

# THE FUTURE OF HIGHER SCHOOL IN RUSSIA: MISSIONS AND FUNCTIONS OF UNIVERSITIES

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## Abstract

Currently, changes in higher education are conceptualized as a multifaceted crisis. We consider that the crisis is civilizational at the bottom and is connected with the "phase shift" (the transition from industrial to post-industrial way of social existence) so all developed countries experience it with varying degrees of acuteness.

The article presents Foresight results concerning future of Russian higher school in the context of world and Russian economic, technological and socio-cultural trends that determine higher school prospects in the time horizon to 2030. Large-scale Delphi survey with participation of 730 experts from 39 cities in Russia was conducted within the project. Expert survey has obtained data that reflect professional community vision about options for higher education future in Russia. New variants of higher school mission and functions have been identified based on Delphi survey.

Analysis of economic, social and cultural trends made it possible to identify four variants of higher school mission. They are "Source of skilled personnel", "Institute for society (country, region) development", "Institute for social stability", "Core of cognitive society". According to the survey, the changes in higher school mission in the long-term future are expected. First and foremost, higher school should become a "core of cognitive society" and "institution of society development". The role of higher school as a "source of skilled personnel" will not disappear, but will be subordinate in importance.

Multidirectional dynamics will be observed in the system of higher school functions in the period from 2020 to 2030: 1) "descending" – traditional functions "education as personnel production" and "incubator for young people" will lose their value; 2) "rising" – importance to society and realization of functions "school for adults", "core of cognitive society", "anticipatory education" will increase because of forthcoming demographic changes and global transition to a "knowledge economy" and "cognitive society". Experts expect that higher school functions "science outpost", "innovator", "anticipatory education", "school for adults" will be leading by 2030. In addition new "emerging" functions can be identified, their importance will increase, but feasibility will remain low up to 2030. These functions are "think tank", "platform of future in present", "core of cognitive society", "school for innovators and entrepreneurs".

Keywords: Higher school in Russia, Foresight, Delphi-survey, future scenarios, the mission and functions of higher education, Russian universities.

## 1 INTRODUCTION. TRANSFORMING UNIVERSITIES

Currently, changes in higher education are comprehended as a multifaceted crisis [1], which includes: the gap between labor market requirements and professional qualifications received in higher school [2]; higher education status reduction and teaching work prestige decline [3]; necessity to change paradigm and formats of education [4] and others. We believe that education crisis has general civilizational nature and is connected with the "phase transition" from industrial to post-industrial forms of society existence, and all developed countries face it in a varying degree [5, 6]. Transformation of anthropological platform (the basis on which education is built) i.e. the mode of human, formed in XIX-XX in "western world" occurs. Social-anthropological project that determined meaningfulness and orientation of modern education in the past two centuries is problematized.

Crisis of higher education is manifested in blurring of educational institutions' functions: "educational events of personality" move from colleges and universities, and last ones turn into educational supermarkets or socio-adapting institutions. Education as shaping of cultural value core of personality [7] and formation of intellectual functions (thinking, understanding, reflection) [8], as well as situations of "performative existence" [9] occur in new communicative and creative institutions [10].

Education institutes in the millennium boundary undergo significant changes. Share of paid education significantly increased in many countries [11]; education gradually ceases to be a state (national) project and moves into sphere of individual responsibility. At the same time there have been significant changes in higher education content and technology, technologies based on own educational activity of a man have proliferated. University management builds on "academic capitalism" concept in which they are conceived as subjects of economic and business activity [12]. Universities independently operate in educational services market, research and development market, and their task now is to generate revenues through creation of competitive intellectual production; their work become more pragmatic and "market-oriented" [13]. On the other side, higher education extends beyond national borders and becomes an important instrument of international influence and a significant sector of international business. Countries with a successful economy and developed education sphere are able now to accumulate best intellectual resources through the selection of talented youth.

The article presents Foresight results concerning future of Russian higher school in the context of world and Russian economic, technological and socio-cultural trends that determine higher school prospects in the time horizon to 2030. Large-scale Delphi survey with participation of 730 experts from 39 cities in Russia and expert workshops were conducted within the project. Details about expert pool and methods of analysis are presented in the article [14]. Expert survey has obtained qualitative and quantitative data that reflect professional community vision about options for higher education future in Russia.

