

# Research on the Collaborative Development Path of Enterprise Internal Control and Risk Management

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## Abstract

Against the backdrop of deepening market-oriented economic reforms and increasingly fierce market competition, internal control and risk management have become the fundamental guarantee for enterprises' normal operations and the achievement of strategic goals. This paper systematically interprets the core connotations and interconnections of internal control and risk management, conducts an in-depth analysis of the key problems encountered by enterprises in the practice of their integration, and puts forward targeted optimization plans for collaborative development. It provides theoretical reference and practical guidance for enterprises to improve their comprehensive management level and enhance their risk resistance capacity.

**Keywords:** Enterprise Management; Internal Control; Risk Management; Collaborative Development

## 1. Introduction

With the advancement of globalization and the deepening of digitalization, the business environment has become increasingly complex and volatile. In the process of enterprise operations, they face various internal and external risks such as fluctuations in raw material prices, supply chain disruptions, and accelerated technological upgrades. These risks interact and influence each other, making the integration of internal control and risk management more crucial than ever.

Internal control is an important means for enterprises to achieve self-regulation and standardized operations, while risk management plays an indispensable role in preventing operational risks and ensuring enterprises' sustainable development (Guo, 2025). The internal control mechanism plays an irreplaceable role in integrating internal enterprise information, assisting management in making informed decisions, and supporting the company's investment and strategic planning, which is an integral part of the enterprise management system (Kinney,

2019). Their in-depth linkage can provide important support for enterprises' stable and sustainable development.

Current academic research on the collaborative development of the two still has problems such as the disconnection between theory and practice, and the unsystematic sorting out of core issues. Based on this, this paper combines the actual operation of enterprises and real cases from multiple different industries to systematically analyze the core problems in the integration of internal control and risk management, and proposes practical collaborative optimization measures. The research findings can enrich the relevant theoretical system and provide practical suggestions for enterprises to improve their comprehensive management and risk resistance capacity. To achieve this goal, this paper will conduct in-depth research combined with cases from multiple industries. Firstly, it systematically interprets the connotations of internal control and risk management, clarifies their relevance, and lays a theoretical foundation for subsequent analysis. Secondly, it sorts out the key problems in the process of their collaborative development from four aspects: cognition, system, capability, and supervision, illustrates the hazards of their lack of collaboration with cases, and puts forward targeted optimization suggestions. Finally, it summarizes the conclusions and research value, points out the research limitations and prospects for future development, hoping that enterprises will attach importance to the problems and optimize solutions.

## **2. Connotations and Relevance of Internal Control and Risk Management**

### **2.1. Connotations of Internal Control and Risk Management**

Internal control is a management work jointly implemented by the board of directors, management, and all employees of an enterprise. Its core purpose is to improve operational efficiency, ensure the authenticity and reliability of financial reports, and guarantee the safety and integrity of assets (Cai, 2025). China's \*Basic Norms for Enterprise Internal Control\* clarifies its core requirements: through the formulation and implementation of a series of standardized policies and processes, ensure the orderly development of enterprise operational activities, the safety and integrity of assets, the authenticity and compliance of accounting information, and effectively prevent fraudulent behaviors.

Internal control includes five core elements: internal environment, risk assessment, control activities, information and communication, and internal supervision. These elements are progressive and interconnected: the internal environment is the foundation, which directly affects the implementation effect of internal control; risk assessment is a preliminary link, providing accurate basis for the design of control activities; control activities are the core executive part, regulating operational behaviors through specific methods such as authorization and approval, and budget control; information and communication ensure the efficient flow of internal and external information; internal supervision realizes the whole-process closed-loop optimization (Li, 2025). These five elements work together to ultimately achieve the goals of improving operational efficiency, safeguarding asset safety, and ensuring information authenticity, providing a solid guarantee for the implementation of enterprise strategies.

The concept of risk management was first proposed by William C.A and Heine R.M, who believed that this method can be used for pre-risk prevention and can minimize enterprise losses and operational costs (William & Heine, 1964). Risk management is a dynamic process in which enterprises cultivate risk management culture and improve the risk management system through a full-cycle closed-loop management of "identification-assessment-response-monitoring" around the overall operational goals. The risks faced by enterprises usually include market risk, credit risk, compliance risk, operational risk, and other aspects. Compared with internal control, risk management focuses more on the full-cycle control and value creation of various risks, with the core goal of reducing risk losses and enhancing enterprises' risk-bearing capacity. The two form complementary collaboration in functions.

