Research on the Construction and Operation Mechanism of Enterprise Innovation Management System Driven by New Quality Productivity

Qiren Chen[1]

[1] *Liaoning Finance & Trade College, Xingcheng 125105, China*

ABSTRACT

As a microeconomic entity, enterprises' traditional innovative management model has shown its limitations in coping with the trend of high-frequency technology iteration and cross-border integration, and it is urgent to build an innovative management system that meets the development requirements of new quality productivity. From a systematic perspective, this paper analyzes the inherent requirements of new quality productivity for enterprise innovation management, aiming at designing a four-dimensional system framework covering strategic orientation, organizational structure, resource allocation and cultural ecology. The research focuses on the key dimensions such as motivation, cross-border collaboration, value distribution and knowledge transformation, and designs an operating mechanism to ensure the effectiveness of the system. At the same time, the paper further proposes to provide a solid guarantee for innovation management by consolidating the digital base, cultivating a compound talent echelon and establishing a dynamic risk management and control system. By upgrading innovation from local auxiliary function to global strategic core, and realizing the dynamic reorganization and coordination of various management elements, enterprises can effectively break organizational boundaries and information islands and improve the allocation efficiency of innovation elements.

Keywords: *New quality productivity, Innovative management system, Operating mechanism, Resource allocation, Digital transformation.*

1. INTRODUCTION

The global economy is in a critical period of transformation between old and new kinetic energy, and scientific and technological innovation has become the key driving force to promote high-quality economic development [1]. As an advanced productive force with scientific and technological innovation as its core and getting rid of the traditional mode of economic growth, new quality productive forces are profoundly changing the logic of industrial evolution and the pattern of market competition. Its core lies in technological leap, innovative allocation of production factors and deep industrial transformation and upgrading [2]. Under this macro background, enterprises, as microeconomic subjects, their innovation ability directly determines the cultivation effect and long-term development quality of new quality productivity [3]. How to effectively stimulate the innovation vitality of enterprises has become an important topic in the field of economic management.

Facing the development requirements of new quality productivity, the traditional innovative management mode of enterprises gradually shows its limitations. In the past, innovation management focused on single technology improvement or gradual product iteration, with information barriers between departments, relatively solidified organizational structure and limited resource allocation efficiency, which made it difficult to adapt to the current trend of rapid technology iteration and cross-border integration [4]. New quality productivity emphasizes high technology, high efficiency and high quality, and requires enterprises to change innovation from marginal auxiliary function to strategic core, realize global optimization and dynamic reorganization of

innovation elements, and build open and collaborative innovation ecology [5]. Faced with the double pressures of rapid changes in external environment and internal transformation, enterprises urgently need to break the original management inertia and reshape the innovative management system to match the internal development logic of new quality productivity. This paper aims to analyze the specific requirements of new quality productivity for enterprise innovation management from a systematic perspective, and then design a set of adaptive innovation management system framework, and further explore the key operating mechanisms such as motivation, cross-border collaboration, value distribution and knowledge transformation.

2. INTERNAL LOGIC OF NEW QUALITY PRODUCTIVITY AND INNOVATION MANAGEMENT

New quality productivity takes scientific and technological innovation as the core and has the characteristics of high technology, high efficiency and high quality. Its evolution trend is accelerating to digital, intelligent and green direction. This state of advanced productive forces has changed the combination of production factors and reshaped the creative logic of industrial value [6]. In the past, management practices mostly focused on gradual product iteration or single technical improvement, and the organizational structure was relatively solidified, and there was an information barrier between departments [7]. This linear and closed management method leads to the limited efficiency of resource allocation, which is difficult to adapt to the current market environment of rapid iteration and cross-border integration of technology. Innovation activities are often regarded as local auxiliary functions, lacking overall strategic planning and system support, and it is difficult to form a sustained innovation synergy.

New quality productivity puts forward more systematic requirements for enterprise innovation management. Enterprises need to change innovation from local link optimization to overall strategic core, and promote innovative allocation of production factors. This requires enterprises to break the traditional organizational boundaries, build agile and collaborative innovation ecology, and realize the dynamic reorganization of core elements such as technology, data and talents [8]. Innovation management needs to pay more attention to the layout of cutting-edge technologies and strengthen the deep integration of cross-domain knowledge, so as to complete the transformation from gradual improvement to systematic reconstruction at the bottom logic.

3. CONSTRUCTION FRAMEWORK OF ENTERPRISE INNOVATION MANAGEMENT SYSTEM

The enterprise innovation management system driven by new quality productivity is a complex system with multi-dimensional coordination. This system requires enterprises to upgrade their innovation activities from local optimization to overall strategic level, and realize the deep integration of management elements through systematic framework design. The framework of innovation management system constructed in this paper mainly includes four core dimensions: strategic orientation, organizational structure, resource allocation and cultural ecology, as shown in “Figure 1”.

