Research on the Problems and Countermeasures of the Construction of Scientific and Technological Talents in State-Owned Enterprises

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ABSTRACT
As the backbone of talents in state-owned enterprises, scientific and technological talents are knowledge-intensive and innovative talents with strong innovative thinking and ability. They are at the forefront of various professional fields, and have the characteristics of high quality, strong ability, great contribution and wide influence. To constantly accelerate the construction of scientific and technological talents is an important guarantee and source of strength for state-owned enterprises to achieve high-quality development. This paper systematically analyses the problems faced in the construction of scientific and technological talents, and puts forward suggestions to strengthen the construction of scientific and technological talents in state-owned enterprises.

Keywords: *Scientific and Technological Talents, State-Owned Enterprises, Problems and Countermeasures.*

1. INTRODUCTION

In recent years, state-owned enterprises have made full use of their own advantages, thoroughly implemented the strategy of the CPC Central Committee and the State Council on innovation-driven and strengthened the country through science and technology. Insisted on scientific and technological innovation to drive the development of enterprises, state-owned enterprises have constantly increased the intensity of scientific and technological innovation, pursued development and strength through innovation, thus achieving fruitful scientific and technological achievements one after another. Therefore, the capability of independent innovation has been constantly enhanced [1]. However, compared with advanced enterprises in developed countries, the construction of scientific and technological talents in state-owned enterprises still faces several outstanding problems: the shortage of leading scientific and technological talents, especially the shortage of high-end talents and high-level innovation teams; The incentive mechanism of scientific and technological talents is not perfect; The innovation management of state-owned enterprises is not scientific, and the management system and mechanism of scientific and technological innovation is not flexible. The innovation ecosystem after the reform in streamline administration, delegate power, strengthen regulation and improve services has not yet been solidly built, which makes it difficult to create a relatively free, relaxed and bold environment for innovation, and seriously restricts the enthusiasm and initiative of scientific and technological talents for innovation [2].

2. DIFFICULTIES IN THE CONSTRUCTION OF SCIENTIFIC AND TECHNOLOGICAL TALENTS IN STATE-OWNED ENTERPRISES

2.1. The Structure of Scientific and Technological Talents Is Not Reasonable.

Firstly, China's leading scientific and technological talents, high-level innovation teams, emerging and short-supplied talents are still insufficient, and it is difficult to meet the needs of self-reliance and self-improvement of China's scientific and technological innovation. In recent years, the total amount of scientific and technological human resources continues to grow, and various types of scientific and technological talents are constantly emerging, and the scale of scientific and

technological talents is further expanded. However, leading talents in science and technology, international innovative talents, strategic scientists and high-level innovative teams are still lacking.

Secondly, the scientific and technological talents engaged in basic research are relatively insufficient. There is a huge gap between China's basic research level and developed countries. The problem is that there are relatively few scientific and technological talents engaged in basic research in China, and most of them tend to follow the imitation, lacking major original scientific theories and ideas. At the same time, many scientific and technological talents focus on transforming achievements in the market to earn economic benefits. The talent team engaged in basic theoretical research for a long period is not stable. The investment in basic research is mainly government funds, accounting for 90%. Most of the Fortune 500 companies have basic research departments, but at present, China's enterprises invest less in basic research. For example, 95% of China's chips still rely on imports, and are still in the low-end position of the global industrial chain.

2.2. The Science and Technology Management System Is Not Flexible.

Firstly, the evaluation mechanism of scientific and technological innovation is still not perfect, which cannot meet the practical requirements of scientific and technological innovation, and the vitality of scientific and technological talents need to be further stimulated. China's science and technology management tends to be administrative in some extent, the innovation management of state-owned enterprises is relatively extensive, the special assessment indicators are relatively single, the assessment of innovation quantity is emphasized, the quality, competitiveness and influence of innovation are not paid enough attention, and it is difficult to give full play to the market role and guide the optimal allocation of science and technology resources and talents. Although China is vigorously promoting the reform of science and technology evaluation and establishing a science and technology evaluation system that meets the requirements of innovation-driven development, at present, there is still a tendency that titles and posts are promoted to "only papers" in China's science and technology evaluation. In the evaluation of natural science achievements, there is a trend that "having the most right to speak" is more powerful, which not only does not meet the falsification spirit required by scientific development, but also causes certain obstacles to young talents in the process of career development. In addition, the lack of scientific research evaluation mechanism and policies to encourage long-term basic research accumulation and tolerate failure is not conducive to releasing the creativity of scientific and technological talents.

