Application of Mathematical Modeling Method in Small and Medium-Sized Enterprises

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Abstract: In the current social environment of rapid development of science and technology, mathematics has also penetrated into various fields. Mathematical modeling method is a mathematical method that has been widely used in recent years and plays a role that cannot be ignored in people's daily life. This article explores the application of mathematical modeling methods in the operation of small and medium-sized enterprises, finds out the problems in the application process, and gives specific measures to improve the efficiency of applying mathematical modeling methods in the operation of small and medium-sized enterprises.

1. Introduction

In the operation of small and medium-sized enterprises, with the increasingly fierce market competition, the survival problems of small and medium-sized enterprises have become more and more serious. The promotion of economic globalization has created opportunities and accelerated the development of some large domestic enterprises. In view of the economic development of large enterprises, the integrated economic operation mode has brought certain difficulties to the development of small and medium enterprises. For this reason, how to optimize the management system and how to set up an operating mechanism in the development process of small and medium-sized enterprises is a question worth pondering in the course of operation of small and medium-sized enterprises. Practical experience shows that the application of mathematical modeling methods in the operation of small and medium-sized enterprises can promote better development of enterprises.

2. The Significance of Mathematical Modeling Methods

The application of mathematical modeling methods in small and medium-sized enterprises is mainly through the use of mathematical knowledge and mathematical structures, such as differential product methods, function methods, linear and nonlinear programming methods, and statistical methods. The application of economic, management, and development aspects in the business process of the enterprise has reduced the production and operation costs of the enterprise, built a sound economic management system, improved the economic efficiency of the enterprise, and promoted the better development of the enterprise. Mathematics involves a wide range of aspects. In medicine, ecology, science and technology, military, etc., all can improve the corresponding level of science and technology and optimize the allocation of resources. With the continuous improvement of China's economic strength, various companies are paying more and more attention to the technology, digitalization and accuracy of enterprise development in the process of operation, so that mathematics gradually runs through the operation of the entire enterprise. Based on the concept of economic operation and sustainable development, the mathematical thinking method is used in the development of enterprises, and specific mathematical development methods are used to solve specific development problems, and corresponding rectification measures and accurate

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development directions are proposed to make small and medium-sized enterprises Capable of continuous and stable operation [1].

3. Second, the Problems in Mathematical Modeling Methods in Sme Business Applications

3.1 Inadequate Corporate Awareness

In the development of small and medium-sized enterprises, business management leaders and some leaders did not recognize the significance of mathematical modeling methods in the development of the enterprise, and did not use mathematical methods to exchange them according to the current form of enterprise development and existing problems I think that mathematical modeling method is just a way to judge product quality and equipment production performance in ordinary production links, and it has no effect on the operation and management of an enterprise. This outdated conception makes the mathematical modeling method unable to play its real role in the development process of the enterprise and limits the economic operation of the enterprise [2].

3.2 Employees Do Not Have Professional Knowledge and Skills in Mathematics

In the operation and development of enterprises, if the mathematical modeling method can be used in the operation and management of the enterprise and drive the economic growth of the enterprise, it is necessary to ensure that the staff of the enterprise has the corresponding mathematical knowledge and can thoroughly analyze the mathematical modeling method. The enterprise's own structural conditions and development conditions use the modeling method in this way, so as to formulate a scientific development plan. However, some small and medium-sized enterprises lack talents, their staff do not possess certain mathematical expertise, weak working ability, poor mathematical foundation, and cannot use mathematical modeling methods.

3.3 Improper Application of Mathematical Methods

The mathematical modeling method has the characteristics of strong thinking and logic ability and high abstraction in the application process, which brings some difficulties to the development of some small and medium enterprises. Due to the variety of mathematical modeling methods, in the application process, relevant users are easily misled by surface phenomena, and the wrong choice of mathematical modeling methods can not only improve the economic operation of the enterprise, but also bring the operating cost of the enterprise. To bear, leading to failure in the competition.

4. Measures to Promote the Application of Mathematical Modeling Methods in the Operation of Smes

In the development process of small and medium-sized enterprises, it is necessary to integrate a series of problems existing in the specific use of mathematical modeling methods, and to implement the constraints and problems in the development process, strengthen the enterprise's own structure, and ensure that mathematical modeling methods are used in the operation of the enterprise. Among them, it can be fully utilized to promote the sustainable development of small and medium enterprises.

