Issues on Selecting National R&D Project

Joon Lee*, Youn-Gyou Kook, Jae-Soo Kim, and Ki-Seock Choi

Dept. of NTIS (National Science & Technology Information Service)
KISTI (Korea Institute of Science and Technology Information)
Daejeon, 305-806, Korea
rjlee98@kisti.re.kr

Abstract. Because of the difficulties on selecting National R&D projects, it is expected that the errors of decision making can be reduced if the information on project (i.e. project duration, people, budget etc.), and its evaluation result is properly provided to stakeholders as a reference. In reality, however, the result of project evaluation is rarely utilized in its own purpose. One reason is that the information on evaluation result and budget is not shared amongst stakeholders at the right time. The other is that the interconnection between systems to support the R&D evaluation and budget information is not realized yet for further utilization. Therefore, this paper is focused on the improvement of decision process that reviews and selects the R&D project to provide relevant information through the data mapping approaches from different system domain and to suggest the enhanced process for the seamless interconnection between National R&D performance evaluation and budget information.

Keywords: National R&D, Performance Evaluation, Performance Budgeting, NTIS, dBrain.

1 Introduction

In Korea, the scale of budget for national R&D project has been rapidly increasing from 4 trillion won(4billion US dollars) in 2003 to 13.7 trillion won(13.7billion US dollars) in 2010 and this figure shows that the R&D budget continuously increases about 10% in annual average. As the investment is expanding, Korean Government introduced the evaluation system to enhance the efficiency of R&D expenditure. According to the law of Performance Evaluation and Performance Management for national R&D, government should apply the evaluation results of R&D project to the formulation of the following year's budget. Spending for R&D is an investment for uncertain future, budget formulators and policy makers have difficulty in knowing the effect of R&D budget they authorize. They need many detailed information and professional opinions about the projects and technical trends in regard to national R&D, in making their decisions in the process of budget formulation. Nonetheless, exact and sufficient information are hardly provided to them at the right time. Information of evaluation results for national R&D is not sufficiently utilized due to

* Corresponding author.
the following reasons. One is that NTIS (National Technology Information service for R&D) that contains national R&D information (i.e. project duration, people involved in a project, research papers, patents, project evaluation results etc.) is not connected to dBrain(National digital accounting system) that contains all national financial information including R&D financial data. As a result, the R&D performance information loaded on NTIS is not able to be connected to dBrain. Second, the R&D evaluation results in the public sector is hardly utilized through the process of budgeting not just for Korea, but for almost any other countries. Therefore, the purpose of this study is to review current R&D performance evaluation system and the budget management system, and to diagnose the processes for the target systems (NTIS and dBrain) in terms of the possibility of connected utilization, and to propose the improvement solutions to enhance the information flow between performance evaluation and budget making. Consequently, the key issues from selecting national R&D projects which have to be concerned to do the decision making are identified.

2 The Status of Korean Government Performance Management

The current budget management system and the evaluation system for R&D were built respectively for its own sake, the compatibility between systems was not considered at all from the initial development. Furthermore, there have been many changes in accordance with the political changes. For examples, Korean government organization structures were changed in terms of starting new government in 2008 and national R&D functions are adjusted the changed structures accordingly. Ministry of Strategy and Finance (MSF) takes a responsibility of all performance evaluations of government based programs including R&D projects. This change brings about advantages and weaknesses compared with the former government process. The main advantage is to obtain a consistent decision process and a clear responsibility for decision making. Otherwise the weakness is a lack of consulting service of expert group that operates to compensate government officers for special knowledge of science and engineering domain. To fill the gap of this situation, MSF temporary utilize the expert committee which consists of experts in academic and private sector. The major concept of performance based budgeting was not changed, however, it was succeeded from the former government. The idea on the utilization through the connection between performance and budgeting information originated from performance budgeting of the United States. The Government Performance and Results Act (GPRA) established for promoting a focus on improving program performance and to provide greater accountability for results within federal government agencies in the U.S. [1]. The legislation explicitly requires agencies to develop measurable goals for outcomes and outputs and to report actual results. According to John Mercer [1], a major benefit of GPRA has been to bring greater transparency to the operations of the federal government, particularly to the relationship between investments and results. In order to assist program managers achieve their goals, government agencies should implement comprehensive performance management systems. An effective performance management system ensures that an agency’s administrative and support functions such as budget, financial management, human resources, information technology, procurement etc. A