Cross Current International Journal of Economics, Management and Media Studies
Abbreviated Key Title: Cross Current Int J Econ Manag Media Stud
ISSN: 2663-2462 (Print) & Open Access
DOI: 10.36344/ccijemms.2022.v04i04.002

Volume-4 | Issue-4| July-Aug, 2022 |

Review Article

Complete Solution of Financial Management to Promote and Develop Science and Technology Organizations in the Ministry of Science and Technology

Pham Dang Tinh[1*]
[1]Institute of Management for Culture, Sports and Tourism, Vietnam

***Corresponding author:** Pham Dang Tinh

| **Received:** 03.06.2022 | **Accepted:** 06.07.2022 | **Published:** 13.07.2022 |

Abstract: Over the years, with the attention of the Party and State, Vietnam's science and technology industry has received increasingly large investments. The achievements in science and technology as well as the scale and scope of application of these achievements, therefore, are also increasing. However, compared with other countries in the world as well as in the region, Vietnam's science and technology level is still low, not meeting the requirements set forth by the country's socio-economic development process. Science and technology has not yet become the main growth engine of the economy. One of the main reasons is that Vietnam has not yet built a complete and synchronous financial mechanism for S&T activities, thus not attracting enough necessary financial resources. Therefore, this article focuses on analyzing and proposing solutions to improve financial management at science and technology organizations in Vietnam today.

Keywords: Financial management, science, and technology organization, Ministry of Science and Technology, Vietnam.

1. Overview of the Process of Formation and Development of the Ministry of Science and Technology

The Ministry of Science and Technology is an agency of the Government, performing the function of state management of science and technology. Its main functions include scientific research, technology development, and innovation; develop scientific and technological potentials; Intellectual Property; quality measurement standards; atomic energy; radiation, and nuclear safety; State management of public services in the fields under its management according to the provisions of law. The process of formation and development of the Ministry of Science and Technology goes through the following stages:

The Ministry of Science and Technology, formerly known as the State Science Committee (SSC), was established on March 4, 1959. The development from the State Committee of Science and Technology to the Ministry of Science and Technology is a process of formation, construction, and completion. During that development, awareness of the content and management responsibilities of science and technology has been increasingly enhanced. Science and technology management activities of the Ministry have developed both in width and depth and are increasingly effective.

From the period 1959 - 1965, the State Committee of Science and Technology had the function of ensuring the completion of tasks and plans for scientific and technical development. In this phase, the committee focused on bringing Vietnam's science and technology to an advanced level to serve production, people's livelihood, and national defense, contributing to promoting socialism construction in the North and fighting for unification.

In the period 1965 - 1975, the State Committee of Science was divided into 2 agencies: the State Committee for Science and Technology and the Vietnam Academy of Social Sciences. The State Scientific and Technical Committee shall uniformly and centrally manage scientific and technical work and directly perform the functions of a research institute for natural and technical sciences. This phase is to carry out the technical revolution, serving the construction and defense of communism in the North, and fighting for national reunification.

In the period 1975 - 1985, in response to urgent requirements when Vietnam both built socialism and had to deal with two border wars, the Vietnam Academy of Science was separated from the State Committee for Science and Technology. At this time, State Committee for Science and Technology is

Quick Response Code

Journal homepage:
https://www.easpublisher.com/

Citation: Pham Dang Tinh (2022). Complete Solution of Financial Management to Promote and Develop Science and Technology Organizations in the Ministry of Science and Technology. *Cross Current Int J Econ Manag Media Stud*, *4*(4), 51-56.

responsible for the state management of science and technology nationwide to effectively serve the construction of material and technical foundations of socialism, improving people's living standards and strengthening national defense.

The period 1985 - 1992 was the period of important changes in the Party's guidelines and policies on doi moi and the transformation of the economy from a centrally planned mechanism to a socialist-oriented market economy. In 1990, the State Committee for Science and Technology had renamed the State Scientific Committee, performing state management functions in the fields of natural sciences, technical sciences, and social sciences to encourage creativity and wide application of scientific and technical achievements, bringing practical effects to the new development period of the country.