Risk management strictly follows a closed-loop process: comprehensively identify internal and external risks through various methods such as interviews, surveys, and industry benchmarking; assess the probability and impact of risks using qualitative and quantitative analysis tools to classify risk levels; formulate differentiated response strategies such as avoidance, reduction, transfer, and acceptance accordingly; finally, dynamically monitor changes in risks and adjust response measures in a timely manner to ensure the achievement of risk management goals.

## **2.2. Relevance of Internal Control and Risk Management**

In September 2004, driven by the limitations of the original framework and the SOX Act, the COSO Committee officially released the revised COSO-ERM framework. On the basis of adding strategic goals, this framework clearly defines eight core elements, breaking the relatively independent operation pattern of internal control and risk management, and becoming an important milestone for the two to move towards in-depth collaboration (COSO, 2004). The 2017 version of the COSO framework is an iterative upgrade of the 2013 version, with its core upgrade direction focusing on strengthening "strategic integration" and "value creation", and deeply embedding risk management into the entire process of enterprise strategic formulation and performance improvement. This upgrade logic is highly consistent with the collaborative development needs of enterprise internal control and risk management, providing more accurate theoretical guidance and practical framework for their systematic linkage and functional complementarity (COSO, 2017).

Internal control and risk management play important roles in enterprise operations and are related to enterprise development (Chen, 2025), mainly reflected in four aspects: first, goal synergy. The ultimate goals of both serve the sustainable development of enterprises, and they are highly consistent in specific goals such as compliant operation, improving operational efficiency, and ensuring asset safety (Liu, 2025). Second, content overlap. Risk assessment is the core link connecting the two. The construction of the internal control system needs to be guided by the results of risk assessment, and the implementation of risk management strategies relies on the support of internal control measures. Third, mutual promotion. Standardized internal control lays a solid foundation for risk management, and scientific risk management provides a clear direction for the optimization of the internal control system. Fourth, path integration. In enterprise practice, a dynamic closed loop of "risk identification - internal control design - risk monitoring - internal control optimization" is formed to achieve in-depth integration of the entire process.

At the theoretical level, the collaborative development of the two conforms to the core logic of principal-agent theory and system theory. From the perspective of principal-agent theory, the agency problems arising from the separation of enterprise ownership and management rights can be alleviated through internal control to regulate management behaviors and strengthen information disclosure. Risk management can further make up for the defects of the agency mechanism, prevent moral hazards and adverse selection, and the collaboration of the two can effectively reduce agency costs. From the perspective of system theory, an enterprise is an organic overall management system. As subsystems, internal control and risk management can only improve the operational efficiency of the enterprise's overall management system if they achieve collaborative linkage.

### **3. Core Problems and Improvement Measures of the Failure of Collaboration Between Enterprise Internal Control and Risk Management**

#### **3.1. Cognitive Bias, Lack of Collaborative Awareness and Improvement Measures**

From management to grass-roots employees, enterprises have deviations in understanding the collaborative value of internal control and risk management, forming a "cognitive gap" that seriously hinders the in-depth integration of the two. Specifically, management may have cognitive misunderstandings: either simply equate the two or manage them separately, leading to the waste of management resources; middle-level executors pay more attention to departmental interests, ignoring cross-departmental collaborative cooperation, forming management barriers; grass-roots employees lack a sense of collaborative participation, regarding control requirements as an additional burden, which affects the implementation of collaborative strategies.

Taking Baiyin Nonferrous Group Co., Ltd. as an example, there is a typical problem of ineffective collaboration between internal control and risk management in the control of its high-value assets. The company separated the risk assessment of third-party warehouses from the warehousing internal control process: the Risk Management Department only conducted a qualification review of Hebei Zhongbang Deyao Logistics, which had cooperated for 7 years, and did not dynamically update risks such as its loose management and personnel compliance; the Internal Control Department was responsible for warehousing approval but did not synchronize information with the Risk Control Department, entrusting the remote monitoring of the warehouse to a third party without implementing the requirements of regular reconciliation and abnormal feedback. In November 2023, 990 tons of zinc ingots were stolen through collusion between traders and warehouse managers. Although the company won the lawsuit, it did not receive compensation and ultimately accrued a loss of 23.2364 million yuan.

