論説 Commentary

Achieving a science and technology budget of high quality: "Action Plans" and "Platforms"

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Challenges of the science and technology budget

In "Commentary" in the June 2010 issue, this author pointed out that the strategic priority of our nation's science and technology should be urgently shifted from quantity to quality. The same thing applies to the science and technology budget; i.e., it is essential to raise the quality of the science and technology budget by establishing processes to systematically formulate necessary policies so that the purposes and objectives of those policies can be articulated and eventually achieved in an effective and efficient manner, while at the same time striving to ensure the necessary budget amount.

Not only the science and technology budget but also other national budgets are to inject funds in order to achieve some policy purposes. Therefore, related budget items need to be rationally designed so that they can contribute to achieving the relevant purpose as a whole.

In many cases, a great number of organizations (government ministries and agencies, their internal bureaus and departments, as well as legal entities, etc.) formulate and implement necessary policies, respectively, in order to achieve one and the same policy purpose. Accordingly, it matters how total optimization is ensured through adjustments beyond organizations. In other words, instead of the conventional way in which requests from individual organizations come together and eventually make up the whole, we will need the following processes: At first, the whole framework is designed; and then in accordance with this framework, individual policies are formulated. This author calls a budget complied in this way an "integrated budget."

Nowadays, science and technology is strongly expected to vitalize the economy and solve social issues through innovation. In deliberations at the Council for Science and Technology Policy to formulate the 4th Science and Technology Basic Plan, council members have also been discussing a shift from science and technology policy to science, technology and innovation policy. Influential innovation is rarely created by just one organization or just one research-field initiative. It will be important to compile an integrated budget which comprises related policies in order to create such innovation.

Our national framework and its limitations

The Cabinet Office and the Council for Science and Technology Policy (CSTP) established within it are main coordinators to make intra-government adjustments concerning the science and technology budget. The basic framework is described as follows: Around July, the CSTP decides which items to be prioritized in science and technology-related budget requests for the next fiscal year and stipulates them in the resource allocation policy, which is presented to each ministry; Based on this policy, each ministry decides specific contents of its budget request and submits that request to the Ministry of Finance at the end of August; in September, the CSTP conducts hearings and asks for public comments with regard to any ministerial policy of which the requested budget reaches or exceeds a certain amount (for example, the certain amount for any new policy is in principle set at 100 million yen or over in the budget request for fiscal year 2011). Based on such hearings and public comments, the CSTP judges each level of priority; in October, the CSTP announces the priority results and also requests all the ministries, including the Ministry of Finance, to assess their respective budgets in light of the announced priority; In late December, the government decides the draft budget after the budgetary assessment is completed; and in January, the government's draft budget is submitted to the Diet.

As described above, in the conventional framework, the basic policy shall be decided at the government level before the budget request session starts. And yet, specific contents of respective requests have never been adjusted. Instead, each ministerial budget request has been assessed on an after-the-fact basis, with each requested amount to be assessed (reduced). This framework has revealed its weakness; namely, it is not sufficiently capable of compiling an integrated budget at the entire government level for the sake of one and the same policy, such as drastically changing each ministerial request or adding policies to make up for a deficiency.

The U.S. framework

How do other countries deal with budget requests? Let's take a look at an example from the U.S. In the U.S., which adopts the presidential system, the Executive Office of the President (EOP) is in charge of budget adjustments, including science and technology-related budgets. Within the EOP, the Office of Management and Budget (OMB) is responsible for total adjustments, while the Office of Science and Technology Policy (OSTP) is involved in partial adjustments related to science and technology.

Around August, the EOP presents to each department and agency the guideline on the science and technology-related budget for the year after the next year. Thus far, their process is similar to ours. But differences show up from September onward. Each department and agency submits its draft budget request to the OMB, and the science and technology-related part is referred to the OSTP. Then each department and agency receives OSTP's comments and is requested to make amendments. In response, the amended draft is submitted to the OMB. When necessary, the OSTP requests each department and agency to further amend the relevant draft. After this cycle is repeated several

times, the draft budget is finalized and then submitted to Congress as the President's Budget Request the following year.

Compared to our national framework, the U.S. framework is considered to make it easier to compile an integrated budget beyond departments and agencies, by making adjustments such as adding policies to make up for a deficiency at the initial stage of each departmental request.