## **2 GLOBAL TRENDS AND DRIVERS OF CHANGES IN EDUCATION**

Currently various countries and international macro-regions are at different stages of socio-economic development. A number of countries in Africa, Asia and Latin America are in pre-industrial phase and mass literacy achievement is relevant for them and provides: 1) reducing of demographic and ethnic tensions; 2) national economies strengthening and employment increasing; 3) inclusion in production and consumption global processes; 4) adoption of new technologies and standards for economic activity.

Educational systems relevant to rapid industrial development and related processes of urbanization, population welfare and internal consumption market growth are rapidly forming in China, India, Brazil, South Africa, and Southeast Asia. It is important that governments of these countries aim to achieve regional leadership in higher education and vocational education export. Educational systems that ensure socio-economic, political and technological leadership in post-industrial phase will be formed in OECD countries. Their higher education systems will be focused primarily on management and innovation-technological activities that ensure influx of talented, educated migrants and allow concentrate intellectual capital of highest quality.

With growing civilizations' competition "educational areas" will be formed based on unity (affinity) of languages and cultures. Educational areas formation will be keenly competitive process and become new phase of "world redivision". The most powerful educational areas will be: European-American English educational area; Chinese educational area; Spanish-Latin educational area; Arab-Islamic educational area. Each educational area will have country-leader (or group of countries) exporting higher education. Processes of knowledge globalization and dissemination of new generation educational technologies (distance learning, open education, etc.) will be imposed on educational areas formation. For Russia, the crucial task will be formation of Russian educational area based on dissemination of Russian language and traditional socio-economic relations with Asia countries and the Caucasus (former Soviet Union republics) [16]. There will be a significant increase of youth population in these countries which makes actual for them labour and educational migration.

## **3 HIGHER SCHOOL IN RUSSIA: NEW MISSIONS AND SOCIAL FUNCTIONS**

Periods of socio-economic and socio-cultural transformations are characterized by large-scale "shifts" in social institutions system i.e. functions of existing institutions, their missions towards society are changing. Viability of different institutions (social, cultural, governmental, and others) is largely determined by whether they are able to declare new actual mission and update own functions in period of changes. Loss of institution' mission is manifested in "dissipation" of its activity meanings, it becomes imitative and "fictitious". Such institution is losing its attraction for active people so lose human and other resources and then immerse in stagnation state.

Historical path of higher school included the "eras of change" when mission and functions of universities have been actively discussed and practically transformed. In the first half of the XX century reflexive discourse about mission, purpose of University, its role in society was deployed with active participation of M. Weber, E. Durkheim, J. Ortega y Gasset, K. Jaspers etc. [16-20]. At the turn of XX and XXI centuries redefining of university mission in the modern world was continued by J. Habermas, R. Barnett, D. Bell etc. [1, 5, 21-24]. New, "inspiring" mission of higher school can considerably improve its status, increase scope of state and public support, and attract qualified and talented young people.

An important aspect of higher school future forecast is to identify promising technologies and formats of education, research and innovation. Without technological "upgrade" it is impossible to implement by higher education its mission and functions that are relevant to society and are replacing traditional missions and functions formed in previous development phase [25]. The ongoing "digital revolution" has already led to significant changes in higher school technologies, and role of these changes will increase. Emerging technologies and facilities of research, innovation and teaching will significantly alter and enrich the reality of higher school.

### 3.1 New missions of higher school in Russia

In the industrial development era higher school has fulfilled "source of skilled personnel" mission, providing highly qualified engineering, management, medical, scientific etc. personnel necessary for industries, services, social sphere. For countries in a situation of post-industrial transition, in which "knowledge economy", "cognitive society" is forming, new options of higher education mission become relevant. Analysis of the economic, social and cultural trends allows to identify four options of higher school mission that were discussed at an expert workshop and entered the Delphi survey questionnaire [26]. Experts were asked to assess the relevance and feasibility of following mission of higher education in Russia in perspective till 2020 and till 2030:

- 1 Higher school is "source of skilled personnel", it prepares highly qualified specialists for industries.
- 2 Higher school is "institute for society (country, region) development". Its products are development strategies, technology solutions, projects, new activities.
- 3 Higher school is "institute for social stability", it provides employment for youth, teachers, and (in the future) growing number of pensioners, some of whom will be students again.
- 4 Higher school is "core of cognitive society", it forms country' intellectual potential for transition to a knowledge economy (generates research, project, management competence etc.).

