation, especially since MIEM was the leader in many fields, for example in the electrification of space vehicles. Finally, MIEM alumni include a number of prominent scientists, ministers, rectors, chief designers and CEOs of large businesses.

As far as I know, there was some uncertainty regarding the merger within HSE, too, though similar combinations do exist in the West. Social sciences, economics and technologies successfully coexist at the Massachusetts Institute of Technology, for example, and many scientific breakthroughs happen at the 'crossroads' of various disciplines.

The first results of the merger manifested themselves during 2012 admissions. They led to the following conclusions:

1. Concerns for the future of the MIEM brand after the merger turned to be baseless. There were even more applicants. The institute fulfilled its enrolment targets and the share of self-financed students increased by 40% (despite spiking tuition fees).
2. The first-year students' average for the Unified State Exam grew by 10 points in comparison to the year before that and reached 73 (out of 100).
3. For the first time in many years MIEM HSE could enroll students from other regions (and later even international ones). This dynamics is reflected in Table 1.
4. It became clear that having 14 undergraduate programs was too much in terms of promotion and their number needed to be reduced as of 2013, while the range of master's programs had to be expanded.

Table 1

Indicator	Academic Year				
	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017
Share of newly enrolled first-year students at MIEM HSE from regions other than Moscow	33%	35%	38%	45%	50%
Share of newly enrolled international first-year students at MIEM HSE	0	0.1%	1.3%	2.0%	2.5%

MIEM HSE currently offers 13 degree programs (including 9 master's programs) and counts 2000 students (including postgraduates). Most of the programs have an accreditation from the European Network for Accreditation of Engineering Education (EUR-ACE), and MIEM HSE actually competes with the country's leading engineering schools, namely ITMO University, National Research Nuclear University MEPhI and Moscow Institute of Physics and Technology, in terms of the applicants' GPA bypassing such market leaders as National University of Science and Technology MISiS, Bauman Moscow State Technical University and Tomsk Polytechnic University.

MIEM HSE has successfully integrated education and research. From their first year onwards, all students participate in research workshops and project activities. MIEM HSE also hosts a number of joint departments together with leading Russian companies and research centers. There is a student research society, and the institute hosts an annual conference for young researchers, postgraduates, students and high-school students which bears the name of Evgeny Armensky — MIEM's founder and first rector. Moreover, MIEM HSE is gradually integrating into the international educational landscape, and its students are showing more and more interest for international academic mobility programs.

According to a 2017 survey by Future Today, alongside other HSE schools MIEM ranked in the top-20 Russian schools in terms of employability.

MIEM HSE faculty composition has changed, too. It currently employs 4 full members and 5 corresponding members of the Russian Academy of Sciences. Since the merger, 11 MIEM HSE staff have received national and governmental awards. Salaries have risen, too, and an average salary (including bonuses for research productivity) now exceeds 100 000 rubles (about USD 1700).

The institute's research productivity has more than doubles since the merger. The number of grants it received from the Russian Foundation for Basic Research and the Russian Science Foundation has grown 7 times, while the number of WoS- and Scopus-indexed publications has increased 6.5 times.

In 2014, MIEM moved into a new campus with the most modern labs that are used both for research and education, including Mission Control Center, which allows near-earth orbit satellite monitoring in real time, a training lab on 3D imaging, computer-generated graphics and prototyping, and a telecommunications lab equipped by National Instruments.

In the end, we can say that the initial goal of the merger has been successfully achieved owing to, among other factors, the invaluable contribution of MIEM's first academic supervisor and director, full member of the Russian Academy of Education, Professor Alexander Tikhonov, whose name MIEM now bears.



How Far Eastern Federal University Benefits Innovation-Driven Development of the Russian Far East

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The establishment of Far Eastern Federal University (FEFU) became a major step in the national policy of the development and modernization of the Russian Far East. The university's mission includes not only knowledge production and training of highly qualified specialists but also transformation of such knowledge into technologies and innovative products thus stimulating new technological waves in the region and boosting its socioeconomic development. Alongside traditional university functions, consulting and foresight become important spheres of work, too, as well as modernization of the regional higher education system, and engagement in strategic forecasting and design of the regional innovation policy.

FEFU history began in 2009 with the presidential decree announcing the creation of a federal university in the Far East; the construction of a new, modern campus on the Russky Island in the city of Vladivostok started the same year. In the fall 2010, Far Eastern State University evolved into FEFU. A year later in was merged with three important regional HEIs: Far Eastern State Technical University, Pacific State University of Economics and Ussuriysk State Pedagogical Institute. At that stage, the merger of human and material resources became a pivot point for the further advancement of a major international research and innovations center, which was to become a resource center for the development of the Russian Far East and Transbaikalia.

FEFU integrated two models: the model of a research university that participates in international knowledge and talent exchange and the model of an entrepreneurial

university that ensures commercially viable development of the national economy's various branches. While the former is rather common for Russian universities, the latter is innovative and very specific for FEFU, which relies on the most important investment projects of the Far East and Asia Pacific.

By 2018, it had become obvious that the 2009 decision had helped significantly raise the level of fundamental research in both hard and social sciences at FEFU, establish mutually beneficial cooperation with various institutes of the Russian Academy of Science, and join the Asia Pacific academic community. At the time of the merger, the 4 HEIs' joint publication count in international journals was under 100 but doubled a year later. It nearly reached 1000 by the end of 2017 and continues to grow. Also, in 2011 the share of co-authored papers with foreign researchers was just 5% but in 2017, it exceeded 20%.

At the same time, the university's entrepreneurial function externalizes via developing engineering training programs in long-term cooperation with big businesses which work within the priority areas of the Russian Far East and which focus on exporting intellectual services (including education), goods and technologies into Asia Pacific. Such strategic choice has turned out to be rather successful. As a result, by 2018 most of the Russian export-oriented companies that have interests in the regions have opened their R&D and training departments at FEFU. In 2010, the aggregate volume of all research amounted to just 150mln rubles (about USD 2.6mln) but within the first post-merger year the scope of work doubled by means of merging research teams from technical and classical universities, so by the early 2018, annual aggregate volume exceeded 1bln rubles (USD 17.5mln). In other words, the scope of work has grown nearly 10 times in the past 7 years.

Of course, such results could not have been achieved simply by merging resources. Changes in some spheres of university life caused synergistic effect in many other spheres. Before the merger, for example, there were no large-scale research projects that would unite research teams from different HEIs in the region. Nowadays it is already nearly impossible to imagine a project that would not require cooperation between engineers, specialists in natural sciences and specialists in social sciences. Recruitment of foreign researchers and increased mobility among Russian researchers have led to the creation of international research teams and, therefore, higher publication count in international journals, as well as more international co-authorships.

