중국 맥주 산업의 공급망 재고관리에 관한 연구

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The Inventory Managemant of the Supply Chain in China's Beer Industry

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요 약

중국에서의 빅데이터 개발 역사는 비교적 길지 않아 지금까지 10여년 정도에 불과하다. 또한 실생활에서의 빅데이터의 응용수준도 높지 않지만, 공급망 분야에서는 일부 성과가 이루어져 왔다. 다양한 유형의 데이터가 공급망의 실제 운용 과정에서 수집되었다. 그러한 데이터들이 효율적으로 분류되고 활용될 수 있다면, 공급망 운용과정에서의 채찍효과가 역시 효율적으로 향상될 수 있을 것이다. 따라서 본 연구의 목적은 중국맥주 산업 공급망에서의 협업재고관리 모델의 개발과 동시에 빅데이터를 활용하는 응용 프레임워크의 개발이다.

ABSTRACT

The development history of China's big data is relatively short, and it has only been ten years so far. Although the application level of big data in real life is not high, some achievements have been made in the supply chain. Various kinds of data will be generated in the actual operation of the supply chain. If these data can be effectively classified and used, the "bullwhip effect" of the operation of the supply chain can be also effectively improved. Thus this paper proposes the development of a supply chain collaborative inventory management model and application framework using big data.

키워드

재고관리, 빅데이터, 채찍효과, 공급망

I. 서 론

The development and research history of big data in China is relatively short, and it is mainly guided by policies and focuses on application. The ease and openness of data acquisition in different industries lead to different penetration rates of big data in different industries, resulting in different application degrees of big data in different industries.The application-oriented approach leads to the lack of a theoretical framework system for big data in academic research. In contrast, there are certain management theories and comprehensive applications for supply chain inventory management.In foreign research theories, Hau Lee was the earliest foundation of the research on supply chain inventory management in 1992, and pointed out that collaborative supply chain was the development trend of supply chain in 1999[1]. Based on Gurnani's study on the supply chain collaboration problem that minimizes the expected total cost under the random output of suppliers, Guer and Bilgic considered the supply chain bulk order collaboration problem under the maximized expected profit of the supply chain. Most foreign schol-

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ars study practical problems of supply chain inventory management, but they only explore the factors before and after the results when solving the problems. Chinese scholars are led by Maersk, who mainly studied multi-level inventory management, inventory management and logistics coordination theories on the basis of foreign inventory management research theories. There is also a type of scholars who think that the application of information technology is the main research on supply chain inventory management. Li Rong, Xie Liansheng and others use advanced management ideas such as MRP, JIT, OPT and the integrated ideas between them to assist in the development and production planning and control System etc.

There are few researches on the application of big data in supply chain inventory management. Although some of them involve information technology, they rarely go into the overall view of supply chain. Aiming at the "bullwhip effect[2]" in supply chain inventory management, this article uses big data to classify and share supply chain information based on the theory of supply chain collaborative inventory management, and proposes a supply chain collaborative inventory management model under the background of big data. We studied the industry with the most prominent "bullwhip effect" -- fast consumption industry (beer industry) for analysis, and used system dynamics to build a dynamics model for further analysis, to verify the feasibility of supply chain collaborative inventory management model under the background of big data.

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