

The Optimization of Global Organizational Communication for Enterprise Supply Organization Management by Using Big Data Text Mining

Yu Fu, School of Management, Sichuan University of Science and Engineering, China

 <https://orcid.org/0009-0009-1451-4057>

Xiaoxi Sun, School of Media, Harbin Normal University, China

Weiwei Wang, Hangzhou Xinken Culture Media Co., Ltd., China & Zhejiang University, China*

ABSTRACT

The purpose is to optimize supply chain management (SCM) programs in global organizations and promote international economic development. This paper first discusses the development of cloud technology and the international organization supply chain under big data, artificial intelligence, the internet of things, mobile internet and cloud computing (BIIMC). Then, the application design concept of cloud technology in the global organization supply chain is discussed. Finally, based on the current international organization supply chain foundation, the management optimization program is designed using cloud technology and evaluated. The results show that the program performs prominently in the SCM of Taobao and Amazon.

KEYWORDS

BIIMC, Cloud Computing Technology, Global Organizations, Management Procedure, Supply Chain

INTRODUCTION

Cloud computing technology is the product of the development and integration of traditional computer technology and network technology, such as network computing, distributed computing, parallel computing, utility computing, network storage, virtualization, and load balancing (Lu & Ji, 2022). It aims to integrate multiple relatively low-cost computing entities into a perfect system with mighty computing power through the network and distribute this computing power to end users through various advanced business models (Yang et al., 2022). At its core, cloud computing technology seeks to provide more secure cloud computing resource management and services at a lower cost. Cloud computing has become a trend in the development of computer networks. It is

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*Corresponding Author

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an advanced concept for processing information resources and has been widely adopted in multiple fields. It also brings many new inspirations to the sharing and managing of digital archive resources (Yagli et al., 2022). Developing cloud technology has become a significant task under the current big data, artificial intelligence, Internet of Things, mobile Internet, and cloud computing (BIIMC) development backgrounds (Yang et al., 2022). BIIMC is the embodiment of integrating big data, cloud computing, and the Internet of Things (IoT). The integration and penetration of information technologies, such as cloud computing and big data, are changing people's lives and are expected to create a new industrial change.

"BIIMC" was proposed at the China Internet Conference, and "intelligence" includes the user experience supported by the IoT and big data mining. The combination of mobile Internet and IoT makes the generation and collection of big data possible. The components of "BIIMC" are also related to each other. The application of mobile Internet and IoT needs cloud computing support. The in-depth analysis and mining of big data boosts the development of mobile Internet and IoT, making software and hardware more intelligent. Moreover, under the premise of the current global development integration, optimizing supply chain management (SCM) programs in international organizations through cloud technology has also become a hot research topic.

To explore the cost management innovation under the background of BIIMC, Terrén-Serrano and Martínez-Ramón (2021) selected X Company with typical significance as the case study enterprise. To better build the ecosystem of X Company, the main goal of cost management was to reduce supply chain costs. Through reviewing the current cost management, the "BIIMC" technology has realized cost management's accuracy, refinement, and timeliness. Finally, they put forward relevant suggestions on the cost management innovation under "BIIMC" from the enterprise, industry, and country levels. It was proposed to take X Company as a model to continuously promote cost management innovation under "BIIMC" and help enterprises to better develop in the volatile and ever-changing market (Terrén-Serrano and Martínez-Ramón, 2021). The cloud computing technology has an important essential impact on enterprise development.

Lutfi (2021) adopted the intelligent part's least-square structural equation model (SEM) and tested the hypothesis through data analysis of Jordanian small and medium-sized enterprises. Additionally, a theoretical model based on the technology acceptance model was proposed to support the research results. The least-square SEM analysis results indicate that all proposed factors significantly impact the intention to adopt cloud-based enterprise resource planning. It is found that trust significantly impacts the relationship between the determinants and intentions of Jordanian small and medium-sized enterprises to adopt cloud-based enterprise resource plans (Lutfi, 2021).

Carlsson-Wall et al. (2022) explore the extent to which the cloud-based enterprise resource planning system has enabled management accountants in the public sector to play a role. The research results show that the cloud-based enterprise resource planning system allows central management accountants to mobilize their specific expertise. It eliminates manual work, increases transparency, and makes them more comfortable with numbers (Carlsson-Wall et al., 2022). Additionally, Zhang et al. (2022) point out that the total factor productivity of the e-commerce industry is higher than that of other industries. The technological progress index and scale efficiency are the main factors that restrict the improvement of the production efficiency of retail enterprises. The total factor productivity and technological progress index of the e-commerce industry in the subdivided industries are significantly higher than that of other industries. Under the "BIIMC" innovation-driven perspective, retail enterprises should adopt a diversified business philosophy to broaden the online and offline channels of the retail industry. They should use the "BIIMC" technology to improve the efficiency of the supply chain and realize the reconstruction of consumer experience and the integration of real-time consumption scenarios to promote the transformation and development of the retail industry (Zhang et al., 2022). Son et al. (2022) point out that under the background of "BIIMC," GOME Retail Holdings Limited realizes the intelligent transformation of finance through information system integration, business and financial integration, financial sharing, and "standardization - systematization - automation -

