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An integrated approach for the evaluation of national Foresight: The Russian case

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ABSTRACT

As the need for anticipatory strategic decision-making increases at all levels of governance, there are growing demands for high quality and relevant contributions from Foresight exercises. In this regard, identification of strong and weak aspects of Foresight design and implementation, a quality of outputs and a degree of impact as well as learning from this practice is of great importance. Strong evaluation procedures contribute to further Foresight development and its effectiveness.

Literature analysis reveals the diversity of different approaches and criteria for Foresight evaluation at the national level however its basic principles are not yet consolidated and spread for use. The purpose of this paper is to start such consolidation through the development of an integrated approach for ex-post national Foresight evaluation. The proposed methodology was tested in the Russian National Foresight 2030 and the article presents and analyzes the results. Further ways of developing this approach are suggested.

1. Introduction

In the last 10 years due to Foresight popularity in the whole world (Popper, 2012), questions concerning its evaluation have come to the fore (Miles, 2012). Today activity in this area is widespread. Theoretical approaches towards Foresight evaluation as well as large-scale ad hoc evaluations of national Foresight programs to define the future direction of development in different countries are growing (Miles, 2012).

Issues concerning the evaluation of Foresight studies have formed a separate research area. Literature analysis reveals that 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 first 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 identified: strong interconnections between public, private and academic sectors; the effective engagement of stakeholders; relevance vis-à-vis the current policy agenda; the development of novel methodologies, creativity and lateral thinking; and taking previous experience into account (Calof and Smith, 2008; Meissner, 2012; Habegger, 2010). Some scholars have also identified the main pitfalls of Foresight projects as well as factors of success (Öner and Beser, 2011).

Assessing the impact of Foresight activities is a crucial part of the evaluation because this involves examining issues concerning their basic rationale. Four types of Foresight impacts (awareness raising, informing, enabling and influencing) have been identified in the literature (Johnston, 2012). Researchers have determined several avenues for the most considerable Foresight impact, including: a knowledge society; the emergence of science, technology and innovation (STI) system; business and policy decision-making processes; and public understanding of science and technology (e.g. Popper et al., 2010; Havas, Schartinger and Weber, 2010; Rollwagen

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et al., 2008; Harper, 2013). Some scholars suggest combining internal criteria (related to actors, processes, objectives and inputs/outputs), with wider environmental and external factors for the qualitative evaluation of Foresight impact (Amanatidou and Guy, 2008). In addition others emphasize the need to consider the impact of Foresight from the national innovation performance perspective (Meissner, 2012).

Regarding the evaluation of Foresight design and implementation the main issues include: what we are going to evaluate (an identification of evaluation topics) and how (a choice of optimal methods and criteria). The following criteria are considered to be the most important (Georghiou et al., 2004a; Georghiou and Keenan, 2006; Meissner, 2012; Popper et al., 2010; Destatte, 2007; Dursun et al., 2011; Rijkens-Klomp and Duin van der, 2011): 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. Applying the most important "economic" criterion – value for money – involves a mainly qualitative evaluation of the funding mechanisms' performance (Popper et al., 2010). The use of the "behavioural additionality" criterion in the context of the evaluation of Foresight impact is currently subject to extensive investigations by the research community (Gok and Edler, 2012). Many other criteria can be applied for the evaluation of different aspects of Foresight processes, 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 shows that there is no consensus among scholars about a Foresight evaluation framework. Georghiou and Keenan (2006) claim that this framework might vary depending on Foresight's rationale (they identify three main rationales: providing policy advice, building advocacy coalitions, and providing social forums). Some other researchers propose to modulate the evaluation approach according to the levels of management (normative, strategic, and operational) and to subjects managed (people, system, and organization)[1] (Alsan and Öner, 2004).

Foresight evaluation theory has co-evolved with Foresight assessment practices. The first evaluation initiatives appeared in the late 1990s. The list of the most remarkable Foresight evaluation projects 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, 2002, 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). All these studies evaluated belong to Foresight at the national level, which, compared with the other types of Foresight (e.g. regional, corporate), usually has a broader scope, an involvement of many different stakeholders, focus on outputs and stronger links to science, technology and innovation (STI) policy (Kindras et al, 2014). In spite of the all studies related to the same level of Foresight, different approaches, methods and criteria were used for their evaluation, confirming that there is no generally accepted evaluation framework. The lack of shared understanding of the evaluation process and evaluation topics could create difficulties in its further development and spread for use.

The purpose of this paper is to propose an integrated approach for Foresight evaluation at the national level on the basis of consolidation of different approaches in this area and to test it on the example of Russian National Foresight until 2030. The approach is aimed at identification of strong and weak aspects in a design and implementation of a conducted Foresight study, an evaluation of quality of results (outputs and outcomes) and the degree of impact. It allows for learning lessons from this practice for initiating and designing new Foresight studies and the further development of Foresight. In this connection the approach proposed is suitable for ex-post evaluation and its results could be used for ex-ante evaluation in the framework of planning next national Foresight studies.

1.1. An integrated approach for national Foresight evaluation

The methodology offered in this research is based on the previous review of practical experience and theory of Foresight evaluation (Makarova and Sokolova, 2012), as well as approaches formed in the sphere of project management (Makarova and Sokolova, 2014). It includes the several stages presented in Fig. 1.

The number of Foresight studies is rising globally (Popper, 2012), however, because of the current popularity of the term "Foresight", it is often being used for projects that do not possess some of its key attributes, such as the support of the decision-making process.[2] To be sure that an evaluated project is really a Foresight one it is suggested that one check the project according to a set of criteria which could define a Foresight exercise before evaluation process starts. However, there is no universally recognized definition of Foresight because of the constant changes in the understanding of it and the progress made in applied methods and instruments. Nevertheless, on a basis of the literature review, a list of key criteria was compiled (see, for example, Popper et al., 2010; FOR-LEARN): multi-stakeholder participation, future orientation and support of the decision-making process.

1.1.1. The preparatory stage

The main goal of this stage is to identify the key characteristics of the project being evaluated, to analyze the possible place of the project in the national innovation and research system and to develop a design for the evaluation (an evaluation model).

Basic characteristics of a Foresight project usually include information about its initiator, its budget and its timeline. In addition, identifying the type of the project in accordance with the type of goal (Rijkens-Klomp and Duin van der, 2011), rationale (Georghiou and Keenan, 2006), generation (Georghiou, 2007) and dimension (Calof and Smith, 2008) (see the Table 1) could be useful for designing the appropriate evaluation approach.

The knowledge about the research and innovation context of the evaluated project, which could be gained, for example,

[1] It is a framework of the adjusted integrated Foresight management model (Alsan and Öner, 2004).

[2] Accordingly to (FOR-LEARN) there are four characteristics that distinguish Foresight from other kinds of future studies: action-oriented, open to alternative futures, participatory, multidisciplinary.

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