



Digitalized ERP-TESI System Modelling: Financial Management Informatization and Standardization Construction

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Abstract. Based on the theory of financial management informatization and standardization, this paper constructs a digital-economy-based ERP-TESI system model, in which trade export firms and cold-chain logistics companies are combined and integrated as a whole being the research object, namely, the TLCICS enterprises, for the ecosystem paradigm research. Both of the deductive induction and mechanism exploration methodology are applied to study how TLCICS enterprises can meet the needs of high-stage financial management information construction through standardized construction. This paper further analyzes and explores the self-organizing corporate behavior cognitive mechanism: financial management information-digital embedding-standardization, followed by concluding the digital development path of financial management informatization and standardization construction based on the effective “docking” of relevant content and modules.

Keywords: Informationization · Financial Management · Standardization · Erp-Tesi System · Digital Economy

1 Introduction

In recent decades, there are many small and medium-sized foreign trade export companies engaged in cold-chain logistics, but they must obtain obvious trade competitive advantages, especially by using high-end “standardized” means to enhance and consolidate their own advantages to cope with transnational cold chains competition. The competition of SME trade export enterprises in logistics and general trade firms is taken as an unprecedented and severe challenge faced by the trade and logistics domain in various countries and regions.

Why is the standardization of cold chain logistics so difficult? This is an issue worthy of study. With the development of cold chain logistics industries in various countries, small and medium-sized trade export companies engaged in cold chain logistics have long discovered that there exist some weaknesses, such as small scale, limited technology research and development, as well as lack of unified standardization. The analysis of the current situation can reflect in terms of service standardization, cold chain logistics as a sort of service supply, and the inconsistency of its standards often directly leads to the

overall low efficiency of SME cold chain logistics and trade export enterprises. For this, it is necessary to study a series of countermeasures, in terms of promoting the high-quality construction of cold chain logistics standardization, the digital economy and financial management information management strategy, which, as a whole, provide a feasible solution for this problem.

In today's rapid development of new information technologies such as the Internet + digital economy and data mining, especially in the context of the "digital economy", research how to use the financial management information strategy from the information side (that is, data as a resource supply side) + finance Management (that is, financial management as a management resource supply side) to enhance the competitiveness of small and medium-sized foreign trade export enterprises in cold chain logistics, and finally realize the high-quality construction of cold chain logistics standardization, has become a significant and urgent research study.

2 Literature Review and Theoretical Basis

2.1 Enterprise Strategic Management Theory

As an expert in corporate strategy management, Professor Michael Porter of Harvard Business School in the United States first proposed the concept of Corporate Competitive Strategy and subdivided the strategy into three types, namely, corporate cost leadership strategy, corporate differentiation strategy, as well as corporate concentration strategy. For foreign trade companies and logistics companies, especially those "heterogeneity" foreign trade companies and logistics companies, or the "eco-circle type" strategic cooperation supply chain cooperative relationship formed by foreign trade companies and logistics companies (TLCICS: Trade + Logistics Cooperation Integration Chain Strategy), can integrate these three strategies come up with by Michael Porter.

TLCICS companies can use supply chain strategic partnerships and economies of scale to control the aggravated total cost of the two companies to be lower than the competitors they face together, or the difference between the company's export products and logistics service trade supply and competitors' rivals, with the help of "heterogeneity" to form its own product and service characteristics, and try to solidify it to form standardization and build relevant prospect trade barriers.

Professor Michael Porter pointed out that such characteristic innovation and differentiated heterogeneous sales can allow customers and consumers to experience on the demand side from the supply side. TLCICS companies provide more value than competitors' similar services and products. Among them, it can be measured based on certain equivalent "standards". It can be seen that standardization is also an important bridge between the "supply side" and the "demand side"; TLCICS companies can also devote themselves to serving a specific foreign trade, or logistics market segments, such as cross-border e-commerce in foreign trade and cold chain logistics in logistics, enabling TLCICS companies to produce a certain type of export products (such as electronic goods), provide a certain logistics service (such as cold chain transport of seafood, fruit, etc.). With the help of standardized construction, it is used to target the customer consumer group serving a certain geographical region.

2.2 Theory of Informatization Strategy at the Corporate Organization Level

For any enterprise organization that implements the corresponding construction, the ultimate economic goal of information construction is nothing more than two aspects. One is to improve the operating efficiency of the enterprise organization (profit maximization); the other is to quickly reduce the management cost of the enterprise organization (cost minimization). Based on these two aspects of informatization, companies can widely fulfill and reach the Pareto of resource elements. As for the information construction of SME foreign trade cold chain logistics enterprises and SME general export enterprises, due to the small scale of SMEs, the relatively large proportion of financial, intellectual, and material resources that need to be invested in appears to be relatively huge and sometimes even overwhelming, which requires certain resources can only be promoted through optimized allocation of resources. Therefore, to promote the informatization reform of small and medium-sized enterprises, it is necessary to establish the performance evaluation of the financial and economic strength and market prospects of the small and medium-sized enterprises, so as to evaluate accordingly the comprehensive strength, competitiveness and the prospects of the enterprise [1]. Only by doing these can the firms, in the future, further consider the construction of comprehensive digital informatization and the ultimate standardization.