intelligence” of all business processes. Based on the underlying database platform, Gome supports its intelligent economic operation through the supplier interaction platform, supply chain platform, killer whale big data analysis platform, Bytter capital platform, cost control platform, and robot project. Smart finance transformations for Gome are mainly applied to smart sharing services, smart supply chains, smart budgets, intelligent internal control, smart decision-making cockpit, smart finance, and robots. It has realized the integration of industry, finance and credit, and the infiltration of the front, middle, and back, which has greatly improved Gome’s business growth and value creation ability (Son et al., 2022). Dong and Salwana (2022) build a collaborative management system architecture and application structure model of cluster supply chain based on this and cloud computing. They discuss the six key technologies involved in the collaborative management of cloud computing. Their research provides a reference for further research and development of cooperative management centers, collaborative management leadership, and application of clustered supply chains under a cloud computing environment (Dong & Salwana, 2022). Currently, BIIMC technology provides a crucial impetus for social development and essential technical support for the growth and transformation of enterprises. However, in terms of global organization SCM, the application of BIIMC technology is not mature enough, so more research is needed to support its development.

To sum up, optimizing the SCM program under the BIIMC background is imminent. This paper aims to optimize global organization SCM programs and promote the global economy’s development. First, it introduces the basic social situation under the background of BIIMC development and the development status of cloud technology. Then, it discusses the optimization concept of global organization SCM under the background of BIIMC. Finally, the optimization model of the worldwide organization SCM program is designed based on cloud technology. This paper provides a reference for the future development of cloud technology. Moreover, the innovative optimization model proposed also provides crucial support for optimizing the global organization supply chain and contributes to the development of the global economic and trade system.

GLOBAL ORGANIZATION SUPPLY CHAIN IN THE CONTEXT OF THE BIIMC

Cloud Technology Under the BIIMC

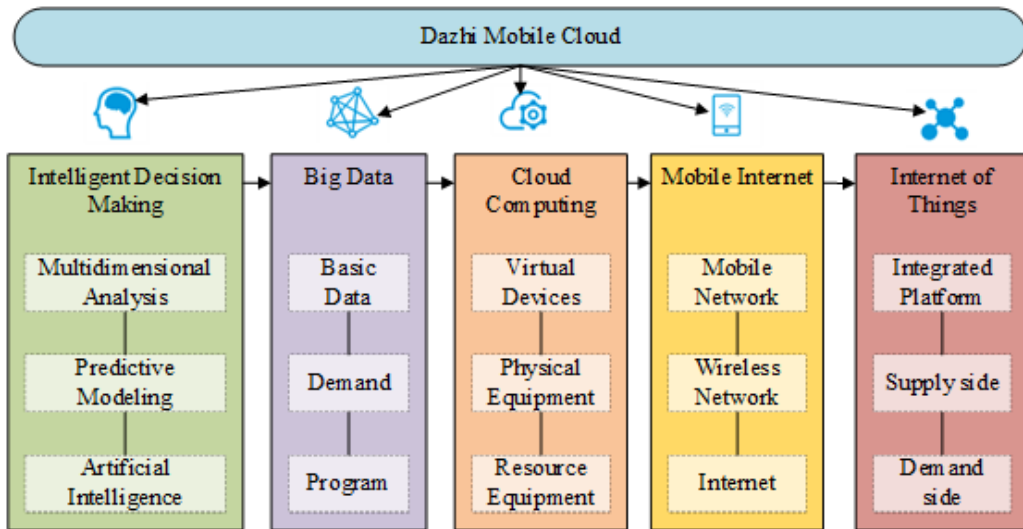
The Development of BIIMC Technology and Its Impact

BIIMC was launched at the China Internet Conference in August 2013, integrating big data, artificial intelligence (AI), mobile Internet, cloud computing, and other technologies, and is an essential part of today’s science and technology. The four technical interactions of the BIIMC assist in the construction of a financial sharing center (Pan et al., 2021; Bin & Sun, 2022). The comprehensive development of intelligence, mobile Internet, and cloud computing has greatly promoted the development of big data databases. The support of cloud computing technology has promoted the evolution of mobile Internet. It allows for full performance of the function of the network, screening and analyzing massive amounts of information in work, thus reducing the fault tolerance of the network.

Additionally, it can effectively improve work efficiency (Liu et al., 2021). In enterprise operations, BIIMC can accelerate enterprises’ financial information processing and enhance their real-time competitiveness in the market. Figure 1 shows the basic principle of the BIIMC.

