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The paper suggests a framework for analysis of internal and external challenges that science is facing. Under internal challenges we understand changes in knowledge production that influence organization of research, training of students, career tracks, and other characteristics of science sphere. External challenges reflect new vision on functions of science in a society. In this context science serves as a tool to solve socio-economic problems. Government science policy addresses (and sometimes inspires) both internal and external challenges. We apply this conceptual framework to the Russian case.

We argue that Russian science is out of context of majority internal challenges that scientific communities are facing in developed countries. The biggest internal challenge for Russian science is the ongoing process of reforms per se, in which all sectors of science are involved – government (including Academy), university, and business enterprise. As far as external challenges are concerned, only recently the government suggested the view in a global context, by stating that Russian scientists should try to solve problems related to “grand challenges”. The tasks within these “grand challenges” are listed in the Strategy for Scientific and Technological Development of the Russian Federation until the year 2035 that came in force on December 1, 2016.

Internal challenges, discussed in international scientific community, are concentrated among such issues, as:

- Growing speed of research
- Value of fundamental science versus exploratory research
- Team science and its influence on organization of research
- Virtual research groups
- Effects of external and internal mobility
- Crisis of the postdoc model
- Limitations and pressure of bibliometrics
- Responsible research and innovation policy
- Pace of reforms, often related to budget cuts.

The Russian discourse covers only some of abovementioned issues. All attention is given to the process of government reforms in science sphere and its implications. We define five periods, or waves, of reforms, from the dissolution of the USSR till the present time. The latest period has started in mid-2013, when government initiated the fundamental reform of the Russian Academy of Sciences, and simultaneously introduced large resource-consuming program to support research and innovation in leading universities. Government agencies and scientific community are interpreting differently this internal challenge and its impact. While agencies see progress

and support it by improved statistics on scientific papers count and their citations, as well as some other quantitative indicators, scientific community finds the results of reforms harmful. Starting from 2016 the rhetoric of scientists was marked by reanimation of such terms as “stagnation”, “survival”, and “defeat”. These words were often used at the beginning of 90-s when Russian science was undergoing one of the most severe crisis associated with the breakup of the Soviet Union. We suggest explanation of such divergence based on the analysis of official statistical data and summarizing results of various qualitative sample surveys.

The paper contributes to understanding of pace and results of large government initiatives in Russian science, both at conceptual and practical level. It also suggests a scheme for analysis of government science policy in historical perspective, helping to define critical areas of path dependence.