One of the most serious problems FEFU leadership faced in 2011-2012 was merging faculty from four different HEIs with different academic cultures into one community that would share the same federal university values and work together for the goals stated in FEFU Development Program. Moreover, there were complications arising from the 1990s and 2000s when Russia's difficult socio-economic situation caused 'deferred employment' effect. It meant spiking enrolment rates and growing gaps between high-

er education and real labor market prospects. Instead of stimulating the academic process and introducing systemic changes, most of the HEIs chose to simply hire more teaching staff, which, in its turn, led to decreased quality of the faculty. Alas, HEIs from the Far East followed this trend, too.

Therefore, in order to mitigate social tension among faculty during the merger, FEFU chose a two-step approach to personnel issues: first, new thematic units (schools) and large departments were created with the idea to unite specialists representing the same disciplines. Later, staff rotations were introduced in these new departments, new, external people were employed; sometimes planned staffing cuts took place, too. As a result, the university's new academic and administrative core developed.

The merger also led to large-scale infrastructural transformations. 121 institutes and schools that existed at the time of the merger were reshaped by discipline into 9 large schools with consideration for regional interests. The former 4 HEIs' 364 departments were integrated into 115 new departments, and the number of branches dropped from 25 to 13. The university managed to cut costs by 20% by reducing the number of administrative staff and used these resources to improve faculty salaries and quality. For the first time in the region's history FEFU began open targeted competitive recruitment on the international academic labor market. In 2011, for example, the 4 old HEIs employed only 30 international faculty members, while now FEFU annually hosts over 200 international researchers who are engaged in both teaching and research. FEFU experience in this regard, as well as its use of performance-based labor contracts, turned out to be useful for many leading Russian universities.

Important curriculum transformations took place, too. It turned out, the 4 old HEIs had in total 301 degree programs, including 77 overlapping ones. These excessive numbers meant, of course, that the amount of courses was unreasonably high, too, and that the quality of education was inappropriately low due to low quality and low academic mobility of the teaching staff. FEFU leadership decided to reduce the number of degree programs to 169 and to bring all the students together, as well as to improve education quality by introducing the position of a supervisor of an educational program and creating student offices at every FEFU School. This brought positive changes in the quality of the student body. People gained faith in FEFU: when it was created, only 5% of its students had come from outside the region. In 2012, 23% of the newly enrolled first-year students represented other Russian regions. In 2017, their share nearly reached 50% and continued to grow.

In 2012, FEFU had just 500 international students, most of whom were studying Russian, while nowadays it hosts more than 3200 international students from 56 countries, primarily from Asia Pacific, which is unique for Russian universities.

What is the main conclusion? The main conclusion is that all the infrastructural and staff changes that happened af-

ter the merger weren't an end in itself but a tool used by FEFU leadership to introduce systemic changes in academic management.

Far Eastern Federal University has truly lived up to its federal status. It made it through hard competition and was named among the country's 15 leading universities that participate in the national excellence program. FEFU can now be seen as a corporation that unites students and academicians from both Russia and abroad, and as a platform for a civilizational dialogue between Russia and Asia Pacific which allows cultural, educational, scientific and business exchange, as well as public diplomacy. In fact, FEFU has developed into a systemic national academic project that facilitates faster economic growth and improvement of the quality of life for the people of the Far East and, therefore, helps consolidate Russia's position in Asia Pacific.

Associations of Higher Education Institutions: Types, trends and implications

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Much like in other sectors, higher education has witnessed an increase in the number of cooperative ventures in recent decades, national and international alike. Contemporary higher education institutions (HEIs) are more likely to sign agreements, enter joint projects, or to form associations, than their earlier counterparts. In this paper I will focus on the associations established and joined by HEIs, which have become particularly prominent in recent years, especially in the international domain.[1]

Associations of HEIs are as such not a novel phenomenon. Be they called rectors' conferences, networks, consortia, alliances, councils, or, simply, groups, associations of HEIs have been around for more than a century. Among some of the oldest examples would be the Association of Catholic Colleges and Universities in the US, established as early as in 1899, the Rectors' Conference of Swiss Universities (est. 1904) or the Association of Indian Universities (1925).

Normally, associations are established by HEIs which share some characteristics, such as the category they belong to (e.g. university or polytechnic), religion (e.g. Buddhist or Catholic), disciplinary focus (e.g. technical universities), ownership (e.g. public or private), status, political, cultural or geographic border. Sometimes they are established by

a law and membership in them is mandatory, such as it is the case with some national associations. They may also be national and international, but also formed in specific regions within a country. To illustrate the variety of thus shared characteristics that bring HEIs together, we may think of examples such as the Association for European Life Science Universities, Eurasian Universities Union, Association of Universities in Portuguese Speaking Countries, or, for example, Association of Universities Entrusted to the Society of Jesus in Latin-America. However, a closer look at the variety reveals some important patterns.

Types

Once we look at the global-historical picture of the membership in associations, a rather straightforward typology emerges. The most common type of associations is the one which brings together all HEIs which can be grouped under the category "university." Typically, their purpose is to represent interests of all universities in their respective countries, regions or, as it is the case with the International Association of Universities, globally. They are concerned with issues such as university autonomy and academic freedoms and they typically engage in internal and public debates about the nature and purpose of higher education and science, as well as about their place in society and relationship with other sectors. Russian Rectors' Union, Czech Rectors Conference, European University Association or Baltic Sea Region University Network would be examples of this type. I refer to them as (a) generalist.

The second type is reserved for those associations formed by different kinds of HEIs and is accordingly called (b) specialist. Two sub-types emerge here. First, there are associations formed by HEIs which have some characteristic in common in addition to all being HEIs, such as ownership, religion, language, discipline and mission and they are hereby called (b-1) specialist-horizontal. Typical examples of a specialist-horizontal association would be the Rectors' Conference of Finnish Universities of Applied Sciences, Asian Association of Agricultural Colleges and Universities or the International Association of Buddhist Universities. They come together not only as universities, but as a particular kind of universities, i.e. of applied sciences, agricultural and Buddhist, respectively.

Finally, the second sub-type is reserved for those associations formed by HEIs which claim to be of high status which are here called (b-2) specialist-vertical or simply elite. These associations are typically exclusive and invite-only clubs, usually of research-intensive universities which claim to be superior to the rest in terms of their quality and contribution to economy and society. Well-known examples of such high-status associations are Group of Eight in Australia, League of European Research Universities, German U15, Japanese RU11, African Research Universities Alliance and the previously mentioned Russell Group. All of them stress the importance of "excellence," in research in particular, and a "world-class" status, for which the position in global rankings is commonly taken as a proxy. For example, the main membership criterion

of the Young European Research Universities is to “have been included at least for one year, in the QS ranking Top 50 under 50 or the THE ranking 100 under 50.”