In Figure 1, the composition of the BIIMC system includes many essential technologies. Big data mainly refers to massive data. This technology development can handle many things, such as screening massive data (Yang & Meer, 2021). Big data technology can effectively cope with many types of data that are difficult to store and save with the development of the company, including data that is difficult to excavate and analyze objectively and rationally by manpower alone (Li et al., 2021; Zhao & Zhou, 2022). In this digital world, there will be a lot of daily information. Only by properly processing it to make it have certain potential economic benefits, can the potential economic value of big data be reflected. Therefore, people often use big data technology to mine and analyze data in enterprises (Yang, 2022).

Figure 1. Basic principle of the BIIMC



AI is a bridge connecting people. People think independently, and programming can be used to imitate people’s actions and intelligence. AI can make this distinct change, make this system feel independent, and make its judgments according to its thoughts. During the company’s operation, AI has been used to realize various functions for each position, enabling it to play an efficient, convenient, and supportive role in the management and development of the company (He et al., 2021).

Mobile Internet is a very useful intelligent network that can connect people and things, things and things, and combine mobile devices, application software, color, and other functions (Hoyos-Gómez et al., 2022). There are three differences between mobile Internet and the Internet—first, the definition of personal identity. Mobile Internet means combining network and communication technologies to achieve a comprehensive definition of users and provide users with high-quality products in a more professional way. Second, the advantage of being online at all times. Mobile Internet has broken the hard demand for media at the computer end, allowing users to access the Internet anytime and anywhere. Third, protecting users’ personal information. Users can better maintain privacy when using private devices (Feng et al., 2022).

Cloud technology uses the Internet as a medium for data transmission and charges. Cloud computing is not a new network technology. It is a new application concept on the network. The core of its concept is “network” (Madhavan & Ratnam, 2021). Cloud computing can provide users with fast and safe cloud computing services for massive computing and data storage on the Internet, as well as application and management on the Internet (Yang et al., 2021).

The Development and Effect of Cloud Computing Technology Under the Background of BIIMC

Cloud technology has become one of the primary uses of science and technology, mainly including data storage, processing, and virtualization. Typically, this technology is characterized by virtualization, superscale, and high scalability (Atieh, 2021). Cloud technology provides users with dynamic, scalable, and virtualized resources over the Internet. Users do not need the knowledge, expertise, or control to support the cloud architecture (Kaginalkar et al., 2021). Cloud technology includes four main factors:

1. A shared cloud infrastructure: it provides enterprise-class security, scalability, and quality of service (G'ayratovich, 2022).
2. A development environment that enables enterprise application developers who are used to developing small independent applications to easily transition to developing secure, “multi-tenant” applications. These applications can be expanded horizontally to potentially millions of users (Kwilinski et al., 2021).
3. An operating environment that can seamlessly transfer and update cloud services without affecting the user experience.
4. A simple way to combine multiple cloud services to complete business or personal tasks. Cloud technology is a computing mode. In this mode, various computing resources are virtualized as services and dynamically allocated through the connection of the Web to meet the needs of users (Al Hader et al., 2021).

Cloud technology includes virtualization technology, which means that computing components run on a virtual basis rather than on a real basis. It can expand the hardware capacity, simplify the software reconfiguration process, reduce the costs associated with software virtual machines, and support a wider range of operating systems. Virtualization technology allows software applications to be isolated from the underlying hardware. It includes the split mode of dividing a single resource into multiple virtual resources and the aggregation mode of integrating multiple resources into one virtual resource. According to objects, virtualization technology can be divided into storage, computing, network, etc., and computing virtualization can be divided into system, application, desktop, etc. (Ali et al., 2021). In implementing cloud computing, computing system virtualization is the basis of all services and applications based on the “cloud.” Virtualization technology is mainly applied in the central processing unit, operating system, server, and other aspects and is the best solution to improve service efficiency (Zheng et al., 2021).