In the period 1992 - 2002, the Ministry of Science, Technology, and Environment was established in the context of the country carrying out the renovation work and preparing to enter the period of accelerating industrialization and modernization. The Ministry performs state management functions in the fields of scientific research, technology development, standardization, industrial property, and environmental protection nationwide.

From August 2002, until now, the Ministry of Science and Technology was established according to the Resolution of the first session, the 11th National Assembly. The establishment of the Ministry of Science and Technology in the period of accelerating industrialization, modernization, and international economic integration shows the Party and State's interest in the development of science and technology. The Ministry focuses more on state management tasks in science and technology throughout the country, affirming the position and role of the Ministry in coordinating and promoting science and technology activities, contributing to act for national economic development and integration.

2. Orientation of Science and Technology Development in Vietnam

In the Document of the 13th National Congress of the Party, Party, and State, the orientation of science and technology development has been set forth as follows: strongly developing science, technology, and innovation to create breakthroughs to improve productivity, quality, efficiency, and competitiveness of the economy. Science and technology development orientations must meet the requirements of having a science and technology development strategy suitable to the general trend of the world and the country's conditions, meeting the requirements of national construction and defense in the current situation, adapting to the fourth industrial revolution.

The orientation of science and technology development has been more specific to the sciences that need to focus on development in natural sciences, science-technology, technology, social sciences, and humanities. In particular, for the first time, political theory has been strongly emphasized. At the same time, mention more specifically the requirements for scientific fields, thereby promoting the strong development of the social sciences and humanities as the scientific basis for best serving the cause of innovation and social and economic development. Social sciences and humanities need to closely associate with natural sciences and technology in the process of implementing the country's socio-economic development tasks. In particular, priority is given to the transfer and application of scientific and technological advances to economic, cultural, social, and human development, national defense, and security. The scientific and technological organizational system needs to be reviewed and rearranged in association with comprehensive reform of the science and technology human resource policy, prioritizing the attraction of talents and scientists who are enthusiastic about developing and protecting the country.

Science and technology development must meet the requirements of promoting international cooperation and integration and improving the national innovation capacity. Scientific activities need to strengthen international cooperation and integration, adopt policies to support international academic exchanges and exchanges, and promote innovation.

To promote and strengthen the national scientific and technological potential, Vietnam needs to develop several spearhead science and technology branches, directly contributing to solving urgent problems, suitable to the conditions, and resources of the country. Vietnam needs to improve the capacity of the national innovation system, restructure science and technology research programs in the direction of enterprise-centered, and effectively serve the cause of construction and protection of the country as the target. Vietnam needs to focus on developing digital infrastructure and ensuring network security to create favorable and safe conditions for people and businesses to access digital resources and build a large database.

Vietnam needs to improve the potential and level of science and technology in the country so that it can deploy new directions of scientific research and technological development. In addition, Vietnam needs to focus on developing priority technologies with high applicability, especially digital, information, biology, artificial intelligence, mechatronics, automation, and medical electronics. bio, energy, environment. Funds for scientific development and technological innovation play an important role in promoting research, innovation start-ups, and application and technology transfer. Research facilities, national key laboratories,

and high-tech parks need to be invested to improve operational efficiency.

Vietnam should strongly develop a network of intermediary service organizations, brokerage, and assessment of technology transfer. National technology exchanges need to be effectively connected with local centers for the application and transfer of scientific and technological advances. The Government needs to come up with solutions to improve the technology absorption, mastery, and innovation capacity of enterprises; encourage the import and transfer of advanced technology; create competitive pressure in the business environment to promote businesses to use technology, and increase labor productivity. Vietnam needs to strongly develop the science and technology market in association with building a national database on science and technology; strengthen the protection and enforcement of intellectual property rights; expand and improve the system of standards and regulations in harmony with international standards.

