World science, especially in developed countries, is going to the new form of organization and assessment of scientific activity. Unfortunately, our science is lagging with assimilation of positive innovations.

Keywords: academic science, post-Soviet transformation, lagging, innovations

Social processes in Russian academic science during the post-Soviet decades
The results of sociological research

Last two decades the reality in Russia clearly fits the notion of “unstable times”. The collapse of the Soviet Union (1991) has provoked serious political and socio-economic changes in all spheres of Russian life. The subject of our study was and is the domestic academic science — the professional activity of scientists working in the research institutes of the Russian Academy of Sciences (RAS). From 1994 to the present time our sector of Sociology of Science, which belong to Institute of the History of Science and Technology RAS, realized a monitoring of this phenomenon. Monitoring was based on regular sociological interrogations in representative groups of academic scientists and systematic analysis of data collected in these surveys. In 1990-ies the transformations in the political and socio-economic spheres were continuous. A long time academics are also expected to upgrade their sphere — science. However, during this period the State has ceased to be interested in science: funding (which has always been the only state one) declined sharply, many scientific organizations were liquidated. Academy of Sciences, as the focus of national basic research is preserved (converted from the USSR in the RAS). The scientists of academic institutions...
eked out a miserable existence and waited for state reform of science. Finally, this long-awaited reform, from which all scientists were waiting a modernization, it was held only in 2006—2008. The reform was realized, but it results have shown for scientists that not every reform have to lead to modernization. Most scientists are unhappy with the results of reform, combined data of these years survey showed that the vast majority — 96 % of scientists (both managers and performers) — at the final stage of the reform treated it negatively. Taking rising wages as a necessary but long overdue action, almost all of them said that it will not add to their interest in the work (90 %) and did not give additional motivation to the more hard work (92 %). A large proportion of respondents (72 %) expressed irritation connected with unprofessional approach which was revealed in many concrete proposals for reform coming from the government.

Scientists were disappointed that the main, in their view, the task of reform — the modernization of science system — has not been implemented, and in fact, as became clear, a program for reform had not implied it. Well understanding that the impact of science depends on an adequate combination of formal institutional actions with the structures of self-organization of scientific activity, most of the scientists is left to his own opinion: for a successful science requires its true modernization, which is not reducible to an increase in salary.

Outcome of the reform did not give the significant reasons for optimism, but scientists have always have reserved hope for a positive outlook. An important result of the reform was the common comprehension of the fact that the modernization will not be conducted “from above” — it must be made by those people who really need to update the organization of the modernization will not be conducted “from above” — it must be made by those people who really need to update the organization of the national science by them own was quite high. But gradually, recognizing the complexity and dimension of this task, they moved to their ordinary daily activity, projecting “to study this issue”.

Scientists are still disappointed that the main task of reform — the modernization of the national science system — has not been implemented, and in fact, as became clear, a program for reform had not implied it. Scientists understood that the impact of science depends on an adequate combination of formal institutional actions with the structures of self-organization of scientific activity, most of the scientists left to his own opinion: for a successful science requires its true modernization, which is not reducible to an increase in salary.

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of this time showed qualitative changes which the latest ICTs introduced into research activity. From a means of interpersonal communication, which were often decided by the scientific and organizational problems, there were also the most responsive source of scientific information. Exactly, information and communication compose the basis of productivity of scientist. Many new features, such as the use of international data-bases, participate in global trade networks, setting out its tasks to other people’s computers, etc., etc. And these opportunities were actually used, which was clearly documented by empirical evidence.

Only one impatiently waiting result did not manifest itself. Not only in 1995 but also in 1998, data processing was not identified positive effects of ICTs on the professional productivity of scientists. Both surveys showed the same correlation: the scientists who were most actively and successfully engaged in scientific work, were also active users of ICTs, but an inverse relationship was absent — “super active” in the ICTs group was weaker for scientific achievements of other users. AND minimally active group of users of ICTs showed excellent academic results, especially for the publication indicator. All this lead to the conclusion that the active use of ICTs is rather the consequence of a common professional activity but not the cause of professional success scientists.

After 1998, no radical events in the academic system of RAS was not happening. Over time, innovation has become a familiar comfort. Everyone understood that it speeds up certain kinds of work, but sociologists trusted their data and knew, to their regret, that this innovation does not increase the productivity of scientific activity. It was unclear and provoked disturbance, so, in 2001/02, a third survey was made with special attention to this phenomenon. Apparently, the past years were the time of ripening stage for results of innovation. Data obtained in this survey were non-trivial and have revealed exactly a long-awaited law.

This survey, fixing up the three years since the previous one, has clearly demonstrated a radical change in the role of ICTs in research teams. Completely in all groups of respondents appeared stable positive correlation between the use of ICTs and professional productivity. Major users of ICTs significantly improved their productivity as the increase of number of publications and reports and participation in international grants. Extra-active ICTs team took first place and on indicators of professional performance. And previously successful team which little use ICTs significantly lost its effectiveness. So, on the basis of empirical evidence 10-year monitoring of concrete innovation, there was first shown unequivocally positive final correlation between the degree of involvement of the scientists in the ICTs and their professional success (Mirskaya, 2009; Mirskaya, 2010).

But innovations also have their own development and it is impossible to satisfy the needs of scientists in communication and information technologies once and for all. Constant updating of information and communication infrastructure of national science is necessary even in order to keep abreast of international scientific information and to maintain international contacts. Therefore, our prospects for success in the global science seriously linked to the emphasis in the near future will be on further implementation and, most importantly — the development of advanced information and communication technologies. Our complex history of this innovation has one simple conclusion: do not rush to assess the impact of innovations. Their prospects have to be carefully weighed beforehand, but then do not rush the evaluation: that is impossible to receive “all at once”.

**Literature**


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**Russian Mathematical Journals in World and National Corpora of Scientific Journals: bibliometric analysis**

The present paper is devoted to a discussion of results of the bibliometric analysis of a number of mathematical journals (more than 700) and scientific fields of knowledge (more than 50) in the JCR databases for the 1998–2010 period. An attempt is made to assess Russian journals in the mathematical sciences in the world and national corpora of scientific journals by the impact factor Ip and the normalized impact factor K.

**Keywords:** bibliometric analysis, mathematical journals, Normalized Impact Factor K, Impact factor, ranking lists, ISI Web of Knowledge: Journal Citation Reports Science Edition

**Introduction**

Since the beginning of the 1960-ies, a new direction in the study of science has been gaining ground — the quantitative analysis of information flows (bibliometrics). (Some precedents of bibliometric studies go back to 1917). A specific feature of bibliometrics is the use of secondary information: all kinds of bibliographic indexes, abstracts, etc. The corresponding statistics are of substantial interest for the analysts of the development of science, they can help in the planning and management of science. The objects counted in bibliometrics are authors, journals, thematic groupings, organizations, words, etc. Bibliometrics is aimed at the quantitative analysis of documentary output in science as a whole or in specific fields of science. The bibliometric approach opens new vistas for the study of science, supplying it with an empirical base covering both the science’s past and (which is especially important) the forefront of science in the making.