Trends

Much as the number of HEIs, the number of associations has also increased over time, although when we look into specific regions or countries, the relationship between the growth rates of the two is all but linear. This suggests that in order to understand where and why associations emerge, we need to look beyond the number of HEIs around. Factors such as types of HEIs present, legal framework, cultural specificities, national policies and international organizations, etc. play an important role, but so do broader trends and the narratives constituting them such as competition and internationalization. A closer look at the associations, the context and the time period in which they emerge reveals three sets of global institutional conditions which appear indispensable for certain types of associations to emerge and diffuse: (a) the 20th century university expansion and the consolidation of national higher education fields, which has been particularly important for the global institutionalization of the generalist and specialist-horizontal types in national contexts; (b) the intensification of cross-border interaction and the advent of international institutions, especially important for the international associations of the specialist-horizontal type; and, finally, (c) the formation of a global field and the rise of competition discourse, as vital for the rise of the specialist-vertical or elite type of associations.

Implications

Scholars of organizations have argued that associations are created in order to reduce the complexity and uncertainty in their environment. Affiliating with similar others is a well-known way of organizing the environment. In addition, many associations are active in advocating policies and promulgating standards of performance. On the other hand, for a single HEI, membership in several associations may, in addition to creating new opportunities for profiling and positioning, also create new kinds of complexity and tensions. This is in a way equally valid for any of the associational types, although elite associations emerge as an especially interesting case, given their prominence in recent years. International domain, and especially regions like Europe, has grown into a vibrant arena for the self-proclaimed “leading” universities’ lobbying activities and networking, somewhat similarly to the so-called “mission groups” in the UK. This trend clearly indicates that the European field is becoming increasingly stratified with an emerging elite tier of HEIs. Such behaviour is, however, not exclusive to the Western European universities. Not long ago, a group of “seven respected Central-European universities” [2], the so-called CE7, has reportedly also joined the trend. If we look at other empirical settings studied by scholars, such dynamics are not unheard of: high-status organizations tend to be more concerned with their actual status as such, especially

when the status order is contested and when there is some uncertainty about “who is who” in terms of quality and reputation. Certainly, rankings and competitive funding schemes play a role in both shaping and fuelling competition for status. Meanwhile, the expanding – yet still tiny – elite is becoming ever busier working its way to make sure the rest do not catch up. How any of this shapes the public discourse on higher education and not least how it affects higher education and its institutions – in Europe as anywhere else – are important questions which await further empirical investigation.

Notes

[1] This article is based on the book chapter “How do meta-organizations affect extra-organizational boundaries? The case of university associations” (by Brankovic, J.), forthcoming in the volume *Towards Permeable Organizational Boundaries?* (Book series “Research in the Sociology of Organizations”) edited by Ringel, L., Hiller, P. and Zietsma, C. Emerald Publishing Limited, 2018.

[2] <https://www.leru.org/news/leru-and-central-european-universities-team-up-for-better-research-education-policies>, retrieved on 13 February 2018.

When 2 Become 1. On the Cultural Aspect of University Mergers

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In the last 15 years, European higher education institutions including Russian have experienced more than 150 organizational mergers and acquisitions. We know from various country cases that they took different forms, varied in scope and scale, goals and means, depth of integrity and structuring. Although each merger is unique, common features have been identified, which provides important distinctions about voluntary and enforced mergers, vertical and horizontal, governed by state or universities and etc. [1] Moreover, it has been noted that merger is a multidimensional process. University managers should not underestimate the duration of the transition period [2] and take into account the long-term integration effect for organizational culture generally recognized as a ‘sense of community in a newly created university.’

[3] Mergers need culture because it provides the 'newly emerged organization' with some possibilities of getting to social wholeness.

This short paper discusses the cultural aspect of mergers and puts forward a hypothesis that higher education systems with strong organization-centered academic cultures – in comparison with association-centered academic cultures – are more sensitive to mergers related to getting the social integration.

First of all, it should be emphasized that institutional merger is not an ordinary organizational change that is aimed at adopting new structures or enforcing strategic development within the existing organizational order. Of course, adaptive or strategic changes can also question the sense of community, cause friction and conflicts between administrators and academicians or different organizational units but they don't question the essential characteristics of a particular university – leadership, existing structure, management style, cultural artefacts, routines, and rituals – everything that was shared within the existing frame. As any frame-bending or radical organizational change, university merger occurs as a social drama. It does not mean that there is no happy end but whether a merger will be a passage to a 'newborn academic organization' or a degradation of the previous ones strongly depends on how university as a community experiences this transition or the so-called 'threshold period.' When preexisting structures of merging universities lose their binding capacity but the newborn organizational structure does not exist yet, the structurally invisible symbols and signs become sources of meaning that are used to deal with ambiguity. University names and sagas, honored faculty photos, memorial places, great academic awards and prizes – all these sacred things and accompanying rituals point to a generalized social bond recognized as a living university community independent of formal structural conditions. Will they become part of the newly emerged university and its collective memory or just sink?

Being an example of organizational deconstruction and moral ambiguity, university merger opens the window into social organization and values. During the threshold period of university merger 'we' become separated from 'others' not according to the distinction of ranks but through various modes of informal communication – labeling, rumorming, censoring, etc. They highlight those who are in the 'circle of trust' and those who are not, sometimes going in a contradiction with 'reliable information' shared by official channels of communication. The more 'others' express their transparency, the less they are trusted. Managers responsible for the merger could be those 'others' especially if they were appointed from one of the pre-merged universities or even invited from the outside. Many researchers point out that organizational merger is not an end in itself but rather a goal-oriented process accompanied by a discussion of future plans usually initiated by university managers. A transition period is a process when empowered university managers pass through the cultural realm of the

community called university. This structurally invisible and hardly manageable 'threshold' period determines the process of transmitting developmental ideas, programs, and future plans of the merged university from 'leaders' to 'followers.' Since loyalty and diligence in their implementation rely on the level of social trust or, in other terms, on transaction costs, university managers should not underestimate the transition period.

Today the Russian higher education system is strongly university-dependent in terms of academic culture. Locked-in university communities and academic schools are reproduced overall through generations of their own students. Faculty exchange between different universities is not a common agenda and often is not allowed. Institutionalization of academic culture occurs through strengthening faculty identity of a certain university in comparison with academic systems more dependent on external professional associations which provide academic standards and norms, social and symbolic capital, and circulation of information or other opportunities for getting an academic job. They stimulate social mobility of young academicians, who change two or three colleges and universities before settling in one place. [4] It means that a sufficient number of academic staff regularly move to more or less selective colleges and universities and become less embedded into local university culture. From the community perspective, a merger of two or three locked-in and leaders-driven universities with strong signs of local culture is not the same as a merger of more open universities that are less adherent to local culture.

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What Matters in University Mergers: Students' Feedback on Organizational Change

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Introduction

Mergers are common practice in higher education systems around the world, and merger-related aspects, such as the transformation of organizational and administrative structures, the impact on internal funding allocation mechanisms or changes in academic strategies and profiles, are well researched.

