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THE INTEGRATED APPROACH FOR FORESIGHT EVALUATION: THE RUSSIAN CASE

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As the impact of strategic decision-making at the corporate, sectoral and national levels increases, there are growing demands for high quality and solid Foresight outputs. In this regard, a timely detection and elimination of problems in Foresight projects is of great importance. A thorough evaluation of criteria and methods used in Foresight analysis would permit the improved effectiveness of Foresight activities. The results could be set against the aims to decide on the feasibility of projects and identify ways to improve them. Despite great interest in Foresight evaluation demonstrated by stakeholders at various levels, the general principles for conducting it have not yet been formulated, which hinders its development and the diffusion of successful expertise.

The purpose of this paper is to develop an integrated approach for the evaluation of Foresight projects, including their classification, basic criteria to evaluate project realisation, results and impact and a SWOT analysis. The proposed methodology was tested on Russian National Foresight 2030 and the results are described and analysed. Further ways of developing this approach are suggested.

Keywords – foresight, evaluation, Russia
JEL Classification: O22; O32

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Introduction

In the last 10 years due to Foresight popularity in the whole world, questions concerning its evaluation have become more crucial. Today activity in this area is widespread. Theoretical approaches towards Foresight evaluation as well as large-scale specialized projects on the evaluation of national Foresight-programs that define the future direction of development in different countries are growing.

Issues concerning the evaluation of Foresight studies have formed a separate research area. The most widespread problems investigated in this regard are the following: factors of Foresight success, areas of Foresight impact, and the evaluation of different aspects of Foresight processes.

Scholars presenting the first research direction focus on defining Foresight success and identifying factors that lead to such success. Foresight is considered to be successful if it provides more effective learning and more creativity in developing strategies and initiatives (Bezold 2010). Several factors of Foresight success have been determined: strong interconnections between public, private and academic sectors; the inclusion of different stakeholders; links to the current policy agenda; the development of novel methodologies, creativity and lateral thinking; proactive public work; and taking previous experience into account (Calof and Smith 2008; Meissner 2012; Habegger 2010). Some scholars have identified pitfalls of Foresight projects as well as factors of success (Öner and Beser 2011).

The impact of Foresight activities, as being the main reason for Foresight intervention, is a principal indicator of evaluation as well. Four types of Foresight impacts (awareness raising, informing, enabling and influencing) form a Foresight impact schema (Johnston 2012). For the purpose of impact evaluation, researchers have determined several directions of the most considerable Foresight influence. These directions include: a knowledge society; the emergence of science, technology and innovation (STI) system; business, policy-making and decision-making processes; and public understanding of science and technology (e.g. Popper et al. 2010; Havas, Schartinger and Weber 2010; Rollwagena et al. 2008). Some scholars suggest analysing internal criteria (related to actors, processes, objectives and inputs/outputs), wider environmental factors, and external factors together for the purpose of a qualitative evaluation of Foresight impact (Amanatidou and Guy 2008). In accordance with the close interconnection between STI system and Foresight, the impact of the latter is assessed from the national innovation performance perspective (Meissner 2012; Gershman 2012).

Issues devoted to the evaluation process include choosing optimal methods and criteria, the identification of evaluation topics and elaborating evaluation algorithm (Meissner and Sokolov 2013). The following criteria are considered to be the most important: appropriateness, efficiency (input-output, input-effects, and input-impact relations), effectiveness (objectives-output,

objectives-results, and objectives-impact relations), sufficiency, value added, usefulness, importance and relevance (Georghiou et al. 2004a; Georghiou and Keenan 2006; Popper et al. 2010; Destatte 2007; Dursun et al. 2011; Rijkens-Klomp and van der Duin 2011). The most "economic" criterion – value for money – is assessed through the evaluation of the funding mechanisms' performance and is characterised mainly in qualitative terms (Popper et al. 2010). The specificity of the "behavioural additionality" criterion is widely investigated by researchers in regard to the evaluation of Foresight impact. Many other criteria can be applied for the evaluation of different aspects of Foresight process, for example, the appropriateness of objectives and the experience of the project team (e.g. Georghiou et al. 2004; Yoda 2011; Calof 2011).

The review of the literature has revealed that there is no consensus among scholars about a Foresight evaluation framework. Georghiou and Keenan (2006) suppose that it depends on Foresight's rationale (the authors identify three main rationales for Foresight: providing policy advice, building advocacy coalitions, and providing social forums). Some other researchers propose to conduct analysis according to normative, strategic, and operational levels of management and to three basic elements – people, system, and organisation[3] (Alsan and Öner 2004).