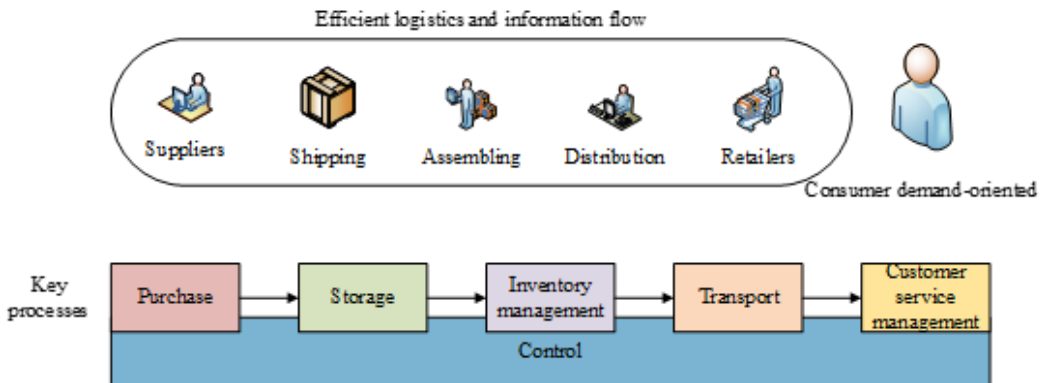
SCM of Global Organizations

The global supply chain is an economic organization form that realizes organic links, and efficient coordination of all supply chain links including research and development (R&D), design, procurement, production, sales, and service. It is also the inevitable result of the continuous evolution of the international division of labor, and an essential manifestation of the interdependence and integration of interests among countries in the world (Barbosa, 2021). Since the 1990s, fundamental changes have occurred in the comparative advantage structure of countries and regions, as well as the increasingly open international environment, long-distance transportation, large-scale communication, and other external conditions, which have accelerated the pace of international industrial gradient transfer. The international industrial division of labor has entered a new stage of intra-product division of labor based on production processes, forming a highly connected global supply chain network pattern with supply chain efficiency as the decisive factor (Shao et al., 2021; Qiao & Williams, 2022).

Before the international economic and trade situation was deeply affected, the global supply chain had become shorter, smarter, and faster under the influence of AI, big data and industrial robots, and other technologies. With the gradual penetration of cloud computing, big data, the IoT, mobile Internet, AI, intelligent printing, robotics, and other technologies into all aspects of the supply chain, the original research and development mode, manufacturing mode, trade mode, and industrial organization form will be fundamentally changed (Katsikouli et al., 2021). Figure 2 is the basic principle of a global supply chain.

Figure 2 suggests that the SCM of global organizations includes two aspects: industrial management and logistics management. The management contents of these two aspects jointly determine the development of the SCM of international organizations. With the accelerated penetration of the new generation of information technology, especially the deep integration of Internet technology and advanced manufacturing, the redundant links in the supply chain have been

Figure 2. Supply chain principles of global organizations



significantly reduced. Moreover, the complexity has been dramatically reduced, the upstream and downstream collaboration efficiency has been higher, and the supply chain has become shorter. Besides, combining human-computer interaction, new plastic materials, and 3D printing technology provide strong support for mass customization. Raw material procurement, parts production, and processing and manufacturing are more centralized, and the supply chain flattening trend is more prominent (Fernando and Wulansari, 2021).

The supply chain is a system, and the optimized supply chain management can improve its efficiency and make it play its due role. The concept of its management has also emerged in several ways. Firstly, SCM aims to meet customer service needs, coordinate high service quality and low inventory, and reduce the conflict between costs (Raj et al., 2022). Secondly, SCM is an integrated philosophy to manage the overall business process of the entire channel from supplier to final customer service. Finally, it is a compelling collection of collaborative strategies and activities of suppliers, manufacturing enterprises, wholesalers, carriers, retail stores, and consumers to deliver the right goods to the right consumers at the right time, and to reduce costs with the optimal supply chain to achieve customer demand (Kovács and Falagara Sigala, 2021). Therefore, SCM plays an important role in the development of enterprises and economic development of the whole industry (Saroja et al., 2022). The demand for global organization supply chain systems is more intense. The international organization optimizes SCM to improve its performance and promote economic development.

OPTIMIZATION FRAMEWORK DESIGN OF GLOBAL ORGANIZATION SCM PROGRAM

The traditional global organization SCM model has been unable to meet the needs of society. The current social progress needs a more efficient and intelligent SCM model. This paper attempts to use cloud computing technology to optimize the traditional global organization SCM process to improve the effectiveness of SCM and promote the production development of the world. This paper studies SCM from two aspects of decentralized and centralized decision-making. Table 1 shows the meaning of some design parameters.

In Table 1, the parameters in the model design are defined, thus clarifying the specific content of this design. Based on this, this paper designs a global organization's supply chain optimization program through decentralized supply chain decision-making and centralized supply chain decision-making. The decentralized decision-making of the supply chain refers to the decision-making of each subject in the supply chain to optimize their interests. Centralized decision-making means that the decision-maker makes decisions to optimize the overall benefits of the supply chain. First, this paper

Table 1. Design parameters

Number	Parameters	Meaning
1	α	Proportion to service data security/configuration
2	$c\alpha^2$	Cloud provider costs
3	c	Cloud provision cost factor
4	a	Potential market demand
5	b	Price sensitivity coefficient
6	p	Product price
7	P^*	Total product price
8	ω	Cloud service price
9	γ	Cost-sharing factor
10	φ	Profit sharing factor
11	π_s	Cloud provider profit
12	π_c	Profit of cloud enterprises
13	Q	Cloud service purchases
14	b_2	Safety elastic coefficient

designs the decentralized decision-making model of the supply chain under cloud technology. The revenue and profit of cloud service providers and enterprises are as follows.

