# Developing the evaluation framework of technology foresight program: lesson learned from European countries


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There are many European countries putting into large resources in “Foresight” activities since 1990, such as European Union, United Kingdom, Netherlands, Sweden, etc. The implementation of foresight activities extend opportunities for innovation so as to set priorities for investment, guide the direction of the science and innovation system responding to its original goals, and even broaden the range of actors engaged in science and innovation policy. Foresight exercise is a valuable instrument for the government to monitor the impact of its science and innovation policy. However, how to measure the outcome and impact of foresight activities is hard to define. So the study mainly develops the evaluation framework and presents the outcome perspectives of technology foresight program through generalizing from the experiences of European countries.

The study applies the concepts of evaluation and logic framework with the experience of foresight evaluation from developed countries, for instance European Union, United Kingdom, Sweden, etc., to develop the framework of foresight evaluation. The process in the framework mainly includes eight elements, overall policy goals, inputs, strategic objectives, foresight activities, outputs, effects, outcomes, and impact. The efficiency, appropriateness, relevance and effectiveness of foresight process have been considered as main viewpoints of evaluation, as shown in figure 1. And during the process, it is divided into several phases: (1) between strategic objectives and outputs; (2) between strategic objectives and outcomes; (3) between strategic objectives and effects/impact; (4) effects, outcomes, and impact; (5) between inputs and outputs; (6) between overall policy goals, foresight activities, and outcomes. Each phase has its own focus of evaluation and consideration. Based on the four perspectives and six phases, we can further develop various items of evaluation and indicators.

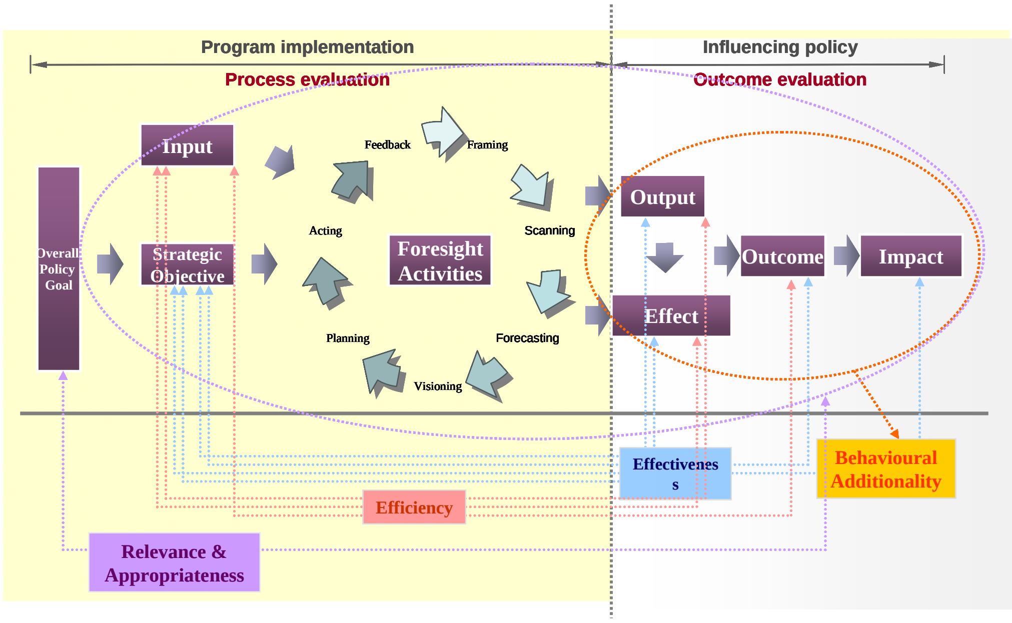


Figure 1 Foresight evaluation framework and its perspectives

As shown in figure 2, the study also further develops various measured items according to the four perspectives. Taking effectiveness as an illustrated example, it will include six measured items: (1) the level of policy making; (2) the ability of innovation; (3) the quality of communication between participators; (4) the implement of strategies; (5) the construction of network; (6) the adjustment of policy issues. And in above phases, effectiveness is emphasized between strategic objectives and outputs, between strategic objectives and outcomes, and between strategic objectives and effects/impact. Furthermore, we will extend to define indicators for these measured items, such as the influence of government funds' inputs (to measure the level of policy making), or the influence of S&T policy's funds (to measure the level of policy making), or the commitment of participators (to measure the quality of communication between participators), or the number of network formation ( to measure the construction of network). Each indicators' measurement and categories are also mentioned.