3. The Solution to Complete Financial Management to Promote and Develop Science and Technology Organizations in the Ministry of Science and Technology

Solutions to Financial Management Mechanism

The current financial management is quite cumbersome and troublesome, causing significant inadequacies for scientists. The cause of these inadequacies is set by the State financial management mechanism. Therefore, the solution to increasing the efficiency of financial management here is some solutions to contribute to the financial management mechanism or the way to manage and operate financial resources at science and technology organizations in science and technology activities:

Speeding up the roadmap to transition to autonomy and self-responsibility

The issue of autonomy in public non-business organizations in general and public science and technology organizations, in particular, has been mentioned a lot in recent times. The Government has issued many documents guiding the implementation of autonomy in science and technology units. Self-responsibility is the solution being implemented today. The transformation of operating models towards improving autonomy and self-responsibility in science and technology organizations still faces many difficulties. Science and technology organizations need to actively build or adjust their development orientations and strategies in association with national socio-economic development programs to meet market demands. Science and technology organizations need to proactively propose to the Government and ministries to promulgate appropriate mechanisms and policies on technology mastery, creation, development, and market protection.

Although self-responsibility is the solution being implemented today, the effectiveness of this solution has not been proven, it needs time to test. However, it can also be said that this is a mandatory solution because the financial management mechanism that we have applied so far has not been effective. From a management perspective, managers always want to have the tightest control over the organization's capital.

Regardless of which solution is applied for the transition to the self-responsibility mechanism, the state must have a policy to support funding sources in different forms such as loans or gradual conversion over some time. Because, if this solution is applied to basic research units, there is no market for research results. If full autonomy is to be exercised for these units, certain priorities must be given.

It is necessary to propagate and explain so that the heads and all scientists and staffs of science and technology organizations understand the autonomy mechanism, implementation purposes, benefits, and challenges. The lack of awareness in science and technology organizations is a major obstacle to the implementation of the autonomy mechanism. Therefore, it is necessary to take measures so that each employee and manager understands that it is time for a change, and the organization needs to be proactive in its activities to improve service delivery quality and income. In science and technology communication, upper management plays an important role in propagating this interpretation.

The current autonomy mechanism is creating a misunderstanding that the more effective a science and technology organization is, the more it will lose state budget resources and must be completely self-reliant. For scientists and staff to feel secure when implementing the autonomy mechanism, one issue that needs to be changed when developing the mechanism is to clarify how the state budget will be allocated to science and technology organizations. The purpose of the autonomy mechanism is to increase responsibility and enhance the positivity, initiative, dynamism, and creativity of science and technology organizations and heads of science and technology organizations. The autonomy mechanism should create conditions for linking scientific research and technological development with production, business, and human resource training, speeding up the process of socialization of scientific and technological activities. In addition, the autonomy mechanism should create conditions for focused investment in science and technology organizations, improving the operational efficiency of science and technology organizations, and contributing to strengthening the country's scientific and technological potential.

The purpose of the autonomy mechanism should not be to gradually reduce budget expenditure or cut the budget to force science and technology organizations to take care of their costs. The autonomy mechanism should be one where science and technology organizations are given more autonomy in all aspects, provided that the results of their activities are guaranteed. If autonomy increases but decreases or loses the state budget, it will reduce the motivation for transformation. Science and technology organizations should receive a state budget if they operate well and have many achievements. Budget investment for effective organizations is the most effective way to invest budget that the theory of public expenditure management shows as well as the world's practical experience. Reducing the burden on the state budget is about reducing spending on weak institutions, not cutting off funding for effective organizations.

Reducing the burden on the state budget, the state should only focus on investing in what the private sector cannot or does not do enough. Socialization of science and technology organizations should be understood in terms of increasing social resources for investment in science and technology activities, funding for science and technology organizations, not the state, reducing, and giving up funding for science and technology institutions.

Innovative solutions to mobilize financial resources for science and technology activities

As mentioned above, currently the financial sources outside the state budget of science and technology organizations are very modest. The transition to the self-responsibility mechanism is on the way, but it is still quite slow and faces certain difficulties. In the short term, science and technology organizations still need a budget to support the operation of the apparatus. At the same time, science and technology organizations need to make efforts to exploit and find new sources of revenue to gradually increase the proportion of non-state budget revenues for their units. Viewpoints on service development need to change in the direction of proactively and actively developing revenue sources, which must be considered an important revenue-generating channel. In addition, developing service activities helps science and technology organizations gradually balance their unit's revenue and expenditure balance, eliminating the idea of increasing revenue just to increase income for employees. Therefore, right now science and technology organizations must have an appropriate policy to promote activities toward external markets, such as:

