

# DEFINING REVERSE LOGISTICS PLATFORMS

WHAT ARE THEY AND HOW DO THEY WORK?

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WHITE PAPER

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## INTRODUCTION

Driven by the desire to capture savings throughout the entire supply chain, retailers and consumer brands are seeking new ways to turn distressed inventory into value. As a result, leading brands are embracing Reverse Logistics Platforms, a new category of software solutions that span the entire reverse logistics lifecycle and help create more value from returned and excess inventory while removing cost from the supply chain. Adopting these solutions is essential to increasing inventory recovery and velocity, reducing warehouse costs, and increasing visibility within the reverse logistics lifecycle.

What are Reverse Logistics Platforms? What specific types of value do these technologies deliver? And what is required to create and implement one? This paper addresses these questions through an examination of this new type of technology embraced by leading retailers and consumer brands.

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## A. WHAT IS A REVERSE LOGISTICS PLATFORM?

Reverse logistics is messy and unpredictable. Product comes back in a variety of conditions and in unpredictable waves. Some items arrive in the original box, but most arrive in whatever was available at the time. Sometimes a return includes a return authorization (RA or RMA), but sometimes it does not. Even if it does, what's inside the box might not match what's on the RA/RMA. These unpredictable details in reverse logistics have created complexity that is difficult for most retailers and consumer brands to handle.

Traditionally, retailers and consumer brands have taken a “brute force” approach to reverse logistics management. They return to stock as much inventory as possible, liquidate as much of the remainder as they can, and then try to dispose of the rest in the least burdensome way. They make these routing decisions by creating rules that dictate the disposition of inventory at the product level. For example, a retailer may require that all laptops of a certain model get sent to a bulk distributor, while all t-shirts of a certain SKU get donated. These rules are designed to optimize the net recovery—the difference between the sale price and handling cost—for each item, and take into account the cost of shipping, the secondary market price, and other factors.

But what happens when market conditions change? What happens when secondary-market prices go up or down, or when the condition of returned product varies? When retailers and brands use static, rule-based systems to govern disposition—combined with warehouse management systems designed primarily for forward fulfillment—they leave tremendous value on the table.

As a result, leading retailers and consumer brands are looking to software solutions that can help them get ahead of this changing market landscape. They are looking for solutions that can determine the value of returned, excess or distressed inventory in real time and provide an instant feedback loop to route the inventory to the highest-value disposition channel. This all needs to happen while maximizing warehouse efficiency through a purpose-built warehouse management system (WMS) to handle non-uniform inventory with varying conditions, missing labels or packaging. These software solutions are known as Reverse Logistics Platforms.

## B. WHAT DO REVERSE LOGISTICS PLATFORMS ACCOMPLISH?



In general, top retailers and consumer brands are using Reverse Logistics Platforms to deliver four key areas of value:

### 1. Increasing supply chain visibility

One problem with existing reverse logistics solutions is that retailers and consumer brands lack the data that will help them understand and improve performance. This includes information on the location and condition of on-hand inventory, as well as information on the return reason, recovery amount and final disposition path of each item. By committing to data capture through a Reverse Logistics Platform, retailers and consumer brands can begin to understand trends in distressed inventory and remediation tactics, focusing on what works and treating causes instead of triaging symptoms.

### 2. Achieving higher recovery on returns, excess and distressed inventory

When an item enters the reverse supply chain, retailers and consumer brands aim to recoup some of that item's value. Often this involves sending the item back to stock (either in-store or online), or sending it back to a vendor. When those options are unavailable, they rely on traditional bulk liquidation or, more rarely, direct-to-consumer remarketing. With Reverse Logistics Platforms, leading retailers and consumer brands are able to achieve higher recovery by using first touch dispositioning to route inventory to higher recovery channels, including secondary direct-to-consumer (D2C) and business-to-business (B2B) marketplaces.

### **3. Increasing warehouse processing efficiency**

The unpredictable volume and assortment of inventory in reverse supply chains complicates warehouse design and makes standard handling processes difficult to implement. As a result, per-item processing costs in reverse logistics are traditionally very high and often prohibit utilization of the best disposition channels. However, leading retailers and consumer brands are using Reverse Logistics Platforms not only to create more top-line value from inventory and gain visibility, but also to reduce processing costs through purpose-built warehouse tools.

### **4. Delivering control and flexibility to business owners**

Business needs are never predictable, and what works in one month or quarter may not be what's required in the next. Many retailers and consumer brands struggle with systems and providers that require being locked into a given approach and don't offer the flexibility needed to adapt to changing business requirements. However, with Reverse Logistics Platforms, companies can adjust the mix and nuance of tactics to ensure they are always meeting their business requirements.

Leading retailers and consumer brands have demonstrated that Reverse Logistics Platforms enable them to apply a holistic approach to logistics, as these systems pull various components of merchandising and supply chain modules for an end-to-end solution. Thus, this technology becomes essential to maximize inventory value, create a cohesive customer experience, and prepare the organization for long-term success.