$$\pi_c = Q(\omega - c\alpha^2) \tag{1}$$

$$\pi_c = Q(p - \omega) \tag{2}$$

Based on the first and second partial derivatives, Eqs. (3) and (4) are obtained:

$$\frac{\partial \pi_c}{\partial p} = a - 2bp + b_2\alpha^2 + b\omega \tag{3}$$

$$\frac{\partial^2 \pi_c}{\partial p^2} = -2b < 0 \tag{4}$$

Then, Eq. (5) is obtained:

$$p^* = \frac{a + b_2\alpha^2 + b\omega}{2b} \tag{5}$$

First and second-order partial derivatives are performed about ω , as shown in Eqs. (6) and (7):

$$\frac{\partial \pi_s}{\partial \omega} = \frac{a + b_2\alpha^2 + bca^2}{2} - b\omega \tag{6}$$

$$\frac{\partial^2 \pi_s}{\partial \omega^2} = -b < 0 \tag{7}$$

Then, Eq. (8) is deduced:

$$\omega^* = \frac{bc\alpha^2 + a + b_2\alpha^2}{2b} \quad (8)$$

The respective profits of cloud service providers and cloud enterprises under decentralized decision-making are calculated, as shown in Eqs. (9) and (10):

$$\pi_i^* = \frac{[a + b_2\alpha^2 - bc\alpha^2]^2}{8b} \quad (9)$$

$$\pi_c^* = \frac{[a + b_2\alpha^2 - bc\alpha^2]^2}{16b} \quad (10)$$

The total profit of the cloud service supply chain is calculated, as shown in Eq. (11):

$$\pi^* = \frac{3[a + b_2\alpha^2 - bc\alpha^2]^2}{16b} \quad (11)$$

Then, the centralized decision model of the cloud service supply chain is analyzed. At this time, the profit calculation of the supply chain is shown in Eq. (12):

$$\pi = Q(p - c\alpha^2) = [a - bp + b_2\alpha^2](p - c\alpha^2) \quad (12)$$

p is taken as the first and second-order derivatives, as shown in Eqs. (13) and (14):

$$\frac{\partial \pi}{\partial p} = a - 2bp + b_2\alpha^2 + bc\alpha^2 \quad (13)$$

$$\frac{\partial^2 \pi}{\partial p^2} = -2b < 0 \quad (14)$$

The optimal pricing of the supply chain is shown in Eq. (15):

$$p^{**} = \frac{a + b_2\alpha^2 - bc\alpha^2}{2b} \quad (15)$$

The calculation of the optimal supply chain profit is shown in Eq. (16):

$$\pi^{**} = \frac{(a + b_2\alpha^2 - bc\alpha^2)^2}{4b} \quad (16)$$

Then, this paper completes the optimization design of the supply chain and then evaluates the effect of the model. Based on the above calculation methods, this paper constructs a global organization

SCM model based on cloud computing technology under the BIIMC background. The model is mainly divided into the centralized SCM model and the decentralized SCM model. Then, the two models are comprehensively evaluated. Table 2 shows the specific experimental parameters used.

EXPERIMENTAL RESULTS

Data Design

This paper mainly uses enterprise data to evaluate the designed program. The program evaluates the supply chain data of Taobao and Amazon. Taobao is a giant online retail and business district in the Asia-Pacific region, founded by the Alibaba Group in May 2003. It has nearly 500 million registered users and over 60 million regular daily visitors. Additionally, the number of online products daily has exceeded 800 million, with an average of 48,000 products sold per minute. Amazon is the largest online e-commerce company in the United States. Amazon and other distributors provide customers with millions of unique new, refurbished, and second-hand goods, such as books, movies, music and games, digital downloads, electronics and computers, home and gardening products, toys, baby products, food, clothing, footwear and jewellery, health and personal care products, sports and outdoor products, toys, automobile, and industrial products, etc. These are two examples of extremely popular enterprises. Studying them can better highlight the advantages of the design procedures in this paper.

Supply Chain Decentralized Decision Evaluation

This paper's design is to use the supply chain data of Taobao and Amazon to evaluate the performance of the program and to explore the comprehensive version. This paper mainly evaluates the program's cost and profit management effect in the SCM process. Figures 3-6 show the design program's cost and profit management evaluation results.

Figures 3-6 show that in evaluating the decentralized SCM model, the program designed is very prominent in the SCM of Taobao and Amazon. For cost management, the management fit of the program organized on the Taobao and Amazon platforms is about 81% - 93% and 84% - 95%, respectively. In profit management, the management fit of the program designed in Taobao and Amazon platforms is about 83% - 90% and 80% - 92%, respectively. It suggests that the model designed can well meet the development needs of SCM.

