



Applying audition systems from the performing arts to R & D funding mechanisms: quality control in collaboration among the academic, public, and private sectors in Japan

Shin-ichi Kobayashi *

Graduate School of Information Systems, The University of Electro-Communications, 1-5-1 Chofugaoka, Chofu-shi, Tokyo, 182-8585 Japan

Abstract

The Japanese government has recently launched a number of new research funding schemes. We are already familiar with two types of funding mechanisms: non-targeted research funding channeled into the academic sector through a system of peer-review selection, and establishment of independent laboratories designed to meet specific demands in the manner frequently practiced by government laboratories and private firms. The government's new schemes are distinct from both these mechanisms. This paper examines how these schemes differ from their predecessors, and seeks to clarify them generally. In addition, an audition system, a third type of funding mechanism that addresses social needs by channeling research resources in university–industry–government networks, is introduced. This system centers on a producer who unites the sponsors and research community. Sponsors control the research funds devoted to social needs, and the research community contributes its research capabilities. Finally, the system attempts to harmonize social goals with the behavior patterns of researchers. © 2000 Elsevier Science B.V. All rights reserved.

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1. Newly emerging funding schemes in Japan

In 1995, the Japanese government launched several new research funding schemes under the auspices of a supplementary budget. The aim of this paper is to clarify the differences between these new and other more traditional funding schemes, as well as to characterize the new schemes generally.

Under the new funding schemes, the government provides funds to special public corporations which

function as quasi-governmental organizations devoted to the promotion of scientific and technological research. Each of these public corporations selects research fields and targets expected to contribute to social and economic goals and then presents these selected targets to the general public. In principle, research teams hoping to raise funds submit a proposal within one of the selected fields. The corporations select from among these projects, often through a process of peer-review, and then award research grants to the teams that proposed them. This is called teian koubo-gata R&D, which loosely

* Fax: +81-424-43-5666; e-mail: skob@is.uec.ac.jp

translates to R&D that invites public proposals and participation.

Other factors affecting current funding schemes are the Science and Technology Basic Law enacted in 1995 (STA, 1995), and the Science and Technology Basic Plan formulated by the government based on the Law in 1996 (STA, 1996). Under both the Law and the Plan, the Japanese government shifted R&D priorities towards projects focusing on social and economic contributions. The teian koubo-gata R&D funding schemes are now viewed as measures to cope with these new policy ends. Under the new schemes, the government does not organize its own R&D, but utilizes existing research potential in sectors where the government remains solely in charge of the sponsors. The research teams are usually inter-sectoral ones whose researchers come from universities, private firms, and public laboratories.

These types of funding schemes are becoming increasingly common. Currently, seven ministries and agencies have funding programs of this type. In only 3 years, the budget for these programs has grown to over ¥500 billion, or almost one-half of the amount dispersed through the Grant-in-Aid program, the principal source of funding to academic research activities. For a clearer understanding of these new schemes, let us examine some typical cases. The following is a brief introduction of some of the programs implemented by the Japan Science and Technology Corporation (JST) and the Japan Society for the Promotion of Science (JSPS).

1.1. Core research for evolutionary science and technology (CREST) by STA-JST

The JST, a special public corporation controlled by the Science and Technology Agency (STA), defines strategic research areas and designates one or more supervisors for each. The principal investigator, a representative of a research team composed of researchers from the academic, public, and private sectors, is invited by the JST to make research proposals, and the research supervisor then selects the proposals in cooperation with selection advisors. Once this process is complete, the JST makes a contract with the research institution to which the

principal investigator belongs. The research period is 5 years, and the research expenditures for each theme are estimated to be less than ¥200 million annually (STA, 1998).

The rationale behind CREST was to provide researchers originally from universities or government laboratories with more freely available research funds, and to align the research activities of each research team more closely with their academic counterparts. Despite this inclusion of the private and academic sectors, however, the established strategic areas are all related to public goals. A body composed of the research supervisor and selection advisors conducts a peer-review to select proposals. However, the research supervisor plays a more prominent role than the reviewers in that he or she also conducts all research projects in each strategic area. Thus, in this approach, the goal addresses public concerns, the research methods are determined by the researchers' proposals, and each research project remains under close supervision.

1.2. Research for the future program by Monbusho-JSPS

The JSPS, a special public corporation controlled by the Ministry of Education, Science, Sports and Culture (Monbusho), established the Research for the Future Program to promote, through a system of funding and coordination, specific projects of frontier and pioneering research implemented mainly by universities. The research period is 5 years, and the annual budget for each project ranges from ¥50 to ¥300 million. As of 1997, about 220 projects were underway. The fields of research to be pursued are selected based on the objectives of the program, and a Research Promotion Committee comprised of frontier researchers is established for each field. These committees formulate and facilitate specific research projects in their respective fields (Monbusho, 1997).

The mechanisms adopted to select projects in the Future Program are not based on peer-review, and the research themes to be pursued are defined by the Research Promotion Committees of the JSPS. The role of the committees is similar to that of the supervisor in the CREST program, while the process

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