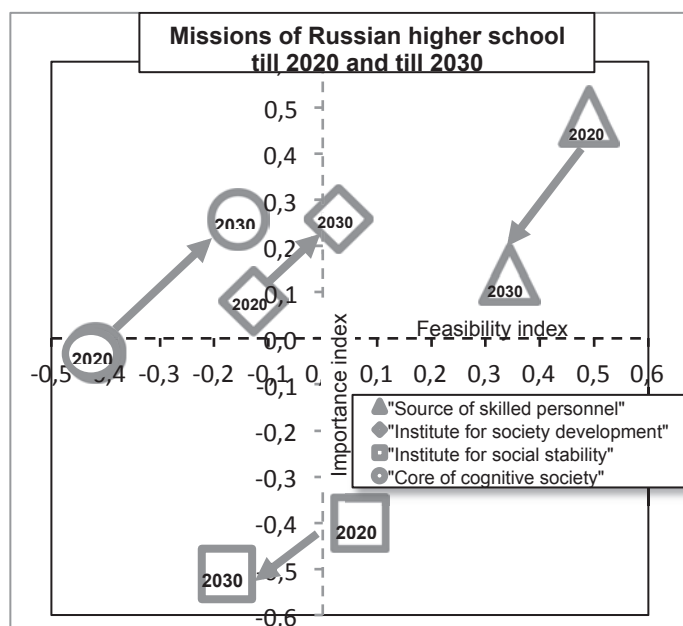


Figure 1. Expected changes in importance and feasibility of different options of higher education mission in perspective till 2020 and till 2030.

In fig. 1 is a "map" in which each option of mission is presented in form of markers and characterized by two coordinates - value of importance index and feasibility index (about index calculation in [14]). Each mission has marker twice (for 2020 and for 2030), markers pair are connected by arrows showing in which direction importance and feasibility of missions will change over time.

In medium-term perspective (until 2020), most significant for society and most feasible according to experts is mission "source of skilled personnel". The mission "institute for society development" is assessed as medium significant and medium feasible. Importance of the mission "core of cognitive society" till 2020 will be average but feasibility will be low. Importance of the mission "institute for social stability" expected to be low and feasibility - average. In the long term (until 2030), the missions of higher school, according to experts, should be changed as follows. The most important will be missions "core of cognitive society" and "institution of society development", their feasibility will increase, compared to 2020 (but still won't reach a high level). Mission "source of skilled personnel" in this case is the most feasible, but its importance in the future will be significantly reduced. Mission "institute for social stability" remains the least significant; decline of its feasibility is expected over time.

Therefore, experts expect that missions of higher school in the society will be changed in future. Higher school should become, first and foremost, "core of cognitive society" (to form the country's intellectual potential for knowledge economy transition) and "institution of society development" (an institution that generates development strategies, technology solutions, projects, new activities). The role of higher education as a "source of skilled personnel" will not disappear, but will be subordinate in importance. The degree of consensus for significance of higher school mission options by various experts is quite high, the coefficient of variation is between 19.1% to 33.2%. A bit more varied assess for feasibility of higher school missions, the coefficient of variation is 42%.

Analysis of changes in Russian higher school mission options (Fig. 1, 2) allows to select two directions: 1) rising line – importance and feasibility of mission increases with time (from 2020 to 2030); it includes missions: core of cognitive society and institution of society development. 2) descending line – importance and feasibility of mission decreases with time; it includes missions: source of skilled personnel and institute for social stability.