## **C. WHAT COMPONENTS ARE REQUIRED?**

At the heart of a Reverse Logistics Platform is the ability to direct returned and excess inventory to the proper channel considering a variety of cost, profit, and business rule inputs. In order to do that correctly, Reverse Logistics Platforms include a variety of supporting infrastructure across big data processing, warehouse management, marketplace management, and data analytics reporting. In this section, we detail the key components of a Reverse Logistics Platform.



## C1. BIG DATA INFRASTRUCTURE

With the rise of data analytics, retailers and consumer brands can strategically leverage data to make smarter routing decisions. But the increasing volume and type of returns—combined with unpredictable volumes, frequencies, conditions, and regulations—make the task of routing each individual item to its best home extraordinarily complex. Reverse Logistics Platforms include fundamental database layers that are well-suited to rapid reading and writing to large datasets, the crucial tasks required for efficient inventory routing. In particular, these data storage systems should be able to:

### **Store large amounts of historical data**

For retailers and consumer brands working with evolving products, it’s critical to understand the previous return and excess rates, disposition paths, and recovery performance of that inventory. More data leads to better decisions, so companies should invest in storage that can scale linearly using commodity hardware.

### **Accommodate multiple types of data**

Reverse systems depend on the ability to analyze disparate data, including structured pricing data and unstructured product condition and attribute data.

### **Enable “in place” data analysis**

By performing calculations on the same machines used to store the data, retailers and consumer brands can eliminate bottlenecks associated with moving large amounts of data back and forth between systems. This enables brands to perform advanced analytics on an ongoing basis.

Because these new systems are evolving at a rapid rate, they require new and ongoing investments in skills and capabilities as compared to traditional databases.

## C2. WAREHOUSE MANAGEMENT SYSTEM

Reverse Logistics Platforms typically contain extended or advanced WMS functionality. What makes these warehouse features distinct from more typical and pervasive WMS technology is that these components are specifically designed to handle reverse inventory. As we detail, handling returned, excess and distressed inventory requires a variety of distinct capabilities, including:

### **Unit-level license plating**

Because returned inventory comes in all conditions and types, reverse-oriented WMS must be able to distinguish each unit within the same SKU (UPC) by condition. Consequently, Reverse Logistics Platforms should have the ability to support unit-level license plating, in effect creating a unique identifier for each unit.

### **Purpose-built receiving and processing**

The ability to receive, putaway, stock, count, allocate, pick, and ship is fundamental to any WMS. Reverse Logistics Platforms, however, enable users to easily receive and process returned and excess inventory that often poses challenges for forward-built WMS. For instance, a retailer may have different receiving flows depending on unit data completeness or the specifics of the program. It may receive some returns by UPC while others by RA/RMA, which then require reconciliation. The modular and flexible receiving flows of Reverse Logistics Platforms enable retailers and consumer brands to efficiently handle this inventory across a variety of different scenarios.

### **Inspection**

Retailers and consumer brands need to be able to inspect inventory that spans a wide range of conditions from brand-new to salvage. Advanced Reverse Logistics Platforms guide warehouse users to accurately and efficiently inspect a full spectrum of products across condition and category.

### **User identification and permissions**

A dedicated returns center operates differently than a forward-oriented fulfillment center with one important distinction being the highly-specialized roles of workers within the facility. Because of this, the reverse WMS must be able to create user-specific permissions and capabilities within the system.

With the inclusion of these reverse-specific WMS features, Reverse Logistics Platforms keep the flow of inventory moving quickly while simultaneously adding more value to a retailer or consumer brand's bottom line.

## C3. DISPOSITION ENGINE

Effective inventory routing—the core purpose of a Reverse Logistics Platform—requires rapid analysis of the data available within the platform. At first-touch, that data will determine whether an item should be returned to a store shelf, listed back on an online marketplace, routed toward remarketing channels, an end-of-life disposition, or elsewhere.

### **Performance analysis**

Retailers and consumer brands must be able to evaluate the previous performance of similar inventory through the reverse logistics lifecycle in order to predict how a given item may fare. That analysis requires combining multiple data types from the data warehouse.

### **Condition evaluation**

Product performance often varies by product condition, so a Reverse Logistics Platform must be able to parse performance data by condition to determine more precise outcomes.

### **Velocity optimization**

Retailers and consumer brands often have concerns beyond inventory value and recovery, in particular when the finance department is looking to close the books or the supply chain department is looking to clear physical space. In those situations, Disposition Engines must be able to find the balance point between required velocity and desired recovery.

### **Disposition rules and criteria**

Advanced Reverse Logistics Platforms enable retailers and consumer brands to set and continually adjust a variety of criteria to target specific recovery and velocity service level agreements (SLAs). These inputs then feed into the logic of the Disposition Engine.

Because the initial disposition determines the lifecycle of each item, it's essential that retailers and consumer brands ensure their Reverse Logistics Platforms' routing components function accurately and reliably.