- Diversification of science and technology investment resources is the implementation of policies to increase investment from the private sector for science and technology activities, products, and related services.
- Actively expand research, design, and manufacture of traditional commercial products.
- Research to open services based on the strengths of science and technology organizations.
- Strengthen cooperation and association with localities, businesses, and individuals in performing scientific and technological tasks in the form of economic contracts or professional outsourcing. This is strength of science and technology organizations because science and technology organizations have many leading experts in the field.
- Science and technology organizations should encourage and support scientists to carry out research projects in the form of scientific and technological research cooperation under the Protocol with other countries, bilateral and multilateral cooperation, participation in programs and projects of international organizations such as WB, ADB, JB, JICA, UNDP, etc.
- Develop regulations on statistics and reports from the grassroots level on the exploitation of financial resources from international organizations and individuals.

Maintain and expand domestic and international scientific research cooperation

The main source of income for science and technology organizations today is revenue from scientific research contracts with domestic and foreign organizations. In the coming time, this source of revenue promises to increase with the quality of research projects being improved. In international cooperation, science and technology organizations have developed close and long-term cooperative relations with international organizations. Science and technology organizations need to continue to maintain and expand international cooperation in scientific research activities and implement research cooperation projects with international scientific and technological organizations such as Institutes of Science and Technology, foreign universities, etc.

Expanding the customer base to the outside and orienting to seek outside sources of income is necessary. Funding cannot only depend on stable funding from the state anymore but must increase competitive grants and revenue from businesses. Need to change the operational strategy of the organization. Science and technology organizations need to actively understand the needs of businesses and the market, find application addresses, and bring research results to the market. Qualified human resources have always been considered an important input to the activities of science and technology organizations. There are many reasons why the human resources of science and technology organizations must change quite comprehensively. Management leaders must adapt to inevitable change. They must have new knowledge and

skills. When they have enough knowledge and skills (besides scientific expertise) they can lead the organization to work better and more effectively as the state desires. Transforming scientific and technological organizations existing in the subsidy regime into operating according to the laws of the market economy is not an easy task. Knowledge and skills in management, such as human resource management, change management, strategic management, science and technology management, innovation, technology commercialization, and enterprise thinking necessary strengths for the management team of science and technology organizations. Knowledge of financial management skills is also very important because it is a matter of revenue generation and cost control. Specifically, the knowledge and skills of financial management that managers need to know to include the following issues: revenue management; expense management; asset management; internal financial management tools.

The expansion of scientific research cooperation not only increases revenue for science and technology organizations, and increases income for researchers, but also creates a good environment for researchers to cultivate experience. Thereby, science and technology organizations can obtain optimal research results in formulating strategic policies for economic development in general and industry development in particular.

Innovative solutions for payment and settlement procedures for science and technology topics and tasks.

Scientific and technological topics and tasks that have been approved for implementation should let the project owner have full rights to use the funding. After completing the research, the project manager submits all the products according to the thesis description to the acceptance committee; the project implementation cost is settled. In other words, the State should apply the mechanism of allocating funds to the final scientific and technological products, assigning maximum initiative to organizations and individuals presiding over scientific and technological tasks in the use of science and technology funds. The State actively buys scientific and technological research results.

Strengthening accounting, auditing, inspection along with financial disclosure

Based on the actual situation of financial operations management, science and technology organizations need to strengthen accounting, auditing, inspection along with financial disclosure in a clear, detailed, and transparent manner. In which, the most basic step is accounting, and statistics of financial activities that scientific and technological organizations have achieved in a year. This requires administrative, accounting, and internal audit staff to have sufficient capacity, knowledge, and in-depth expertise to control and manage financial sources of revenue and expenditure, and other sources of financial resources.

The State needs to develop scientific and independent plans, plans, accounting, auditing, and accounting systems so that when implementing and reviewing financial management activities of science and technology organizations in a certain systematic order.

The State needs to choose the form and ensure the full implementation of accounting inspection reports of science and technology organizations on a regular, specific, and detailed basis. In the accounting report, the data is always aggregated so that we can know the general situation of financial activities and manage the revenue and expenditure sources of science and technology organizations. At the same time, it will help the competent management agencies understand the current situation of financial management and the difficulties and limitations that science and technology organizations need to overcome and supplement.

