

Difficulties and Countermeasures in the Logistics Informatization Construction of Small and Medium-Sized Enterprises in China

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Abstract:

Small and medium-sized enterprises (SMEs) are an essential part of the Chinese economy. This article, through the author's interviews with 10 SME managers and 2 managers from software companies engaged in information technology development, as well as insights from experience in logistics informatization, analyzes the challenges faced by Chinese SMEs in logistics informatization and proposes feasible solutions. The analysis is approached from both the perspective of SMEs and that of service providers in information technology development.

Keywords:

Logistics Information Construction, SMEs, Information Technology Development

1. Introduction

Small and medium-sized enterprises (SMEs) are a crucial part of China's economic development, playing a key role in driving economic growth, promoting innovation, and fulfilling social responsibilities. However, with the accelerated pace of global and domestic informatization in recent years, Chinese SMEs are increasingly finding it difficult to keep up with market competition in terms of information technology. In logistics management, traditional logistics models are no longer able to meet the fast-paced development needs of SMEs. Without logistics informatization, these enterprises struggle with poor data accessibility, low communication efficiency, and difficulties in using data for decision-making. [1] Yet, many SMEs still face challenges in advancing logistics informatization due to limited funding, lack of technology, and shortages of skilled personnel. [2] Therefore, exploring the current state, issues, and potential solutions for logistics informatization in Chinese SMEs holds significant practical value.

2. Current State of Logistics Informatization in Chinese SMEs

Chinese small and medium-sized enterprises (SMEs) generally refer to businesses with fewer than 300 employees and annual sales below 200 million yuan. In the Pearl River Delta region, these SMEs are predominantly family-owned businesses. They are characterized by relatively stable business operations, smaller organizational scale, management that relies more on individual managers than on formal management systems, and relatively modest investment levels. Through interviews with 10 SME owners and 2 executives from software companies involved in information technology development, the author summarizes the current state and key characteristics of logistics informatization in Chinese SMEs.

Firstly, Chinese SMEs have made some progress in logistics informatization, but overall development remains at a relatively low level. In recent years, with policy support from the Chinese government for digital and information transformation, some SMEs have begun gradually introducing advanced logistics management systems and information technologies, such as ERP (Enterprise Resource Planning), WMS (Warehouse Management System), and TMS (Transportation Management System). Business managers also recognize that logistics information systems can help reduce labor costs while improving data accuracy, security, and accessibility.

Secondly, Chinese SMEs still face significant challenges in using digital tools effectively. One key issue is that access to logistics informatization systems is often limited to a few key administrators, with frontline employees having limited or no access. This challenge is largely due to the lower digital literacy of personnel in manufacturing-based SMEs, where employees may lack the skills or motivation to use digital systems and are often reluctant to learn. Even those who wish to learn encounter challenges such as lack of instruction, high learning difficulty, and unsystematic training. Additionally, high employee turnover and frequent job changes in Chinese SMEs exacerbate these issues, making it difficult to provide consistent training on information systems for new hires. In many cases, employees leave shortly after completing their training, and incoming staff have yet to undergo training, creating a cycle that keeps employee digital skills at a low level.

Thirdly, the logistics informatization of Chinese SMEs currently suffers from poor compatibility and overall lack of coordination. Due to limited investment capabilities, SMEs often do not have the ability to make a one-time, comprehensive investment in company-wide information systems. As a result, their informatization systems are typically developed and deployed in phases. This leads to the use of different suppliers for the informatization systems in various departments, which results in a lack of compatibility between them. Common issues include incompatible data formats and limited data accessibility. For example, if a company's logistics informatization system is poorly integrated with its financial system, it can lead to difficulties in inventory management, significantly impacting the operational efficiency of SMEs.

Fourthly, Chinese SMEs face significant challenges in implementing logistics informatization effectively. Although there have been efforts to develop and deploy logistics information systems, the reality is that many companies experience a disconnect between the systems and actual operational practices. This phenomenon, often described as a situation where the system and practical operations exist in two separate realms, means that not all operational tasks are completed through the system. The primary reason for this disconnect is the weak awareness among employees

regarding adherence to rules and processes; many do not follow established protocols. In some smaller enterprises, employees may find that the complexity of using the system is greater than simply bypassing it. As a result, for the sake of convenience, they choose not to use the system. These factors contribute to the fact that, in some small and micro enterprises, the logistics informatization systems fail to perform their intended functions and instead become mere formalities.

3. Challenges in Logistics Informatization for Chinese SMEs

Through interviews with 10 SME managers and 2 executives from companies involved in information technology development, the author analyzes the situation from both the perspective of SME owners and that of the information system implementation providers.