Besides the issues of funding after a merger or organizational structure transformation, one of the most common problems is the “human factor.” It includes differences of university cultures in merging universities, protests before the mergers and conflicts afterwards ignited by university staff and especially students. But the role of students in university mergers and their understanding of these processes are hardly investigated at all. So, research is necessary to find better managerial decisions during merger processes and to understand actual students' interests in contemporary universities overall. The first step is to clarify the most sensitive changes for students during university mergers.

Analysis

Four main cases of recent university mergers were chosen for in-depth analysis of student feedback on organizational change. These cases represent various types of mergers with different rationales to merge, different status [1] of universities and different academic focus.

Because this research focuses on personal and group opinions, qualitative methods, namely semi-structural individual interviews and focus groups analysis, were used. Interview questions were about the process of merger, its visibility for students and their personal pros and cons.

About 80 students (studying at the moment of their universities undergoing mergers) aged 19–25 years, both males and females, with various educational backgrounds took part in the survey.

What Changes and What Matters in University Mergers for Students?

Brief analysis of the results made it possible to identify the most significant and sensitive changes in student experience during and after university mergers. These are chang-

es in organizational characteristics, in educational process characteristics, in university culture, and in university status and reputation.

Changes in university infrastructure, accommodation and time wasted on commuting to and from a university became one of the main and typical problems mentioned by students. When there was not enough actual information on these changes, uncertainty increased and even small and local problems in the process of transformation were given extra meanings and interpreted as discrimination of students or conflicts between universities-partners.

Changes in faculty teams and increased class size (mentioned as both positive and negative consequences of mergers) were mentioned by students in the context of educational process.

Another major educational factor was the changing level of qualification works, exams, and thesis defenses at the new united university. These changes could be interpreted by students both as fair and logical difficulties caused by joining a “stronger” and “more prestigious” university with a higher level of requirements and, at the same time, as discrimination of students by faculty originally representing the other university.

But the contents of educational process itself, new knowledge and skills or any other changes in this direction connected with mergers and creating of new universities were not mentioned by the respondents at all.

The respondents also talked about difficulties in communication with students from partner universities, with academics and with administrative staff as well because of their too different “cultures” and “other atmosphere.” According to research data, these problems were actualized in such post-merger situations as when a) students from small HEIs with a serious role of personal relations began studying at a big university with multiple bureaucratic procedures, b) students from HEIs focused on professional education became members of a research university with values and practices connected to research and science, c) students with originally different and rather strong academic identities (for example, “engineers” and “humanities scholars,” “future researchers” and “future school teachers”) came to interact.

Issues of university “brand,” “status” or “reputation” and the value of its future diploma dominated among the students' merger-related concerns. (It is important to mention that they did not refer to their universities' positions in Russian or international ratings, only to opinions of relatives and friends, media and common sense.)

Moreover, students' reactions were not symmetrical in the case of subjective and objective differences in the status of universities-partners. Students of “weaker” universities described themselves as “winners” in mergers due to an opportunity to graduate from bigger and more famous universities. They also very quickly began to identify themselves as students of the united university. On the contrary, students of “stronger” universities described the situation of merger as “unfair” to them and as “devaluating” their status and identity as future alumni.

Reflection

According to available literature on university mergers, main changes usually refer to the official name and mission; to the organizational structure and governance; to the system of communication and mobility in case of mergers of geographically distant campuses; and finally to organizational culture issues.

Comparing these factors with those that mentioned by our respondents one can see that transformation of the organizational structure or funding system are only interesting for students in terms of local changes of the organizational characteristics affecting their everyday experience. At the same time, university culture issues often mentioned in the analytical literature were also visible and important for students in this research.

Nevertheless, university mergers are often justified as a way to widen educational opportunities for students but changing university status and brand can seem more important for students than changing the contents of educational programs.

Presumably, such concern with the brand is reflected in the disengagement of students from reorganizational processes, i.e., when students are not engaged — either at group or at personal level — in the process of merger planning, official communication with students from the partner university or discussion of the university's new name and mission.

Notes

[1] According to the data from Monitoring of Quality of Admission to the HEIs for 2014 – 2016 (by National Research University Higher School of Economics).

Russian Federal Universities: A Bibliometric Comparison with 5Top100, C9 and Ivy League

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University mergers are a dominant trend in higher education in many countries. The most well-studied examples are Chinese and Nordic initiatives (Liu et al 2018) but mergers also happen elsewhere, from France to Japan. Russia is one

of the world leaders in terms of university mergers but are these mergers successful in terms of achieving their goals? In this short survey we will present a short bibliometric analysis of the quantity and quality of scholarly output for Russian federal universities. These are special and the most high-profile type of merged universities in Russia, created in order to become the focal points of scientific, educational and business development in their corresponding regions. Generally speaking, this is one of the several overlapping Russian excellence initiatives and it is centered around university mergers. For a condensed review of the federal universities program and other types of Russian university mergers (see Romanenko and Lisutikin 2018).

There are currently ten federal universities. Two pilot projects are Siberian and Southern Universities (both created in 2006), whose boards of trustees are headed by the Prime Minister. Several other universities were added in 2010-2011.[1] The federal universities program precedes the 5Top100 excellence initiative, which kickstarted in 2012, and half of federal universities participate in it although one of them — Siberian — only joined the project in 2015. All federal universities except the Baltic Federal University in Kaliningrad were formed by merging several already existing higher education organizations.

As we focus on bibliometric evaluation of the scholarly component of university mission, it is important to quote the relevant goals of the program. According to the corresponding federal law,[2] federal universities “undertake fundamental and applied research across a wide range of disciplines; enable integration of science, education and industry, also by ensuring practical application of the results of intellectual activities; and play the role of leading research and tutorial center.”

To put it simple, federal universities have to excel in science and humanities and to do so across a wide range of subjects. Are they successful in pursuing these academic goals? According to official sources, they are. Dmitry Livanov, minister of science and education, said in 2015: “We can now surely acknowledge that it was an absolutely right strategic decision [to start the federal universities program]. <...> 10% of all academic papers published by Russian universities are produced by federal universities. <...> All in all, the policy of raising the scholarly productivity of our universities, which started about 10 years ago, is absolutely successful.”[3]

We would like to complement this appraisal with a bit of national and international benchmarking. To do so, we will compare combined publication output of the 10 federal universities with those of the 5Top100 participants (limited to the 15 universities chosen during the first phase of the project), with the Chinese C9 league of the top nine universities supported under the first wave of Project 985 (see Zhang et al 2013), and with the Ivy League. We perform such analysis using Scopus/SciVal database, which is a standard scientometric tool used, amongst others, by the THE and QS rankings. Organizational profiles in Scopus already account for all the mergers and unite all merged universities under

combined profiles, so it is possible to look at the publication counts even before the mergers took place. All data presented here was exported on the 7th of March, 2018.