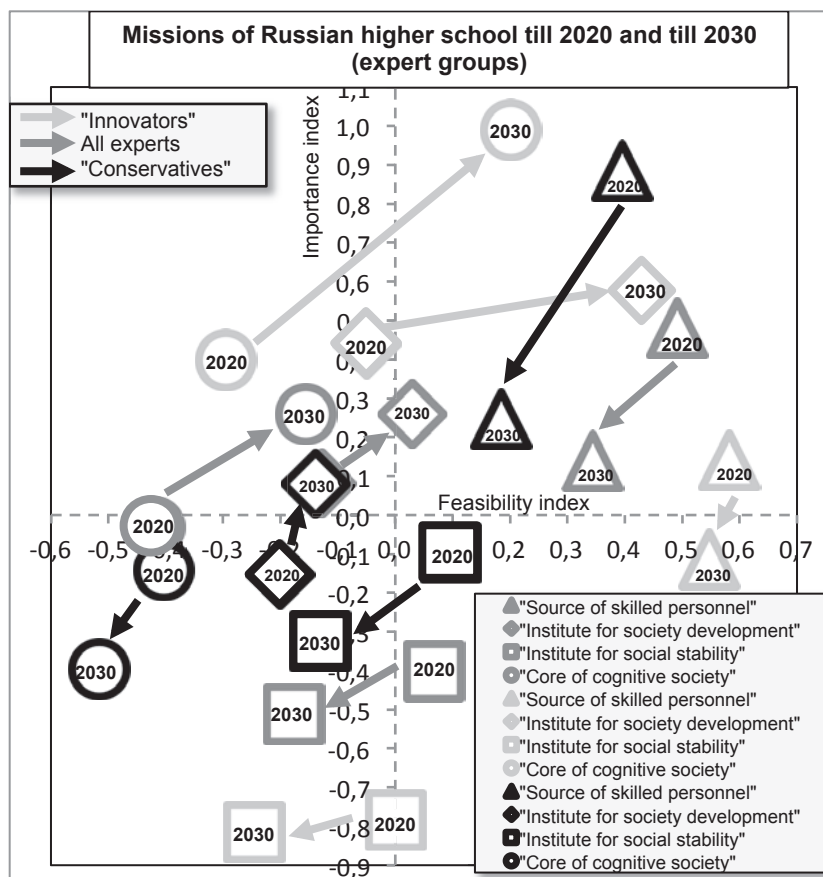


Figure 2. Changes of importance and feasibility for Russian higher education mission options in perspective till 2020 and till 2030 (evaluations of expert groups).

Fig. 2 shows a map of higher school missions, which shows evaluation by experts of various groups: "innovators", "all the experts", "conservatives". Forms of markers indicate to which missions estimates (indices) relate. Shades of markers and arrows (linking index marker for 2020 and index marker for 2030) indicate which experts groups gave assessments.

For a group of "experts-innovators" division of missions in "rising stream" and "descending stream" has a clearly expressed character. "Innovators" believe that by 2020 new higher school missions ("institution of society development" and "core of cognitive society") will be highly significant, and by 2030, their importance will increase even more, with the increase of feasibility. Mission "source of skilled personnel" preserved as a highly feasible, but its significance will be reduced. Importance of "institute for social stability" mission "innovators" assess as very low and feasibility of this mission, in their opinion, will also decrease with time. It's worth to note high assessments consolidation within the "innovators" group. This group expresses a very clear vision of higher school mission in the long term.

"Experts-conservatives" expect that importance and feasibility for almost all variants of higher school mission will decrease with time; except to the mission "institution of society development", importance of which will slightly increase to 2030 but feasibility will remain low.

### 3.2 New functions of higher school in Russia

Mission of higher school is specified in a number of functions that higher school can or should perform in reproduction and development processes. It is expected that school should develop a number of new functions. In expert interviews and workshops 20 possible functions specific to present and future of were identified. For convenience compact articulated symbolic notation of functions have been formulated. In the second round of the Delphi survey experts evaluated necessity for society in Russia and possibility of unfolding (in two time horizons - up to 2020 and up to 2030) following higher school functions.

- 1 "Education as personnel production" – training skilled workers demanded by labour market for basic industries.
- 2 "Science outpost" – basic research implementation, as the basis for tomorrow's technologies.
- 3 "Innovator" – technical and technological innovation developing.
- 4 "Humanitarian design bureau" – development and implementation of social and human innovations.
- 5 "Anticipatory education" – training of students in demand for companies of high-tech sectors.
- 6 "Think tank" – producing of strategies, approaches and "technical solutions" for economic, technological, social, cultural development.
- 7 "Platform of future in present" – creation and testing of new engineering, social, humanitarian practices.
- 8 "Operator-assembler" of existing knowledge and technologies which search, transfer, "assembly" knowledge and technologies for innovative solutions on behalf of Russian and foreign partners.
- 9 "Communicative platform" – organization of professional-public discussions of socio-economic and technological development key issues with participation of experts, authorities and business.
- 10 "Core of cognitive society" – deployment of activities and communications specific for knowledge economy; formation of research, project, management competences of students.
- 11 "Cultural center" – support for socio-cultural environment of the region.
- 12 "Educational Hub" – development of non-institutionalized educational environment of the region.
- 13 "The center of Russian world attraction" – creation of Russian cultural and educational area (education for the countries of the CIS, and others).
- 14 "Supermarket" – giving to consumers a variety of "products" in accordance with market demand as educational programs, applied developments, and others.
- 15 "School for innovators and entrepreneurs" – formation of human capital for innovative economy ("innovative man").
- 16 "School of success" – increasing of individual competitiveness, successfulness, adaptability.