To address cognitive biases, it is necessary to build a three-tier rectification method led by senior management, coordinated by middle management, and participated by grass-roots employees: first, strengthen the leading role of senior management. The board of directors takes the lead in formulating a collaborative development plan, incorporates collaborative goals into the enterprise strategic system, and management changes their cognition through visits to benchmark enterprises, lectures by industry experts, etc., and increases resource inclination to provide

guarantee for the implementation of collaborative work. Second, build a coordination platform for middle management. Establish a monthly collaborative meeting mechanism, clarify the collaborative tasks of each department, and form a coherent process of early risk warning, internal control optimization, and business implementation. Third, promote grass-roots participation. Conduct hierarchical special training and explain collaborative requirements combined with typical cases; encourage employees to take the initiative to participate in risk identification and internal control optimization, and cultivate a cultural atmosphere of "everyone values risks and everything emphasizes collaboration".

### **3.2. Imperfect System, Lack of Integration Mechanism and Improvement Measures**

An imperfect system and lack of integration mechanism are the core reasons for the failure of collaboration, mainly reflected in four problems: first, there are repetitions and conflicts in system clauses. The internal control systems and risk management systems formulated by different departments lack connection, leading to confusion in implementation. Second, unclear division of responsibilities. The collaborative responsibilities of departments such as internal control, risk control, and audit are not clearly defined, resulting in problems in division of labor, such as overlapping supervision or lack of control (Di, 2021). Third, lack of collaborative processes. The results of risk assessment are disconnected from the design of internal control measures, and no full-process linkage has been formed. Fourth, unsmooth information transmission mechanism. The development of any work of an enterprise requires the rapid intercommunication of information as a guarantee. If the enterprise does not establish a unified information sharing platform, risk information and internal control execution data cannot be synchronized in real time (Bian, 2022).

The procurement fraud incident of Tianye Innovation Co., Ltd. fully exposed the hazards of the lack of system integration. The enterprise's procurement internal control system was not linked to the supplier risk assessment requirements, and the measures related to supplier control in the risk management system were not embedded in the procurement process. In addition, there was no clear division of departmental collaborative responsibilities and no information sharing platform was built. In this context, procurement personnel took advantage of system loopholes to inflate procurement amounts by 8.5534 million yuan through contract price increases when purchasing raw materials such as fruits from some suppliers. Relevant directors, supervisors, and senior managers were subject to regulatory measures by the Beijing Stock Exchange, and the company was rated as a Class D enterprise.

To solve the defects of the system, it is necessary to promote integration and optimization from four aspects: first, conduct a comprehensive sorting out of systems. Set up a special working group to delete repetitive and conflicting clauses and establish a quarterly dynamic update mechanism. Second, clarify the division of collaborative responsibilities. Formulate detailed responsibility lists, determine the authority and responsibility boundaries of the board of directors, internal control department, risk control department and other subjects, and establish a coordination mechanism for responsibility conflicts. Third, build a full-process collaborative closed loop. Design a linkage process of identifying risks, judging risks, designing internal control measures, promoting implementation, tracking and monitoring, and optimizing and

improving to ensure that risk assessment results are effectively transformed into internal control measures. Fourth, build an integrated information sharing platform. Connect the data interfaces of financial, procurement, risk control and other systems to realize the real-time synchronization of risk information and internal control execution data.

### **3.3. Insufficient Risk Assessment Capability, Weak Targeted Internal Control Measures and Improvement Measures**

Insufficient risk assessment capability is a key factor restricting the quality of collaboration, which directly leads to the lack of feasibility of internal control measures. It is mainly manifested in: first, incomplete risk identification index system, overemphasizing financial indicators while ignoring non-financial indicators such as technological iteration and supply chain stability. Second, single assessment method, over-reliance on experts' subjective qualitative judgment, lack of support from quantitative analysis tools, and insufficient accuracy in risk level classification. Third, lack of dynamics in assessment, adopting an annual one-time assessment model, which cannot timely respond to changes in the internal and external environment. Fourth, lack of professional talents. The assessment team is mainly composed of part-time personnel who lack systematic professional capabilities.

Chongqing Xishan Technology Co., Ltd. fell into an operational crisis due to insufficient risk assessment capabilities. The enterprise's risk assessment indicators only covered financial indicators such as operating income and asset-liability ratio, and did not include the core risk of price control of downstream agents in the assessment scope, nor did it design targeted internal control measures. Finally, when its core medical consumables were circulated to hospitals through agents, there was an illegal situation where the terminal price was higher than the national minimum listed price, involving an arbitration case of 35.71 million yuan in total, and it had to bear joint and several liability for compensation.