Centralized Decision Evaluation of the Supply Chain

This paper's designed centralized decision-making optimized the program, and evaluated the performance of the program's SCM. Figures 7-10 show the results of the centralized decision-making evaluation design.

Figures 7-10 display the evaluation result of the SCM effect of the designed program under centralized decision-making. Figure 7 shows that the control fit of this program on the supply chain cost

Table 2. Specific experimental parameters

Serial Number	Parameters	Unit
1	Training times of decentralized model	1000 times
2	Detection times of decentralized model	1000 times
3	Training times of centralized model	1000 times
4	Detection times of centralized model	1000 times
5	The initial parameter of the decentralized model	1
6	The initial parameter of the centralized model	1

Figure 3. Cost management of Taobao supply chain

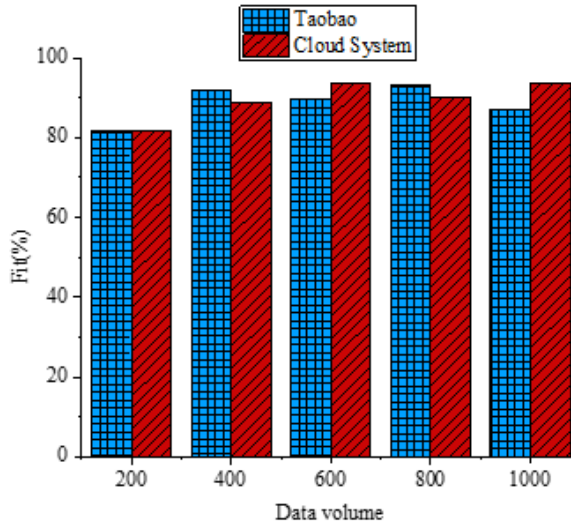
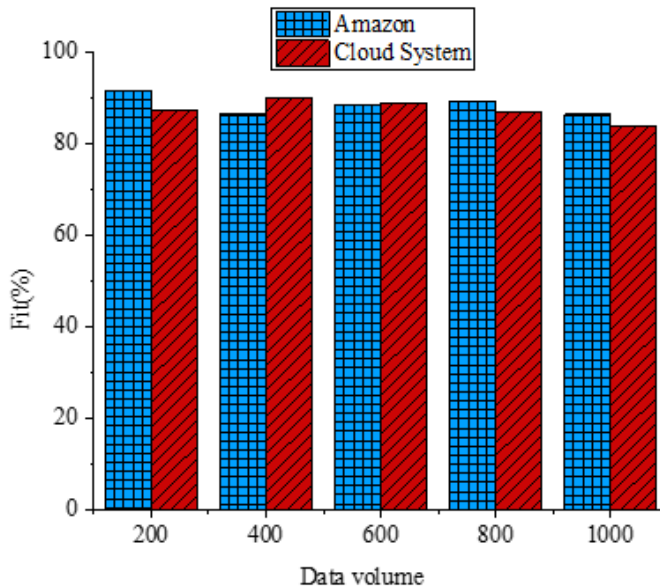


Figure 4. D cost management of Amazon supply chain



management of the Taobao online shopping platform is 83% - 90%. Its reasonable degree in the cost management process of the Amazon online shopping platform is about 84% - 88%. The proper degree of the program designed in the profit management process of the Taobao online shopping platform is about 83% - 92%. The proper degree in the profit management process of the Amazon online shopping platform is about 85% - 88%. It reveals that the SCM program designed can well meet the current social needs and the requirements of the existing online shopping platform system. Therefore, this paper shows outstanding and excellent performance in optimizing the SCM program of global organizations.

