

# The Current Situation and Countermeasures of the Scientific Research Management

Diao Shaoxuan

Fisheries Engineering Institute, Chinese Academy of Fishery Sciences Beijing 100141

**Abstract:** After the analysis and discussion of the problems existing in the funds management of scientific research projects in enterprises, further analysis and attribution has been made and the corresponding countermeasures and solutions are proposed. The management should be mainly from the improvement of relevant management systems, and the establishment of communication and collaboration mechanisms with the financial department.

**Key words:** Scientific research management, Current situation, Countermeasures

## Introduction

Since the Reform and Opening up, the state has increased its investment in technological research and development year by year in order to promote the development of science and technology, together with various supportive policies for scientific and technological enterprises. In recent years, China has continuously strengthened the management and control of research funds, promulgated more scientific systems of funds management and also enhanced audit supervision. At the same time, the use of funds follows the plan. When managing the use of funds, procuring facilities and materials, auditing and accounting, we take the actual use into consideration and ensure observance of corresponding institutional principles on the one hand, and the successful completion of scientific research projects on the other hand, which means data required can be acquired in projects, quality and quantity of projects are guaranteed and the technological level in the field of high-tech enterprises is enhanced. Therefore, through analyzing the problems in the management of scientific research

funds in high-tech enterprises, this paper tries to find a reasonable and effective solution of them.

## 1 The current situation of funds management of scientific research projects in enterprises

### 1.1 A gradually increased need for funds of companies' scientific research projects

Nowadays, as the entire society promotes the development of science, scientific research also gets further development with a growing number of professionals who are engaged in it. The further development of scientific research requires to get more funds to support professional growth, stimulate their enthusiasm, and provide for scientific research departments of all units. Therefore, the need for funds used for scientific research is enlarged.

### 1.2 Strive to build a scientific and technological credit management mechanism

In February 2007, centering on building a scientific and technological credit management mechanism, the Ministry of Science and Technology, the Ministry of Education, the Chinese Academy of Sciences, the Chinese Academy of Engineering, the National Natural Science Foundation of China, the China Science and Technology Association, these 6 departments and other departments established the joint conference system for credit construction in scientific research for the first time. The main responsibilities of the joint conference are to guide the scientific and technological community to build scientific integrity, study and formulate major policies for the construction of scientific integrity, and supervise and coordinate the implementation of relevant policies and priorities. At present, the joint meeting

has 16 members, whose role in coordinating all forces to develop China's scientific integrity and build credit system has become increasingly prominent. During the same time, the competent authorities have also established some relevant organizations for scientific integrity, such as the Scientific Integrity Construction Office of the Ministry of Science and Technology, the Study Style Construction Committee of the Ministry of Education, the Supervision Committee of the National Natural Science Foundation of China, and the Special Committee on Ethics and Equity for Science and Technology Workers of the Chinese Association for Science and Technology. Each one of them specializes in the building of scientific and technological credit, and constitutes China's scientific and technological credit management operating system.

### **1.3 A continuous improvement of relevant regulations for the funds of scientific research projects**

With the continuous development of scientific research projects in all walks of life, scientific research work has become mature gradually. Funds is the most crucial factor for scientific research projects. In particular, various scientific research departments, such as business management departments, capital management departments and finance auditing departments, have negotiated and established a management system concerning the funds of scientific research projects, which sets the standard for funds management of scientific research projects fundamentally. However, in the actual implement of projects, the funds management of scientific research projects will encounter various unpredictable problems and differences. Therefore, the enterprises still need the instruct and guidance from aforesaid departments in the process, especially in the pooling and listing the expenditure of funds, to carry out projects successfully.

## **2 The problems in enterprises' scientific research management**

### **2.1 Financial accounting is not standard**

For scientific research projects, all funds are disbursed as a unity, and there is no independent accounting system. This led to high-tech enterprises' inability to review the funds of scientific research projects according to the accounting rules in enterprises and the guidelines for science and technology funds accounting

stipulated by the Ministry of Finance. In practice, high-tech enterprises tend to make things easy. R&D expenditures are directly classified as expenses, and appropriation funds directly offset profits. In this way, the true expenditure of scientific research projects cannot be completely and accurately reflected in the financial accounting records.