## C4. MARKETPLACE MANAGEMENT ENGINE

Retailers and consumer brands are faced with a challenge when the Disposition Engine determines that certain inventory is appropriate for remarketing. How do they list that inventory on the appropriate channels while avoiding the cost associated with creating product content and managing listings for each item? That's where the Marketplace Management Engine comes into play. This engine enables an automatic listing process so that items can be sold to consumers or wholesalers for the highest possible net recovery. Specifically, these Marketplace Management Engines include:

### **Content generation**

Retailers and consumer brands must invest in reverse logistics technology that is capable of creating descriptive listing content for a wide variety of unpredictable inventory. Since the time required to generate listing content directly impacts the speed with which an item sells, leading brands have invested in Reverse Logistics Platforms that can create merchandising content in milliseconds.

### **Dynamic pricing**

One major lever that retailers and consumer brands can use to balance recovery and velocity is the price of an item. Best-in-class reverse logistics technologies enable dynamic pricing at the unit level based on item condition and secondary market supply and demand. Advanced systems will take advantage of factors such as price anchoring and decay to ensure each item clears at its maximum achievable price within given velocity constraints.

### **Integrated D2C and B2B marketplaces**

Once content and pricing are generated, sophisticated Marketplace Management Engines seamlessly list the inventory on a variety of D2C and B2B marketplaces through real-time integrations. Utilizing both D2C and B2B sales channels enables retailers and consumer brands to maximize the value of their returned and excess inventory.

### **Simultaneous listing**

Attaining the highest price for each item requires finding the largest possible audience of buyers. For that reason, leading Reverse Logistics Platforms support the ability to list products on multiple marketplaces at the same time. The need to avoid overselling requires that this functionality respond in real-time to market conditions.

When an item is routed to D2C or B2B remarketing, the Marketplace Management Engine ensures that process happens with minimal incremental cost per item.

## C5. REPORTING & ANALYTICS

One problem with basic reverse logistics management is that retailers and consumer brands lack data they can use to understand and improve performance. This includes information on the location and condition of on-hand inventory, as well as information on the return reason. Advanced Reverse Logistics Platforms not only capture this data but present this information back to users, so they can begin to understand trends and remediation tactics. Specifically, these platforms include the following Reporting & Analytics capabilities:

### **Built-in visibility reporting**

Acting as the “system of record” for all things reverse logistics, these platforms must include built-in dashboards and reports that provide insight into the status of all inventory under management. This includes reports on aged inventory, on-hand inventory, and a variety of other types of data.

### **Data warehouse and Business Intelligence (BI) integration**

A retailer and brand's Reverse Logistics Platform aggregates product data, sources new data from consumers, and generates valuable insights. By integrating this data with existing operational systems and making it available for ad hoc analysis, brands can generate new sources of business value. As a result, these systems must be compatible with various off-the-shelf BI and data warehouse applications.

By providing this level of visibility and reporting, Reverse Logistics Platforms allow those who manage the reverse logistics network to focus on what works, triage what does not, and continuously improve performance across the entire reverse logistics network.

## D. CONCLUSION

The desire of retailers and consumer brands to capture savings throughout their entire supply chain and the increasing focus on returns management has amplified the importance of reverse logistics. While the particular features of each Reverse Logistics Platform may be different, most leading retailers and consumer brands are investing in technology that enables them to approach reverse logistics holistically. Thus, these platforms not only power the four walls of a return center, but also drive greater visibility, better recovery, and faster velocity across an entire reverse logistics network. Perhaps most importantly, these brands are investing in Reverse Logistics Platforms that offer them the control and flexibility required to meet their unique business needs.

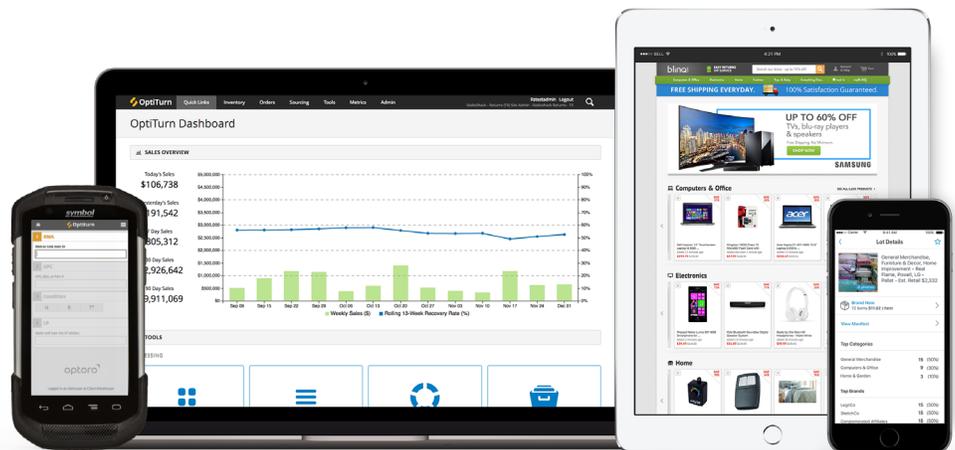
## ABOUT OPTORO

Optoro, Inc. is a technology company that is transforming the way retailers process, manage, and sell their returned and excess inventory. Through comprehensive, world-class data analytics, Optoro's software platform determines the best path for returned and excess goods, maximizing recovery value, enabling consumers to get great deals, and reducing environmental waste.

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