



Chapter 15 Managing Reverse Flows in the Supply Chain

- Traditionally, reverse flows were not viewed as adding value for customers or revenue for the manufacturer or producer.
- Information and financials (cash) are also an important dimension of reverse logistics and closed loop supply chains.
- Global supply chains present challenges and opportunities for reverse flows (e.g. difficulty in returning goods to distant manufacturing locations).



Importance and Magnitude of Reverse Flows

- Transportation cost of returns is very high due to uneven sizes, damages and generally poorer condition of packaging.
- Retailers lose 3 to 5% of gross sales to returns.
- Internet returns are about double the store sale returns.



Eight categories of reverse flows:

- Products that have failed; are unwanted, damaged, or defective; but can be repaired or remanufactured and resold
- Products that are old, obsolete, or near the end of their shelf life but still have some value for salvage or resale
- Products that are unsold from retailers, usually referred to as overstocks that have resale value
- Products being recalled due to a safety or quality defect that may be repaired or salvaged



Eight categories of reverse flows:

- Products needing “pull and replace” repair before being put back in service
- Products that can be recycled such as pallets, containers, computer inkjet cartridges, etc.
- Products or parts that can be remanufactured and resold
- Scrap metal that can be recovered and used as a raw material for further manufacturing

Reverse Logistics Systems versus Closed Loops

- Reverse logistics—The process of transporting goods from their final destination for the purpose of capturing value or for proper disposal.
 - Reverse logistics involves the processes for sending new or used products “back up stream” for repair, reuse, refurbishing, resale, recycling, or scrap/salvage (e.g. recalled food & drugs, damaged printer, malfunction TV)
- Closed loop supply chains—Designed and managed to explicitly consider both forward and reverse flows activities in a supply chain.
 - Explicitly designed from the start for both forward and reverse flows (e.g. empty cartridges, beverage bottles, retread truck tires)

Figure 15-1

A Closed Loop Supply Chain for Cartridge Reuse

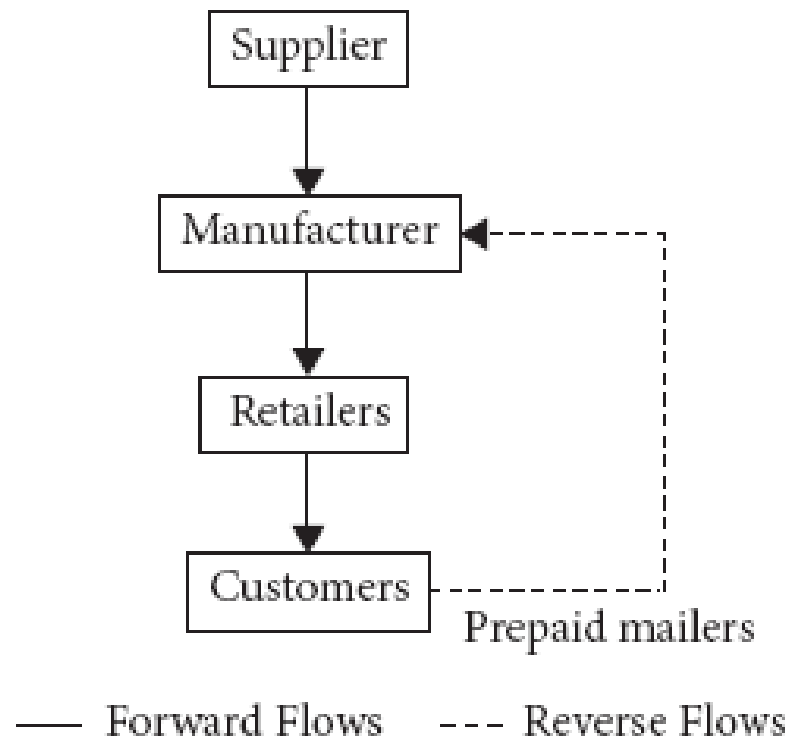
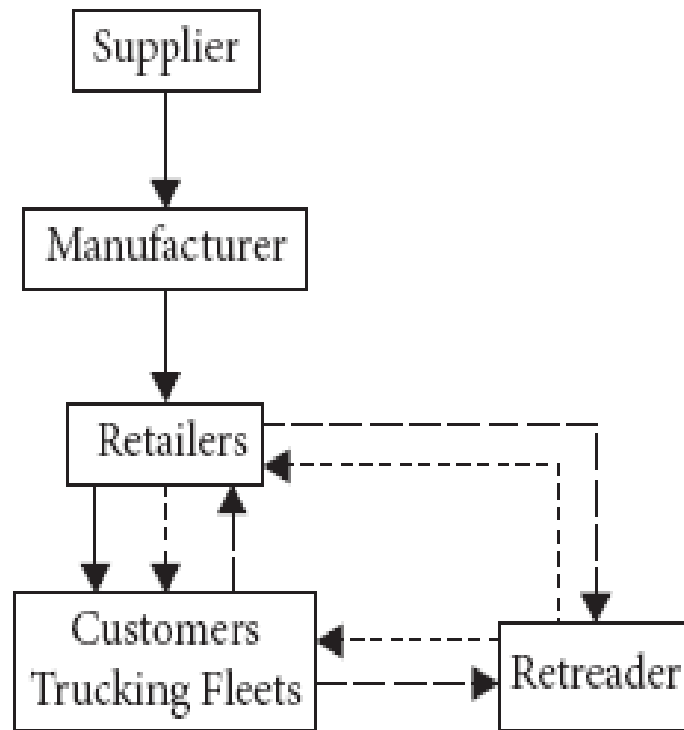