### **2.2 The calculation of scientific research projects' cost is not precise.**

In the implementation of scientific research projects, the cost of projects mainly includes all direct and indirect cost in relevant works. More attention should be paid in financial accounting. In the current situation, the staff of scientific research projects are basically responsible for their own work, and also undertake a series of other work to help scientific research projects implement, so both the wages of normal work and the post subsidies for participating in scientific research projects are disbursed from the funds of scientific research projects. However, according to the relevant management regulations, the sources of payment for research projects works and the payment for normal jobs are different. Therefore, expenditures for scientific research should be distinguished from expenses of normal job. There should be no involvement between them, because that may lead to unclear situation in accounting. However, at present, many companies in actual works often confuse the funds for scientific research projects with funds used for normal works, and even blurred the boundaries between them. If the resources and materials for normal works are used in scientific works, the difficulty of expenditure accounting for scientific research projects will be greatly increased, which causes a series of problems. And if the funds for scientific research projects are allotted to normal works, many companies will add repeatedly equipment resources which are redundant, and resources between different units can not be shared and discussed together, which prevents mutual improvement.

### **2.3 Lacking strong rewards and penalties mechanism for scientific research integrity**

In the management of science and technology, the relevant competent authorities and research institutes have issued a number of supervision and management systems related to scientific integrity. These systems are either special provisions for dishonest behaviors

or rewards and punishments for specific behaviors during project management. However, in reality, due to low cost of dishonesty and greater pressure on the competition of scientific research, many scientific researchers are impatient, lack of a rigorous scientific spirit and an honest and fair scientific attitude, as well as weak self-discipline. And some misconducts have become normal for scientific researchers, such as providing unfaithful information, copying other people's scientific research results, fabricating or falsifying scientific research data. But such behaviors do not receive punishment, which increases the fluke mind of researchers, thus exposing a lack of strong incentives and penalties in supervision mechanism.

#### **2.4 Lacking a complete system for funds performance evaluation**

In the reality of scientific research in our country, the research institutes often only consider the final results and the technical acceptance of scientific research projects in the actual research and management of scientific research projects. While they neglect the most important aspect, that is, the performance evaluation of scientific funds in the process of implementation. The measures for the performance evaluation of scientific funds have not been established so that the funds management of scientific research projects has not been taken seriously. In addition, there are also other problems. For example, after the completion of one scientific research project, the research institutes have not gone through financial procedures and also do no timely accounting according to the actual work progress. The remaining funds after the use of this research project are continuously applied to the next scientific research project, which leads to the situation that there is no complete and single accounting for each scientific project in the scientific research management department or financial department. Eventually, it seriously confuses the use performance of scientific research funds, fails to obtain the correct performance, and add difficulties to the next accounting, as well as increasing the burden on accounting for financial department.

### **3 Strategies for the management of scientific research projects**

The management of the scientific research projects funds is a crucial issue at this stage, which must be processed according to the present problems so as to ensure effective improvement of scientific research

project funds management. The countermeasures for the management of funds for scientific projects can be analyzed and discussed from the following aspects:

#### **3.1 Improve the system of internal control for scientific research funds and strengthen the supervision mechanism**

According to the National Regulations for the Expenditure of Scientific Research Projects, we should build a reimbursement and inspection system for the funds used in internal scientific research projects of high-tech enterprises, and set up expenditure regulations and other rules relating to scientific research projects. And funds must be used for their specific purposes. Enterprises strengthen their supervision of expenditures used by scientific research projects, strictly control the cost of projects at different stages according to the expenditure plan, and examine the details of the cost, and also the correlation between the facilities or equipment purchased and the project. The evaluation and management of the funds for scientific research projects should be further improved, and the offenders must be investigated.

#### **3.2 Strengthen the normalization of system**

The establishment of a sound and complete scientific research management system is the foundation for standardizing science and technology activities, enhancing scientific and technological innovation capabilities, and promoting scientific research comprehensively. First, establish a complete management system for scientific research systems, and strengthen standardized management in all aspects, such as, in project application, peer review, implementation, conclusion acceptance, results evaluation, academic exchange, and publication of paper, to eliminate scientific misconduct from all aspects. Establishing regulations and systems for the flow of talents, returns and disposal of scientific and technological achievements, and technological innovation incentive systems, and improving incentive distribution mechanisms closely linked with their contributions to inspire the innovation of researchers. Secondly, in project management, information disclosure should be strengthened, the information of project setup, funds use, project results, and scientific and technical reports should be disclosed within the unit to receive internal supervision; Improve the

selection and use of experts, strengthen the construction and maintenance of expert databases, constrain the number of research projects experts participating in, regulate the sources of experts, rotation of experts through adjustment and avoidance, and strengthen their self-discipline. Finally, an effectively collaborative mechanism for scientific research management will be established. For dishonesty behaviors, the disciplinary inspection and supervision, personnel, and financial management departments within the unit should cooperate together to carry out scientific integrity education and investigate all misconducts in scientific research.