Both federal universities and 5Top100 universities lag far behind the C9 or Ivy League but there has been substantial growth for both projects' participants after the year 2012. Also, this growth is much more pronounced for the 5Top100 universities. Still, it is important to note that robust growth of the publication counts is demonstrated by all federal universities. In fact, for 8 of them the three-year moving averages of yearly publication count increases were above 20% for three years in a row (2014-2016).

In terms of citation counts the difference between the two Russian initiatives and the two foreign top leagues is even more pronounced. For example, the papers of federal universities published in 2012 were cited 13 000 times, and the papers published in the same year by the Ivy League US universities were cited 1.85mln times.

Raw citation counts are not very well suited for comparing institutions with different distributions of publications across disciplines due to different citation rates in these disciplines, so it is better to complement them with field-weighted citation analysis. It is also justified to eliminate all self-citations in the broadest sense, e.g., citations from papers published by authors from the same university or another universities from the same group.

Field-weighted indicators in SciVal are normalized in a way that the value of 1 is the average citation rate of papers in a specific subject field. The value of 2 means that these particular publications are cited twice more than the average.

Federal universities are the worst performers, and even the C9 group is still below the world average. On the other hand, federal universities have been showing promising growth for several years in a row. What is disturbing, however, is the ratio of field-weighted citations with and without self-cites. While for C9 and the Ivy League self-cites account for 25% and 18% of field-weighted citation impact respectively, for 5Top100 this figure rises to 52%, and for federal universities — to 61% (data for the years 2013-2015). Mostly these are self-cites by individual authors or cites by authors from the same institution.

Another important measure of excellence is the distribution of published papers by journals ranked by their citation characteristics. It allows us to forecast citation impact for big enough sets of articles and also shows the proportion of research output with the strictest peer-review and broadest visibility.

It should be noted that Scopus is actively increasing the number of indexed journals. Some 200 Russian titles have been added to the database over the last 3 years. This partly explains the lack of increase of the relative publication quality of Russian universities because such local and mostly Russian-language journals are not well-known to the world and hence not well-cited. At the same time, we have to admit that federal universities perform significantly below national average, which is highly unusual for an excellence initiative. In fact, only 2 of the 10 federal uni-

versities are above national average according to the 2016 data. Both are 5Top100 members.

Generally speaking, federal universities that participate in the 5Top100 program simultaneously produce both higher numbers of papers in top journals and higher number of publications in predatory journals, i.e., venues that publish anything and basically sell Scopus/WoS publication counts. The “leaders” of 5Top100 in terms of such predatory journal papers are those federal universities that are part of the 5Top100 project. This means that the picture is rather complex: when faced with the goal of rapidly increasing publication output, federal universities pursue several conflicting paths. They do more quality research and more pseudo-science at the same time. The latter is probably so prominent because of the lack of proper academic culture at some of the merged institutions — a problem which many of the “non-merged” 5Top100 universities do not face.

Another, even more pronounced difference between 5Top100 and federal universities is the share of international publications, which is a key internationalization metric. SciVal offers a unique opportunity to compare the four leagues using normalized international collaboration shares, reflecting the differences in terms of international publications between different disciplines. Surprisingly, 5Top100 and federal universities have exhibited almost exactly opposing trends in the recent years.

For those outside Russia it is worth explaining the rise of international papers after the collapse of the Soviet union. Firstly, thousands of scientists left the country due to harsh economic conditions and opening of borders but many continued to indicate the affiliation to their home institutions in their papers. Secondly, due to the deterioration of research infrastructure, it gradually became impossible to do good science without partnering with those who had good — modern and expensive — equipment. This was achieved via collaboration and short-term visits.

In the second half of the 2000s, Russian government started spending much more on research infrastructure and the lack of equipment gradually became less severe. Federal universities were essentially the ones that received the first large-scale investments in research infrastructure. In the second half of the 2000s buying scientific equipment was perceived as the safest way of effectively investing money in research universities as opposed to increasing faculty salaries.

Still, it is not entirely clear what caused such a difference between two Russian excellence initiatives after 2010. Partly it could be due to the very high share of “mega-collaboration” physics papers arising from CERN projects, which is characteristic for some of the leading 5Top100 universities. Another possible explanation is that 5Top100 with its pronounced “world-class” agenda is much more active in attracting foreign part-timers, often bordering on affiliation buying. This is the shortest way to obtain much sought after articles in top journals.

Perhaps the most important bibliometric measure of both Russian initiatives is their share in the total Russian scholarly output.

Figure 1. Combined publication output (articles, reviews, conference papers)

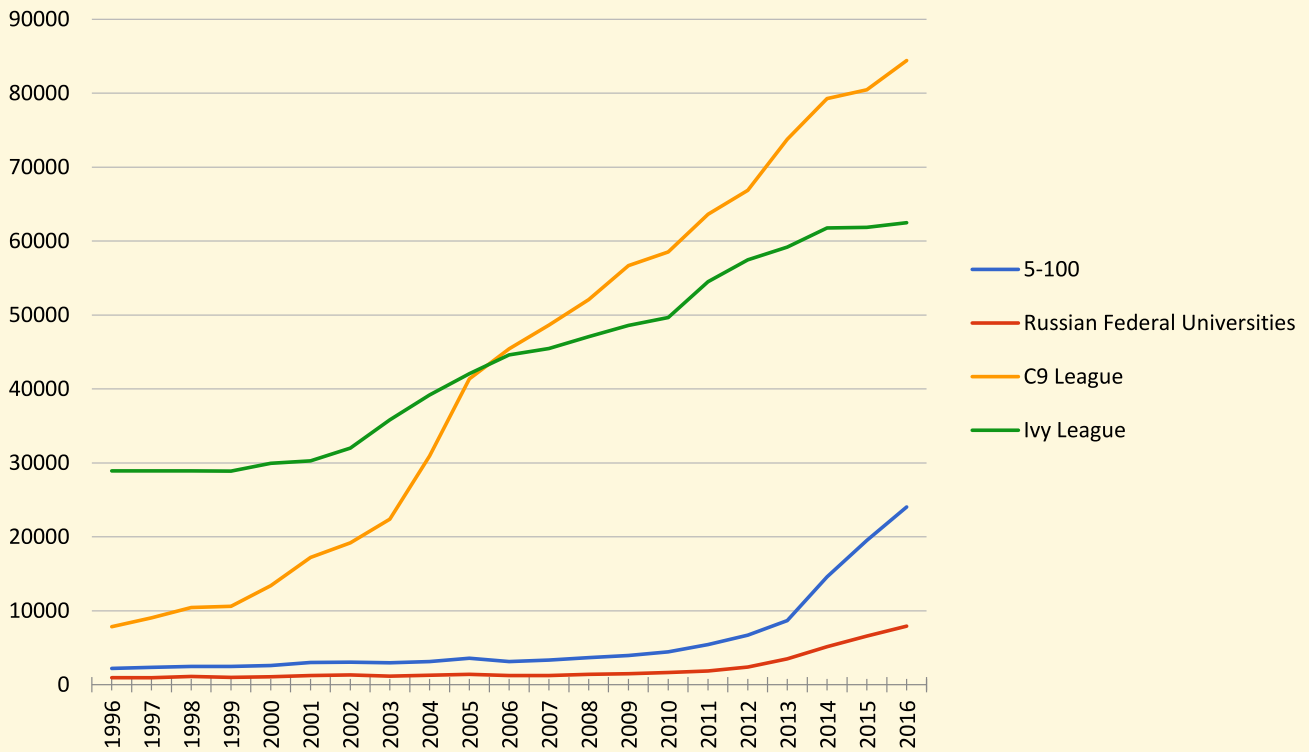


Figure 2. Aggregate field-weighted citation impact (articles, reviews, conference papers), without group-level self-citations

