

# Returns Management and Value Recovery Through Systemized Orchestration and Inventory Tagging

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## Abstract

It is widely known that the retail industry relies on *economies of scale* benefits, i.e. it is characterized with high volumes and low margins. In such an environment, any bottom line value recovery automatically contributes back to the top line or revenue of the company, giving it a natural edge over other players who do not emphasize on a similar recovery philosophy. One major value recovery opportunity in retail is with *Returns/Rejects* or *Defective/Damaged* inventory which constitutes a *backflow* to the forward supply chain. Owing to the unpredictable and non-linear nature of this reverse flow there isn't a definitive and single point optimal solution for managing this reverse flow of inventory. Based on select key parameters analysed in great depth over the course of our study, we have designed a *hybrid model* for managing rejects aimed at maximizing value recovery.

Returns can flow into the *Warehouse Management System (WMS)* as *Shipments, Consignments, and Identified or Unidentified* inventory items. The first step in processing them is to account for them by confirming the receipt of the shipment or consignment in the WMS. For identifiable inventory items, inventory quantity needs to be created in the stock file with a tagging of the specific reason of creating the stock. Similarly for inventory which can't be identified, based on the legal implications prevalent in the region of operation, a line item or tag can be created in the WMS, with specifications of the inventory specified by authorized personnel and approved by the appropriate approval authority within the organization. These are the primary steps in returns inventory processing and management.

The crucial parameters that should be considered while selecting a strategy for managing these returns are: *type of retail* – e-retail, mom and pop, superstore, brand store etc., *range of categories sold and returned*, *point and time of return*, *trade terms with suppliers*, *type of procurement*, *operational capabilities*, *size of inventory*, *sales and return type* and *quantum of returns*.

Based on these either a specific alternative or a hybrid model can be derived for optimized returns management designed around methodologies like: *inventory serialization* and *serialized order pick*, *inventory bucketing* and *product ID level order pick*, *bulk/non-tagged inventory with bulk outward*.

For either of these strategies the WMS needs a specialized *orchestrator* using a *rule engine* that uses multiple parameters and flag based configurations for flexibility to handle variability. The usage of multiple parameters largely depends on the fact that the existing systems are built with these parameters being captured at product on-boarding and inventory creation or these are recorded while accounting of returns which has been mentioned above as the first step of the returns process flow.

This paper aims to provide a comprehensive view of the design of the new process and an overall understanding of the orchestrator capabilities required for each of the aforementioned alternatives.

**Keywords** Order Returns, Reverse Logistics, Salvage, Process Flow Optimization, Value Recovery

## **Biography**

**Udayan Kashalikar** handles Process design, ERP Development, Kaizen/Lean Initiatives and Automation/Innovation Initiatives of the Fulfillment Centers at Flipkart Internet Pvt. Ltd. He is a Mechanical Engineer from Maharaja Sayajirao University of Baroda and a PGDBM (Operations) from TAPMI, Manipal. He holds over 6 years of hands-on experience in the fields of Project Execution, Operations and Supply Chain. He has previously worked with Bectochem Consultants and Engineers Pvt. Ltd. handling end to end projects of delivering Tablet/Capsule/Ointment equipment lines for clients like Glaxo SmithKline, Pfizer, Merck, Aurobindo, Cipla etc. He has designed the process flows for entire returns/reject inventory and made operational the ERP module for returns management at Flipkart in 8 warehouses spread out across India.

**Ananth Rangarajan** is a Manager-II in the Fulfillment Center Design team at Flipkart.com, India's largest online marketplace. His focus areas are Industrial Engineering and Supply Chain Innovation. He earned his Bachelor in Industrial Engineering from the University of Pune, India and has graduated from the Postgraduate Program in Management at the Indian School of Business with concentrations in Finance and Operations Management. Ananth has served with Mercedes-Benz India in Assembly Line & Plant Management, Logistics & Supply Chain Management and Production Planning. He has been involved in academic research since his deputation to the University of Windsor, Ontario, Canada as an Undergraduate Exchange Scholar. He has been associated with the IEOM society since the inaugural conference in Dhaka'10 where he was the youngest delegate. He has published conference and journal articles on financial modelling, simulation, service sector process flows, urban transportation, healthcare, back office operations and e-commerce. He also serves on the panel of peer reviewers for multiple international journals and conferences.