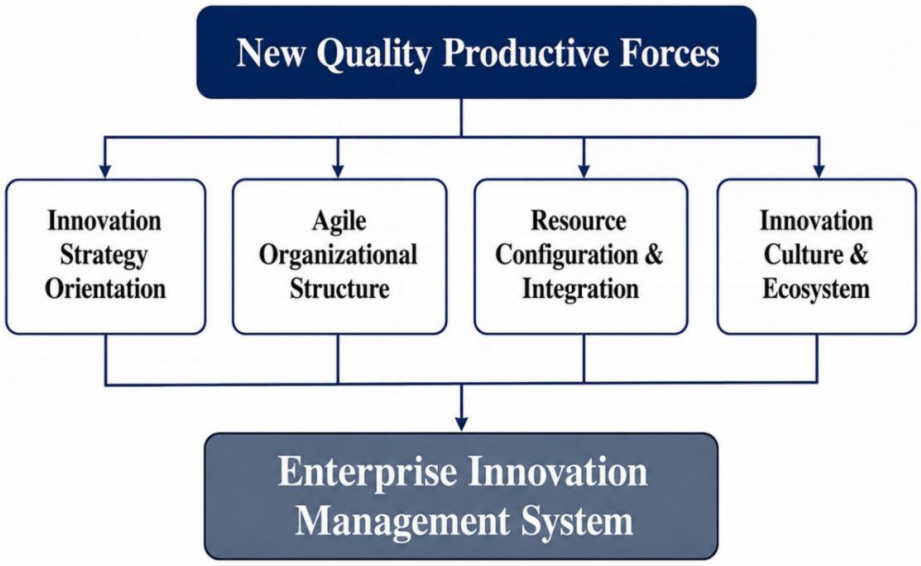


Figure 1 Construction framework of enterprise innovation management system driven by new quality productivity.

3.1 Innovation Strategic Orientation and Target System Setting

Enterprises need to internalize the development requirements of new productivity into their own strategic planning, and make clear the main direction of technological innovation and business model innovation. In setting the target system, enterprises should build a multi-level target matrix including short-term breakthrough and medium-and long-term layout. The target matrix covers the achievement of core technical indicators, and also needs to include comprehensive evaluation dimensions such as the transformation rate of innovation achievements and the synergy efficiency of industrial chain. Management needs to regularly evaluate the matching degree between strategic objectives and external technology trends to ensure that the investment of innovative resources always focuses on high-value areas.

3.2 Reconstruction of Organizational Structure and Agile Transformation

Enterprises should set up inter-departmental innovation committees or special project teams to give them higher decision-making authority and resource scheduling ability. This agile transformation enables the front-line R&D team to directly meet the market demand and the technological frontier, and greatly shortens the innovation decision-making chain. Enterprises need to establish an internal innovation incubation platform and encourage employees to form micro-innovation teams spontaneously. The flexible design of organizational structure improves the response speed of enterprises to market changes and provides a flexible organizational carrier for the breeding of disruptive technologies.

3.3 Allocation of Innovative Resources and Integration of Core Elements

Enterprises need to break the island of internal resources and establish a dynamic integration mechanism of core innovation elements such as data, technology, talents and capital. In terms of data elements, enterprises should build a unified digital R&D management platform to realize real-time sharing and deep mining of R&D data. In terms of talent elements, enterprises need to implement cross-border talent introduction and internal knowledge transfer plans to promote the deep integration of people with different professional backgrounds. The allocation of funds needs to establish a dynamic allocation model based on the life cycle of innovative projects, so as to ensure sustained and stable financial support for key core technology research.

3.4 Cultivation of Innovative Culture and Internal Ecological Construction

Innovation culture is the hidden link to maintain the continuous operation of innovation management system. Enterprises need to cultivate an internal

innovation ecology that embraces failure and encourages exploration, and integrate innovation consciousness into employees' daily behavior norms. Management should establish a clear innovation fault-tolerant mechanism, define the boundary of reasonable trial and error, and eliminate the concerns of R&D personnel when facing high-risk frontier technologies. Enterprises can also stimulate the micro-innovation vitality of grassroots employees by holding internal innovation competitions and setting up special innovation awards.

