Standardization-Based Dynamic Intelligence Linkage Financial Management Modelling Financial Artificial Intelligence

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Abstract. Entering the era of artificial intelligence, standardized dynamic intelligent linkage has attracted the attention of enterprises and industries. From the perspective of standardization and artificial intelligence, this paper explores a dynamic and intelligent linkage mechanism, together with a dynamic intelligent linkage financial management model established. Based on the model, further analysis is carried out, leading to the path suggestions for outsmarting the financing dilemma of enterprises, speeding up capital flow, achieving competitiveness improvement and high-quality development.

Keywords: Standardization · Financial Management · Artificial Intelligence · Dynamic Modelling

1 Introduction

Entering the era of artificial intelligence, more and more enterprises, especially professional financial companies, are taking the lead in launching financial robot products, which has attracted the attention of the financial circle. Following the financial robot products developed by Deloitte, which deployed applications on servers or computers, KPMG, PricewaterhouseCoopers, and Ernst & Young, the other top largest international accounting and financial companies, have also successively launched their own financial robots and financial robot solutions. In the context of artificial intelligence, financial robot products realize the following main functions: replacing manual operations in traditional processes; automatically managing and monitoring information-based financial processes; entering and merging data, summarizing statistics and extracting information [1–3]; analyzing and judging according to established business logic and forecasting; identifying points of improvement and optimization in financial processes. Moreover, those functions, which are completely different from previous financial management, are a dynamic and intelligence linkage mechanism based on standardization [4–6]. Therefore, it is of great theoretical significance to study this mechanism, understand how standardization is embedded in the financial management process, thereby realizing dynamic and intelligence linkage, improving financial management performance, and optimizing resource allocation, which has important practical value.

2 Literature Review

2.1 Block-Chain, Data Mining Technology and Financial Management Transformation

Application of block-chain technology in financial management of state-owned enterprises under the background of mixed reform has become more and more prevailing these days [5–8]. Wang Xiufang (2022) [9] explored the application and innovation of statistical analysis in enterprise financial management from the perspective of data mining, and also studied the relationship between technology and financial management.

2.2 The Relationship Between Corporate Transformation Performance and Financial Management Transformation

Starting from the context of rapid changes in the global business environment, Z Tan. (2021) pointed out that changes in the business environment have driven the transformation of SMEs towards sustainable development. Research agrees that the success of SMEs is extremely important to every developing economy, and that the perfect financial management directly affects the success rate of 90% of SMEs. The literature related to financial management practices shows that implementing financial management practices has its large benefits in promoting business growth [10–12]. He Fangfang (2022) [2] also used seed companies as an example to analyze, of which research analyzed from the perspective of value chain, and pointed out that value chain management is an advanced enterprise management concept. It is believed by some other scholars that the prerequisite for enterprise transformation is financial modernization and transformation, and the study also recognizes that finance is the core of an enterprise, and all aspects are at the forefront of other businesses [13].

2.3 Reviews

By combing the above literature, it can be found that the academic circle has basically formed a consistent view on the relationship between enterprise transformation performance and financial management transformation, that is, financial management transformation is a core of enterprise transformation and directly affects the performance of enterprise transformation. The technology required for financial management transformation mainly focuses on the relationship between block-chain, data mining technology and financial management transformation. In recent years, the academic community has begun to pay attention to artificial intelligence and financial management transformation, yet researches concerning the role of standardization in financial management transformation are quite limited; how standardization can be embedded in financial management processes and evoke the mechanism of dynamic intelligence linkage is still in a "black box". Therefore, the innovation of this study is to explore a dynamic and intelligence linkage mechanism from the perspective of standardization, and to obtain first-hand information and experience based on the practice of the "Cold Chain Logistics Standardization Research Center" study group participated by the authors. This study aims to clarify how standardization is embedded in the financial management process,

realize dynamic intelligence linkage, improve financial management performance, and optimize resource allocation, which has important practical value.