Secondly, the remarkable feature of scientific research management in state-owned enterprises is that scientific research is managed by the mode of production management, which, to a certain extent, constrains the innovative activities of scientific and technical talents. Production management mode emphasizes accuracy, stability, discipline and reliability. The advantage lies in no mistakes and strong execution; Shortcomings lie in rigid implementation, too little flexibility and less free space for innovation. At the beginning of a scientific research project, it is necessary to accurately formulate the financial budget, accurately predict the innovation achievements and accurately divide the stages and processes of scientific research. At the end of the project, it is accepted according to the task book and contract standards at the beginning of the project, and the scientific research process is repeatedly supervised and inspected. This rigid management method does not conform to the law of scientific research, and the space for scientific and technological talents to innovate is limited. In addition, researchers would still encounter financial and personnel management constraints. For example, the current financial system makes researchers spend a lot of time and energy dealing with financial reimbursement and other trivialities, and international talent exchange is limited. The above situation has had a certain impact on giving full play to the autonomy and enthusiasm of researchers [3].

2.3. The Incentive Mechanism of Scientific and Technological Innovation Is Not Perfect.

Firstly, the incentive mechanism of scientific and technological innovation is not systematic and targeted, and the incentive effect is not obvious. The salary incentive system of scientific and technological talents in state-owned enterprises is not systematic, the incentive items are numerous and miscellaneous, the salary grading standard is not scientific, the incentive and restraint, long-term incentive and short-term incentive has not been effectively combined, the related supporting evaluation system and performance management system are not perfect, and the incentive effect for scientific and technological talents is not obvious [4].

Secondly, the incentive intensity and scope of scientific and technological innovation do not match the national strategic demand and the demand of scientific and technological talents. In terms of incentives, the salaries and benefits of state-owned enterprises generally lack market competitiveness, the medium and long-term incentives for scientific and technological talents are not sufficient enough, which makes it difficult to meet the needs of scientific and technological talents and achieve the purpose of

retaining key talents. In terms of incentive scope, it is difficult to cover different groups of scientific and technological talents, which does not match the national strategic needs. It is difficult for scientific and technological talents engaged in major scientific and technological innovation activities such as basic research and technological breakthrough to obtain effective incentives. Because of the long research period, great difficulty and high risk of basic research, it is difficult to realize the transformation of achievements and economic benefits in a short project cycle [5].

3. SUGGESTIONS ON STRENGTHENING THE CONSTRUCTION OF SCIENTIFIC AND TECHNOLOGICAL TALENTS IN STATE-OWNED ENTERPRISES

3.1. To Continuously Optimize the Structure of Scientific and Technological Talents.

Firstly, it is primary to strengthen the top-level design of the construction of scientific and technological talents. Through establishing and implementing the development plan of scientific and technological talents, the direction of the construction of scientific and technological talents can be clarified. Under the unified deployment and intensive management of the construction of scientific and technological talents, state-owned enterprises could promote the structural optimization and strategic matching of scientific and technological talents, and improve the all-round development of talent work. The second is to speed up the training of leading scientific and technological talents and high-level innovation teams through talent introduction, exchange and cooperation. It is of great significance to strengthen the introduction and selection of talents, and enrich the team of innovative scientific and technological talents. State-owned enterprises need to broaden the channels of talent introduction, innovate the mode of talent introduction, regularly carry out talent selection, and build a talent cultivation base. Through the training and exchange activities at home and abroad, state-owned enterprises would further cultivate the innovative thinking of leading figures in science and technology innovative teams, broaden their international horizons, introduce and train a group of R&D talents, and give full play to the role of teachers as mentors. The third is to strengthen the cultivation of scientific and technological talents. State-owned enterprises need to fully consider the particularity of scientific and technological talents, establish a training system to meet the individual needs of scientific and technological talents, and continuously optimize their career development channels. Only by taking these measures can state-owned enterprises give full play to the carrier role of scientific and technological innovation and rely on scientific and technological platform to gather talents and educate wisdom. By building more high-level R&D platforms and new R&D institutions, state-owned enterprises would further attract and expand the contingent of scientific and technological talents, especially pay attention to cultivating strategic scientific and technological talents and leading scientific and technological talents, strengthen the training of young and middle-aged scientific and technological talents and experimental technical talents, thus building a multi-level and high-level echelon of scientific and technological talents [6].

3.2. To Gradually Deepen the Reform of Science and Technology Management System.

Firstly, it is urgent to improve the scientific and technological management system and policy system that conform to the laws of scientific research. Through deepening the reform of "streamline administration, delegate power, strengthen regulation and improve services" in the field of science and technology, state-owned enterprises could further improve the allocation mechanism of science and technology resources, innovate the use and management methods of research funds, and give scientific research units and researchers greater autonomy and more room for fault tolerance. Moreover, to promote the reform of science and technology management system, state-owned enterprises need to reduce administrative intervention in micro-scientific research activities, fully respect and trust scientific researchers, and give innovation teams and leading talents greater power to control people's property and technical route decisions, so as to avoid the delay and block caused by lack of autonomy and cumbersome approval process. State-owned enterprises also need to further decentralize the management authority of science and technology and optimize the management and control methods, in order to increase the power to scientific research units. State-owned enterprises should minimize intervention or non-intervention, and give more autonomy in selecting and employing human resource, research projects, results disposal, financial management, salary distribution, etc., so that scientific research units could let go of their hands and feet and have room for display. State-owned enterprises should optimize the rigid management system of using scientific research funds according to the prior plan, budget and approval, effectively reduce the burden on researchers and give them greater autonomy.