4. DESIGN OF OPERATION MECHANISM OF INNOVATIVE MANAGEMENT SYSTEM

Driven by new quality productivity, enterprises need to build a set of closed-loop operation mechanism covering motivation, cross-border collaboration, value distribution and knowledge transformation to ensure that innovation activities are transformed from ideas to actual productivity [9]. Motivation incentive mechanism is the source of maintaining innovation vitality. Enterprises should establish diversified incentive combinations and combine material rewards with spiritual recognition. In addition to the traditional salary performance linkage, enterprises need to introduce long-term interest binding methods such as equity incentives and project dividends, so that core R&D personnel are deeply related to the interests of innovation achievements, and a stepped innovation honor system is established to commend innovation practices at different levels.

Cross-border collaboration mechanism aims to break organizational boundaries and information islands and realize the optimal allocation of innovative resources. Enterprises should build an open collaborative innovation platform, promote data exchange and business integration of various departments internally, and link universities, research institutes and industrial chain partners externally. In the process of collaboration, the precise matching of requirements and rapid iteration of technology are realized by digital means, which reduces transaction costs and improves collaboration efficiency, thus obtaining the support of innovative elements in a wider scope.

The value distribution mechanism is related to the fairness and sustainability of innovation results. Enterprises need to establish a contribution-oriented value evaluation standard, comprehensively consider technical difficulties, market prospects and economic benefits, establish a transparent and fair revenue sharing system and clarify the ownership of intellectual property rights, so as to attract high-quality resources to gather in high-value fields. Knowledge transformation mechanism is the key to realize technology accumulation. Enterprises should build a life-cycle knowledge management process, covering the collection, storage, sharing and application of knowledge, establish an internal knowledge base and expert network, and promote the manifestation and standardization of tacit knowledge. Accelerate the precipitation of experience through technical resumption and cross-departmental communication, and strengthen the knowledge feedback mechanism to promote the continuous iteration of technology, so as to realize the leap from single-point breakthrough to system capability improvement.

5. THE GUARANTEE PATH OF SYSTEM CONSTRUCTION AND OPERATION

5.1 Depth Empowerment and Data Management of Digital Pedestal

Enterprises need to build a unified data center, break the data barriers in R&D, production, supply chain and sales, and realize real-time data collection and standardized management of the whole value chain. By introducing artificial intelligence algorithm and big data analysis technology, the massive R&D data are deeply mined, and the technological evolution trend and potential market demand are identified, which provides quantitative basis for innovative decision-making. Enterprises should establish a digital twin system to simulate and verify the design and process of new products in virtual space, so as to greatly reduce the cost of trial and error and shorten the research and development cycle. As shown in Figure 2, the digital base opens up all levels of innovation management through data flow, forming a closed-loop feedback mechanism from bottom data collection to top strategic decision, ensuring the accuracy and efficiency of innovation activities.

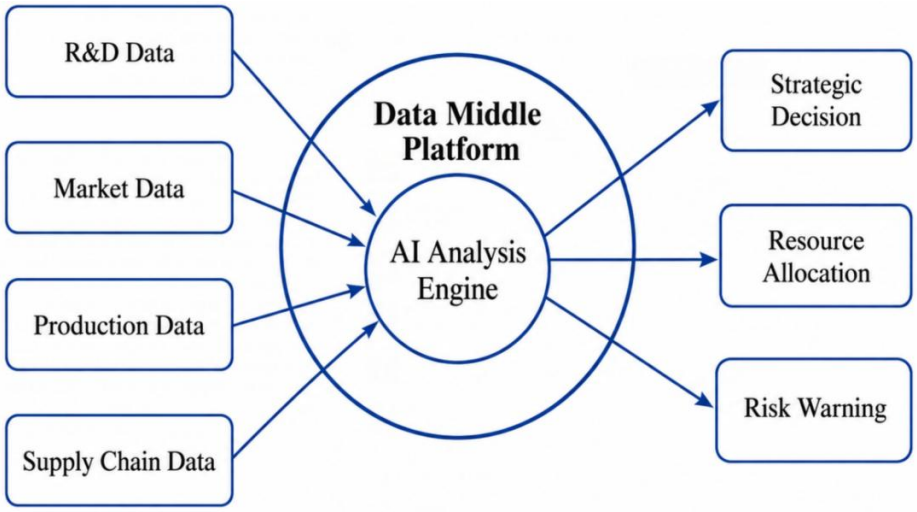


Figure 2 Digital base empowers the operation logic of innovative management system

5.2 Cultivation and Encouragement of Compound Innovative Talents Echelon

Talent is the most active factor in the new quality productivity. Facing the trend of technology cross-border integration, it is difficult for single skilled talents to meet the needs of complex innovation tasks. Enterprises should focus on building a "T-shaped" compound talent echelon with profound professional depth and broad interdisciplinary vision. In terms of internal training, enterprises can implement the training mode of combining rotation system with project system, encourage technicians to participate in market research and customer service, and promote the deep integration of technology and market. In terms of external introduction, we can focus on attracting high-end talents with interdisciplinary background, and set up a flexible talent introduction mechanism to borrow external intellectual resources through consulting and short-term cooperation. Enterprises should also establish evaluation criteria oriented to innovation value and ability contribution to ensure a high degree of matching between talent supply and innovation strategy.

