

# **Examining the Impacts of Product Recovery to Production-Distribution Systems - A System Dynamics Approach**

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## Abstract:

Increased global competition and shortened innovation cycles have resulted to a variety of available products in the market. This however has become a reason for concern because of the waste being generated from their disposal. The advent of economic and environmental considerations have necessitated for the strategic management of product recovery. This study tackles the issue of inventory management for a production-distribution system which had been integrated with product recovery. This is done through the development of a simulation model based on the system dynamics methodology. The model provides a description of the system's structure and identifies the inherent feedback loops within it. It likewise examines the effects of introducing product recovery to the inventory levels of the echelons. The use of numerical validation further leads to the replication of resulting system behaviors under various scenarios.