Foresight evaluation theory has developed in parallel with the formation of a practical area of Foresight appraisal. The first evaluation initiatives appeared in the late 1990s. The list of the most remarkable recent Foresight evaluation programs includes the evaluation of FUTUR (Germany) (Cuhls 2003; Giesecke 2008), the Hungarian Technology Foresight Programme (Kováts et al. 2000; Rader 2003), the third round of United Kingdom Foresight Programme (Miles 2003; Georghiou et al. 2006), the Vision 2023 Technology Foresight (Turkey) (Saritas et al. 2007), and the Colombian Technology Foresight Programme (Popper et al. 2010). Different evaluation methods and criteria were used in the framework of each programme. Therefore, an analysis of practical cases has confirmed that no generally accepted framework for the evaluation of Foresight activities has been developed to date.

The purpose of this paper is to propose a methodological approach to Foresight evaluation including evaluation of process, results and impact step by step. Besides, it is aimed to test the proposed approach on the example of Russian National Foresight until 2030.

1. The integrated approach for Foresight evaluation

The methodology offered in this research is based on previous analysis of practical experience and the theory of Foresight evaluation (Sokolova and Makarova 2013), as well as approaches, formed in the sphere of project management (Makarova and Sokolova 2012). It includes the several stages presented at Figure 1.

[3] It is a framework of the adjusted integrated Foresight management model.

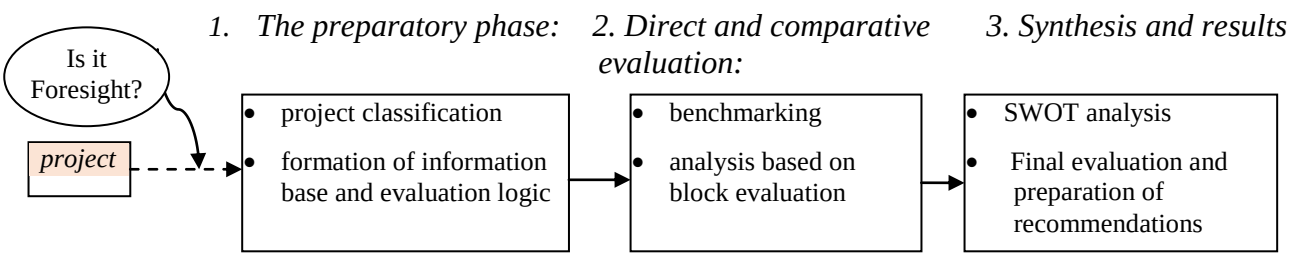

Figure 1. The main stages of the evaluation methodology offered

Nowadays, because of the rapid growth of Foresight popularity worldwide, its brand is often being used for the projects which do not possess its key characteristics, for example, like broad involvement of all categories of stakeholders. That dramatically decreases the quality and validity of final results. In this regard, the necessity to form a range of criteria appears in order to define the relation of a project to the Foresight category. However, there is no universally recognized definition of Foresight because of constant change in its understanding and dynamism of applied methods and instruments. Nevertheless, a list of criteria based on the detailed literature review (see, for example, Popper et al. *2010;* FOR-LEARN) was complied and it includes two categories of criteria:

Main: multi-stakeholder participation, future-orientation and the support of the decision-making process.

Additional: a complex approach, the creation of networking, a mix of planning strategies, future studies and strategy analysis.

1.1.The preparatory stage

At the beginning of project evaluation, it is necessary to reveal the projects' basic characteristics (the initiator of Foresight, budget, timeline) and define its place in the Foresight "coordinate system". In the framework of this research different classifications were analysed and the most common features of Foresight project typology were found to include level, goal type (Rijkens-Klomp and van der Duin 2011), rationale (Georghiou and Keenan 2006), generation (Georghiou 2007) and dimension (Calof and Smith 2008) (see the Table 1).

Table 1. The classification of Foresight projects

Criteria	*Types of Foresight projects*					
Level	International	National	Regional	Local	Industry-specific	Corporate
Goal type	Result oriented			Process oriented		
Rationale	Providing policy advice		Building advocacy coalitions		Providing social forums	
Generation	first generation	second generation	third generation	fourth generation	fifth generation	
Dimension	Scientific and technological aspects		Societal aspects		Policy and implementation aspects	

It is obvious, that for different projects types various evaluation approaches can be used and various emphasis can be put. Thereupon, taking into account this classification at the preparatory stage an evaluation model is developed. The evaluation model identifies its key steps, main blocks, criteria, scales and instruments. Besides, at this stage an information base is formed. It includes all the necessary and available information about the project (terms of reference, reports, presentations etc.).