Solutions about people and potential

Solutions for training financial management staff

Personnel working in management play an important role in the effectiveness of management. Directly doing financial management, the officer is the person who best understands the processes, procedures, and related documents. Scientists only carry out procedures under the guidance of financial managers. Therefore, the capacity of managers directly affects the effectiveness of financial management. The more precise the guidance, the more specific the instructions will help reduce a lot of errors related to regulations as well as common errors, helping scientists reduce time and energy on procedures to increase efficiency. Therefore, using highly qualified and professional staff will help science and technology organizations to perform their financial management tasks well as well as help the institute's research units complete their documents related to the procedure properly and quickly. On that basis, science and technology organizations need to implement the following solutions:

- Recruiting individuals with good expertise in financial management. This is completely within the capacity of science and technology organizations by the direct recruitment of the head of the unit.
- Every year, science and technology organizations need to organize training courses or improve financial management capacity so that staff can improve their expertise and increase efficiency in financial management.

Perfecting the organizational and management apparatus

Based on functions, tasks, and performance evaluation, the organizational structure and management of science and technology organizations should be perfected in a streamlined and intensive manner. At the same time, restructuring the apparatus needs to develop a process to handle and solve the work of each unit and each department as well as the coordination between departments in the same unit in a scientific way. Reasonable, reduce unnecessary intermediary stages, speed up the process of work and make the process of processing and solving work public.

To assign work to units and departments following unit leaders who are responsible for inspecting and controlling projects and topics; at the same time, the chairpersons are allowed to actively organize the performance of their tasks within the permitted scope of their rights and obligations.

Technology application solutions information in the implementation of Science and Technology

Due to the nature of scientific and technological activities that involve a lot of paperwork and procedures, applying information technology to carry out procedures, will reduce a lot of time and money instead of having to work directly.

In addition, science and technology organizations should focus on recruiting and methodically training all cadres, civil servants, and employees with basic skills and information about informatics to serve reform and improve work efficiency. At the same time, information technology also helps to solve arising problems more effectively and thereby, timely allocate financial management in the unit. Moreover, science and technology organizations need to establish a team of experts to handle, program and solve problems of information technology applications so that auditing and accounting experts can review, and review financial management issues more quickly.

It can be said that information technology applications will help science and technology organizations in controlling data, records, and documents related to financial management, and at the same time help to allocate financial resources. Correct and better. In addition, information technology applications not only solve problems, and process financial processing and management faster, but also help increase revenue for the state budget.

CONCLUSION

Compared with other countries in the world as well as in the region, Vietnam's science and technology level is still low and has not met the requirements set forth by the country's socio-economic development process. Science and technology has not yet become the main growth engine of the economy. One of the main reasons is that Vietnam has not yet developed a complete and synchronous financial policy for science and technology activities in general and research and development activities in Science and Technology organizations in particular. Therefore, science and technology have not attracted enough necessary financial resources. At the same time, the available financial resources have not been allocated and used effectively as expected. It can be seen that in scientific and technological activities, financial activities, and financial management of science and technology organizations under the Ministry of Science and Technology, there are still many problems. Therefore, it is necessary to have the solutions mentioned in this article to perfect the financial management of science and technology organizations.

REFERENCES

- Dang, H. T. (2018). Financial management at the Institute of Labor and Social Sciences. Master thesis, National Academy of Public Administration.
- Decision No. 1318/QD-BKHCN dated June 5, 2015 approving the main scientific and technological directions, objectives and tasks for the 2016-2020 period.
- Decision No. 418/QD-TTg dated April 11, 2012 of the Prime Minister approving the Strategy for Science and Technology Development for the period 2011-2020.
- Decree 70/2018/ND-CP dated May 15, 2018 on the master plan on the management and use of assets formed through the implementation of scientific and technological tasks using state capital.
- Decree No. 54/2016/ND-CP dated June 14, 2016 stipulating the autonomy mechanism of public science and technology organizations.
- Decree No. 99/ND-CP/2014/ND-CP dated October 24, 2014 of the Government regulating investment in developing potentials and encouraging scientific and technological activities in Scientific Organizations Technology.
- Tran, V. G. (2011). Textbook of Public and Public Finance. Finance Publishing House.