

Proceedings of the 8th Annual World Conference  
of the Society for Industrial and Systems Engineering,  
Baltimore, MD, USA  
October 17-18, 2019

## **Optimal Decisions for the Perishable Food Supply Chain by Applying Blockchain Technology**

**S. Abedi and S.W. Yoon**

Department of Systems Science and Industrial Engineering  
State University of New York at Binghamton,  
Binghamton, NY, USA

Corresponding author's Email: [sabedi1@binghamton.edu](mailto:sabedi1@binghamton.edu)

**Abstract:** Due to increasing concerns over food safety, the level of customer's awareness of the products has been considered significantly during the recent years. In this study, the application of the Blockchain technology and its impact on perishable food supply chain is examined. Blockchain can help to eliminate the costly delays and waste the products due to its traceable, secure and distributed structure. Perishable food nature of quality deterioration over time, inefficient quality control during the transportation and food contamination incidents lead to a need for more detailed information on food production. Besides, asymmetric information at the situation that parties are not equally informed about the details of the products causes marketing failures such as last minute order cancellations, late payments and retroactive changes to contracts. In this study, a decision making mechanism is developed based on the quality, price, safety, and degree of information exposure parameters by applying Blockchain technology in the perishable food supply chain management.

*Keywords:* Blockchain Technology, Perishable Food, Dynamic Pricing, Food Traceability