5.3 Dynamic Risk Control and Compliance System Construction

Innovation activities are inherently accompanied by high risks, especially when it comes to cutting-edge technology exploration, and the uncertainty increases significantly. Enterprises need to establish a dynamic risk management and control mechanism in the whole process, and embed risk management in all stages of innovation projects. During the project establishment period, double evaluation of technical feasibility and market potential can be carried out to identify potential technical bottlenecks and market exclusion risks. During the implementation period, it is necessary to set up a key node review mechanism to monitor the project progress and resource consumption in real time, and start the rectification or termination procedure in time once it deviates from the expected trajectory. Enterprises should strengthen the management of intellectual property compliance, establish a patent early warning mechanism, and avoid the risk of infringement. Pay attention to data security and ethical compliance, especially when it comes to user data collection and artificial intelligence application, it is necessary to strictly abide by relevant laws and regulations, ensure that innovation activities run on a legal and compliant track, and build a safe defense line for the long-term development of enterprises.

6. CONCLUSION

The rise of new quality productivity marks a fundamental change in the logic of economic development, and puts forward the requirement of systematic reconstruction for enterprise innovation management. The framework of innovation management system constructed in this paper shows that enterprises must go beyond the traditional path of single technological improvement and put innovation activities at the strategic core. By establishing a clear innovation strategic orientation, reshaping the flat and networked organizational structure, optimizing the

allocation of core elements such as data, talents and funds, and cultivating an inclusive and open innovation culture, enterprises can establish an internal management foundation that adapts to the rapidly changing environment.

The design of operation mechanism is the key to the system landing. The organic coupling of the four mechanisms of motivation, cross-border collaboration, value distribution and knowledge transformation ensures the smooth flow of innovation activities from concept to effect. This closed-loop mechanism not only stimulates the innovation vitality of internal subjects, but also realizes the effective integration of external resources through open collaboration, and promotes the manifestation and continuous accumulation of tacit knowledge.

The implementation of the security path provides the necessary support for the system operation. The deep empowerment of digital base improves the accuracy and response speed of decision-making, the construction of compound talent echelon solves the bottleneck of intellectual supply, and the dynamic risk management and control system ensures the compliance and sustainability of innovation activities. Only through systematic construction and systematic operation can enterprises effectively cultivate new quality productivity, take the initiative in the fierce global competition and achieve long-term high-quality development.

REFERENCES

[1] Baldwin C Y, Bogers M L A M, Kapoor R, et al. Focusing the ecosystem lens on innovation studies[J]. Research Policy, 2024, 53(3): 104949.

[2] Xie F, Jiang N, Kuang X. Towards an accurate understanding of ‘new quality productive forces’[J]. Economic and Political Studies, 2025, 13(1): 1-15.

[3] Cui J, Du D. New quality productive forces, urban-rural integration and industrial chain resilience[J]. International Review of Economics & Finance, 2025, 102: 104245.

[4] Liu Z, Zhang H, Guo C, et al. New quality productive forces enabling high-quality development: Mechanism, measurement, and empirical analysis[J]. Sustainability, 2025, 17(18): 8146.

[5] Liang H, Huang W. Technological innovation spurring new quality productive forces and its global effect[J]. China Finance and Economic Review, 2025, 14(1): 50-69.

[6] Martínez Falcó J, Sánchez-García E, Marco-Lajara B, et al. Digital transformation and green innovation performance: unraveling the role of green knowledge sharing and top management environmental awareness[J]. Internet Research, 2025, 35(4): 1621-1656.

[7] Alaassar A, Mention A L, Kryzhanivska K. Digital innovation: a bibliometric review and research agenda[J]. Review of managerial science, 2026, 20(1): 331-377.

[8] Marchese S, Gastaldi L, Corso M. Orchestrating innovation ecosystems and digital technologies for dynamic capabilities development: the case of EdTech industry[J]. European Journal of Innovation Management, 2026, 29(2): 429-463.

[9] Hafeez S, Shahzad K, De Silva M. Enhancing digital transformation in SMEs: The dynamic capabilities of innovation intermediaries within ecosystems[J]. Long Range Planning, 2025, 58(3): 102525.