Figure 5. Profit management of Taobao supply chain

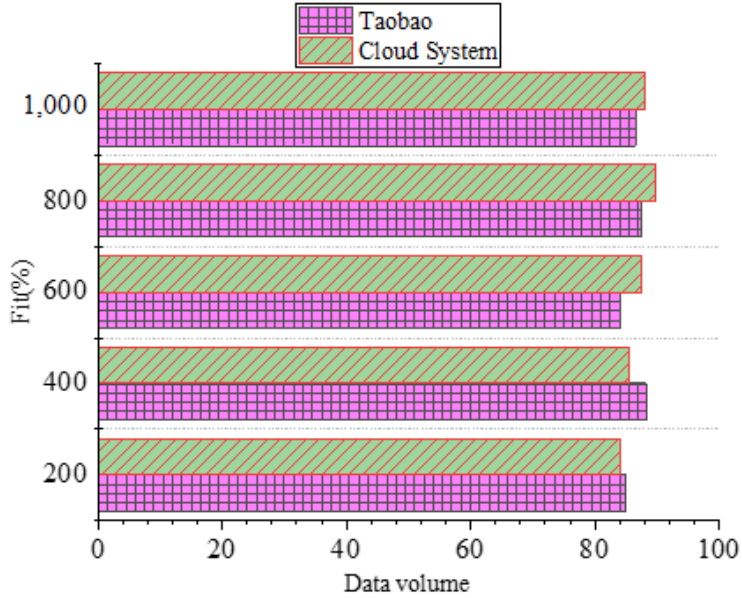
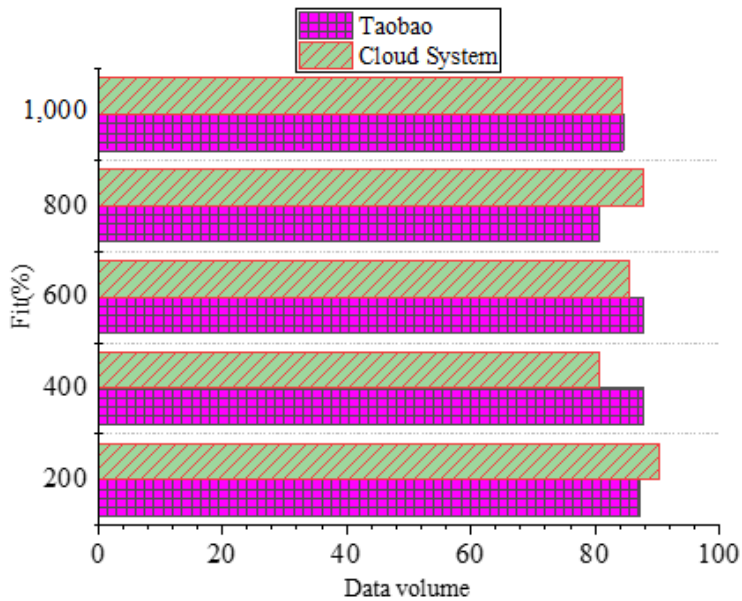


Figure 6. Profit management of Amazon supply chain



Discussion

The global organization supply chain is also known as the “global network organization supply chain.” The members of the supply chain are all over the world, and the acquisition of means of production, the organization of product production, the flow and sale of goods, and the acquisition of information are all carried out and realized globally. Global SCM is the process of managing and

Figure 7. Cost management of Taobao supply chain

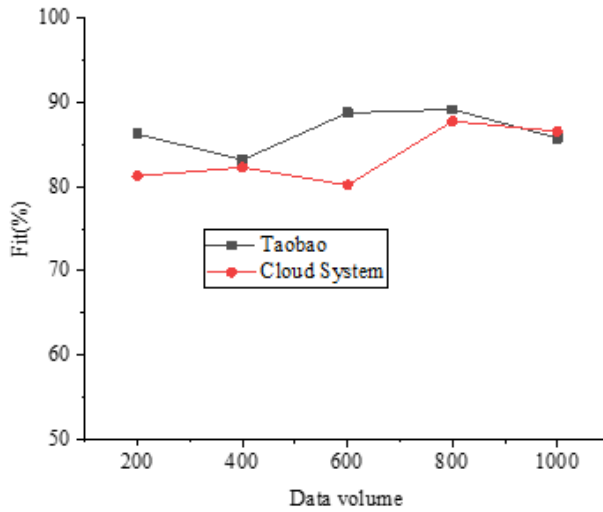
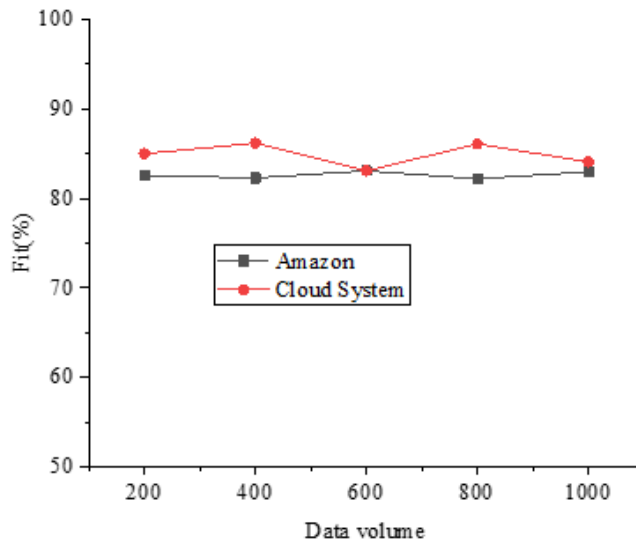


Figure 8. Cost management of Amazon supply chain



guiding physical networks. Its core goal is to maximize profits, improve the efficiency of the supply chain, and provide goods and services promptly. Its ultimate challenge is to meet demand faster, cheaper and less wastefully than competitors, while maintaining quality and standards.