1.2 The main stage: direct and indirect evaluation

At the main stage according to the developed model the project evaluation which can be both absolute, and relative is carried out. The latter assumes the implementation of a cross-country comparison (benchmarking) aimed at the detection of similarities and differences of the analysed project and similar projects (in respect of the objectives and goals), realized abroad. It allows the defining of possible areas of improvement of the project. Projects are compared by such criteria as: purposes, implementation period, stages, thematic areas, ways of involvement of experts, applied methods, etc.

An absolute evaluation can be realized according to the following key blocks: process of project implementation, its results and impact. Wherein, the first block consists of the following elements: objectives, project team, client, stakeholders, methodology, organisation, resources. Each element corresponds to a list of criteria (see the Table 2).

Table 2. The list of evaluation criteria

Objectives • appropriateness • attainability • non-divergence • adequacy of formulation	*Stakeholders* • key sectors' involvement, key organisation presence • methods of participants involvement • interconnection between experts
Project team • level of qualification and experience level in regard to function • communication between project team members • level of independence	*Client* • position of initiator • interaction with project team
Organisation • efficiency of Foresight implementation • efficiency of management • complexity of actions planning	*Resources* • sufficiency • quality • efficiency of allocation
Methodology • relevance of methods to objectives • variety of methods • efficiency of implementation • approach to methods selection	

The proposed structure of elements and the corresponding criteria are based on an analysis of the theory and practice of Foresight evaluation and project management experience and, of course, could not be considered universal, and should be adapted according to the needs of a specific project. Within the framework of this research, the emphasis was made on the national S&T Foresight, aimed at decision-making support.

The evaluation of process of Foresight projects starts with an analysis of the subsystem of *objectives*. The criteria for objective analysis are appropriateness, attainability, non-divergence and adequacy of formulation. The evaluation is conducted by interviewing members of the project team, stakeholders and experts, by comparing the set targets with the results obtained in practice.

Effectiveness of Foresight depends greatly on the professional characteristics of project team members. In project team evaluation such indicators as: level of qualification and experience level in regard to function, communication between project team members, and the level of independence are considered. Anonymous surveys with members of a project team are used to evaluate the last criterion.

Client position (the ability to influence the condition of a national innovation system) can be identified on the basis of the analysis of documents and interviews with members of a project team. The degree of involvement of the client in the Foresight realization process is revealed from the

nature of their interaction with the project team. The element devoted to stakeholders, contains particularly information on key sectors involvement and key organisation presence. In order to analyze the block, it is necessary to reveal all key players in advance at the preparatory stage.

The analysis of methodology applied is one of the most important evaluation directions. Compliance with the selected methods and achieving the objectives may be determined by an analysis of the contribution of each method in the achievement of the individual objective of Foresight. Additionally, the approach to the choice of methods is taken into account: random selection, the selective use of some tools, a set of different methods (Meissner and Cervantes 2010). A variety of methods is evaluated in accordance to inclusion instruments from each apex of the Foresight-diamond (Popper 2008) and the effectiveness of their joint application is suggested to be done.

The evaluation of the process of the Foresight project could be made according to the following stages: pre-Foresight, recruitment, generation, action and renewal (Miles, 2002). For each stage efficiency of activity is defined, administrative and organisational mistakes come to light. Besides, quality of planning is estimated by the comparison of expected actions during each stage and the actual achievements. Project resources (informational, financial, temporal and human) are estimated according to such criteria as: sufficiency, quality, usage efficiency.

Evaluation of the results involves an analysis of general and specific criteria which depend on the type of the final product of the Foresight project. The general criteria for evaluation include: effectiveness, reliability, objectivity, accuracy, validity, reasonableness.

Roadmaps, scenarios, lists of critical technologies and priorities of development, analytical reports, recommendations to decision-makers, etc. are considered to be the most widespread results of Foresight projects. Each group of results has its requirements, instruments of achievement and, respectively, specific criteria of evaluation are necessary. For example, for roadmaps and scenarios the specific criteria could be considered (on the basis of Kappel 2001; Lindgren and Bandhold 2003; Bezold 2010) (see the Table 3).