### **3.3 Establish a sound and effective system of rewards and penalties for scientific and technological credit**

Strengthen the management of the credit behavior of the researchers in enterprises, establish a sound and effective system of rewards and penalties for scientific and technological credit which combines reward and punishment. On the one hand, stimulate more honesty behaviors in scientific research. Researchers who are faithful should be encouraged. The leading role of excellent scientists with good scientific morality should be demonstrated to cultivate a good style of study; On the other hand, we should increase punishment for dishonesty in scientific research, and make public notification and punishment for major events and people. At the same time, the scientific credit evaluation is linked to actual scientific research activities. The credit rating of scientific research is used as an important basis for project application, funding, title assessment, funds management, assessment and rewards. Especially, scientific researchers who direct major national scientific research projects must have good scientific research credit records. According to the difference of credit rating, a differentiated evaluation procedure is applied to the project application to increase the enthusiasm of the researchers, and encourage scientific researchers who acted dishonestly to build good behaviors in research.

### **3.4 The enterprises carefully exam the necessity and feasibility of scientific research projects according to their real need**

The establishment and improvement of the management system for project application is the first line to increase the efficiency and effectiveness of the use of scientific research funds. Therefore, it is necessary to pay attention to the audit of project application to

eliminate blind or even empty projects so that the abuse of scientific research funds can be avoided. Only such projects who aim at effectively improving the technological innovation capability of enterprises, increasing market competitiveness, or promoting the sustainable development of oilfield enterprises that are necessary. We should take the company's existing research conditions and research capabilities into consideration when setting up scientific research project instead of establishing a project blindly which cannot be operated or is difficult to achieve, and scientific research projects should be committed to necessary and feasible principles.

### **3.5 Strengthen the rationality of scientific research project budget and the management of daily affairs**

First, the scientific research management department needs to make reasonable and comprehensive budgets for scientific research projects and strengthen communication and cooperation between the research department and the financial department. It is necessary for both sides to negotiate together and take full account of various factors to determine the budget, especially the expenditures involved in a whole scientific research project, including the related conference fees, labor costs and management fees. Second, the scientific research management department should strictly control the daily use of funds and formulate a series of scientific and effective fund management systems. Regulations must be clear for the expenditure of scientific research projects, the scope of use and the relevant approval rights. Third, the scientific research management department should pay strict attention to the supervision of the actual use of funds in every process to ensure the authenticity and efficiency of the expenditure. What's more, a corresponding accounting table is also required to facilitate the subsequent verification. Fourth, the financial department should provide timely feedback to management department on the use of the funds in scientific research projects. In this way, accounting and management are more convenient, and at the same time, the normative and scientific nature of scientific funds are greatly increased.

### **3.6 Improve the internal control system for scientific research funds and strengthen the supervision mechanism**

According to the National Regulations for the

Expenditure of Scientific Research Projects, we should build a reimbursement and inspection system for the funds used in internal scientific research projects of high-tech enterprises and set up expenditure regulations and other rules relating to scientific research projects. And funds must be used for their specific purposes. Enterprises strengthen their supervision of expenditures used in scientific research projects, strictly control the cost of projects at different stages according to the expenditure plan, and examine the details of the cost, and the correlation between the facilities or equipment purchased and the project. The examination and management of the funds for scientific research projects should be further increased, and the offenders must be investigated.

### **3.7 Adhere to people-oriented strategy and focus on the sustainable development of scientific research management**

The realization of informatization is a long-term task with continuous improvement. It cannot be accomplished overnight or done once and for ever. It includes both technical issues and management factors, but the change and innovation of ideas is more important. Beijing General Research Institute of Mining & Metallurgy fully takes into account the actual needs of researchers. Each procedure they designed follows the principle of “reducing the researchers’ workload as much as possible”, thereby bringing innovation in management concepts and effectively eliminating disadvantages in the old management model, as well as combing resources and information organically together. This not only broadens the horizons of managers and increases the depth and breadth of management work, but also strengthens communication and understanding among technical workers, thus inspiring their innovation. The connotation of scientific research management informationization lies in the innovation of new management processes and management models that can reflect systematicness, relevance, immediacy, and pertinence. The existing management model is replaced, so the staff can be freed from complicated transactions.