- 17 "School for adults" – "upgrade" of personal and professional potential of all ages people including additional vocational education, retraining, professional development, personal development, life course restart etc.
- 18 "Incubator for young people" – "rearing" of youth up to the age when they would be able to determine themselves and to develop activities.
- 19 "Social buffer" – ensuring social stability, employment of youth, teachers, and in the future growing number of senior citizens.
- 20 Educational migration bridge" – improving migration quality, attracting talented young people.

Fig. 3 is a "map" of Russian higher school functions in horizon until 2020 and until 2030. Each function is marked by two markers (estimates for 2020 and 2030) with two coordinate values - "feasibility index" and "necessity index". Arrows are directed from markers for 2020 to markers for 2030. Letter codes, abbreviated each function are given near the arrows. Five groups of functions in accordance with their content, as well as level of their necessity and feasibility are allocated<sup>1</sup>.

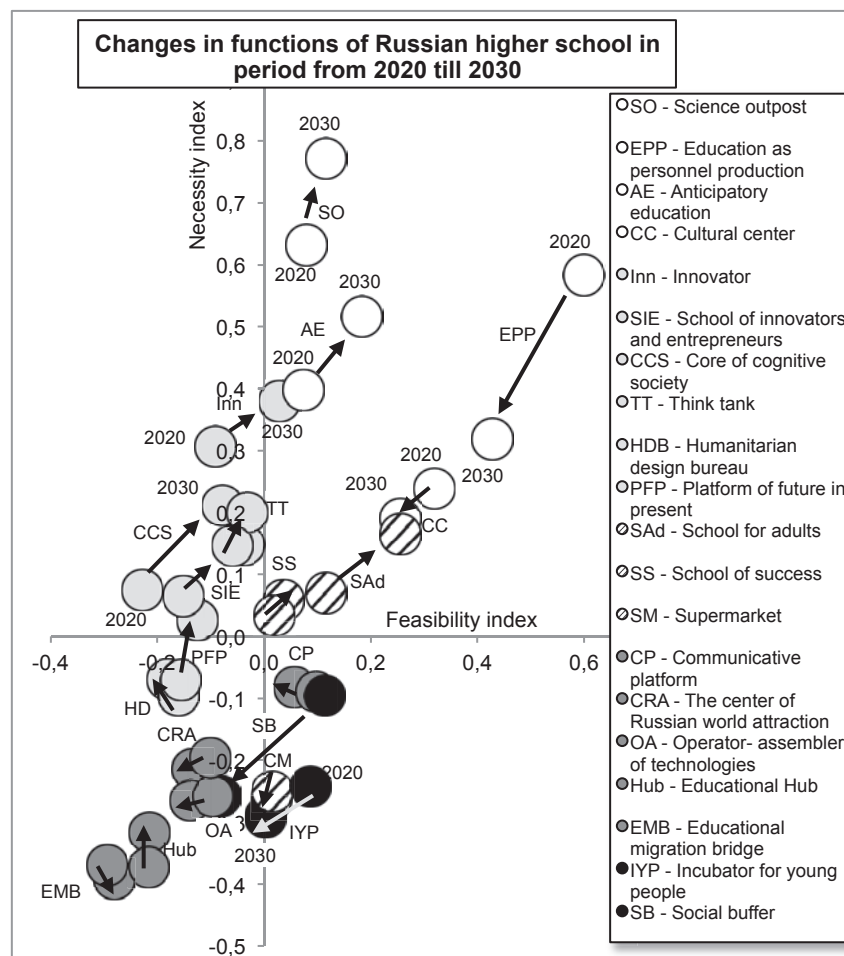


Figure 3. Changes of necessity for society in Russia and feasibility of higher school functions from 2020 to 2030

1. The first group includes highly necessary and medium and highly feasible functions that are perceived by society and universities as an integral part in complex of higher school functions; consistent understanding regarding their content has formed. They are traditionally prescribed to higher school functions, and they are implied as functions that higher school must comply with. Functions "education as personnel production", "science outpost", "anticipatory education", "cultural center" are in this group (on figures they are marked in white).