Table 3. The evaluation criteria for roadmaps and scenarios

Type of results	Roadmaps	Scenarios
Criteria	The relationship between the levels Meet the needs of the client Creativity (originality of solutions proposed) A clear prioritization Reliability The connection with "real life" Address potential commercialization	Impact on decision-making Flexibility Alternativity Comprehensiveness Diversity Memorability

However, it is not easy to define specific requirements for some groups of results (for example, the list of priorities or trends) and high estimation of the formation process (methods, involved experts, etc.) as well as the degree of their sufficiency can be a certain guarantee of their quality.

In the evaluation of the influence of Foresight different types of impact, compliance with the range of criteria, factors of efficiency/ inefficiency of this influence are considered. The following types of impact of Foresight could be distinguished depending on (see, for example Miles 2012, Johnston 2012):

- the way: direct and indirect;
- time: short-, middle-, long-term;
- the object: participants, stakeholders, third party, organisation of participants, system;
- the functions of Foresight: awareness growth, support of decision-making process, identification of potential directions of research and investment, contribution to problem solving, connected with Grand Challenges, etc.;
- directions: influence on financing the research sphere, Foresight culture formation, development of science and technology program and institutions etc.

1.3 The final stage: synthesis and results

At the final stage a SWOT analysis of the project is carried out. It is built on the basis of data from the previous stage, and by collecting additional information from further interviews with members of the project team. It is supposed that the SWOT analysis allows the presentation of the final evaluation of the studied project in the most visible form. On the basis of this analysis the final conclusion and recommendations on further improvement of Foresight is prepared.

2. Russian national S&T Foresight 2030 (the 3rd cycle)

The third cycle of the Russian national Foresight 2030 was carried out in 2011-2013 for the Ministry of Education and Science of the Russian Federation. The key objective of the project was to identify the most important areas of S&T development, their practical application and possibilities for the implementation of large innovative projects (Sokolov 2013). The project was divided on 3 stages with their own aims (see the Figure 2).

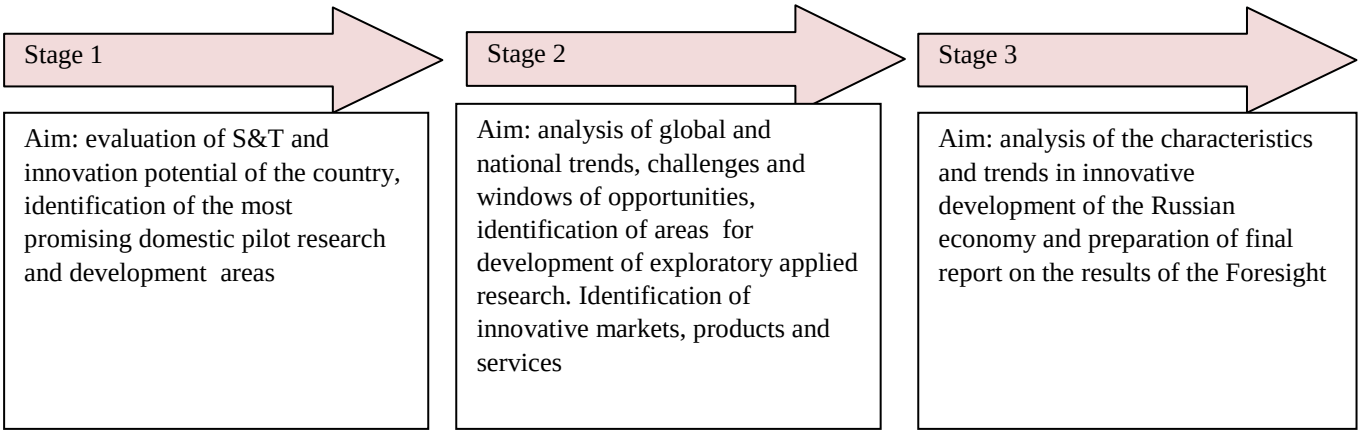

Figure 2. The stages of the Russian national S&T Foresight 2030

The main logic of the project consisted in the following: the major global trends and sectoral tendencies for considered S&T areas, which form the new innovative markets, were identified. Also key global challenges and the threats influencing the formation came to light. Then based a list of the main innovative markets was created, for each of those the major competitive products were identified. Main technologies and research for each product were found (see the Figure 3).