Although the global organization supply chain system has been formed for a long time, its development is still not very optimistic. One of the most prominent reasons for this is that the current society's intelligence of global organization SCM is not high enough to achieve efficient organization SCM, so more research is needed to improve it. Therefore, multiple researchers have carried out relevant research. Through research, Kumar et al. (2022) found that risk and sustainable SCM were frequently used keywords, and procurement and reverse logistics were observed in fewer studies. SCM, food waste, food quality, greenhouse gas emissions and risk management are often observed practices

Figure 9. Profit management of Taobao supply chain

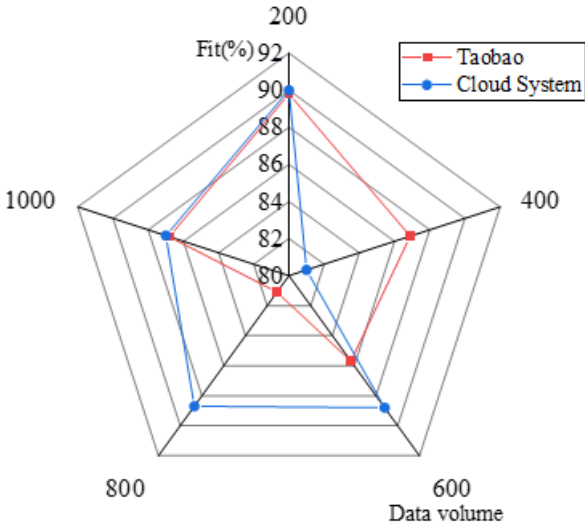
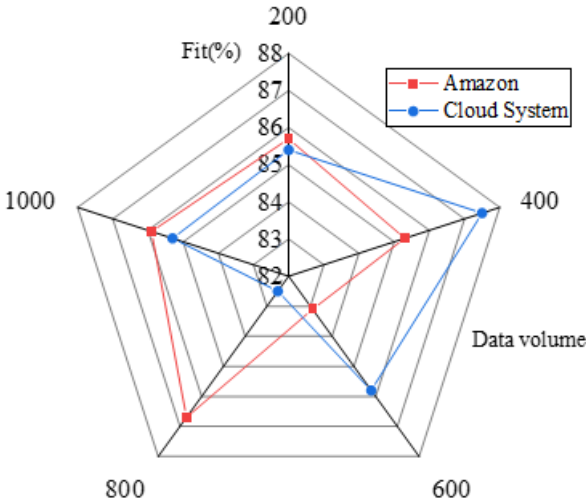


Figure 10. Profit management of Amazon supply chain



in sustainable SCM (Kumar et al., 2022). Edwin Cheng et al. (2022) investigated the factors hindering or promoting the supply chain’s adoption of blockchain. To capture the most important aspects of adopting blockchain in the supply chain, they combined the unified theoretical model of technology acceptance and use with the task technology matching and information system success model, as well as the information technology innovation’s adoption structure based on trust. The results show that the social influence factors of the unified theory have no significant impact on the intention of adopting blockchain. However, inter-organizational confidence significantly impacts the relationship between the cooperative theory dimension and the intention of adopting blockchain (Edwin Cheng et al., 2022). Compared with the above research, this paper provides a relatively complete technical model and designs advanced technical algorithms. It provides technical support for the intelligent management and development of the global organization supply chain.

Additionally, the theoretical significance is to provide a direction for the future development of SCM through the essential international organization SCM model design. Meanwhile, it also supports the expansion of organizational SCM. The practical significance is to design more advanced technical methods, thus providing technical support for the global organization SCM and contributing to its development.

CONCLUSION

Currently, with the highly integrated global trading system, the international organization SCM has become an essential issue for the economic development of countries. This paper first introduces the current development of cloud technology under the background of BIIMC. Then, the basic concept of global organization SCM is discussed. Finally, based on cloud technology, the optimization program of international organization SCM is designed and its performance is evaluated. The results show that the program designed performs very well in decentralized decision-making in the SCM of Taobao and Amazon. For cost management, the fitting degree of the program designed is about 81% - 93% and 84% - 95%, respectively. In profit management, the proper degree of the program designed is about 83% - 90% and 80% - 92%, respectively. It suggests that the model designed can well meet the needs of SCM development.

Moreover, in centralized decision-making, the fitting degree of the program designed in the cost management process is about 83% - 90% and 84% - 88%, respectively. The program's fitting degree in profit management is about 83% - 92% and 85% - 88%, respectively. It reveals that the model designed can meet the current needs, thus providing technical support for the future global organization SCM. Although this paper has developed a relatively advanced technical program, it has not created and evaluated the program. Therefore, in future research, the design scope of the program will be expanded to improve the comprehensive application effect of the program.

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