4.1 Disseminate Mathematical Modeling Methods Based on Development Needs

In the application of mathematical modeling methods, in order to enable long-term development of small and medium-sized enterprises, it is necessary to integrate with the current development situation, continuously optimize the operation mode of the enterprise, and improve the company's own economic strength and market competitiveness In order to obtain corresponding advantages in future development. Therefore, as the person in charge of the enterprise, first of all, it is necessary to fully understand the current development situation of the enterprise, implement the development concept of mathematical modeling methods in the enterprise, and combine the current development situation of the enterprise to spread the mathematical modeling methods. Through their own

learning, the company's staff members are brought into the study of mathematical modeling methods, and the development concept of mathematical modeling methods is popularized. As the person in charge of enterprise management, we must implement the skills training for enterprise staff according to the current development status of the enterprise and establish a comprehensive training plan based on the specific implementation of mathematical modeling methods. During the training process, employees can stimulate their own mathematical consciousness and fully invest in the study of mathematical modeling. Develop employees' thinking ability and innovative consciousness, improve their core mathematical literacy, and enable employees to have certain mathematical modeling method skills. In the operation of the enterprise, the use of certain mathematical modeling methods can enable the economic operation mode, cost management, and human resource management of the enterprise to build a digital and scientific operation mechanism [3].

4.2 Improving Employees' Ability to Use

For small and medium-sized enterprises, the economic strength is not strong, and they cannot improve the skills of relevant personnel from an economic perspective. Therefore, in the application of mathematical modeling methods, it is necessary to meet the needs of employees' positions, combine the acquired mathematical knowledge with the skills of professional positions, and apply mathematical theoretical knowledge to specific practical activities. Use the mathematical method to solve the problems and defects in the development of the enterprise, make full use of the mathematical knowledge and skills possessed by the employees, abstract the actual problems, and implement them in the whole process, so as to stimulate the enthusiasm of the employees , Actively invested in the modeling link of enterprise development [4]. It pays attention to creating various mathematical modeling activities, encourages employees to actively participate in them, purposefully stimulates the employees 'innovative consciousness, and enhances the employees' ability to apply mathematical modeling methods with specific practical activities.

4.3 Combining Enterprise Structure to Build a Mathematical System

Based on the current needs of small and medium-sized enterprises in the development process, we must not only start from the perspective of employees 'corresponding mathematical literacy and use consciousness, but also pay attention to the expansion of employees' mathematical thinking ability, so that they can use mathematical methods in some complex procedures. Precise calculations, cultivate their business management capabilities and decision-making capabilities. When using mathematical modeling to solve practical problems, it can go deep into the problem, solve the problems existing in the development of the enterprise from the root of the problem, and actively exert its own innovative consciousness and ability. In the actual application process, convert practical problems into mathematical problems, build a comprehensive mathematical system, think from multiple angles, and conduct in-depth research, starting from the perspective of economics and practicality, and solving development problems through mathematical modeling [5].

4.4 Controlling Enterprise Cost Output

Effectively controlling business operating costs is one of the functions of mathematical modeling methods applied to enterprises. In the specific application process, the mathematical modeling method focuses on economics from the perspective of the development of the research object. In the modeling process, a large amount of money is not required to purchase professional equipment and tools, which avoids equipment maintenance costs incurred during subsequent operations and accelerates the efficiency of enterprise operations. The use of some high-tech and technological means has changed the limitations encountered in the development of previous enterprises. Use advanced mathematical calculation methods combined with computer technology to plan the direction of corporate development, rationalize the abstract content reasonably and necessary, make assumptions with precise language, flexibly apply various mathematical knowledge, and refine effective mathematics Model to scientifically perform mathematical modeling. With the support of modern information technology, the method of solving mathematics has been continuously

scientific and precise. Based on the background of big data, it has opened up a new direction for the application of mathematical models to solve practical problems. The solution approach has also been simplified and improved. Enterprise development rate [6].

4.5 Strengthen Innovation and r & d

Under the influence of continuous innovation in science and technology, enterprises face tremendous market competition pressure during the development process, which is not conducive to the stable development of enterprises. For this reason, in the specific implementation environment, while improving the corresponding mathematical skills of employees, it is also necessary to combine the pace of current technology development with some specific practical activities to allow employees to independently innovate and develop. According to the current era The needs of enterprises in the development process to formulate corresponding development plans. The person in charge of management strengthens the assessment and inspection to ensure that the mathematical model constructed can solve practical problems. Applying some factual cases, while allowing employees to perceive mathematics among numbers, they also use mathematical models for modeling to better handle management issues in the business process of enterprises and achieve their development goals .

5. Conclusion

In the context of the continuous development of science and technology, in order to implement the application of mathematical modeling methods in enterprise management, it is necessary to comprehensively consider the development of the enterprise itself, improve the learning of mathematical knowledge of enterprise employees, cultivate core mathematical literacy, and expand knowledge and skills , To improve the ability to apply mathematical modeling methods, thereby enhancing its ability to manage and budget. With the application of mathematical modeling methods, the development cost of the enterprise is reasonably controlled, scientific guidance is provided for the development direction of the enterprise, and the harmonious and stable sustainable development of small and medium-sized enterprises is promoted.

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