



Perceptions of domain experts on impact of foresight on policy making: The case of Japan

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ABSTRACT

In this study, the perceptions of domain experts who participated in foresight activities on the impact on policy making are examined by conducting interviews and surveys on five previous foresights in Japan between 1996 and 2007. The purpose of the study is to examine how domain experts look at the practice of foresight in general, and perceive its overall impact on policy making in particular, in the setting of Japanese foresight conducted in the past 15 years. There are two tasks for doing that in this study: to know the views of scientists and engineers who participated in foresights on the impact of foresights they participated; and to know the effect of respondent's characteristics on their perceptions on impact.

There are two main findings of this study. First, the impact on policy making perceived by domain experts who participated in foresight activities in Japan is not very high. Second, there are different patterns of perception on the size of the impact on policy making depending on ages, organizations, member status during foresight, and science and technology areas, and habit of following the situation in general looking for any impacts after the foresight.

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1. Introduction

An international group that analyzes methods for future technology analysis defines foresight as “a systematic process to identify future technology developments and their interactions with society and the environment for the purpose of guiding actions designed to produce a more desirable future” [1]. Foresight techniques are defined as methods for conducting foresight, or, methods aimed at “apprehending the longer-term future of science, technology, economy and/or society in order to identify strategic research and emerging technologies coupled with economic and social benefits” [2].

There are various kinds of evaluation studies on foresight activities such as studies on the accuracy and reliability of its products [3,4] its deliberation process [5,6], its networking effects [7], its productivity [8], its regional differences [9–12], its role at funding agencies [13], and its impact on policy making.

Martin and Johnston explain the benefit of foresight process as follows [7]:

In conclusion, experience with foresight in the countries reviewed here suggests that government, industry, research and educational organizations, professional societies, and community groups should all be encouraged to undertake, or to be involved in, foresight exercises. Such exercises develop a better informed forum and a participatory and transparent process for decision making on science and technology, allowing us to anticipate the potential consequences of current decisions. In short, technology foresight can enable us to shape the future so that it better meets our longer-term economic and social needs.

In this process, “disparate group of people (academics, industrial researchers from different sectors, policy makers, professional forecasters and scientific commentators)” are brought together and “a structure within which they can communicate directly or

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indirectly with each other” is made [14]. Communication is stimulated and partnerships are forged among researchers, and between researchers, research users, and research funders [7]. Consensus is achieved among experts on an uncertain subject [15]. A feeling of commitment to the results of foresight is generated, the ideas generated are turned in action, and they are likely to be self-fulfilling [14]. So the role of experts and their input into the process is very important for the success of foresight activities and selection of experts is important for conducting high quality foresight. The reliability of foresight depends on appropriate selection of experts [16]. Participation of well-respected experts is influential in persuading people that the foresight is taken seriously, and time and commitment are required from a range of experts to conduct foresight successfully as a participatory process [17]. Keenan and Miles explain that experts' work include the following [17]:

- Gathering relevant information and knowledge;
- Stimulating new insights and creative views and strategies for the future;
- Helping to build new networks;
- Diffusing the foresight process and results to much wider constituencies, and
- Identifying and acting on ways to maximize the overall impact of foresight in terms of follow-up action.

There are three types of participants in foresight: experts in foresight methods and organization, experts in the domain(s) addressed by a particular exercise, and users of the outcome of the exercise [18]. The role of participants is important, and there are previous studies on foresight activities including their processes and products from the standpoint of experts in foresight methods and users of the outcomes such as government policy makers. In the explanation on generational development of foresight in the past, it is pointed out that “domain expertise becomes more significant” and experts have “never disappeared from the scene” [19]. But there are not many previous studies on foresight activities from the standpoint of domain experts who participated in foresights. One such study [20] found that “autonomy is still valued by researchers and there was considerable antagonism towards many of the policies that impinged on academics and were seen as an attack on them” based on analysis on UK foresight activities. But is this statement valid to another foresight, for example, conducted in another country?

In this study, the perceptions of domain experts in foresight activities, whose types are varied in terms of their science and technology areas or affiliated organization, on the impact of foresight on policy making are examined by conducting interviews and surveys on participants in five previous foresights in Japan conducted between 1996 and 2007. Japan initiated its first foresight using Delphi method in 1972 and has been conducting foresight since then basically every 5 years [11]. In 2010, the ninth Delphi study was finished. The practice of foresight in Japan is conspicuous in terms of consistency of activities and involvement of a large number of scientists and engineers.

1.1. Purpose of the study

The purpose of this study is, as stated above, to examine how domain experts look at the practice of foresight in general, and perceive its overall impact on policy making in particular, in the setting of Japanese foresight conducted in the past 15 years. There are two tasks for doing that in this study. The first is to know the views of scientists and engineers on the impact of foresight activities they participated in Japan. What are their evaluations on impact? What kind of impact do they observe? On which actors and on which area of science do they perceive the impact as high, or low? Are there any differences among the foresight activities perceived in terms of the size of impact?

The second task is to know the relationship between the characteristics of the respondent and their perception on impact. There are various types of participation (committee member, Delphi respondents, workshop participants, scenario writers, and so on), and various types of participants (organization, scientist or engineer, science and technology area, age group, gender, distance from government, and so on). How are these differences in characteristics related to their perceptions on impact?

By analyzing those, lessons, perspectives or recommendations are gleaned which was not found by previous studies focusing on the views of method experts, and users of foresight.

1.2. Previous literature

In this section, previous literature on Japanese foresight is discussed. As stated above, foresight based on the Delphi method started nearly 40 years ago in Japan, and has continued since then. The foresights were evaluated by practitioners, academics, or users. One practitioner of Japanese foresight explains its advantages as follows [21]:

- The S & T community must periodically think seriously and in detail about the significant science and technology trends relative to important socio-economic priorities and obstacles;
- Participation of science experts outside of the government helps maintain information flow into the government and improves the ability to assess future demands on national infrastructure; and
- The Delphi provides a disciplined way to handle a broad range of topics, including new and/or cross-cutting areas of science.

He also emphasizes the role of foresight in building consensus, arguing that foresight provides “language” to communicate among Japanese actors in science, technology, and society. The result of foresight is not only “sources of valuable general insight for policy makers and managers but also in some important cases have triggered action plans” [22]. He stresses that the strong interest in society in foresight was shown by the fact that around 3000 copies of the report were distributed in case of the fifth survey and major aspects were introduced to the public by many newspapers and magazines [21].

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