<sup>1</sup> We are talking about comparative necessity of functions, because even the least necessary functions, according to experts were rated not lower than 3.46 on a scale till 5".

2. The second group contains medium necessary, relatively less feasible functions, the content of which includes "generating the new" (i.e. new practices based on new knowledge). Currently consistent understanding of content and importance of these functions has not yet formed (not all experts support such functions formulations as meaningful or realistic, or related to higher school). This is new functions, implementation of which is only being tested by separate teams. This group includes "innovator", "think tank", "core of cognitive society", "the school for innovators and entrepreneurs," "platform for future in present", "humanitarian design bureau" (in the figures they are marked in gray).

3. The third group contains medium or low necessary (according to experts) and medium feasible functions, the content of which includes satisfying educational needs of individual. This group includes "school for adults", "school of success", "supermarket of educational services" (in the figures they are marked with gray shading).

4. The fourth group contains low necessary, medium and low feasible functions, substantially related to socio-transforming mission of higher school i.e. creation and maintenance of new communications and relationships as "new social reality". This group includes "communication platform", "the center of Russian world attraction", "operator- assembler", "educational hub", "educational migration bridge" (on the maps they are marked with dark gray).

5. The fifth group includes low necessary medium feasible functions related to maintenance of social stability. This functions group contains "incubator for young people", "social buffer" (black markers).

With regard to higher education functions necessity experts, as a rule, give consolidated estimates (coefficient of variation is no more than 25%). With regard to the feasibility experts gave less consolidated evaluation (coefficient of variation ranging from 25.4% to 47.2%).

Experts consider that in terms of public functions higher school is sufficiently stable institution, and assess of their necessity and feasibility for 2030 have a structure similar to the structure for 2020. It is possible to select "rising line" on fig. 3 including functions whose necessity and feasibility up to 2030, compared with the period up to 2020 will increase, and "descending line" containing functions whose necessity and feasibility according to experts will decline. "Rising line" includes some functions of the first group ("science outpost", "anticipatory education") and also takes almost all functions of the second group as "innovator", "think tank", "school for innovators and entrepreneurs," "core of cognitive society", "platform for future in present". "Rising movement" also includes two functions of the third group, namely "school for adults" and "school of success". "Descending line" includes two functions of the first group ("education as personnel production", "cultural center") and both functions of the fifth group, i.e. "incubator for young people" and "social buffer"; necessity and feasibility of these functions of higher education will decrease.

It should be noted that the functions of the fourth group (relating to socio-transforming role of higher school), according to experts, will not show any clear dynamics, in next 20 years they will remain relatively low necessary and feasible. Thus, higher school is not ready to serve as a "catalyst for a new social reality" and not perceived by expert in this capacity.

Note similar in shape dynamics of the missions (Fig. 1) and functions (Fig. 3). In both cases some elements are located in the upper right sector (necessary and highly feasible in the present and in the near future) and in a more distant future are shifted toward the lower right sector (the necessity and importance of these elements diminish when feasibility for a while "by inertia" persist).

Some elements of the lower-right sector is shifted toward the lower left; they are "moribund" missions or functions, importance of which already is low, and feasibility is expected to fall over time. The elements placed in the upper left sector, i.e. important, but low realizable, are shifted toward the upper right, it is expected that their importance and feasibility will increase over time; they will turn into leading mission / functions. Perspective of elements from lower left sector may be different. Part of them shift towards the upper-left sector, i.e. their importance increases, but feasibility remains low, this is "emerging" missions / functions; the other part stay in the lower left sector, they are functions that do not relate to "own", typical for the higher school (probably it is expected that these functions will be carried out by other institutions of society, or it is considered that their implementation is impossible for higher school in the foreseeable future).

Fig. 4 and Fig. 5 shows changes of necessity and feasibility of higher education functions in the time perspective until 2030, in terms of selected groups of experts i.e. "innovators" and "conservatives".

