

Abstract

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Reverse Logistics Network Design: Review of Models and Solution Techniques

Numerous reasons exist for products to move back to the manufacturers. Legislation, environmental consciousness, take-back policy, warranty returns, and economic aspects are some of these reasons. The majority of publications in the field of reverse logistics are case studies. Yet, there is still a need for structuring the field and creating a general framework for the issues involved in reverse logistics. Network design taking the objective of achieving sustainability into consideration is one of the challenges industry is facing recently. The design of the distribution and reverse logistics network has to fulfill the different objectives from the economic, social, and environmental perspective. In addition to the multi-criteria nature of the problem it is characterized by a high degree of uncertainty concerning the quantity, quality, and timing of returned products. In this paper a review of the modeling and solution methodologies in the field of reverse logistics network design is presented and analyzed.