3   Concept Definition and Theoretical Basis

As the supporting base of AI, block-chain is to establish a decentralized network. The so-called decentralization means that this network does not belong to any individual, it belongs to all. Artificial intelligence refers to a new technical science that studies and develops theories, methods, technologies and application systems for simulating, extending and expanding human intelligence, that is, "the machine's self-learning" [10–12]. In this way, we can find that it is feasible to conduct the study by combination of block-chain and artificial intelligence. The periodic problems existing in the block-chain are: its inability to truly achieve decentralization, low scalability, the mismatch between the incentives obtained by block producers and the best returns of the entire network in that the network always running at maximum capacity, causing serious waste of resources and efficiency reduced. Combining artificial intelligence into the underlying public chain technology can outsmart those problems, by virtue of artificial intelligence optimized neural network to enhance its consensus algorithm, "machine self-learning" & self-optimized public chain, committed to improving the security, interoperability, and high scalability of the transfer process & smart contracts traits. Emerging technologies, such as artificial intelligence, lie in their consensus algorithms, which can be understood as a kind of algorithm standardization. Therefore, standardization has become a core of the emerging artificial intelligence industry. Standards are not only a commanding height of industrial competition, but also the rules of the game for the parties involved in it [13]. Therefore, for artificial intelligence, what its "industry" category attribute cannot change is the irreplaceability of its standards. Because if there is a lack of standards, the research and development, together with application, of artificial intelligence will become chaotic, and if the standards are not unified, the relevant market will also be divided. Establishing a unified and perfect standard system to promote the development of artificial intelligence technology and industry by standard means is not only conducive to synchronizing with the world to achieve internationalization, but also to accelerate artificial intelligence technology innovation and achievement transformation, so as to improve product services & quality. It is of great significance to ensure user safety and establish a fair & open industrial ecology. Therefore, this study aims to clarify how standardization is embedded in the financial management process, realizes dynamic intelligent linkage, improves financial management performance, and optimizes resource allocation, all of which bear important theoretical research significance.

4   Modelling

This part is based on literature and theoretical basis, combined with the relevant financial management standardization and intelligent transformation practice of the "Cold Chain Logistics Standardization Research Center" research group participated by the author and other group members, to obtain first-hand field information and experience cognition; this mechanism modeling is used to clarify how standardization is embedded

in the financial management process, realizing dynamic and intelligent linkage, so as to improve financial management performance and optimize resource allocation.