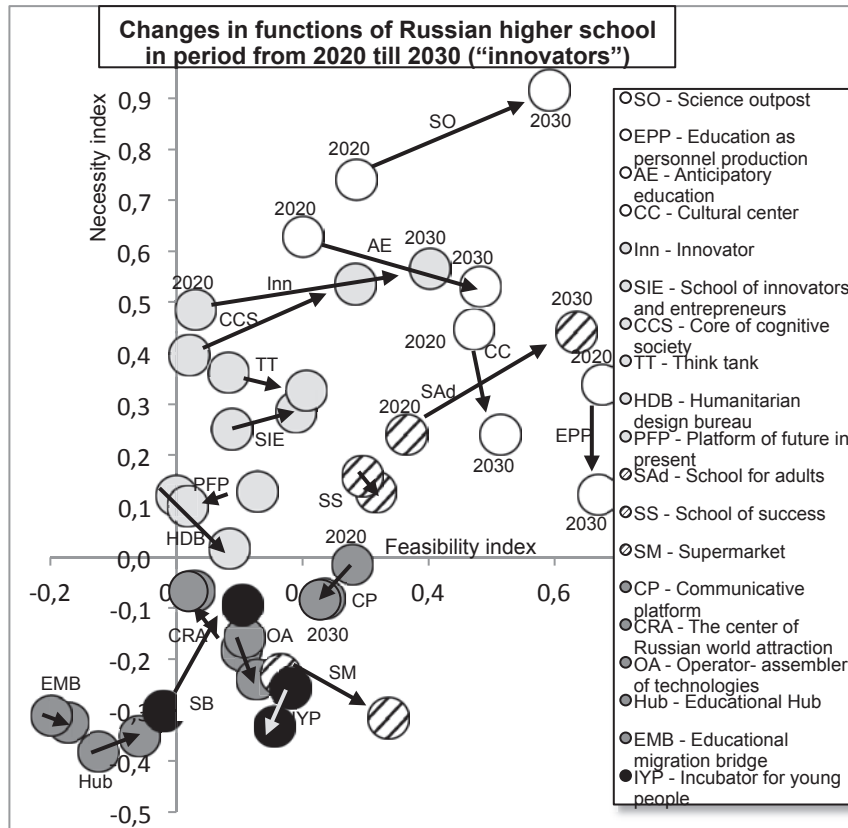


Figure 4. Changes of necessity for society in Russia and feasibility of higher school functions from 2020 to 2030 ("innovators").

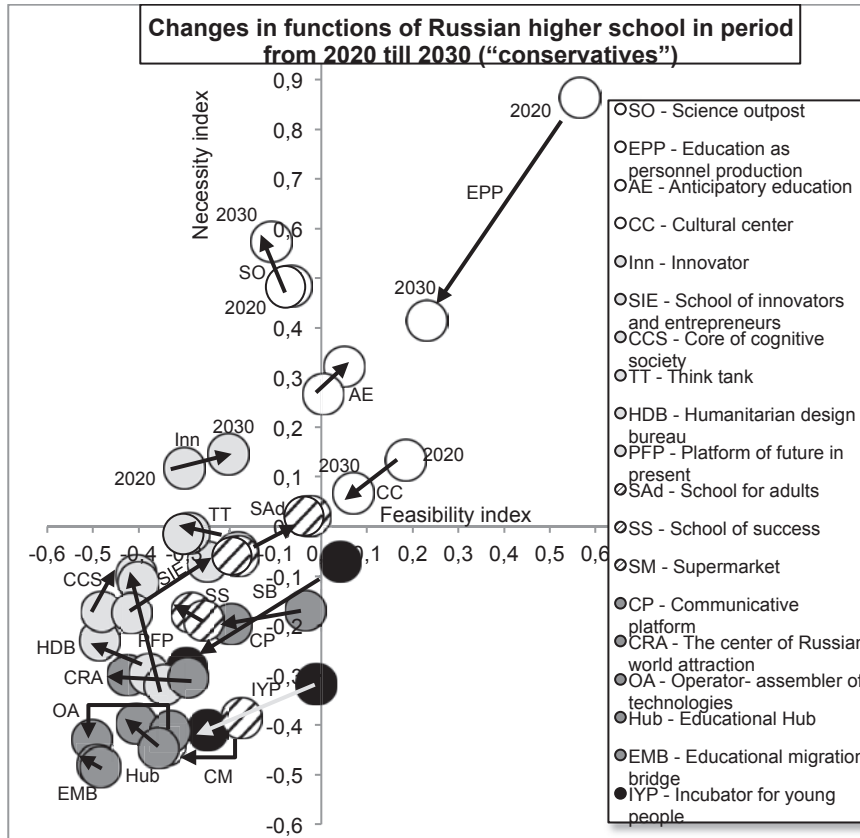


Figure 5. Changes of necessity for society in Russia and feasibility of higher school functions from 2020 to 2030 ("conservatives").



