

# The Impact of Digital Sharing Platforms on Supply Chain Management: efficiency, cost reduction, and market responsiveness

Xu Yang\*

Departure of Civil Environmental and Geomatic Engineering, University College London, London, WC1E 6BT

**Abstract.** This study discussed the construction of a digital sharing platform in the field of supply chain management (SCM) and its multi-dimensional and far-reaching impact on performance. With the rapid development of global economic integration and information technology, enterprise SCM is facing unprecedented complexity and challenges. As an innovative solution, the digital sharing platform reshapes the operation mode of the supply chain (SC) and greatly improves efficiency, enhances collaboration, and lays a solid foundation for enterprises to maintain an advantageous position in the fierce market competition. This study defined the concept of a digital sharing platform, expounded its core functions in detail, and analyzed the specific mechanism of the platform in promoting seamless information sharing, optimizing resource allocation, reducing operating costs, accelerating response speed, and improving supplier satisfaction. Through theoretical discussion and empirical analysis, this study concludes that the digital sharing platform is the key driving force to improve the overall performance of the SC and has great strategic significance for sustainable development.

## 1 Introduction

With the rapid development of big data, cloud computing, artificial intelligence, and other technologies, data has become one of the key elements of the core competitiveness of enterprises. In the field of SCM, the rise of digital sharing platforms marks an important milestone in the transformation of traditional SC to intelligent and efficient [1]. Through the integration of advanced information technology, the platform breaks the information island, realizes the real-time sharing and deep integration of data between upstream and downstream enterprises in the SC, and provides the possibility of fine and intelligent SCM. This paper aims to deeply explore the impact of digital sharing platforms on SCM, reveal its specific role in improving enterprise operation efficiency, reducing operating costs, and enhancing market responsiveness to provide theoretical support and practical guidance for enterprises' SCM innovation.

---

\* Corresponding author: [zcesxya@ucl.ac.uk](mailto:zcesxya@ucl.ac.uk)

A digital sharing platform is a comprehensive platform built based on modern information technology, which aims to promote information sharing, resource coordination, and business coordination among all participants in the SC. By integrating the information systems of upstream and downstream enterprises in the SC, the platform realizes real-time data collection, processing, analysis, and sharing and provides comprehensive, accurate, and timely information support for SCM. The digital sharing platform has core functions such as information integration and sharing, business process optimization, risk prevention and control, early warning, and decision support. First of all, through standardized data interfaces and protocols, the platform ensures the seamless docking and sharing of data in all links of the SC to improve the accuracy and timeliness of information. Second, based on big data analytics and artificial intelligence technology, the platform can automatically identify and optimize inefficient links in the SC, thereby improving overall operational efficiency. In addition, the platform monitors the operating status of the SC in real time, establishes a risk prevention and control system, gives early warning of potential risks, and provides corresponding solutions to enhance the robustness of the SC. Finally, through data analysis and mining, the platform provides a scientific decision-making basis for enterprise managers to help strategic planning and daily operation management [2].

## **2 The impact of digital sharing platforms on SCM**

The digital sharing platform breaks the information barrier in the traditional SC and realizes real-time information sharing between the upstream and downstream enterprises in the SC. This not only improves the transparency and accuracy of information but also helps to reduce decision-making errors and resource waste caused by information asymmetry. At the same time, the information-sharing mechanism on the platform also promotes trust and cooperation among the participants of the SC, laying the foundation for building a long-term and stable SC relationship [3].

Through the digital sharing platform, enterprises can more accurately grasp the demand and supply of resources in each link of the SC and realize the optimal allocation and efficient use of resources. For example, in terms of inventory management, the platform can predict future inventory demand based on historical sales data and market trends to avoid the occurrence of over-inventory or inventory shortages. In terms of procurement management, the platform can reduce procurement costs through centralized procurement, price comparison procurement, and other ways. In terms of logistics distribution, the platform can optimize distribution routes and distribution time Windows and reduce transportation costs and time costs [4].

The digital sharing platform enables the SC to respond quickly to market changes and customer needs through real-time monitoring and early warning mechanisms. When the market demand changes, the platform can quickly adjust the production plan and inventory strategy to meet customer demand. When customers make complaints or suggestions, the platform can give timely feedback to relevant departments and track the processing results to ensure customer satisfaction [5]. This rapid response mechanism not only improves customer satisfaction and loyalty but also enhances the market competitiveness of enterprises.

The digital sharing platform provides a fairer and more transparent cooperation environment for suppliers. Through the information sharing and business collaboration mechanism on the platform, suppliers can more clearly understand the needs and expectations of enterprises and provide more accurate and efficient services. At the same time, the evaluation and feedback mechanism on the platform also helps suppliers to understand their performance and shortcomings in the SC to continuously improve. This cooperative and win-win ecological model not only enhances the satisfaction and loyalty of suppliers but also promotes the sustainable and healthy development of the SC.

## **3 Case analysis**

### **3.1 Haier COSMOPlat platform**

Haier COSMOPlat platform is an industrial Internet platform focused on the digital transformation of the manufacturing industry, aiming to promote the overall upgrading of the manufacturing industry. COSMOPlat platform integrates global supplier resources, covering the whole process from user demand to product design, production, logistics, and service, and realizing the digital management of the whole process. This platform improves the efficiency and transparency of SCM through multi-directional digital means [6].