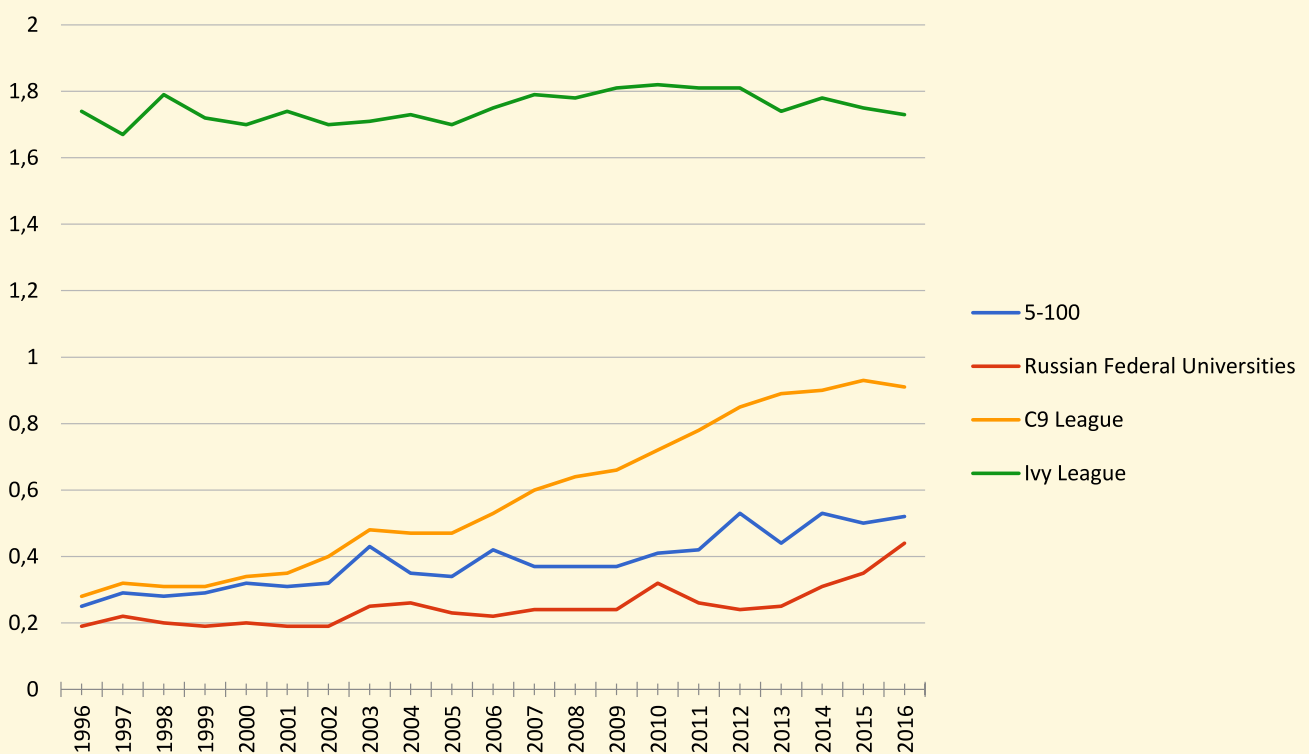


Figure 3. Share of articles and reviews published in the top 25% most cited journals by SJR prestige metric, see (Guerrero-Bote and Moya-Anegon 2012)