From the perspective of SME owners, one significant issue is that Chinese SMEs often prioritize business operations while neglecting management. This phenomenon is particularly pronounced during the early stages of rapid growth, where management tends to allocate most resources and efforts to business expansion and market development, thereby overlooking the systematic construction of internal management—especially in critical areas such as logistics, finance, and human resources. The underestimation of management is also linked to cognitive biases among managers. Many SME leaders come from technical or sales backgrounds, which makes them highly sensitive to market trends and customer needs but less aware of the long-term strategic importance of effective management. They often believe that business success can compensate for management deficiencies. Consequently, SME owners and key managers spend a significant portion of their time on daily business operations, leaving little room to focus on the development of logistics informatization and other information systems.

Secondly, SME leaders and key management personnel often have relatively low educational backgrounds and limited understanding of informatization, which hinders their ability to lead informatization projects effectively. The limited investment in management within SMEs results in a shortage of professional management talent, further exacerbating weaknesses in management capabilities. In some cases, SMEs outsource their informatization efforts entirely to third-party software companies. However, they have reported that these companies, driven by profit motives, may blindly add projects during the development process without aligning with the specific needs of the SMEs. This situation can lead to instances where SME management, lacking technical expertise, falls victim to misleading practices from these third-party providers. Consequently, this breeds mistrust towards software companies and diminishes the enthusiasm of SMEs for undertaking informatization projects, such as logistics informatization.

Thirdly, employees in SMEs, particularly frontline workers, often exhibit strong resistance to logistics informatization efforts. In the first, many employees feel a sense of fear regarding the technological changes brought about by informatization. The introduction of new technologies and systems associated with logistics informatization can be unsettling for employees who have long relied on traditional manual operations. They may worry about their ability to adapt to new systems, fear being replaced by technology, or anticipate that management will raise performance standards due to the introduction of new tools. Meanwhile, logistics informatization typically requires employees to alter their established work habits and processes. In

many SMEs, logistics operations have traditionally depended on manual handling of daily tasks. The transition to informatization often involves standardization and automation, necessitating that employees relearn and adapt to new operational methods. Furthermore, a lack of effective internal communication exacerbates employee resistance. Many SMEs fail to adequately consider the adaptation process for employees when implementing logistics informatization. Instead of providing sufficient training and preparing employees for the psychological changes associated with the new systems, they often impose these new systems directly. Without a clear understanding of the practical benefits of the new system, employees may view informatization as mere “formalism” or a superficial response to policies from management, leading to a loss of motivation to support the changes. Without adequate training, employees struggle to see how informatization can assist their work, intensifying their feelings of resistance. Additionally, logistics informatization increases the demands for transparency and traceability in operational processes. Employees’ actions become subject to monitoring and recording by the system, which can threaten existing interests and generate anxiety. Lastly, there is a perception among employees that they may not succeed in learning new systems. The high turnover rates, frequent job changes, and low retention in Chinese SMEs contribute to a belief that short-term, intensive learning may not yield long-term benefits for their roles. Consequently, many employees exhibit low motivation to learn.

From the perspective of executives at software companies involved in informatization, several challenges arise in the context of logistics informatization for Chinese SMEs. Firstly, there is often a lack of clarity regarding the specific needs of SMEs when it comes to logistics informatization. Many SMEs rely heavily on third-party providers for the design and implementation of these systems, which can lead to misalignment between the developed logistics informatization systems and the actual operational processes of the enterprises. Third-party software companies may not be fully familiar with the unique workflows and requirements of the SMEs, resulting in systems that do not adequately support their day-to-day operations.

Secondly, Chinese SMEs often demonstrate a lack of commitment to logistics informatization, with generally low budget allocations for such initiatives. Feedback from executives at software companies reveals that during the initial stages of project discussions, some SMEs abandon plans for informatization due to concerns about high investment and maintenance costs, or doubts about the effectiveness of the systems. This issue stems from a limited understanding among SME leaders regarding the long-term strategic value of informatization. Many managers believe that while logistics informatization can enhance efficiency and reduce operational costs, the short-term benefits are often slow to materialize and do not provide immediate, significant economic returns. As a result, they tend to prefer allocating limited funds to areas that can generate quick profits, such as sales and production expansion, while neglecting the essential investment in informatization. Moreover, the relatively small scale of SMEs, combined with limited cash flow and significant pressures for survival and growth, adds to the challenge. The costs associated with logistics informatization—including software system procurement, hardware upgrades, employee training, and ongoing maintenance—can be substantial, placing significant financial strain on SMEs. Additionally, these businesses often struggle to secure external financing, further restricting their capacity to invest in logistics informatization. As a result, the existing budgets of SMEs are often insufficient to meet their informatization needs, and requests to increase budgets frequently

encounter resistance. This financial limitation leads to the abandonment of some projects, preventing SMEs from effectively advancing their logistics informatization efforts.

