Using Blockchain Technology to Extend the Vendor Managed Inventory for Sustainability

Authors : Elham Ahmadi, Roshaali Khaturia, Pardis Sahraei, Mohammad Niyayesh, Omid Fatahi Valilai

Abstract : Nowadays, Information Technology (IT) is changing the way traditional enterprise management concepts work. One of the most dominant IT achievements is the Blockchain Technology. This technology enables the distributed collaboration of stakeholders for their interactions while fulfilling the security and consensus rules among them. This paper has focused on the application of Blockchain technology to enhance one of traditional inventory management models. The Vendor Managed Inventory (VMI) has been considered one of the most efficient mechanisms for vendor inventory planning by the suppliers. While VMI has brought competitive advantages for many industries, however its centralized mechanism limits the collaboration of a pool of suppliers and vendors simultaneously. This paper has studied the recent research for VMI application in industries and also has investigated the applications of Blockchain technology for decentralized collaboration of stakeholders. Focusing on sustainability issue for total supply chain consisting suppliers and vendors, it has proposed a Blockchain based VMI conceptual model. The different capabilities of this model for enabling the collaboration of stakeholders while maintaining the competitive advantages and sustainability issues have been discussed.

Keywords : vendor managed inventory, VMI, blockchain technology, supply chain planning, sustainability
Conference Title : ICSCLE 2021 : International Conference on Supply Chain and Logistics Engineering
Conference Location : Madrid, Spain
Conference Dates : March 25-26, 2021