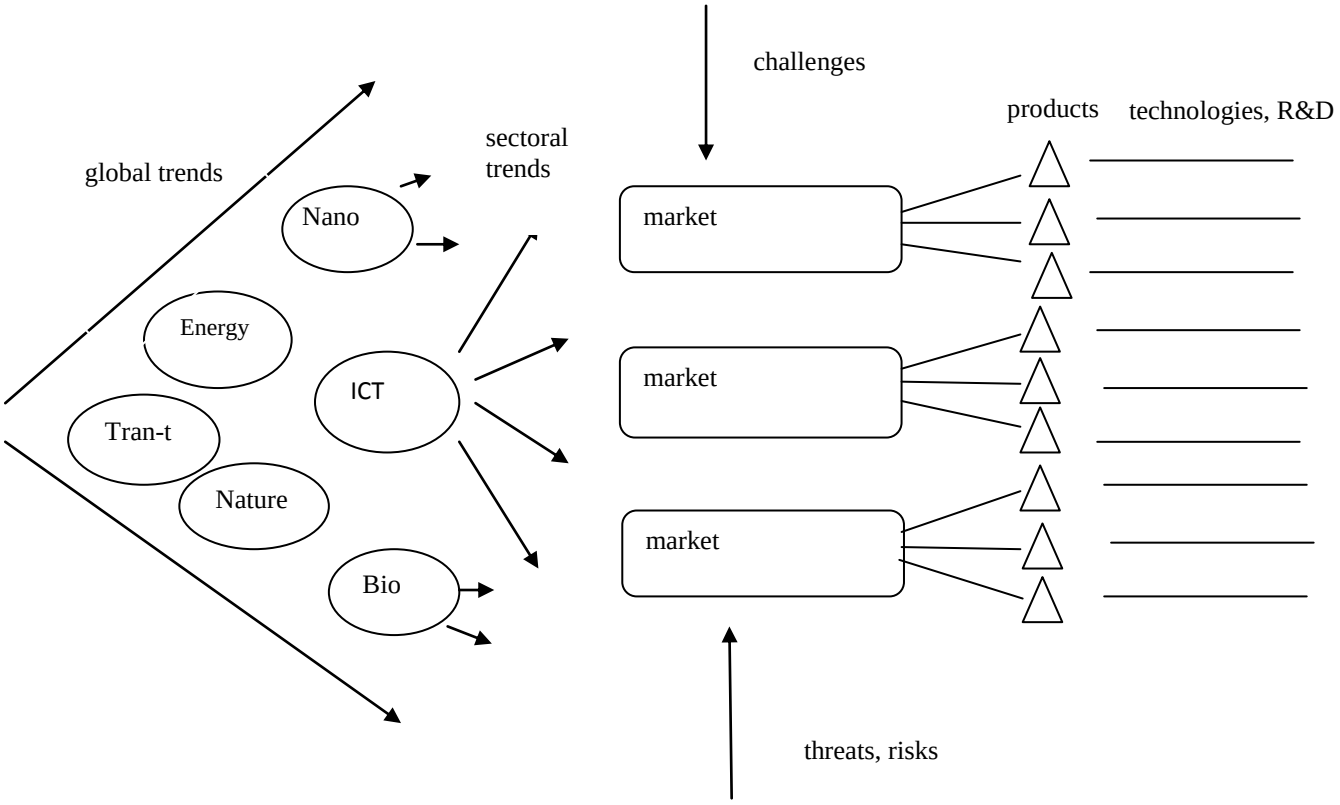

Figure 3. The logic of the Russian national S&T Foresight 2030

Among the chosen S&T areas Russian national S&T priorities were considered:

- nanosystems;
- information and telecommunication systems;
- life sciences;

- rational use of natural resources;
- transport and space systems;
- energy efficiency, energy conservation, nuclear power.

The key applied methods were bibliometric and patent analysis, stakeholders mapping, quantitative and qualitative models, indepth interviews, focus groups, expert panels and questionnaires.

More than 1000 experts representing not less than 500 organisations, including scientific centres, producers and consumers of innovations were participated in the project.

As a result, the descriptions of long-term trends of innovative development for the major sectors of the world economy were created, taking into account global scientific and technological trends, characteristics of the major innovative markets and products were given.

Proposals on integration of Russia into global value chains and the formation of international alliances in the field of science and technology, as well as proposals on the integration of research results into policy decision making were developed. Additionally, the final report, integrating the main results of this project was created.

3. Evaluation of the Russian national S&T Foresight 2030

The evaluation process according to the developed methodology should start with verification that the project belongs to the Foresight category. On the basis of the revealed criteria the assessment of the third cycle of the Russian Foresight was carried out from the point of view of compliance to main and additional Foresight criteria (see the Table 4).