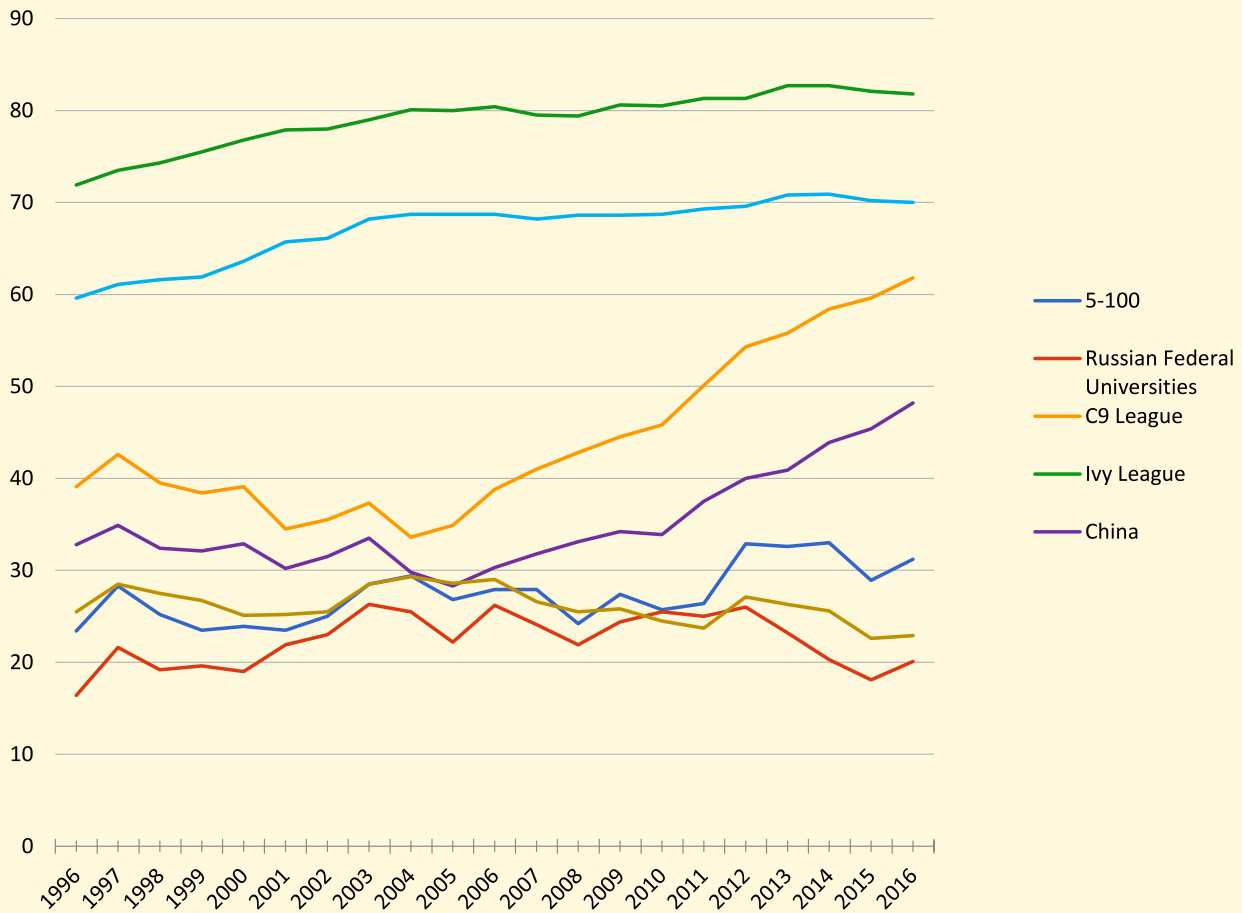


Figure 4. Field-weighted international collaboration (articles, reviews and conference papers)

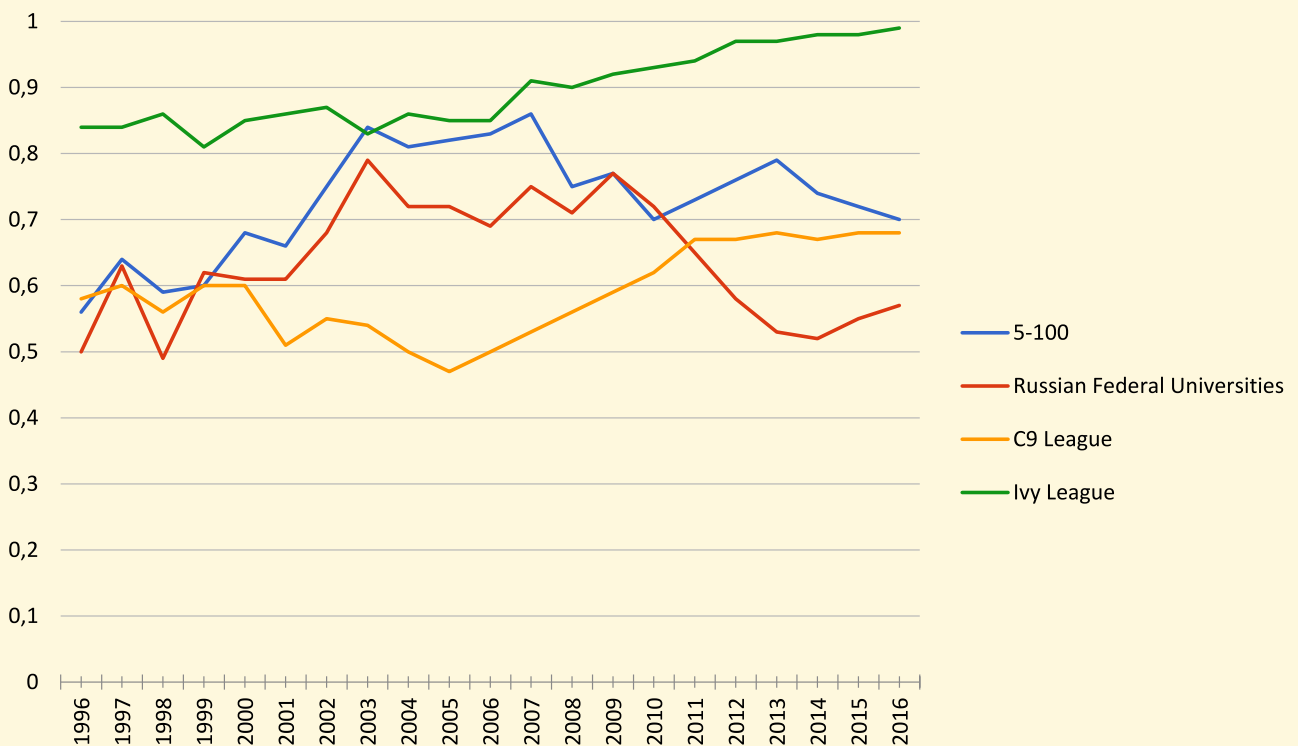


Figure 5. The share of the total national scholarly output (articles, reviews, conference papers), %