Figure 15-3

A Closed Loop Supply Chain for Commercial Tire Retreading

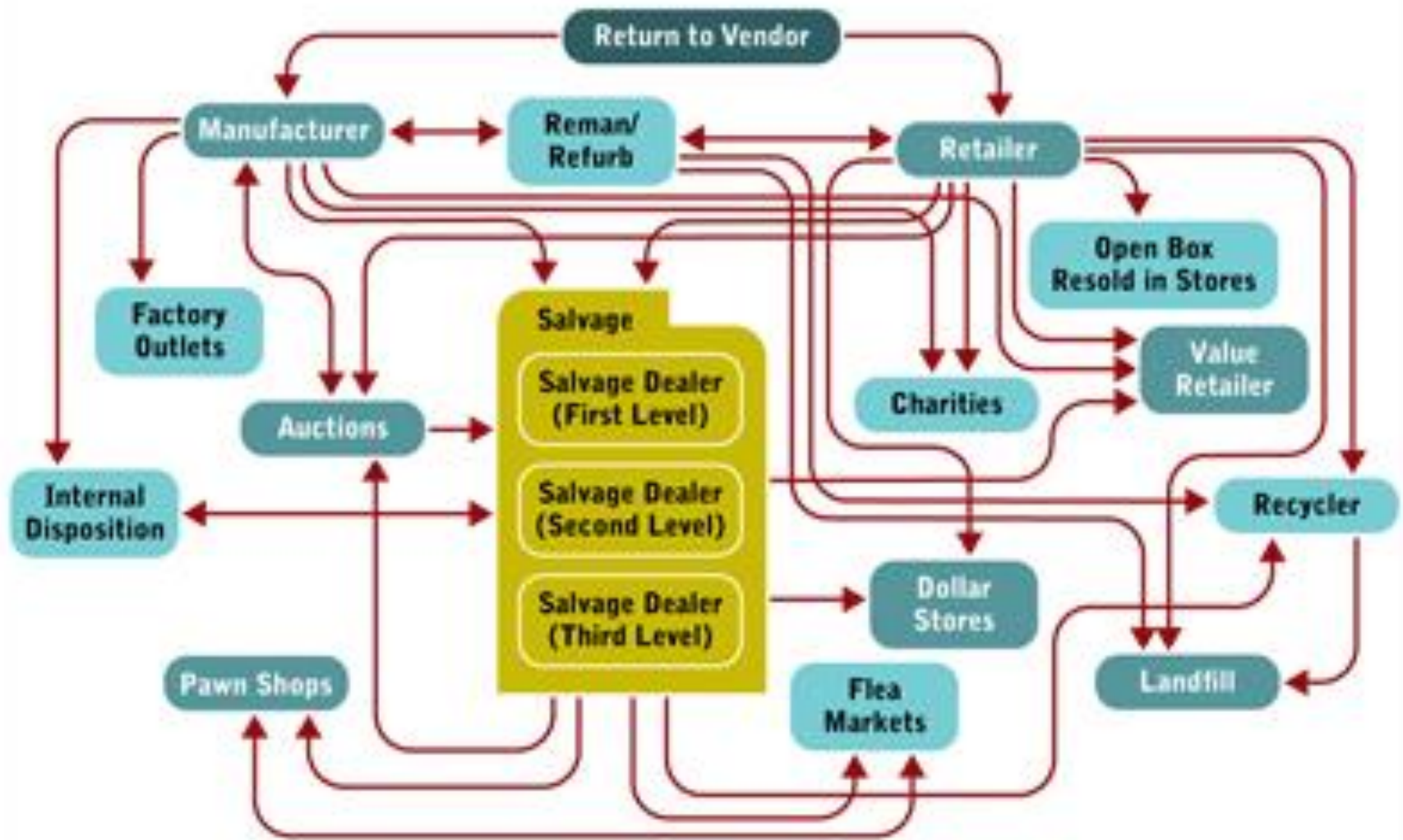


— Forward Flows - - - Reverse Flows - . - Remanufactured Flows

Reverse Logistics System



Product Flow to Secondary Markets (Retail Example)



Adapted from: Dale S. Rogers, Zachary S. Rogers, Ronald Lembke, "Creating Value Through Product Stewardship and Take-Back," Sustainability Accounting, Management and Policy Journal, Vol.1, No. 2, , 2010.

Difference between Forward & Reverse Logistics

Forward

- Product quality uniform
- Disposition options clear
- Routing of product unambiguous
- Forward distribution cost more understandable
- Pricing of product uniform
- Inventory management consistent

Reverse

- Product quality not uniform
- Disposition not clear
- Routing of product ambiguous
- Reverse cost less understandable
- Pricing of product uniform
- Inventory management not consistent

Difference between Forward & Reverse Logistics

Forward

- Product life cycle manageable
- Financial management issues clearer
- Negotiation between parties more straight forward
- Type of customers easier to identify & market to
- Process visibility more transparent

Reverse

- Product life cycle less manageable
- Financial management issues unclear
- Negotiation between parties less straight forward
- Type of customers difficult to identify & market to
- Process visibility less transparent

Reverse Logistics

- Customer Returns
 - Reasons for customer returns include defective or unwanted items, warranty problems, recalls, and miss-shipments.
- Environmental Challenges
 - Recycling and environmental concerns are frequently associated with regulatory policy. Increasingly a focus of firms in supply chain design.
- Economic Value
 - Corporations increasingly view reverse flows as a value stream instead of a waste stream.
- Making reverse flows profitable is a challenge as well as an opportunity.

Achieving a Value Stream for Reverse Flows

- The barriers below may be internal or external:
