**Supply Chain Management (Reverse)**

|  |  |  |
| --- | --- | --- |
|  | **Reverse Supply Chain:** Material flows upstream. |  |
| **Supply Chain**:🡨 Flow of Information 🡨

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |

🡪 Flow of Material 🡪 |
| **Reverse Supply Chain**:**🡨 Flow of Material 🡨**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Supplier | 🡨 | Manufacturer | 🡨 | Distributor | 🡨 | Retailer | 🡨 | Customer |

. . . |

**Primary Market vs. Secondary Market**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
| *Primary**Market* | Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |
|  |  |  |  |  |  |  |  |  | 🡪 |

|  |  |  |  |
| --- | --- | --- | --- |
| Evaluation & Disposition | 🡨 | Receive & Document | 🡨 |

*Reverse**Supply**Chain**Process*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | DisposalOr Scrap |  | Recycle |  | RemanufactureOr RefurbishOr Repair |  | Reuse |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
| *Secondary**Market* | Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |

. . . |

|  |
| --- |
| Receiving & Documenting Material can be caused by: |
| “Returns” | “Returns” which are triggered by downstream agents. |
| “Recalls” | “Recalls” which are initiated by upstream decisions. |
| “Recycle” | “Recycle” which include cooperative policiesbetween upstream and downstream parties. |

|  |
| --- |
| Evaluation & Disposition of Material to secondary market can include: |
| Reuse | No modification. Return to Primary or Secondary Market. | Refunds or Exchanges |
| Repair | Modifications applied. Return to Secondary Market. | Repair or Maintenance |
| Recycle | Components, parts or material retrieved. Provide to Secondary Market or other markets. | Spare parts or Inventory. |
| Dispose | Destroy, incinerate or scrap. Eliminate or provide to scrap market. | Landfill. |

**Primary Market vs. Secondary Market**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
| *Primary**Market* | Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |
|  |  |  |  |  |  |  |  |  | 🡪 |

|  |  |  |  |
| --- | --- | --- | --- |
| Evaluation & Disposition | 🡨 | Receive & Document | 🡨 |

*Reverse**Supply**Chain**Process*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | DisposalOr Scrap |  | Recycle |  | RemanufactureOr RefurbishOr Repair |  | Reuse |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
| *Secondary**Market* | Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |
|  |  |  |  |  |  |  |  |  |  |

. |

**Customer to Manufacturer**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
| *Primary**Market* | Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |
|  |  |  | ↑ | ← | ← | ← | ← | ← | ↓ |

**Customer to Retailer to Manufacturer**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
| *Primary**Market* | Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |
|  |  |  | ↑ | ← | ← | ← | ↓↑ | ← | ↓ |

**Customer to Third-party to Manufacturer**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
| *Primary**Market* | Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |
|  |  |  | ↑ |  |  |  |  |  | ↓ |
|  |  |  |  | ← | ← | Third-party | ← | ← |  |

|  |
| --- |
| **Basic Reverse Supply Chain Strategy** |
| 1.2.3. | Recovery Cycle TimeRecovery Cycle CostRecovery Asset Value |  | 1.2. | Efficient (Lean) Chain (Centralized)Responsive (Agile) Chain (Decentralized) |

**Centralized**

**Cost – Large Inventory – Lean Supply Chain – Postponement – Functional Products**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
| *Primary**Market* | Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |
|  |  |  |  |  |  |  |  |  | 🡪 |

**Centralized**

|  |  |  |  |
| --- | --- | --- | --- |
| **Evaluation & Disposition** | 🡨 | Receive & Document | 🡨 |

*Reverse**Supply**Chain**Process*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | DisposalOr Scrap |  | Recycle |  | RemanufactureOr RefurbishOr Repair |  | Reuse |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
| *Secondary**Market* | Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |
|  |  |  |  |  |  |  |  |  |  |

. . . |

**Decentralized**

**Service – Quick Response – Agile Supply Chain – Early Differentiation – Innovative Products**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
| *Primary**Market* | Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |
|  |  |  |  |  |  |  |  |  | 🡪 |

**Decentralized**

|  |  |
| --- | --- |
| **Receive & Document Evaluation & Disposition** | 🡨 |

*Reverse**Supply**Chain**Process*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | DisposalOr Scrap |  | Recycle |  | RemanufactureOr RefurbishOr Repair |  | Reuse |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
| *Secondary**Market* | Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |
|  |  |  |  |  |  |  |  |  |  |

. . . |

|  |
| --- |
| **Strategic Reverse Supply Chain Management** |
| *Opportunities* | *Barriers* |
| Increased Customer SatisfactionSecondary MarketsEnhanced InformationSustainability | Brand ErosionLogistics Costs & Low Profit MarginsCoordination & Top Management CommitmentMinimal Legal Issues |

|  |  |
| --- | --- |
| *Supply Chain Management Overview:* |  |
|  |  | *Supply Chain Initiatives* |  |
|  |  | Lean(Cost,Waste) | Green(TBL,CSR) | Resilient(Risk) | Responsive(Agile) | Smart(Technology) |  |
| *Key Supply Chains* | Commodity Supply Chain |  |  |  |  |  |  |
| Global Supply Chain |  |  |  |  |  |  |
| Service Supply Chain |  |  |  |  |  |  |
| **Reverse** **Supply Chain**  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | *Functions* | Inventory | Logistics | Relationships | Information | Strategy |  |
|  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |  |
| --- | --- | --- |
| **Green**Reverse Supply Chain Management | **Lean**Reverse Supply Chain Management | **Agile**Reverse Supply Chain Management |

|  |  |
| --- | --- |
| **Smart**Reverse Supply ChainManagement | **Resilient**Reverse Supply ChainManagement |

|  |  |  |
| --- | --- | --- |
| **Commodity**Reverse Supply Chain Management | **Global**Reverse Supply Chain Management | **Service**Reverse Supply Chain Management |

. . . |

**References**

|  |
| --- |
| ResearchGate:Reverse Supply Chains for Commercial Returns.December 2004.<https://www.researchgate.net/publication/275247814_Reverse_Supply_Chains_for_Commercial_Returns> |
|  |
| Cognizant 20-20 Insights:Reverse Supply Chain: Completing the Supply Chain Loop.January 2011.<https://www.cognizant.com/whitepapers/reverse-supply-chain.pdf> |
|  |
| Harvard Business Review:The Reverse Supply Chain.February 2002.<https://hbr.org/2002/02/the-reverse-supply-chain> |