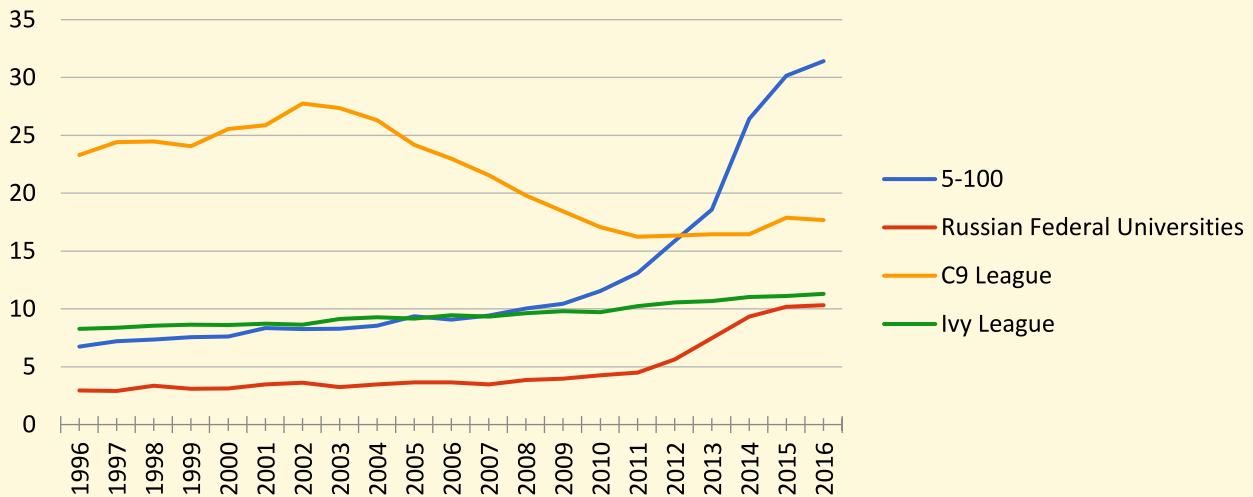
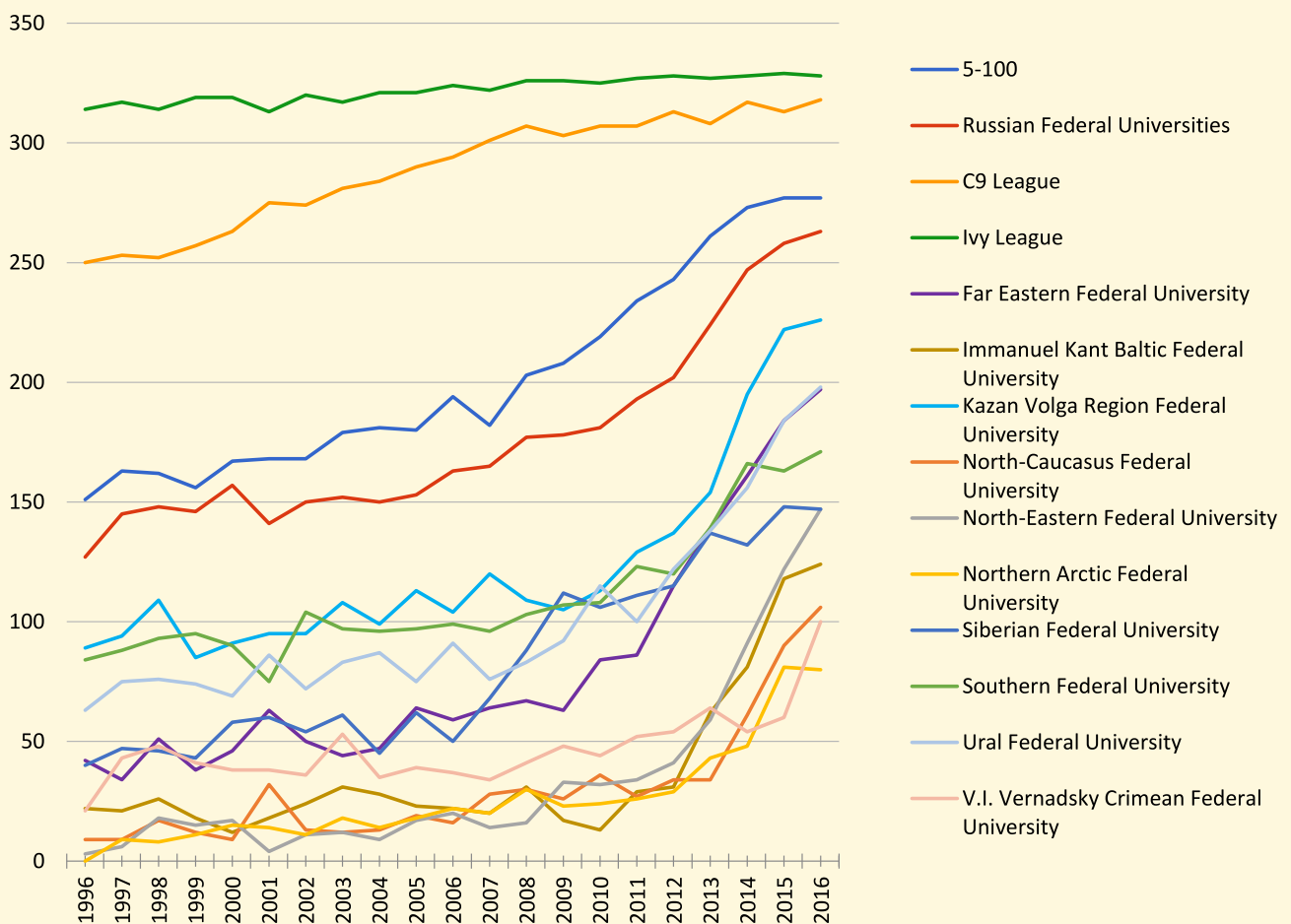


Figure 6. Scopus Subject areas count (articles, reviews and conference papers, max=330). Top four lines are respectively the Ivy League, C9, 5Top100 and federal universities, the bottom lines show the 10 federal universities)



With regard to this indicator some dramatic changes have happened in the course of just five years. Shifting state support from the Russian Academy of Sciences (RAS) to universities as a more modern and innovative research model was started by science and education minister Andrei Fursenko and radicalized by his successor Dmitry Livanov, who has led a full-blown assault on RAS dominance. The federal universities program is a vital part of this plan along with the 5Top100 project. Judging by bibliometric data, the goal has been achieved and the share of federal universities now amounts to 10% of the national output, e.g., even higher than Livanov had aimed for. It is also evident that the most dramatic phase is basically over. The national share has stabilized for both federal and 5Top100 universities and preliminary data for 2017 (not shown on the chart) for both projects shows a slight decline. It is now possible to predict further weakening over the next 5 years, like it has already happened in China where a number of non-C9 institutions have rapidly gained momentum and public financial support.

The last aspect of federal universities' scholarly performance to be surveyed here is the breadth of the pursued research spectrum. Here we can see huge progress for all of the universities. Fig. 5 shows that while 4-5 years ago there were basically two distinct groups of federal universities in terms of the breadth of research spectrum, all of them have made much progress recently. The most active in this sense were three universities engaged in the 5Top100 initiative, namely Kazan, Ural and Far Eastern Federal Universities. To sum up, our quick analysis has demonstrated the following:

- All federal universities have rapidly increased their publication output but this growth was on average noticeably slower than that of the 5Top100 universities.
- Federal universities currently account for 10% of all national publications in Scopus and this share has been stable for the last 2 years, with the signs of a possible slight decrease in 2017.
- Field-weighted citation impact of federal universities' publications has been growing for 4 years in a row but is still way below the world average. The share of self-cites is very high compared to the top US or Chinese universities and even to the 5Top100 universities.
- The share of papers published in top journals was falling for several years until 2016. This share is markedly lower than the national average.
- The share of papers with international co-authors is also lower than the national average for all years except 2016. This is in stark contrast to the 5Top100 program where such collaboration is significantly higher.
- All of the federal universities are rapidly broadening their disciplinary spectrum. Most of them have papers published in nearly one-third of all the subject areas identified by Scopus.

Notes

- [1] In 2014, Russian authorities also established a federal university in the Crimea.
- [2] Federal Law №18-FZ (10 february 2009) <https://rg.ru/2009/02/13/fed-univer-dok.html>
- [3] <http://m.government.ru/news/18389/>

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Higher Education in Russia and Beyond (HERB) is a quarterly informational journal published by National Research University Higher School of Economics since 2014. HERB is intended to illuminate the transformation process of higher education institutions in Russia and countries of Eastern Europe and Central Asia. The journal seeks to adduce the multiple-aspect opinions about current challenges and trends of regional higher education and give examples of the best local practices. Our audience represents wider international community of scholars and professionals in the field of higher education worldwide. The project is implemented as part of cooperation agreement between Higher School of Economics and Boston College Center of International Higher Education.

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Editorial and publisher's address:

20 Myasnitskaya Str., Moscow, 101000 Russian

Mass medium registration certificates:

Print: ПИ № ФС77-67449 issued 13.10.2016

Web: ЭЛ № ФС 77 - 65994 issued 06.06.2016

Subscription to a web version:
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ISSUE

1(15)

SPRING

2018