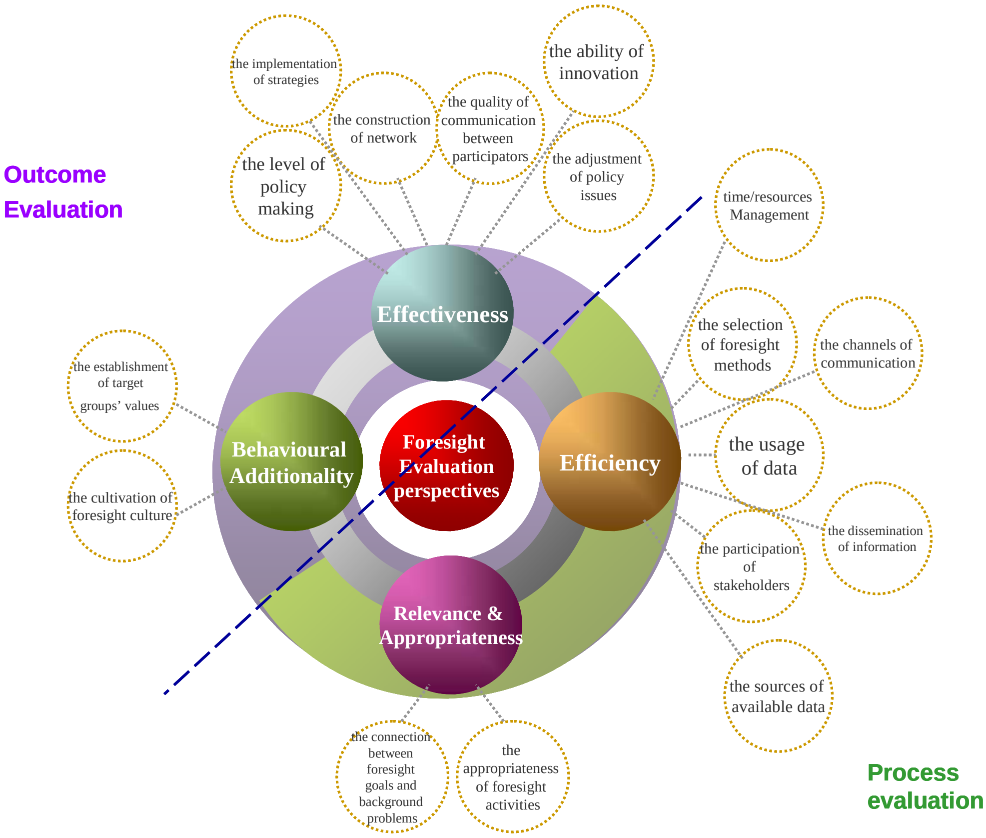


Figure 2 The measured items of Foresight evaluation under perspectives

Besides, the study also takes the evaluation experience of technology foresight from Sweden as a case study to show how the framework of foresight evaluation is workable. Swedish Technology Foresight identifies improvement areas in the Swedish innovation system which is a good example for this research. Swedish Technology Foresight is a national project conducted in 1998-2001 and 2003-2004. In the first round, an evaluation committee was set up to continuously monitor and evaluate the implementation of the foresight exercise. Its evaluation focuses on the actual process, but not the findings of the project's work, such as mission definition, risk analysis, panel recruitment procedure, etc.

By developing the evaluation framework of foresight exercises, the study hope not only to provide the reference of appropriate measured items and indicators for foresight evaluators, but also assist foresight executors to clarify the focuses and perspectives of evaluation so as to the implement of foresight activities responding to initial overall policy goals.

**Keywords: Technology Foresight, Impact Analysis, Performance Indicator, Logic Framework**

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