

Analysis of the Path for Digitalization of Finance and Accounting Integration to Enhance Enterprise Internal Control

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Abstract: In the context of the digital age, the integration of business and finance and the coordinated development of internal control within enterprises have become new propositions for enterprise management transformation. This article, from the perspective of digital integration of business and finance, analyzes the drawbacks of traditional internal control such as information silos, lagging control, and flexible execution, and elaborates on how digital integration of business and finance can achieve data integration, process reconfiguration, and intelligent monitoring of internal control. Based on the research, it is concluded that digital integration of business and finance empowers internal control mainly through three mechanisms. The first is to break the "information silos" through data centers and system integration, transforming control activities from "post-event inspection" to "immediate alerts". The second is to re-create the business and finance processes, embedding control rules at the business front end, thereby transforming control means from "flexible execution" to "rigid constraints". The third is to rely on the supervision loop formed by intelligent risk control and dynamic monitoring, transforming risk prevention from "passive response" to "active protection". Based on the above, this article proposes a comprehensive implementation plan from the aspects of system, technology, organization, and talent guarantee, providing theoretical basis and practical reference for enterprises on how to use the digital integration of business and finance to improve the internal control system.

Key words: Digitalization; Business-Finance Integration; Internal Control; Path Analysis

I. Introduction

The digital economy wave is transforming the management methods of enterprises. When new-generation digital technologies such as big data, artificial intelligence, and cloud computing are widely adopted in the daily operations of enterprises, the financial management of enterprises is also transforming from a calculation-based model to a management and intelligent model. Enterprises need to update themselves to better cope with this change. The "Opinions on Accelerating the Construction of Central Enterprise Treasury System" issued by the

State-owned Assets Supervision and Administration Commission of the State Council mentions the need to build a real-time and dynamic risk monitoring system. The "Accounting Informationization Development Plan (2021-2025)" released by the Ministry of Finance also proposes requirements such as "promoting the integration of accounting information systems with business information systems". At the policy level, there are regulations for the digital and intelligent development of internal control within enterprises.

The cooperation between business, finance, and

operations is a modern management approach that enterprises form to break down the barriers between business and finance. The ultimate goal is to achieve the integration of the three flows of business, funds, and information. "Business-Finance Integration + Digitalization" generates a new management enabling logic. Digitalization is the carrier of business-Finance integration, and the data of business-Finance integration is the foundation of internal control. The two complement each other, enabling internal control to shift from "process control" to "data control" and from "post-event control" to "pre-event prediction".

However, the majority of enterprises' internal control construction is still at an initial stage. Through research on enterprises, it is found that there are problems such as system fragmentation leading to control failure, separation of business and finance causing the failure of collaborative control, and lagging control supervision. Internal control systems often become "empty shells" when implemented at the grassroots level. How to use digital business-Finance integration to solve these problems and achieve a qualitative leap in internal control effectiveness has become a common topic of discussion in academia and industry. This article attempts to explore the mechanism by which digital business-Finance integration affects internal control and the systematic implementation approaches, contributing some ideas to building a solid internal control foundation for enterprises in the digital economy era.

II. Core Pain Points of Traditional Internal Control

(1) Information Isolation: System Fragmentation Leads to Control Failure

Each functional department and each subsidiary of an enterprise has its own financial accounting system, its own fund management system, its own procurement supply chain system, its own contract management system, its own project management system, and many other subsystems. These subsystems have different architectures, different data standards, and different coding rules, and no

integrated management and integration platform covering the entire group has been formed. The proliferation of systems creates data islands, and the enterprise's fund income and expenditure, account balances, financing liabilities, and other important data related to funds are scattered in different systems. The management layer cannot summarize all the fund data into a complete enterprise fund data map at any time. This information isolation makes the data foundation of internal control very weak, as the information required for internal control is incomplete and delayed, and the "process monitoring" of internal control is greatly compromised.

(2) Business-Finance Disconnection: Control Nodes and Business Scenarios Are Out of Sync

The deeper contradiction is the disconnection between business and finance. The business side and the finance side have not reached a consensus on managing money. The business-side procurement payment, project recovery, and other planning are disconnected from the finance-side fund budget and allocation. The finance department cannot participate in the fund control work in the business process in advance and can only calculate the final accounts and record the flow accounts at the end. They cannot issue early warnings for the funds risks of the business side and implement interim regulation. Take procurement as an example. When the procurement contract is signed and the business node of paying the supplier is approaching, the finance department often is at a loss. For the verification of the budget associated with these key time points and the approval of payment procedures, they can only do it after the fact, and the internal control system becomes a mere formality. The mismatch between the control nodes and the business scenarios makes it difficult for internal control to truly integrate into the business process, turning it into a superficial compliance action.