## **4 The innovation of scientific research management model**

### **4.1 Establish a complete approval process**

For the approval process of funds reimbursement, the

more sound it is, the more scientific it will be, which also make the reimbursement of the project leader’s funds more conveniently. Hence, the time used for reimbursing is shorter which is helpful in reducing the surplus of research funds. While in practical work, the process for funds reimbursement is cumbersome. After the materials used for reimbursement are verified by management department, the person in charge of the project shall also report to the financial department, which will objectively restrict the reimbursement of scientific research funds and result in the surplus of scientific research funds. In order to implement the project as soon as possible, the responsible person of the project will pay for the expenditure of some reagent and consumables in advance. And for the publishing fees of paper, the current management method for scientific research funds explicitly stipulate that it shall be reimbursed only after being published. The long publication cycle of the paper is not conducive to the timely reimbursement of research funds, resulting in a balance of research funds.

### **4.2 Gradually establish a unified platform sharing credit and information**

The standardization of scientific credit information is the basis for establishing a credit sharing platform, and also the prerequisite for the effective sharing of scientific credit information, including the basic information of relevant subjects, participation in scientific and technological activities, conduct record and so on. Improving the credit information database of scientific researchers and establishing a unified platform for credit information sharing can not only reduce information asymmetry, make the peers fully and accurately understand the researcher’s credit status, strengthen mutual supervision and promote fair competition, but also realize the sharing of resources, gain the most advanced progress in this field and promote information disclosure and management. For nation, unified standards for the collection, processing, storage, and distribution of scientific credit information should be formulated to avoid problems, such as asymmetric information and inconsistencies in the sharing process, which can also provide technical support for credit information sharing between different departments and share information by stages; For enterprises, they should link the credit information database with the existing scientific research management information platform to make a realization

of sharing mechanism of projects management, avoid duplicate declarations and cross-reports and strengthen the follow-up management for the whole project to gradually establish a credit information sharing platform.

#### **4.3 Strengthen the actual operation of the management system**

With a certain management system, it is necessary to strengthen the operation of it in practice. This is one of the effective ways to strengthen the management effect. For scientific researchers, they should pay more attention to management system. When applying for funds, it is necessary to follow certain procedures according to the management system. For the leaders of scientific research institutions, it is more necessary for them to strengthen the compliance with the management system. Leaders play a exemplary role for other people. The leading role of them can better stimulus other people's compliance.

#### **5 Conclusion**

Through the analysis and discussion above, we know that the improvement of management of scientific research funds must not be separated from the discussion of financial department. Funds management must be conducted with reasonable accounting and supervision. The significance of the financial department is to calculate and supervise the flow of related costs. For the calculation of scientific research projects funds, the scientific research management department must closely cooperate with the financial department to continuously solve the problems existing

in the accounting of scientific funds through effective communication and careful accounting so as to ensure the successful development of various scientific research projects.

#### **References**

- [1] Liu Yang. Study on Scientific Research Management Innovation of Colleges and Universities in Big Data Era [J]. *Modern Society*, 2018(03): 187-188.
- [2] Liu Yang. The development and Implementation of Total Quality Management in Scientific Research Management [J]. *New West*, 2018(02): 102+110.
- [3] Sun Zhengliang. The Management Innovation on Small Topics Research [J]. *Jiaoshi Bolan*, 2018(01): 42-43.
- [4] Zhang Rongrong. The Curiosity and the Exploration of Breakthrough Ways in Scientific Research Management of Colleges and Universities [J]. *Time Education*, 2018(01): 109.
- [5] Wang Di. The Innovation and Reflection on the Scientific Research Management of Local Colleges and Universities [J]. *Technology Wind*, 2017(26): 19.
- [6] Yin Qian. Discussion on Scientific Research Management of Colleges and Universities based on Synergetics [J]. *Think Tank Era*, 2017(17): 201+203
- [7] Yan Hengping. The Problems and Countermeasures in the Management of Scientific Research Funds [J]. *Enterprise Reform and Management*, 2017(24): 89-90.
- [8] Cao Xinyuan. Research on the Innovation of Scientific Research Management in Private Colleges and Universities under the Innovation Driven Development Strategy [J]. *China International Business*, 2017(24):286.
- [9] Hu Qi. On How to Improve Scientific Research Management in Chinese Faculty in Colleges and Universities [J]. *Shandong Textile Economy*, 2017(12): 43-45.
- [10] Xiang Junbei. On the Management of Scientific Research Funds in Vocational and Technical Institutes [J]. *Health Vocational Education*, 2017, 35(24): 33-34.