Thirdly, the product offerings of companies engaged in informatization do not align well with the needs of Chinese SMEs. Well-known brands in the informatization sector, such as Kingdee and Yonyou, primarily offer standardized products that fail to meet the specific requirements of SMEs. When it comes to developing customized solutions, the associated costs tend to be high, making SMEs reluctant to proceed with such options. Many systems and solutions provided by informatization companies are designed primarily for medium and large enterprises, featuring highly complex functionalities and architectures. These products often include comprehensive management modules that are difficult for smaller, less complex SMEs to fully utilize. As a result, SMEs find themselves unable to take advantage of the potential benefits of these systems. Instead, they face challenges due to increased operational complexity and higher training costs, which can lead to frustration. While there are companies in China that offer customized development services, they often lack brand recognition. Even when they provide affordable customized solutions, they struggle to gain the trust of potential clients.

4. Strategies for Improving Logistics Informatization in Chinese SMEs

Firstly, SME owners in China should place sufficient importance on the long-term benefits that logistics informatization can bring. They need to make strategic investments in this area. Logistics informatization can significantly enhance operational efficiency. By introducing automated technologies such as Warehouse Management Systems (WMS) and Transportation Management Systems (TMS), businesses can reduce human error, optimize inventory management, and streamline distribution processes, thereby minimizing inventory buildup and logistics delays. Secondly, logistics informatization can help SMEs better control costs. Through the optimization and data analysis capabilities of informatization systems, businesses can accurately forecast demand, allocate resources effectively, and lower logistics expenses. Additionally, systematic data recording and tracking functions enable companies to transparently monitor costs, helping to reduce unnecessary expenditures. Moreover, investing in logistics informatization can provide SMEs with a sustainable competitive advantage in a fiercely competitive market. Informatization is not only a tool for improving efficiency but also a crucial strategy for enhancing management capabilities and achieving modernization. In the digital age, companies with a high level of informatization can better adapt to changing market demands, utilize big data for decision-making optimization, and further enhance operational precision.

Secondly, Chinese SMEs should appoint managers with a foundational understanding of logistics informatization to oversee logistics departments. This approach can significantly improve clarity during the demand assessment phase of informatization projects, enhancing communication efficiency between the SME and the service providers. Having knowledgeable personnel will also allow for a more professional selection of logistics informatization service providers. These managers can ensure that the chosen solutions are genuinely tailored to meet the specific needs of the business, resulting in a logistics information system that effectively supports the company's operations. By integrating expertise in logistics informatization at the

management level, SMEs can better navigate the complexities of implementation and ultimately achieve more successful outcomes.

Lastly, software companies engaged in logistics informatization should strengthen their focus on customized development. Currently, many mainstream software providers in China tend to over-standardize and modularize their offerings, which can result in high costs for custom development and numerous hidden fees, leaving SMEs' specific needs unmet. Customized development allows for the streamlining and optimization of functional modules based on the actual requirements of businesses. [3] This approach can make systems more targeted and user-friendly, reducing the investments SMEs must make in training and maintenance. Simplified systems not only lower the barriers to use but also enhance employee engagement and improve the success rate of implementation. Furthermore, a strong emphasis on customized solutions can increase customer loyalty and market competitiveness for software companies. In today's competitive landscape, those that provide personalized solutions will have a distinct advantage. By fostering more robust customer relationships, software companies can enhance client loyalty and retention. Additionally, the ability to offer customized development reflects the technical strength of the software provider, helping to shape its brand image and attract more potential clients.

5. Conclusions

Chinese SMEs are still in the early stages of logistics informatization, typically using some conventional information systems. However, they face numerous challenges in this area, including insufficient funding, low technical capabilities, a shortage of skilled personnel, and information security risks. [4] Firstly, many SMEs struggle to allocate enough financial resources for upgrading and maintaining information technology due to resource constraints. This limitation results in a lag in informatization efforts, making it difficult for these companies to compete with larger enterprises. Additionally, the lack of specialized technical talent poses significant challenges for SMEs in implementing and maintaining information systems, further hindering the progress of informatization. To overcome these challenges, it is essential for SME leaders and companies involved in informatization to collaborate and work together to enhance the logistics informatization levels of Chinese SMEs. By pooling resources, sharing knowledge, and developing tailored solutions, they can create a more supportive environment for the successful adoption of logistics informatization, ultimately improving competitiveness in the market.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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