To solve the problem of insufficient risk assessment capability, it is necessary to improve professional capabilities from four dimensions: first, build a two-dimensional index system combining financial and non-financial indicators. Supplement differentiated indicators according to industry characteristics, such as adding channel price compliance indicators for medical device enterprises and strengthening supply chain stability indicators for manufacturing enterprises. Second, optimize the combination of assessment methods. Adopt a combination of quantitative and qualitative methods to analyze and evaluate risks. For example, use qualitative tools such as the Delphi method for basic risks, and introduce quantitative tools such as the risk matrix method and Monte Carlo simulation for core risks to improve assessment accuracy (Zhao, 2025). Third, establish a dynamic assessment mechanism. Implement a regular model of monthly, quarterly and annual assessments. Fourth, strengthen the construction of professional teams. Establish a full-time assessment team through internal training and external recruitment, and establish a standardized training and incentive mechanism (Yin, 2025).

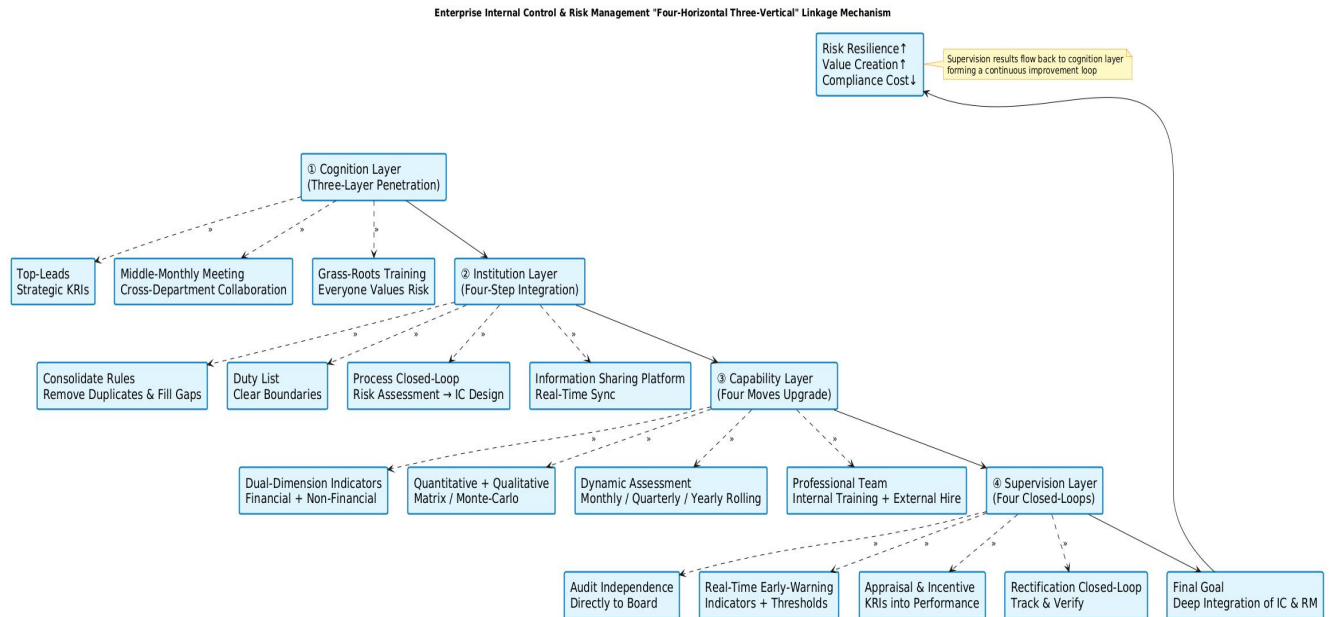
### **3.4. Inadequate Internal Supervision and Risk Monitoring, Poor Implementation Effect and Improvement Measures**

Inadequate internal supervision and risk monitoring are the final obstacles to the implementation of collaboration, mainly manifested in: first, insufficient independence of internal audit. Most of them are affiliated to the management, and enterprises lack effective supervision mechanisms, resulting in the lack of regular monitoring and inspection of the implementation of the integration of internal control and risk management. From the specific requirements of the implementation of supervision responsibilities, the company's person-in-charge should regularly and phasedly report the results of the enterprise's internal control evaluation. Second, the lack of systematicness and dynamics in risk monitoring. No real-time early warning system has been built, and monitoring indicators are single. Third, lack of assessment and evaluation mechanism. Collaborative results are not included in performance appraisal, and there is a lack of incentives and constraints. Fourth, imperfect rectification closed loop. The rectification effect of problems found in supervision is not tracked and verified, leading to the recurrence of problems.