Table 4. The Foresight criteria for the Russian national S&T Foresight 2030

Criterion	Compliance	Comments
Main criteria		
multi-stakeholder participation	✓	Involved experts represent science, industry, business and government
future-orientation	✓	Time horizon of the project is 2030
support to decision-making process	✓	The results of the project were used for development of several strategy political documents
Additional criteria		
complex approach	✓	In the frame of the third cycle a wide range of methods are applied, challenges and opportunities are analysed together
creation of networking	✓	In the connection with project sectoral Foresight centres were created, the work on expert

		community formation was conducted
mix of planning strategies, future studies and strategy analysis	✓	These elements are present in the project: planning strategies was presented at the prepared policy document, future studies as the core of the methodology and strategy analysis by the identification of future development

The conducted analysis concludes that the project is actually Foresight, and, therefore, to the evaluation methodology given in the previous section can be applied to it.

3.1. The preparatory stage

Defining the place of the analysed project in the Foresight system represents an important stage in the preparation of the evaluation. It is a national Foresight project, and it is oriented torwards results and support of political decision-making. It concentrates on scientific and technological aspects and as it is oriented towards the connection of science and technology opportunities as well as economics needs can be related to Foresight of the second generation. Integral classification of the evaluated project can be seen in the Table 5.

Table 5. The classification of the Russian national S&T Foresight 2030

Criteria	*Types of Foresight-projects*					
Level	International	✓ ***National***	Regional	Local	Industry-specific	Corporate
Goal type	✓ ***Result oriented***			Process oriented		
Rationale	✓ ***Providing policy advice***		Building advocacy coalitions		Providing social forums	
Generation	First generation	✓ ***Second generation***	Third generation	Fourth generation	Fifth generation	
Dimension	✓ ***Scientific and technological aspects***		Societal aspects		Policy and implementation aspects	

The model of the project evaluation which included main blocks (process, results, impact), criteria (considered in the previous section) and methods (the documentation analysis, the comparative analysis and interview with members of the project team) were also developed at the preparatory stage. In addition, the information base was created including the terms of reference, reports, presentations, guidelines, expert bases, survey results.

3.2 The main stage: direct and indirect evaluation

At the beginning of the main stage comparative analysis (benchmarking) of the project was carried out.

For this purpose the foreign long-term S&T Foresight projects that are closest to the analysed project, were chosen: The 9th Japanese Science and Technology Foresight, Korean Technology Foresight and Turkish National Technology Foresight (Vision 2023). The analysis of the methodology of all projects showed that expert surveys are implemented in the all studies. Also in these projects the Delphi method was applied, and in the Russian Foresight it was used within the its first cycle. The comparison showed that in the analysed project a wide range of methods is used, moreover quantitative estimates are applied more often than abroad, but there is a lack of creative methods (for example, the scenario method was used in the 9th Japanese Science and Technology Foresight, as well as in Korean Technology Foresight). The advantage of the Russian Foresight is the integrated and interconnected approach to chain forming: trends–markets–products–technology–R&D. For each link in the chain structured and detailed descriptions were prepared. For example, for the "trends" link information was collected about the probable year of their maximum development, the effects, the impact on Russia, the leading countries, and others, for the product - information on their key characteristics, the year of creation, the alternatives, their advantages and disadvantages, etc.

The analysis of structure and context of the compared studies allowed us to see that the majority of the considered key S&T areas in the Russian project are included in foreign Foresights as well, however in the Russian Foresight there are not enough socially-oriented areas compared to the foreign projects (the "social technologies" area in the 9th Japanese Science and Technology Foresight, "science and technologies for society" in Korean Technology Foresight, and "education and human resources" in Turkish National Technology Foresight).

The process of the *direct evaluation* on blocks was built as follows. At the beginning the information base of the project, created at the preparatory stage, was analysed according to the chosen criteria. Further the information "gaps" were identified, and a series of interviews with members of the project team were carried out to fill the "gaps". The most significant amount of additional information collected through the interviews was concerning such estimated elements, as resources, independence level of the project team, interaction with the client, stakeholders and members of the project team.

The evaluation of the objectives and goals of the project showed that the main requirements were observed. They were rational (meet the needs of the customer and key stakeholders), achievable, consistent and adequately formulated.

The position of the client (Ministry of Education and Science of the Russian Federation) was characterized as strong in the national innovative system because the Ministry is one of the key

players in the field of science and technology in Russia. During the project realization, representatives of the client actively collaborated with the project team and provide the necessary support. For example, they prepared cover letters signed by a department director with a request to experts to take part in the project. In addition, some expert discussions with the highest level experts were carried out on the Ministry platform.

The evaluation of the project team showed that its members possessed the necessary level of experience, qualification and independence to carry out this research and solve the corresponding tasks. Most of them took part in more than one Foresight project, many of them have a PhD degree, certificates of the international organisations and publications in Foresight field.