From "innovators" standpoint, there will be two kinds of pronounced changes (Fig. 4): 1) feasibility of high necessary functions will increase, this concerns to "science outpost", "innovator", "core of cognitive society", "school for innovators and entrepreneurs", "school for adults". Feasibility of functions as "think tank", "anticipatory education" will increase, their necessity slightly decrease (relative to other functions). Necessity of function "social buffer" will increase (up to mid-level); 2) necessity of some traditional functions will significantly reduced, while maintaining a degree of their feasibility; this concerns to "education as personnel production" and "cultural center". Thus, from "innovators" standpoint, there will be a noticeable "shift of emphasis" in higher education functions. Under the conditions of knowledge and information availability the role of higher school as a translator of knowledge (personnel production and cultural center) will decrease, but its role as a "generator of the new" (knowledge, technological solutions and innovations) will increase. Due to the demographic changes, its role as a "school for adults" and "social buffer" is increasing. As an effect of movement to the "knowledge society" necessity and feasibility of function "core of cognitive society" will increase.

From "conservatives" standpoint (Fig. 5), the dominant process from 2020 to 2030 will be falling of necessity and feasibility of a wide variety of higher school functions. In particular, it will concern highly evaluated traditional higher school function, namely "education as personnel production". The same dynamics (reducing of necessity and feasibility) awaits functions "social buffer", "incubator for young people", "cultural center", "supermarket". Necessity and feasibility of "anticipatory education", "innovator", "school for adults", "school for innovators and entrepreneurs," "core of cognitive society" will increase, but scale of this growth will be small, and to 2030 these functions won't become highly necessary and highly feasible. Thus, the vision of higher school future by "conservatives" is pessimistic: higher school is losing its position as knowledge translator, personnel production, but won't appreciably replace these items with some others; positive shifts in a number of functions are expected but they are small.

## 4 CONCLUSIONS

In the next 20 years "shift" of higher school mission in society is expected: it should become, first and foremost, "institution for development" in society, should take the role of "core of cognitive society", to form the country's intellectual potential for knowledge economy transition (research, project, management competences and others.). Most clearly the expectations expressed by the experts in group "innovators." This means that changes will be supported by emerging "groups for development" that will solve problems of higher school realizing their own personally meaningful projects.

In the system of higher school functions from 2020 to 2030 a multidirectional dynamics is expected: 1) "descending" – traditional functions "education as personnel production" and "incubator for young people" will lose their significance; 2) "rising" – importance for society and feasibility of "school for adults", "core of cognitive society", "anticipatory education" will increase, in connection with demographic changes and global transition to a "knowledge economy" and "cognitive society".

Experts expect that to 2030 following functions of higher school will become leading: 1) basic research implementation, as the basis for tomorrow's technologies ("science outpost"); 2) developing of technical and technological innovation ("innovator"); 3) training of students in demand for companies of high-tech sectors ("anticipatory education"), 4) "upgrade" of personal and professional potential of all ages people ("school for adults").

"Emerging" functions can be specified, importance of which will increase, but feasibility of them till 2030 will remain low: 1) producing of approaches and "technical solutions" for economic, technological, social, cultural development ("think tank"); 2) creation and testing of new engineering, social, humanitarian practices ("platform of future in present"); 3) deployment of activities and communications specific for knowledge economy; formation of respective competences ("core of cognitive society"); 4) formation of human capital for innovative economy ("school for innovators").

Visions of the future by expert groups "innovators" and "conservatives" differ. According to the "innovators", there will be "shift of emphasis" in higher education functions. Under the conditions of knowledge and information availability the role of higher education as a translator of knowledge will decrease, but the role of higher school as a "generator of the new" will increase. Due to the demographic changes, role of higher education as a "school for adults" and "social buffer" is increasing. With movement to the "knowledge society" the function "core of cognitive society" will appear. "Conservatives" consider that higher school is losing its position but won't develop some new functions in society.

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