

Research on Success Criteria and Popularization of Scientific Research Project Management

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Abstract: Scientific research is the engine of enterprise development, and scientific research project management is an important means to improve organizational operation efficiency and core competitiveness. Based on the analysis of the characteristics of scientific research project management and the traditional project management based on time, cost and quality management by objectives, this paper puts forward the success criteria of scientific research project management. The information data of enterprise scientific research project is still valuable after the end of the project, which needs to be properly preserved and managed for a long time, and continuously inherited and applied. Therefore, on the basis of defining the success criteria of scientific research project management, we should also consider the promotion and application of scientific research achievements, so as to improve the production efficiency of enterprise scientific research achievements.

1. Introduction

Nowadays, high technology and knowledge are developing explosively all over the world. Scientific research is the engine that drives the development of enterprises, and scientific research project management is the embodiment of the management and operation ability of enterprises. An enterprise must pay attention to scientific research, organize and manage the whole process of each scientific research project efficiently, and actively promote and apply the scientific research achievements in the enterprise.

In project management, a project includes the following main activities:

- 1) Allocate and manage resources within or across projects, and carry out activities within projects and non-project work.
- 2) Dealing with cross-project problems and opportunities.
- 3) Collect, sort out, refine and utilize the experience and lessons gained through the project.
- 4) Provide a management structure suitable for all projects of different types and sizes.
- 5) Continuously improve project management skills and effects.

However, the project management here refers to the management that "general affairs are included in certain procedures and scope, and does not involve the particularity of the industry and field in which the firm is a project, especially some special fields." The management of scientific research projects is a special project category. It has its special knowledge field, unique evaluation standard and more uncertainty. According to the characteristics of scientific research project management, this paper discusses its success criteria and discusses the importance of popularization and application.

2. Analysis on the characteristics of scientific research project management

There are eight management fields in the knowledge system of project management. The main areas are scope management, time management, cost management and quality management. There are three auxiliary fields: human resource management, communication management and purchasing management, and there is also a comprehensive management, namely overall management, which is

also called plan management. For scientific research projects, besides the basic framework of general project management, the following aspects should be highlighted.

1) innovation management

Innovation generally means that people create new ideas, new methods, new products and new things different from the past in the practice of transforming nature and society. Scientific research project is an innovative activity, which includes not only the achievements of discovery and invention, but also the popularization and application of these achievements. On the one hand, innovation management of scientific research projects is to take various effective measures to create a good environment and flexible response mechanism, so that innovation can achieve the best effect in complex intelligence systems. On the other hand, this kind of innovative management also includes management innovation, that is, in the process of scientific research project management, to explore an effective management organization that is conducive to achieving the goal. It is an innovative practice to apply the method of project management to scientific research project management.

2) Knowledge management

Knowledge management in scientific research projects refers to "the management process of identifying, acquiring and evaluating the knowledge resources owned and accessible by the project organization, so as to fully and effectively play its role." The results of scientific research projects are knowledge products, and the groups of scientific research projects are knowledge intensive. Therefore, the improvement of R&D ability, knowledge and skills, the change of management concept and the innovation of management ability all belong to the category of knowledge management. The knowledge management model "from hierarchical supervision and control" has gradually evolved into project management type "flat management of guidance and encouragement".

3) Uncertainty management.

There are a lot of uncertain factors in scientific research project management, and the sources of these uncertain factors can be summarized as: "the uncertain random information of some future things; Uncertainty in people's objective understanding of some objective things; Uncertainty or incompleteness in people's subjective understanding of certain objective things." Some uncertain factors can be analyzed by theory, and the influence of these uncertain factors on the project can be effectively reduced according to the analysis results.

3. Success criteria of scientific research project management

What criteria should be used to judge the success of scientific research project management? The concept of standard is: "a series of principles or guidelines on which everything should be based or judged." Therefore, the success criteria of scientific research project management are a series of principles and criteria that can be used to judge the success of scientific research project management. Different people have different expectations and requirements for the project, so different people hold this "principle and criterion of success" differently. The traditional success standard of project management is the iron triangle standard: time, cost and quality, which has existed for many years as the purpose of project management. Due to the particularity of the knowledge field of scientific research project management and the increase of uncertain factors, the deliverable of scientific research project is a knowledge product. The management objectives of time, cost and quality of general project management can not successfully control and solve the new situation brought about by the change of technology and knowledge itself in scientific research project management. It is necessary to improve and update the standard of its success. Success criteria should include progress, cost, technological innovation, potential economic benefits and investor satisfaction.