Scholars have their own definitions for the concept of informatization strategy. It is generally believed that in order to adapt to the drastic external environmental changes and increase the probability of survival, a certain enterprise organization maximizes its utilization through the use of modern Internet technology, data mining and other integrated development applications based on information technology. The internal and external of the enterprise, dynamically evolving information resources, and finally optimizing the various business processes and aspects of the enterprise organization to obtain future market competitive advantages [4, 5]. Scholars have carried out a lot of research on this; amongst them are Harvard Business School professor James Cash and others, who have proposed that almost any kind of enterprise organization in society nowadays must have investment in information technology, and information technology itself cannot directly bring to the enterprise a quick competitive advantage, but rather, the necessary conditions for enterprise operation and the indirect effects of informatization, the key is that informatization construction must be combined with the enterprise's medium and long-term strategy to maximize the value and utility of informatization. This also clearly pointed out by scholars that informatization construction requires systematic engineering planning and top-level design from a strategic point of view [4, 5].

2.3 Reviews

Based on the above literatures and theories, it is crystal clear that in today's Internet + enterprise organization system, all the direct business processing capabilities of a modern enterprise are becoming increasingly close to the enterprise's own information system, and the interdependence between the two is rapidly increasing. In the era of data mining, the company's strategy, the management mechanism, overall system, production and sales and other business processes are changing rapidly, and they increasingly rely on information technology hardware and software; the core trend is that information

technology communications and database use and sharing activities require enterprises to use information. The acquisition and improvement of technical capabilities and the improvement of corporate strategy execution ability can achieve corporate management goals.

3 ERP-TESI System Model

Financial management informatization, as a kind of advanced intensive leader of data information resources, is closely related to digitization. It requires a professional and high-quality financial management team as its practitioners. After TLCICS companies implement the ERP system, if the overall business quality of employees, management, and decision-making levels of various companies cannot meet the needs of ERP system information construction, then there is an urgent need for standardization, that is, the standardization construction launched by TLCICS companies to meet high standards. These requirements for the construction of financial management informatization at the stage: the path principle lies in the related content and modules of standardized construction, which can effectively “connect” the TLCICS enterprise ERP system. In turn, informatization can promote the construction of standardization, and ultimately achieve the so called “Triple helix” development. Hence, this paper subsequently proposes a TLCICS-ERP-Standardization-Informationization, abbreviated as TESI system model, suitable for TLCICS enterprises.

Based on this, this paper proposes the financial management informatization strategy of small and medium-sized foreign trade export enterprises in cold chain logistics, which is to integrate the development strategy of small and medium-sized foreign trade export enterprises into the financial management information construction of small and medium-sized foreign trade export enterprises. As shown by Fig. 1, in order to make full use of financial management informatization and the Internet to generate greater value in the strategy of small and medium-sized foreign trade export enterprises, this paper further proposes that the financial management informatization strategy is to use Internet + digital economy, data mining and other new information technologies, digital economy innovative thinking and technology drive, modern information technology digitally integrates the internal operation information of small and medium-sized foreign trade export companies and the upstream & downstream information of the supply chain of small and medium-sized cold chain logistics companies, and then transforms them into digital intelligent development in the form of digitalization. In this way, the implementation of the strategy of small and medium-sized foreign trade export enterprises can be more efficient. At the same time, after the digitalization is achieved, the artificial recognition technology and the neural cognitive network layer can finally realize the high-quality construction of cold chain logistics standardization.

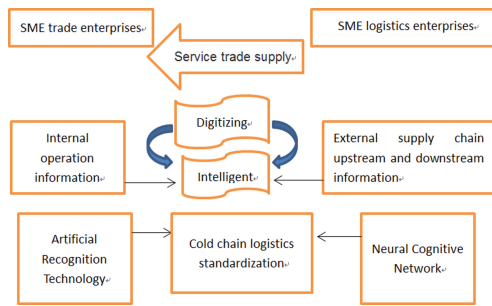


Fig. 1. Procedure of SEM informatization and Cold chain logistics standardization

3.1 ERP System

ERP system is the abbreviation of Enterprise Resource Planning, which refers to a system based on information technology with data as the keynote carrier, integrating digital, data information technology and advanced management ideas; its essence is a system with the integrated engineering management thought providing an advanced management platform based on data mining for decision-making methods for various enterprise employees, management and decision-making.