4.1 Model Description

Figure 1 describes the financial management process of the enterprise based on the standardized dynamic intelligent linkage financial management system, as shown in Fig. 1, the system involves a total of 5 departments (sections), including decision-making level, financial supervisor, financial information management system, standardization and intelligent linkage. These are not just departments, but actually function as nodes and modules. The steps (points) are unfolded in three main stages. The first stage is to establish a financial system. To be specific, the first step is to found a financial analysis system by the financial supervisor. The decision-making level is responsible for reviewing it, and then the financial supervisor executes it. The financial information management system plays an assisting role in this process, assisting and implementing the financial analysis system reviewed by the decision-making level. Standardized intelligent linkage acts on the entire financial analysis system through integration to achieve unified overall planning. This function provides a standardized budget control function, which can fully automate and intelligently grasp the capital flow of the enterprise and realize dynamic intelligent linkage of each branch. Standardized and unified management of inflow & outflow control of various cash forms (including: coins, banknotes, checks, drafts and bank deposits). The second stage is the organizational financial analysis. It is mainly responsible for the financial supervisor. Based on the financial information management system, the financial analysis objectives are defined, the financial analysis indicators are determined, and the financial analysis data is collected. Standardized intelligent linkage acts on the financial analysis stage of the organization through integration. When clarifying financial analysis goals, it integrates the two processes of determining financial analysis indicators and collecting financial analysis data by unifying the basic data caliber and using "intelligent linkage" with other business links, so as to provide a unified standardized accounting and homogeneous financial management platform for branches distributed in various geographically heterogeneous locations. According to the branch financial information provided in the standardized dynamic intelligent linkage financial management system, artificial intelligence standardized checks its corresponding business performance, and realizes horizontal comparison among branches with intelligent linkage comparison assessment. The third stage is the application of financial reporting. After the system obtains and analyzes the financial statements in the previous stage, resulting in key issues recognized, it begins to prepare an analysis report, which is submitted to the financial supervisor and the decision-making level for review. In this process, the standardized dynamic intelligent linkage financial management system mainly plays the role of data intelligence in-depth mining, integrates it into the process of analyzing financial statements, and obtains key issues through data analysis. The system draws and submits an analysis report, which is reviewed by the financial supervisor and then released to various departments and subsidiaries for reception. Based on the feedback from savvy linkage financial management on the deployment and adjustment of subsidiaries, the analysis report is finally determined.
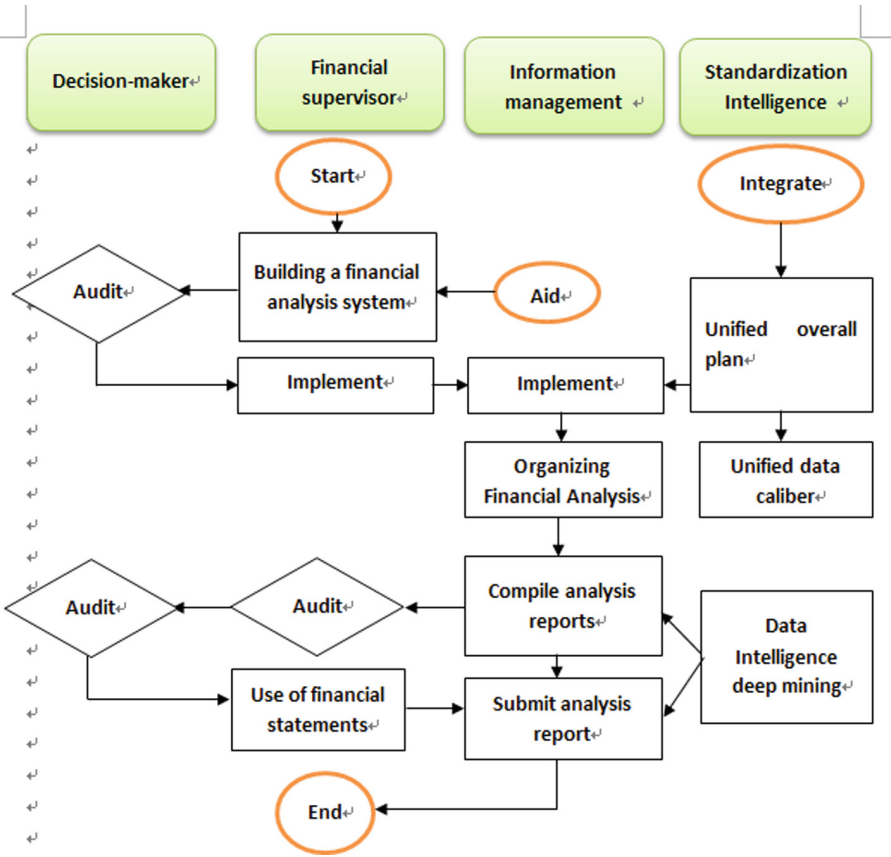
Fig. 1. Process of financial management based on the standardized dynamic intelligent linkage financial management system.

4.2 Model Discussion and Analysis

(1) Automated intelligent financial accounting

First, the model automate a series of important related accounting and financial processes, especially journal entries, accounts receivable and payable, loan management and fund management, etc. That is quite evident when it comes to cost control based on organizational behavior and activities can achieve intelligent linkage monitoring of project costs. Second, the model conducts automatic and intelligent tracking of fixed assets, using standardized functions, simplifying the management of fixed assets, eliminating the cumbersome manual data input work in the past. Third, the model exerts the function of enterprise consolidation account book management, which is convenient for enterprises to understand the operation situation of financial accounting and fixed assets in a more comprehensive and intelligent way. Other than that, it also renders a unified standardized accounting and homogeneous financial management platform for branches distributed in various geographically heterogeneous locations. According to the branch financial information provided

in the standardized dynamic intelligent linkage financial management system, artificial intelligence standardized verifies its corresponding business performance, and realizes horizontal comparison among branches, as well as intelligent linkage comparison assessment.