1) Progress

Schedule is the time target of project management. In the schedule, scientific research projects have strict time limit requirements. Project team members must complete the assigned objectives, each project must have the corresponding schedule, adopt the method and mode of project management, determine the critical path and milestone node, and carry out the whole process control, so as to meet the requirements of the time plan. Otherwise, the most cutting-edge scientific research projects will end in failure due to the delay of time.

2) Expenses

A good scientific research project often runs aground due to overspending. Cost management consists of plan management, cost estimation, cost budget and cost control. By monitoring the cost, analyzing the deviation, taking measures to ensure that the cost meets the requirements of the project objectives. Cost management and control runs through the whole process of the project and becomes the basic requirement to achieve the project objectives.

3) Technological innovation

The value of scientific research project lies in its innovation. From the beginning of the project, it is necessary to track the most advanced technology in related fields through information management, and make a breakthrough on this basis. The scientific research project without technological innovation means the failure of the project, and the degree of innovation is the standard to measure the quality of the project.

4) Potential economic benefits

Scientific research project is different from the scientific research based on the breakthrough of basic theory. Scientific research project itself is closely related to social production practice. To discuss the success of scientific research projects, we should consider whether the scientific research achievements can be applied to production practice, whether they have the value of popularization and application, and whether they can create good economic benefits. If the scientific research achievements can only be shelved after the completion of the scientific research project, no matter how perfect the achievements are, they can not be regarded as a successful project.

5) Investor satisfaction.

Some projects are invested by scientific research funds, and the conclusion of projects is also assessed by experts organized by investors. There are also some projects that are technological research projects, and the achievements are directly transformed into productivity. The investors of such projects are generally enterprises. In scientific research project management, it requires project management to abandon their technology centered management mode and adopt customer-centered management mode. It also requires scientific research project management to recognize that there is no single customer, and the customer's project needs are not immutable.

4. Popularization and application of scientific research projects

According to the requirements of the current management regulations of scientific research projects, a scientific research project has been completed and the project has ended when it passes the examination and acceptance. However, it is not an end in itself to complete scientific research projects and achieve fruitful results. Completing the research content of a scientific research project, obtaining fruitful results and passing the acceptance, is actually just the end of a stage in the composition of a scientific research project. From the goal of the scientific research project, this is the beginning of popularizing and applying the scientific research achievements of the project.

After obtaining scientific research achievements, enterprises must also devote themselves to popularizing and applying scientific research achievements in new product design, manufacturing, improvement and modification of existing products, testing and inspection and other fields related to scientific research achievements. Through the popularization and application of scientific research achievements, the level and quality of enterprise products, management and services will be improved finally. From the perspective of continuous development, the successful completion of a scientific research project only lays the foundation for more in-depth exploration. In order to continue to have a profound understanding of the world, after the acceptance of a scientific research project, it is necessary to continue to sort out, properly save, analyze and count the information data of many important scientific research projects, so as to prepare for further exploration.

In a word, passing the "assessment and acceptance" is not the end of a scientific research project. In fact, scientific research projects should be extended on the basis of the end of traditional scientific research projects, including the promotion and application of scientific research achievements and the long-term proper management, inheritance and utilization of scientific research project information data. In order to ensure that scientific research projects can achieve fruitful results and apply them to

the design, production and all aspects of the enterprise, we must first extend the whole process of traditional scientific research projects from the concept, and add an important link of "popularization and application". On this basis, the enterprise should supplement and revise the original scientific research management rules and regulations, management methods, workflow and standards, and do a good job in the management of popularization and application. In this way, we can realize the spiral rise of research-improvement-application, and then research-improvement-re-application, continuously improve the ability of scientific research projects, and keep the sustainable development of scientific research projects.

5. Conclusions

In the knowledge society, scientific research project is the engine that drives the sustainable development of enterprises, and scientific research project management is an indispensable part of modern enterprise management. Therefore, it is necessary to clarify the success criteria of scientific research project management, improve the corresponding management rules and regulations, management methods and standards, support scientific research activities and management business of scientific research projects, and strengthen the popularization and application management of scientific research projects after acceptance. It is conducive to continuous in-depth exploration and innovation, and is an important measure to improve the competitiveness of scientific research projects and the sustainable development of enterprises.

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