

Guest Editorial Preface

Special Issue of Blockchain Technology on Supply Chain Management

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The application of blockchain technology has had a significant impact on economic development and industrial structure. It has also led to a more efficient and complete supply chain in different industries. This trend will be an excellent opportunity for countries in global supply chain system to achieve leapfrog development and take a favorable position in the division of labor.

Blockchain is a distributed database system that is not easily tampered with or falsified, and is considered as a major breakthrough technology that revolutionizes the way of economic transactions and business operation models. At the same time, blockchain technology can also be combined with emerging technologies such as Internet technology, Internet of Things (IoT), cloud computing and big data to form original combinations for different scenarios. These combinations will be further integrated into the supply chain of different industries to make the industry development more stable and faster.

At present, the current research on the integration of blockchain technology and industrial supply chain is more focused on the virtual financial industry, and few attempts to apply blockchain technology to different real economies. Blockchain technology, as an emerging technology, still has many obstacles in its wide application, and the relevant application of blockchain on supply chain still need to be explored by scholars. Therefore, the theme of this special issue is Blockchain Technology on Supply Chain Management.

This special issue of the *International Journal of Information Systems and Supply Chain Management* (IJISSCM) contains six papers, which combine blockchain technology with emerging technologies such as Internet technology and IoT, and further integrate them with the supply chain in different industries, covering agriculture, e-commerce and so on. They range from the construction and optimization of green supply chain management mode for agricultural enterprises, to the improvement of e-commerce system, as well as the discussion of logistics center coverage. These papers have been fully double-blind peer reviewed before accepted for this special issue.

The first paper conducts further research and design based on previous production line automation. With the paper “Automatic Equipment Design of Intelligent Manufacturing Flexible Production Line Based on Industrial Motorized Spindle”, Runqin He conducts the overall design and system optimization of the automatic production line, and designs a fuzzy PID controller for the step motor. After the system rationalization, the quality robustness of the active programming is significantly improved.

In the paper, “Construction and Optimization of Green Supply Chain Management Mode of Agricultural Enterprises in the Digital Economy”, Jiang Hu and Xuetao Li introduce the construction and optimization of green supply chain management model of agricultural enterprises under the digital economy, including: overview of green supply chain management, construction of green supply chain optimization management model, and establishment of green supply chain management practice index system of agricultural enterprises under the digital economy. This paper provides valuable ideas and directions for the development of green supply chain management of agricultural enterprises based on the digital economy.

Incorporating blockchain into Halal traceability systems is the topic under discussion by Eli Sumarliah, Tieke Li, Bailin Wang, Fauziyah Fauziyah and Indriya Indriya. In their paper, “Blockchain-Empowered Halal Fashion Traceability System in Indonesia”, they examine the participatory intent of the blockchain-supported Halal Fashion Tractive system through a joint framework that includes innovative diffusion theory, institutional theory, and Halal-oriented approaches. The study reinforces the existing literature on halal supply chain, blockchain, operations management, and information system with a cohesive framework and empirical insight.

In “Supplier Evaluation and Selection System of Embedded E-Commerce Platform Based on Big Data”, Jiangnan He, Ying Qian and Xiaoyin Yin firstly introduce the evaluation and selection of e-commerce and suppliers, propose the analytic hierarchy process and entropy method, and finally establish a supplier evaluation and selection system by AHP analytic method. The experimental results show that AHP can be used to sort and select the weights of entropy order analysis. The ABC classification method is adopted to classify according to the ranking of suppliers.

Weijuan Jing builds a reliable e-commerce system based on 5G and IoT technology. The paper, entitled “Construction of an E-Commerce System Based on 5G and Internet of Things Technology”, combines 5G communication technology and IoT technology to improve the e-commerce system, analyze and improve the endpoint of client data analysis system and intelligent logistics system, so as to improve the comprehensive performance of the e-commerce system.

The last paper in this special issue, entitled “Multi-Objective Optimization Information Fusion and Its Applications for Logistics Centers Maximum Coverage”, is written by Xiao Ya Deng. This paper solves the localization problem of large dynamic coverage in detail using a simulated annealing algorithm, and proposes a multi-objective maximum coverage localization and a multi-objective fuzzy objective planning method based on an emergency vehicle localization model. The ultimate goal is to improve the service coverage and service level while shortening the total transportation distance. The innovation of all the algorithms in this paper lies in that the logistics centers themselves are regarded as the subject of free “activities”, and they are allowed to move freely according to these rules by setting certain moving rules.

IJSSCM is honored to present you with this special issue. We hope that reading these high-quality papers will inspire you to submit your own papers in the future. May these contributions fill the application gap of blockchain and open a broad path for the integration and development of blockchain and supply chain!

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