3.2 ERP-TESI System Model of TLCICS

Further to the current study’s object, that is, small and medium foreign trade cold chain logistics companies and small and medium foreign trade export companies, we build their very own ERP-TESI system model. Its mechanism is developed from the MRP (Material Demand Planning) of cold chain logistics companies. The new digital era integrates financial management information systems. Because financial management information, as a carrier of cash flow, runs through the entire business process, it is also the core and most effective indicator of corporate decision-making. The ERP-TESI system model expands the functions of MRP. The core idea of the ERP-TESI system is supply chain management. Specific to this research object, that is, small and medium foreign trade cold chain logistics enterprises and small and medium foreign trade export enterprises, then this kind of supply chain management is the “eco-circle type” strategic cooperation supply chain cooperation relationship constituted by foreign trade companies and logistics companies mentioned above. The ERP-TESI system model of TLCICS companies jumps out of the boundaries of traditional trade and logistics companies, and optimizes the various element resources of TLCICS companies from the scope of the supply chain, especially the data information resources in the digital economy era, and optimizes the Pareto of resource allocation. The new data-driven innovative operation mode of modern enterprises also reflects the Pareto requirements of the market demand side for the reasonable allocation of resources by TLCICS enterprises. Through this allocation of resources, Pareto can be achieved without any further Pareto optimization. In fact, it is the reflection and mark of standardization. It can be seen that the ERP-TESI system model has a significant effect on improving the TLCICS enterprise financial

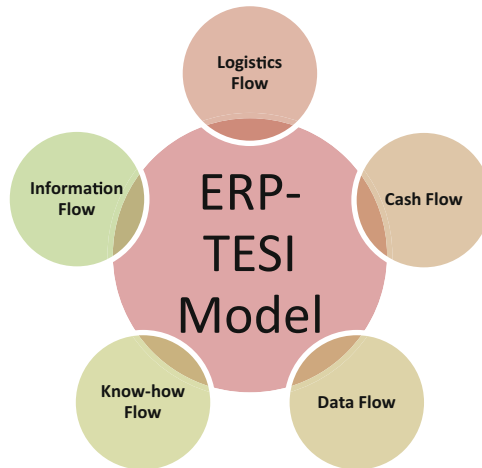


Fig. 2. ERP-TESI system model in TLCICS enterprise

management information system, foreign trade and logistics business processes, and enhancing the core competitiveness of TLCICS enterprises.

3.3 ERP-TESI and Standardization Docking

ERP-TESI system model in TLCICS enterprise, as shown in Fig. 2 is oriented to material resource management (logistics), intellectual resource management (knowledge flow), financial resource management (cash flow), order production management data mining (data flow), information resource management (information flow). The integration and coexistence of a TLCICS enterprise system engineering management serves as a mindset in the model. The docking of the ERP-TESI system at the standardized level is reflected in its interface, which will soon include a consumer group/service trade structure, use digital 3D customer graphic depiction and user interface, and open shared application software system platform interface. These interfaces can effectively ensure the construction of standardization from the aspects of TLCICS enterprise product service quality, order operation process management, together with the performance output reports.

4 Conclusion

Based on the above deduction, it can be concluded that the path design of the ERP-TESI system model is based on the self-organizing enterprise behavior cognitive mechanism, namely, financial management information-digital embedding-standardization. First of all, the actual core digital embedded business application system required by TLCICS internal management mainly refers to the digital embedded core modules of financial cash flow, logistics, knowledge resources, data flow and information flow. The embedding of digitization is conducive to the efficient realization of standardization, because digitization realizes big data mining and sharing, as well as a higher level of artificial

intelligence cognition and neurocognition, together with enterprise intelligent decision-making game. ERP-TESI system model is a standardized financial management thought. Based on the MRP management thought, modern basic financial management methods such as budget management and business evaluation can be effectively realized with the help of digitalization. The enterprise has completed the process management and decision-making in advance and during the process. Moreover, standardization of the ERP-TESI system model also lies in a highly integrated system engineering applied within the scope of the entire TLCICS enterprise system. Data and information are shared among various business systems in the form of digital elements to the highest degree. All source data only needs to be entered once in a certain ERP-TESI subsystem to ensure the dynamic consistency of the entire data. The optimization, standardization and digitization of TLCICS' internal business processes and financial information management processes have also enabled intelligent automation of the main financial management business processes.

Acknowledgment. This research is sponsored by the 2020 Guangdong Provincial University Characteristic Innovation Project “Research on the Path of Guangdong Foreign Trade Enterprises’ Response to the Epidemic from the Perspective of Digital Economy” (Project No. 2020WTSCX114); The 2020 Guangdong Provincial Department of Science and Technology Project “Guangdong Cold Chain Standardization” “The Joint Co-construction of Engineering Technology Research Center” (Project No. 2020440121000082) and the 2020 Disciplinary Co-construction Project of the “13th Five-Year Plan” of Philosophy and Social Sciences of Guangdong Province in 2020 “Research on the digital high-quality development path of Guangdong foreign trade enterprises under the perspective of post-epidemic” (Project No. GD20XYJ23).

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