Experts from various areas of science, education and business were involved in the project. As a whole, the expert base of the project contained more than 1000 experts, including foreign ones. However, the distribution of experts in directions: science, higher education, business and foreign experts was uneven between the analysed S&T areas. For example, the expert distribution of "Life Science" area was: science (63%), higher education (21%), business (11%) and foreign experts (6%), and in "Transport and Space Systems" area - science (30%), higher education institutions (41%), business (24%) and foreign experts (5%). These differences were connected with the specifics of the subject area, as well as with possibilities to make use of experts. The analysis of received questionnaires from experts showed that proportion of responses from business representatives and international experts was significantly lower than that of the representatives of science and education. Among the methods of participant involvement were: conomination, bibliometric analysis, involvement of representatives from key organisations, technological platforms and sectoral Foresight centres. Interaction between participants was organised within the framework of expert panels, seminars and brainstorms.

Within the framework of the *evaluation of the project organisation* and logic of goals to achieve final objectives it was found out that some goals within one stage were not included in the main project outline and were not used or were used indirectly at subsequent stages. One reason for the lack of comprehensive planning, as shown by the results of the interviews, was the desire of the client to add questions they are interested into the project (for example, such goal as "an evaluation of the current state of S&T and innovation potential of Russia" was not directly integrated into the main line of the project). However on the whole, the evaluation showed that the realization and the project management were carried out effectively, the all goals were solved in time according to the timeline.

An interesting result was received in the course of the *evaluation of the project methodology*. The analysis of methods distribution according to the goals of the project showed that the majority of quantitative methods conducted in the project (modeling, bibliometric and patent

analysis and statistics) were used for indirect goals which were not included in the main project outline (trends –markets – products – technologies – R&D). For the main goals of the project expert procedures were mostly used. The distribution of methods used on the apexes of the Foresight diamond also showed as the benchmarking results that creative methods were under-represented (see the Figure 4).

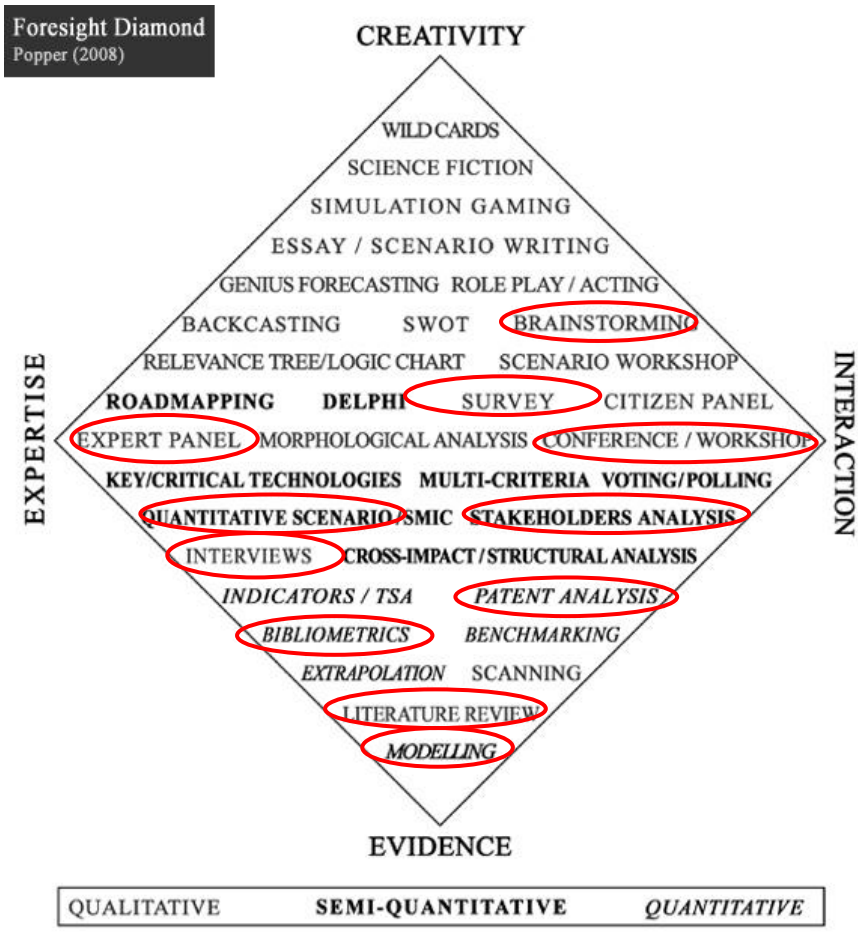

Figure 4. The distribution of methods used at the Russian national S&T Foresight 2030

The evaluation of the project results showed that on the one hand, they have been validated by a large number of experts, but on the other hand, the influence on the final result of personal interests of members of various expert groups is possible. The validation of the results with the verification methods, was presented in the form of a broad literature review, however there was not enough connection with macroeconomic scenarios, trends and quantitative estimates.