(III) Flexible Execution: Gradual Weakening of Institutional Constraint

The organizational structure of a group enterprise is multi-level and cross-segmented, which makes it prone to the phenomenon where the internal control requirements gradually decrease as they are passed down from the top to the lower levels, and the processes deviate. Some enterprises do not have a systematic list of rights and responsibilities, and the decision-making approval, execution implementation, supervision and verification in important business processes lack clear division of responsibilities. This often leads to multiple authorities managing, overlapping responsibilities, or passing the buck. The execution of the system takes on a flexible nature, and grassroots units often bypass the system regulations by citing business-specific reasons. The approval of funds is simplified, and the practice of doing something first and then making up for it is common. The internal control system becomes a mere formality. Moreover, the results of internal control supervision are not closely integrated with performance evaluation, and an effective accountability and correction loop is not formed, resulting in poor effectiveness of internal control.

III. The Mechanism of Digital Finance-Accounting Integration in Enabling Internal Control

(1) Data Integration: From "Isolated Information" to "Real-time Monitoring"

The first logic of digital finance-accounting integration for internal control is data integration. By establishing an integrated data platform for finance and accounting, and then breaking through the data barriers between the ERP business system, the financial accounting system, and the bank-billing direct connection system, the data of business, finance, and funds can be interconnected, fundamentally solving the problems of offline manual verification, information lag, and difficult penetration and verification. After the data is integrated, the information foundation required for control activities changes. What was previously updated through monthly and quarterly reports has now become real-time data streams. Management

can understand important indicators such as funds position, budget execution, and cost variance at any time through the management cockpit. The risk early warning system can collect data flow situations in the business process at any time, and based on the pre-set intelligent early warning boundaries, it can promptly issue warnings for some large-scale fund anomalies or contract performance deviations. "Static reports" have become "dynamic data streams", changing from regular viewing to continuous monitoring.

(2) Process Reengineering: Embedding Control Nodes into the Business Frontend

The second mechanism of digital finance-accounting integration is process reengineering. In the traditional internal control model, control points are mostly set at the financial accounting end, still a distance away from the business front. What digital finance-accounting integration needs to do is to embed budget verification, invoice verification, and fund payment and other financial control links into the core business process, and adopt automatic verification methods to establish a mandatory control rule of "no expenditure without budget, automatic warning for exceeding budget". Enterprises can solidify internal control rules into system processes. When contracts are signed, purchase orders are placed, and expense reimbursements are submitted, automatic verification will be conducted immediately, and those that do not meet the regulations will not enter the approval process, thereby avoiding the occurrence of non-compliant business matters. This actually moves the control point forward, making internal control shift from "post-event correction" to "pre-emptive interception", effectively compensating for the shortcomings of the traditional model of "doing first and then correcting later".

(3) Intelligent Risk Control: From Post-Remediation to Active Defense

The third step of digital finance-accounting integration is intelligent risk control. Enterprises can establish a complete risk control supervision system

from "pre-estimation to mid-process blocking and then to post-accountability". In the field of intelligent risk control, enterprises have established a standard risk rule library. For situations such as split payments, abnormal 收款 parties, large-scale payments by new suppliers, and transactions with dishonest parties, intelligent alerts and melting mechanisms are set up. The system automatically prevents illegal transactions and sends risk alerts. At the same time, using visualization analysis tools, important indicators such as funds position, financing costs, risk exposure, and plan deviations are monitored in real time, and risk management is achieved through dynamic management with red, yellow, and green alerts. The process of "data collection - rule comparison - automatic alarm - manual intervention" transforms internal control from "human management" to "legal management".

IV. The Key Paths of Digital Finance-Accounting Integration Enabling Internal Control

(1) Institutional Level: Reconstructing an Adapted Internal Control Rule System for Digital Finance-Accounting Integration

Digital finance-accounting integration gives internal control the primary capability of institutional adaptation. Traditional internal control systems are mostly established based on manual operations and post-audit, and their control rules, approval authorities, and responsibility attribution are incompatible with the automatic control and real-time supervision in the digital environment. If the old system is "electrified", it will only result in a new form of formalism of "going through the motions online and playing small calculations offline".

Reconstructing the internal control rule system requires three aspects of efforts. First, formulate the principle of "system control is superior to manual control". For routine control matters such as budget control, fund payment, and expense reimbursement, the system rules automatically perform verification and impose strict limitations, minimizing the possibility of human intervention. While for non-

standardized handling stages such as strategic decisions and exceptional circumstances, there is still room for manual evaluation to ensure a "harmony of firmness and flexibility". Secondly, convert the existing institutional provisions into executable system regulations. For instance, "large fund payments require collective decision-making" becomes "any single payment exceeding X ten thousand will trigger a multi-level approval process", and "spending within the budget must be strictly controlled" becomes "without a budget, procurement applications cannot be submitted". This transformation process requires collaboration among the finance department, business department, and information technology department, and the rule design should not deviate from the actual business situation. Thirdly, establish a continuous improvement mechanism for internal control rules. When the company implements new business, encounters new risks, or regulatory policies are adjusted, the internal control rule library should be updated promptly to ensure that the system continuously implements the constraint function for the latest business development behaviors.