 - Priority relative to other issues and potential projects or programs in the organization
 - Lack of attention from top management in the organization
 - Financial resources necessary for operations and asset infrastructure
 - Personnel resources required to develop and implement the reverse flows program
 - Adequacy of material and information systems to support the returns program
 - Local, state, and federal restrictions and/or regulations
- 3PL can add economic value in managing reverse logistics .

Recommendations for Managing Reverse Flows:

- **Avoidance**—Producing high-quality products and developing processes to minimize or eliminate returns
- **Gatekeeping**—Checking and screening merchandise at the entry point into the reverse flows process to eliminate unnecessary returns or minimize handling
- **Reducing reverse cycle times**—Analyzing processes to enable and facilitate compression of time for returns to enhance value recapture
- **Information systems**—Developing effective information systems to improve product visibility, reduce uncertainty, and maximize economies of scale.
- **Returns centers**—Developing optimum locations and facility layouts for returns centers to facilitate network flow



Recommendations for Managing Reverse Flows:

- **Asset recovery**—Classifying and disposing of returned items, surplus, scrap, and obsolete items to maximize returns and minimize cost
- **Pricing**—Negotiating the best price for products being returned and resold
- **Outsourcing**—Considering a relationship with a third-party organization to handle and manage reverse flows in cases where existing personnel, infrastructure, experience, and/or capital may not be adequate to implement a successful program
- **Zero returns**—Developing a policy to exclude returns by giving a returns allowance and/or “destroying” the product in the field
- **Financial management**—Developing guidelines and financial procedures to properly account for charges against sales and related financial issues when items are returned by customers