(2) Dynamic and intelligent linkage budget management

First, the model casts a standardized budget control function, which can fully automate and intelligently grasp the capital flow of the enterprise and realize dynamic intelligent linkage of the capital flow of each branch, involving standardized and unified management of inflow & outflow control of various cash forms. Second, forwarding of the budget is carried out by real-time dynamic and intelligent linkage, and there is no need to manually transfer it amongst various departments or between parent and subsidiary companies. The preparation and approval of the budget are all realized informatization and intelligent operation. Last, the budget can be classified by category; standardized and intelligent summary can be carried out in time, which is convenient for the dynamic intelligent linkage of the corporate headquarters to control the funds of the subsidiaries; according to the budget of the headquarters and the sales department, the artificial intelligence budget calculation is carried out in the marketing system to achieve business performance decomposition; based on this intelligent linkage, it provides easy-to-use standardized financial modeling and analysis modules, and standardizes the assessment indicators for each branch.

(3) Financial reporting and financial risk control management

First, the model use real-time data dynamic and intelligent linkage to create standardized financial statements, providing flexible query and statistical functions, together with standardizing financial performance evaluation. Second, according to the financial data of the t period, the model carries out data mining, and analyzes it based on artificial intelligence technology, meanwhile, the standardized path is formed to unify various basic data, so as to formulate the t + 1 period financial plan, budget, etc. From the perspective of organizational top-level planning, with the help of data dynamic and intelligent linkage to create standardized enterprise capital receipts and expenditures, the model achieves unified overall planning and intelligent linkage of real-time and effective control, contributing to problems avoided, say, randomness and chaotic use of funds, and finally realize artificial intelligence. Eventually, cash flow of the enterprise at all levels and in each period is dynamically and intelligently linked and balanced. In accordance with the regulations and authorizations of the company's various systems, the analysis is carried out with the help of artificial intelligence technology, and finally the intelligent linkage assessment and monitoring of asset security in the process of branch office and operation are realized on the basis of artificial intelligence, simultaneously, financial risk control is also managed.

5 Conclusion

In summary, the standardized and intelligent application of financial management functions in the standardized dynamic intelligent linkage financial management model system based on artificial intelligence enables better allocation and dynamic adjustment

of enterprise resources, improves resource utilization, as well as reducing enterprise inventory and capital, resolving financing difficulties, speeding up capital flow, etc., so as to help enterprises obtain higher overall economic benefits, achieve competitiveness enhancement and fulfill a high-quality development.

References

1. Breuer Wolfgang; Ruiz de Vargas Santiago.Some key developments in international financial management[J]Journal of Business Economics Volume 91, Issue 5. 2021. PP 595–615
2. He Fangfang. Research on the financial management model of seed companies from the perspective of value chain [J/OL]. Molecular Plant Breeding: 1–9 [2022–02–16].
3. Hyuna Park.Warrants in the financial management decisions of innovative firms[J]Journal of Futures Markets.2021
4. Liu Xianghua. Informatization risk prevention and control of modern farm financial management [J]. Quality and Market, 2022(01):25–27.
5. Meng Miao. The application of block-chain technology in the financial management of state-owned enterprises under the background of mixed reform [J]. Economic Research Guide, 2022(01):77–80.
6. Nong Jingping. Analysis of risk factors and management methods of corporate financial management [J]. Finance and Economics, 2021(28): 122–123.
7. Nong Jingping. Analysis of risk factors and management methods of corporate financial management[J].Finance and Economics, 2021(28): 122–123 .
8. Qu Yahong. Talking about the construction of financial management informatization in construction enterprises [J]. Accounting for China Township and Township Enterprises, 2022(01):171–173.
9. Wang Xiufang. Application and innovation of statistical analysis in financial management from the perspective of data mining [J]. Hebei Enterprise, 2022(01):125–127.
10. Wang Yanan. Research on financial management transformation of seed companies based on block-chain technology [J]. Molecular Plant Breeding: 1–11 [2022–02–16].
11. Yang Xiaohong. Research on the impact of the implementation of new accounting standards on enterprise financial management [J]. Modernization of shopping malls, 2021(24):135–137.
12. Z Tan. Value Orientation and Strategy Analysis of Financial Management of Modern Ent Based on Standardization, Dynamic Smart Linkage Financial Management Rises [J] Modern Economics & Management Forum. 2021.
13. Zhou Jing, Yu Zhonghua. Influencing factors of the development of construction financial management under the Internet + [J]. Industrial Architecture, 2021, 51(05): 248.