## Circulation Safety Management System for the Limited Shelf Life Commodity

TIAN Xin<sup>1,2</sup>, WANG Shou-yang<sup>2,3</sup>, TIAN Shi-hui<sup>4</sup>, WU Zhao-song<sup>5</sup>, ZHU Chan-juan<sup>5</sup>

 Research Center on Fictitious Economy & Data Science, Chinese Academy of Sciences, Beijing 100190, China;
School of Economics and Management, University of Chinese Academy of Sciences, Beijing 100190, China;
Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Beijing 100190, China;
School of Economics and Management, Beijing Jiaotong University, Beijing 100044, China;
Shanghai HEADING Information Engineering Co., Ltd., Shanghai 201112, China)

Abstract: It is a difficult issue to ensure the circulation safety of limited shelf life commodities, as the commodity bar code does not contain the shelf life information inherently. Based on the virtual business theory, we propose a new circulation safety management framework, entitled "Shelf-life code bar Traceability System", for limited shelf life commodities, and discuss the detailed process design as well as integrated solutions. The practical application of "Shelf-life code bar Traceability System" shows that it can achieve the shelf-life management for limited shelf life commodities, and improve the sales effectively.

Keywords: circulation safety management, shelf life, retailer, business automation, virtual business