(II) Technical aspect: Build an intelligent control platform for integrated business, finance, and taxation

The technical platform is the material foundation for digitalizing business finance integration and enhancing internal control. The company should regard the establishment of the treasury system as a key point and create an intelligent integrated control platform covering the entire process of business, finance, taxation, and funds. When creating this platform, follow the principles of "unified standards, hierarchical implementation, and gradual integration", and focus on achieving the coordinated operation of each functional module.

The data center is at the bottom layer of the platform, aggregating the raw data from various business systems, and simultaneously forming unified metadata standards, coding standards, and collection standards, eliminating the problem of different

interpretations at the source. The control rule engine is in the middle layer, converting budget amounts, approval authorities, contract terms, and payment conditions into system rules that can be set, and completing automated detection before business operations. The intelligent monitoring module belongs to the application layer, using big data analysis and machine learning methods to dynamically observe important indicators such as fund destinations, cost structures, and budget execution, and identify any abnormal situations. The visualization decision module is the output layer, providing management with a continuous internal control data perspective through forms such as management dashboards and risk heat maps.

It is worth noting that some companies have already started to use RPA robots, OCR recognition, etc. to deal with recurring control matters such as expense reimbursement and invoice review and achieve standardized payment automation processing, significantly reducing human intervention. Blockchain technology can be applied to the storage and traceability of important audit evidence to ensure the integrity and reliability of the business finance data link and provide technical support for internal control supervision.

(III) Organizational aspect: Build a cross-departmental collaborative internal control execution system

Digitalized business finance integration enhances internal control, not simply by upgrading the system version, but involving comprehensive changes in organizational structure, job responsibilities, and collaboration methods. If no corresponding changes are made at the organizational level, the capabilities provided by technology will be greatly reduced due to the "human" factor.

First, clarify the boundaries of authority and responsibility in the digitalized internal control environment. Under the traditional model, the business department "prefers to do less than more", and the finance department "can see but cannot

extend its hands". Business-finance integration means pushing the internal control responsibility forward, making the business department responsible for the authenticity and legality of their own business data, and the finance department responsible for the formulation of their own rules, system supervision, and service guarantee. An industry-finance collaboration responsibility list can be issued, clearly specifying the control subjects, approval authorities, and responsibility scopes of each business node.

Secondly, form a cross-departmental internal control collaboration mechanism. A special working group for integrating finance and business can be formed by convening key members from finance, business, information technology, internal auditing, etc., so as to drive the organization-wide consolidation of internal control rules, the establishment of systems, and the improvement of processes. Through regular joint meetings and the formation of project teams, the internal control requirements in business scenarios can be transformed into technical implementation plans, avoiding the occurrence of coordination disruptions caused by each party developing their own systems.

First, a new understanding of the supervisory role of internal auditing is needed. In the digital internal control environment, internal auditing cannot still be "post-event auditing", but should become "process monitoring". Through the information system to capture business flow, fund flow, and document flow data, and set up automatic screening rules, continuous monitoring of repetitive reimbursements, over-budget expenditures, strange payments, etc. can be carried out to achieve "repeated control of control".

(4) Talent aspect: Cultivate a digitalized internal control composite team

The talents required for digitalized finance-business integration are new talents with cross-boundary integration. Traditional financial personnel can handle accounting and bookkeeping, but they do not understand business processes and cannot use digital tools; business personnel understand the market and

operations, but do not have knowledge of cost allocation, budget control, etc. in finance. The mismatch of ability structure has become a "soft blockage" for the implementation of digital internal control.

The talent cultivation should form a hierarchical and classified system. Financial personnel should focus on training in business process understanding, data analysis tool usage, internal control rule creation, etc., so that they understand business conditions and master digital tools, transforming from "accountants" to "internal control designers". Business personnel should mainly receive training in basic financial knowledge, cost control methods, risk prevention points, etc., to enhance their sense of responsibility for compliant operation and internal control behavior. Information technology personnel should focus on training in financial logic and internal control rules to avoid systems becoming disconnected from management reality.

The company should create a cross-departmental rotation and exchange mechanism to encourage financial personnel to move to the business front line and have business personnel participate, jointly improving the financial processes, and cultivating some composite talents who know the business and are familiar with finance and are able to use technology. Incorporate the results of finance-business collaboration and the execution of internal control into the performance evaluation system, "promote learning through assessment, and promote application through learning".

Conclusion

Digitalized finance-business integration has brought unprecedented technical opportunities and management methods for the leap in internal control effectiveness. According to the research results of this article, digitalized finance-business integration can eliminate information islands through data integration, implant control points into the business front end through process reengineering, and achieve full-process monitoring and closure through intelligent risk control, effectively solving some main

problems of traditional internal control such as "slow control", "weak execution", and "vacant supervision". This empowerment is not simply accumulating some technical tools, but requires a comprehensive reshaping of the four aspects of system rules, technical platforms, organizational coordination, and talent quality.

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