In terms of information sharing and transparency, the COSMOPlat platform allows suppliers to obtain order information, inventory status, and other important data in real-time, thus greatly enhancing the transparency of the SC and reducing the uncertainty and risk caused by information asymmetry in the traditional SC. Secondly, the COSMOPlat platform uses the market demand forecasting function to automatically adjust the production plan to optimize the allocation of resources and reasonably control the inventory level, avoiding the phenomenon of inventory overstocking and stock shortage. As market demand changes, the platform can also quickly adjust production plans to achieve a rapid response to market demand, thereby improving the response speed of the SC. In addition, suppliers can timely understand their performance and obtain relevant feedback on the platform to promote continuous improvement, thus enhancing supplier satisfaction. To sum up, the Haier COSMOPlat platform not only improves information transparency but also successfully promotes the digital upgrading of the manufacturing industry by optimizing resource allocation, improving response speed, and enhancing supplier collaboration.

### **3.2 Intelligent SC platform of JD Logistics**

JD Logistics' intelligent SC platform is committed to achieving accurate management of inventory, transportation, and warehousing, thereby improving the operational efficiency of the entire SC. By relying on big data analytics, the platform can accurately predict sales trends and optimize inventory levels, effectively reducing unnecessary inventory costs. At the same time, the intelligent SC platform optimizes distribution routes and time Windows, further reducing transportation costs. In addition to cost optimization, the JD logistics platform also has a strong response speed advantage. When customers place orders, the platform can quickly arrange delivery, which greatly shortens the delivery time, which not only improves customer satisfaction but also maintains market competitiveness in terms of logistics speed [7]. To cope with potential risks, JD Logistics has also established a comprehensive risk prevention and control system to provide early warning and treatment of possible problems through real-time monitoring of logistics status to further ensure the stability of the SC.

### **3.3 Amazon FBA service**

Amazon FBA (Fulfillment by Amazon) service provides one-stop logistics services for sellers, such as warehousing, packaging, and delivery, aiming to help sellers achieve efficient SCM and improve customer experience [8]. Through its robust logistics network, Amazon FBA ensures that goods reach customers quickly and accurately, which in turn increases customer satisfaction and loyalty. Second, the FBA platform can flexibly respond to changes in market and customer demand, quickly adjust inventory and distribution strategies, and ensure that the SC always remains efficient. In addition, through the FBA service, Amazon has

established a close cooperative relationship with suppliers to achieve efficient collaboration between suppliers and jointly promote the overall efficiency of the SC. Through Amazon FBA, all links of the SC are seamlessly connected, thus enhancing the adaptability of the SC to market changes and promoting a stable relationship between sellers and customers [9].

Haier COSMOplat platform, JD Logistics Intelligent SC platform, and Amazon FBA service have respectively improved the efficiency of the SC and promoted the digital transformation of related industries through their unique digital management methods [10]. They improve the performance of information transparency, resource allocation, customer experience, and other aspects, and optimize the SC operation through diversified risk management and supplier collaboration, fully reflecting the important role of digital technology in the modern SC.

## 4 Conclusion

To sum up, digital sharing platform has significant advantages and important value in improving SC performance. It not only promotes information sharing and transparency but also optimizes resource allocation and reduces operating costs. At the same time, it accelerates the market response speed and improves customer satisfaction. More importantly, it enhances supplier satisfaction and builds a win-win SC ecology. With the continuous progress of technology and the continuous expansion of application scenarios, digital-sharing platforms will play a more important role in SCM. Enterprises should actively embrace digital transformation and strengthen the construction and application of digital sharing platforms to continuously improve their competitiveness and sustainable development ability.

## References

1. Y. Zhang, The study of digital supply chain on enterprise supply chain cost management. Inner Mongolia Univ. Finance Econ. (2023)
2. X. Hua, L. Hu. Y. Zuo, The influence of digital strategy on supply chain risk management ability: the mediating role of supply chain collaboration and the moderating role of organizational inertia. *Logist. Technol.* **46**(20), 158-163 (2019)
3. C. Liu, Study on the impact of digital transformation on the supply chain resilience of circulation enterprises. *Bus. Econ. Res.* **4**, 29-32 (2023)
4. M. Li, Application practice of digital supply chain platform in the manufacturing industry. *China Ind. Econ.* **10**, 120-132 (2022)
5. Q. Wang, Research on supply chain collaborative management based on big data. Shanghai Jiao Tong Univ. (2021)
6. L. Zhao, The application and prospect of cloud computing technology in supply chain management. *Inf. Syst. Eng.* **12**, 90-92 (2020)
7. X. Chen, Supply chain finance innovation in the digital age. *Financ. Forum.* **25**(1), 3-12 (2019)
8. W. Liu, Digital transformation and risk management of supply chain finance. *China Circ. Econ.* **35**(4), 106-115 (2021)
9. J. Wang, Research on the application of blockchain technology in digital SC. *Mod. Manag. Sci.* **5**, 95-97 (2022)
10. H. Ma, Supply chain innovation and upgrading in the era of digital economy. Tencent Res. Inst. (2023)