Taking Huatai United Securities and Guoyuan Securities as examples, there are typical problems of ineffective collaboration between internal control and risk management in their merger and acquisition restructuring financial advisory business. When the two securities firms jointly served as financial advisors for Fuhuang Steel Structure's acquisition of Zhongke Shijie project, they separated the risk verification of the target company from the execution of internal control processes: the Risk Management Department failed to fully identify core risks such as the inter-temporal recognition of the target company's revenue and the nature of dealer transactions; as the former IPO sponsor institution of the target company, Guoyuan Securities did not continue risk tracking and assessment; the Internal Control Department did not establish a linkage mechanism of "risk assessment - verification process", Huatai United Securities failed to play a checks and balances role, and the verification processes of both parties were mere formalities, failing to discover that Zhongke Shijie falsely increased its 2024 operating income by 25.1874 million yuan and violated information disclosure regulations. Finally, the Anhui Securities Regulatory Bureau issued warning letters to the two securities firms and the project sponsors, and held accountable the accounting firms, law firms and other relevant institutions, showing the hazards of collaborative failure.

To address the problem of inadequate supervision and monitoring, it is necessary to build a full-process guarantee system: first, strengthen the independence of internal audit. Enterprises need to conduct internal audit irregularly, timely identify loopholes and weak points in the internal control system, and implement rectification measures for the problems found to provide solid internal control support for daily production and operation (He, 2025). Internal audit should not be limited to traditional financial and compliance audits, but should take the initiative to participate in enterprise risk management, internal control and corporate governance, and provide targeted consulting services (Mahmoud et al., 2016). Second, build a dynamic risk monitoring system. Clarify monitoring indicators, early warning thresholds and response processes, and use digital means to achieve real-time early warning. Third, improve the assessment and evaluation mechanism. Incorporate collaborative indicators such as risk prevention success rate and internal

control process execution rate into performance appraisal, and match them with rewards and punishments. Fourth, establish a rectification closed-loop mechanism. Form a complete management process to ensure that problems are rectified in place.



**Figure 1. Flowchart of Problem-Solving**

#### 4. Conclusion

The in-depth collaboration between internal control and risk management is an inevitable choice for enterprises to cope with the complex and volatile business environment and achieve sustainable development. Currently, in the practice of integrating the two, enterprises generally face core problems such as cognitive biases, imperfect systems, insufficient assessment capabilities, and inadequate supervision. These problems interact to form a vicious circle, and the typical cases mentioned earlier fully confirm their serious hazards to enterprise operations.

To solve the above problems, it is necessary to build a collaborative development model where ideological understanding, rules and regulations, professional capabilities, and supervision guarantees cooperate with each other. It is necessary to address cognitive biases through guidance at the senior, middle, and grass-roots levels, thereby laying a ideological foundation for collaborative development. In addition, it is necessary to improve the system through four specific measures to build a framework for collaborative operation. It is necessary to improve assessment capabilities from four aspects to enhance the accuracy of collaboration. Furthermore, it is necessary to strengthen supervision and guarantee through full-process management to ensure the implementation and effectiveness of collaborative development. This system can help enterprises promote the in-depth integration of internal control and risk management.

This research still has certain limitations: first, the coverage of cases across industries is limited, mainly focusing on manufacturing, retail, medical devices and other fields, with insufficient attention to other industries; second, the impact of differences in enterprise scale on collaborative strategies has not been fully considered. Large enterprises differ from small and medium-sized

enterprises in terms of resource endowments, organizational structure, and collaborative paths; third, there is a lack of quantitative analysis support, and the implementation effect of collaborative measures has not been verified by empirical data. Future research can further expand the coverage of cases and conduct differentiated research by industry and scale; introduce quantitative research methods to empirically test the effectiveness of collaborative measures; combine the trend of digital transformation to explore the application of technologies such as big data and artificial intelligence in collaborative management.

The collaborative development of internal control and risk management cannot be achieved overnight, and requires long-term investment and continuous optimization by enterprises. Enterprises should face up to the problems existing in their collaborative practice, and implement targeted optimization measures in combination with industry characteristics and their own reality to promote the in-depth integration of the two. Only in this way can the collaborative effect be fully released, the enterprise's risk resistance capacity and value creation capacity be improved, and help enterprises move forward steadily in the fierce market competition.

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Zeqing Fan developed the conceptual design of the study and provided guidance for the construction of its theoretical framework. All authors have read and agreed to the published version of the manuscript.

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