The impact of the project results was connected, firstly, with the direct application for the development of strategic political documents (the state program of the Russian Federation "Development of science and technology" 2012-2020; the forecast of long-term social-economic development of the Russian Federation until 2030), and thus the results of the project affected directly funding mechanisms of R&D in Russia. Secondly, they were used as the information source by developing strategic research programs of a number of technological platforms and programs of

the development of innovative territorial clusters. Additionally, implementation of the project promoted formation Foresight culture in Russia (as a result of broad expert work and conducting a series of Foresight trainings for the sectoral Foresight centres by members of the project team).

The resources assessment showed that there was on average enough key resources (finance and time). There were certain difficulties with information resources: separate forward-looking materials of other ministries were unavailable, information search in some technologies and quantitative market forecasts created some difficulties. A lack of human resources as well as a shortage of special knowledge in the areas of other employees' responsibility, was observed, as the project was built around S&T areas.

3.3 Final stage: conclusion and results

At the final stage, a SWOT analysis of the project was made on the basis of the previous evaluation and further interviews with members of the project team. It includes project' ***S***trengths and ***W***eaknesses, ***O***pportunities, facilitated its realization, and ***T***hreats (barriers) that hampered its success (Table 6).

Table 6. The SWOT analysis of the Russian national S&T Foresight 2030

S • Development of an interconnected chain: markets-products-technology –R&D • The structured and detailed description of each link of the analysed chain • Involvement of a large number of experts • Direct connection to the formation of S&T policy • Direct influence on formation Foresight culture in Russia (e.g. infrastructure development and training of the sectoral Foresight centres)	**W** • Uneven distribution of experts in considered S&T areas • Insufficient involvement of business representatives • Insufficient interconnection between some goals of the project • Imbalance in use of various methods of Foresight diamond (insufficient use of creative methods, quantitative methods generally for the indirect goals) • Weak socio-economic focus
O • Strong and active position of the client • Expert base and results from previous cycles of the project • Sectoral Foresight centres as a resource • Growth of interest in Foresight from government	**T** • Lack of expert motivation (especially from the business field) to participate in the project • The gap of expert generations (loss of competences) • Lack of interagency coordination in terms of Foresight work between different RF ministries and their inaccessibility • The difficulties of translation from the language of science and technology into the language of the market and business

Overall, the project was carried out with a high degree of efficiency, although there are some directions for improvement. The methodology developed contained a large number of various

methods and it was built around the worked-out chains: trends-markets-products-technology-R&D, however more active use of creative methods (for example, scenarios and wild cards) and quantitative estimates (for example, market volume) is recommended. The project was realized with intensive interaction with the client and this resource can be used for better experts involvement (especially, from business area), for example, by increasing the prestige of expert participation in Foresight projects. One of the main advantages of the project is its direct integration into the formation of S&T and innovation policy and its influence on Foresight culture development in Russia. However, it is recommended that more attention be paid to the study of social problems and needs, and the opportunities of science and technology to meet them.

Conclusion

This paper presents an approach to the evaluation of national Foresight projects, and its testing for the Russian national Foresight until 2030. The analysis allowed us to identify the main characteristics of this project in key areas of evaluation: process (objectives, project team, client, stakeholders, methodology, organisation, resources), and the result and impact, according to a number of proposed criteria. Benchmarking, which identified some areas for improvement, was also conducted. In addition, the main advantages and disadvantages of the project, and the factors that promote and prevent its implementation, were clearly presented in the form of a SWOT analysis. Thus, the proposed approach allows for a comprehensive evaluation of the project, including preliminary classification and inspection of projects belonging to the Foresight category.

As a further development of this approach, it seems appropriate to build a more explicit links between the position of the classification used in the project and the final list of criteria. For example, identification of specific criteria for corporate and international projects or the differences in the approaches to the evaluation of the Foresight of different generations. In addition, to enhance the objectivity and completeness of the final evaluation, it is necessary to include interviews (or questionnaires) with client representatives and key stakeholders in project evaluation, which is planned to be done as part of the development of the research presented.

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