The second is to deepen the implementation of the evaluation reform of scientific research talents, actively respond to the call of national policies, implement the action of reducing the burden of scientific and technological talents, and pay more attention to the quality and influence of research results and emphasize the economic and social benefits of the results in the

talent evaluation. It is necessary for state-owned enterprises to establish a scientific and technological evaluation system that conforms to the law of scientific and technological innovation and highlights the quality contribution and performance orientation. Guided by innovation quality, industrial contribution and social benefits, according to the post characteristics of scientific and technological talents in different disciplines, research fields and different links in innovation chain, reasonable evaluation indexes are set up respectively, and a classified evaluation system of scientific and technological innovation is constructed. State-owned enterprises need to actively explore and formulate evaluation methods that are conducive to the development of researchers who focus on R&D and devote themselves to research, and to the transformation of achievements.

The third is to build an open and inclusive innovation culture. Culture is the result of development orientation, management system and values of innovation. State-owned enterprises ought to strengthen the construction of innovative culture, vigorously carry forward the spirit of scientists, create an innovative cultural atmosphere that advocates innovation and inclusive of diverse values, thus creating a favourable environment conducive to the rapid growth of innovative talents and the full display of their intelligence and wisdom. State-owned enterprises should fully follow the law of scientific and technological innovation and the willingness of scientific and technological talents to study, and give scientific and technological talents a certain free space. In addition, scientific research innovation is an activity of exploring unknown areas, with unpredictable risks and variables, and failure is the normal state of scientific and technological innovation, so it is necessary to create a scientific research and innovation environment that respects the law of scientific and technological innovation, tolerates failure, allows and encourages trial and error [7].

3.3. To Constantly Improve the Incentive System For Scientific and Technological Talents.

Through improving the incentive and restraint mechanism of scientific and technological talents, state-owned enterprises could achieve precise incentive. According to the characteristics and needs of different types of scientific and technological talents, state-owned enterprises could formulate targeted incentive measures and improve the precise incentive mechanism, giving full play to the incentive effect of material rewards and spiritual incentives.

Firstly, to further strengthen the medium and long-term incentives for scientific and technological talents. State-owned enterprises need to continually deepen the reform of the income distribution system, actively explore ways and means for technical elements to participate in the distribution, promote incentive resources to be inclined to scientific and technological R&D talents, speed up the implementation of medium and long-term incentive methods such as equity incentive and employee stock ownership, so as to encourage and guide scientific research, management and technological talents to closely combine personal interests with long-term performance improvement of enterprises by participating in equity incentive plans. In addition, state-owned enterprises should make full use of the equity dividend incentive policy of technology-based enterprises, use various medium and long-term incentive tools according to the policy of enterprises, vigorously promote dividend incentive, steadily promote equity incentive, make scientific research talents get reasonable returns, achieve a double harvest of wealth and career, and strive to create a group of world-class scientists, leading scientific research talents, outstanding engineers and high-level innovation teams.

The second is to improve the honor incentive mechanism. State-owned enterprises need to further clarify the innovative value orientation of honor incentives, and increase the intensity of honor incentives, so that scientific and technological talents can truly feel the effectiveness of honor incentives. Innovation value should be highlighted in award setting. Appropriate consideration should be given to setting up some awards that can highlight the innovation value, such as the Great Invention Award, rewarding individuals with strong innovation ability, and establishing an enterprise academician selection system to highlight the incentive orientation for scientific and technological innovation. To increase the publicity of innovative figures, it is suggested to further strengthen the propaganda of typical figures, advanced employees and typical figures, publicize the scientific and technological innovative figures of state-owned enterprises like model workers and role models of the times, enhance the transparency of honor selection, and make the awards more convincing. On the other hand, it can not only give the winners great spiritual encouragement, but also set an example and goal for other employees, and generate favourable incentive effect [8].

4. CONCLUSION

State-owned enterprises have accumulated rich experience in training high-end and short-supplied talents, encouraging and evaluating scientific and technological talents, and reforming the system and mechanism of scientific and technological talents. However, compared with advanced enterprises in developed countries, the construction of scientific and technological talents in state-owned enterprises still

faces several common problems, which are as follows: the structure of scientific and technological talents is not reasonable, the scientific and technological management system is not flexible, and the incentive mechanism for scientific and technological innovation is not perfect. There are three Countermeasures for state-owned enterprises to constantly improve the incentive system of scientific and technological talents: the first measure is to strengthen the top-level design of the construction of scientific and technological talents, then to improve the scientific and technological management system and policy system in line with the laws of scientific research, the last is to further enhance the medium-and long-term incentives and honorary incentives for scientific and technological talents.

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