Trial of "Action Plan"

As a reform trial aiming for integrated budget-making within the Japanese ministerial framework, the Action Plan for Important Science and Technology Policies (hereafter "Action Plan" for short) was implemented for the first time when compiling the budget for fiscal year 2011. The framework under this Action Plan is described as follows: An objective is defined for each important policy issue before the budget request session starts; the roadmap to achieve each specified objective by 2020 and the relevant role-sharing among the ministries and agencies are announced; policies to be implemented for the next fiscal year are identified; and each ministry and agency is requested to propose its budget request. Given the first trial status, the scope of this year's Action Plan has been limited. To be more specific, green innovation and life innovation have been designated as the most important issues for the science and technology policy. Above all, eight policy issues have been selected to compile a concrete policy package.

The Action Plan is designed to make pre-adjustments by intervening in each ministerial budget request. Accordingly, there had been an initial concern that each ministry might consider it as an unnecessary interference and wouldn't provide cooperation. In terms of results, however, the Action Plan was formulated with positive cooperation from each ministry and the budget request was made in line with the Action Plan, partly owning to political leadership through both dialogue and decision-making at the political level. The first year trial has achieved a certain level of success, leading to the conclusion that it is appropriate to expand this initiative hereafter.

This year's Action Plan was formulated under a limited structure. To be more specific, task forces were formed, mainly consisting of executive members of the CSTP but also including a small number of external experts. Based on its deliberations, these task forces set objectives and prepared the respective roadmaps, as well as carrying out their other missions. Then the team asked for comments and feedback from all the ministries and compiled the relevant policies.

It has been decided that the Action Plan concerning the budget request for fiscal year 2012 should be expanded in its scope and that the formulation process should be improved in light of this year's trial experiences.

Construction of "Platforms"

In order to improve the formulation process, we will need a framework to take up the insights and awareness of both experts and various stakeholders involved in the relevant policy issues from their respective points of view, and then deeply explore the relevant issues and their solutions.

On the other hand, in order to make a shift from the science and technology policy to the science, technology and innovation policy as mentioned above, we have to strengthen our efforts to solve important issues through innovation beyond both fields and organizations. To this end, it is important to construct "platforms" where a wide range of stakeholders exchange opinions about policy issues on an ongoing basis to share their awareness and strategies and, based on these shared backgrounds, work on the issues in a cooperative and appropriate manner. In deliberations at the CSTP to formulate the 4th Science and Technology Basic Plan, council members have been also discussing such a platform as the Conference for Science, Technology and Innovation Strategy (tentative name).

We will need a framework to construct these platforms and then to formulate and revise the relevant Action Plan by fully capitalizing on deliberation results at such platforms. Members on each platform are expected to deepen their discussions based on sufficient input from multiple sources to be provided as follows: The industrial circle and users close to the innovation downstream or exit shall provide input on their needs and related technological/institutional efforts required; organizations in charge of R&D and/or social institutions shall provide input on possible measures to deal with such needs, etc.; and the research community shall provide input on scientific and technological seeds which have potential to make technological breakthroughs.

The above-mentioned process will not be fulfilled unless each stakeholder participates proactively and autonomously. In addition, existing deliberation groups and their accumulated experiences will need to be fully utilized. How should we construct these platforms and utilize them to formulate national policies including the Action Plan? This will be one of the most important and challenging issues in the 4th Science and Technology Basic Plan.

Policy- and budget-making with a panoramic view of science and technology as a whole

This article has focused the issue-solving type R&D approach. Based on the basics of setting exit objectives and preparing the relevant roadmaps which trace back to respective foundations, this approach emphasizes good planning and stricter selection of focus. At the same time, it is important to strengthen the free idea-type approach as the counterpart of the former approach, in order to create innovative seeds based on new ideas and also to work on various issues from various angles. With regard to the R&D system, there are also various issues, including those related to human resources development, organizational operation, and improvement/utilization of infrastructure.

At the national level, we need to construct the formulation process to make high-quality policies and budgets with a panoramic view of science and technology as a whole. This is a major challenge involved in formulating and implementing the 4th Science and Technology Basic Plan.

The commentary shown here is written by one of the members of the Commentary Committee of the Society, and the author is basically responsible for the contents. The Society acknowledges that this is important and worth publishing. Opinions and comments of the readers are highly appreciated.
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