***Supply Chain Management – Logistics***

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| .  🡨 Flow of Information 🡨   |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Supplier | 🡪 | Manufacturer | 🡪 | Distributor | 🡪 | Retailer | 🡪 | Customer |   🡪 Flow of Material 🡪  . |

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| ***Distribution Configurations*** | |  | ***Objectives of Supply Chain Management*** |
|  | Intermediate Shipping |  | Balance “High Service Levels” with “Low Costs”  Emphasize “Continual Improvement” |
| Direct Shipment | Warehousing  Cross-docking  Transshipment |  |

**Distribution Configurations**

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|  | Direct Shipment | | | | | | | | | |  |  | Traditional Warehousing | | | | | | | | | |  |
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|  | Cross-Docking | | | | | | | | | |  |  | Transshipment | | | | | | | | | |  |
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|  |  | **Trade-off Considerations** |  |  |
|  |  | Direct Shipment vs. Intermediate Shipping |  |  |
|  |  | Centralized vs. Decentralized |  |  |
|  |  | Inventory & Transportation |  |  |
|  |  | Information & Decisions |  |  |
|  |  | Cost & Service Level |  |  |
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|  | Characteristics |  |

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| **Objectives of Supply Chain Management** |
| Balance “High Service Levels” with “Low Costs”  Emphasize “Continual Improvement” |

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|  | ***Characteristics*** | ***Decisions &***  ***Shipping*** | ***Risk***  ***Pooling*** | ***Costs*** | ***Transportation***  ***FTL/LTL&Last-Mile*** |  |
|  | ***Direct Shipment*** | Centralized | Upstream  Demand | No Warehouse  Holding | ↑-FTL ↓-LTL  ↓-Last-Mile |  |
|  | ***Cross-docking*** | Centralized | Upstream  Demand | Lower  Transportation | ↑-FTL ↓-LTL  ↓-Last-Mile |  |
|  | ***Warehousing*** | Decentralized | Downstream  Inventory | Higher  Holding | ↓-FTL ↑-LTL  ↑-Last-Mile |  |
|  | ***Transshipment*** | Decentralized | Downstream  Inventory | Higher  Transportation | ↓-FTL ↑-LTL  ↑-Last-Mile |  |
|  | FTL(Full TruckLoad), LTL(Less than TruckLoad) | | | | |  |
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**Distribution Configurations**

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|  | Direct Shipment | | | | | | | | | |  |  | Traditional Warehousing | | | | | | | | | |  |
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|  | Cross-Docking | | | | | | | | | |  |  | Transshipment | | | | | | | | | |  |
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|  | Strategies |  |

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| *Winners* | Inventory  Risk Pooling | No Warehouse  Holding Costs | No Warehouse  Costs | High Customer  Technical Support |
| **Warehousing** | X |  |  |  |
| **Cross-Docking** |  | X |  |  |
| **Direct Shipment** |  |  | X |  |
| **Transshipment** |  |  |  | X |

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| ***Description*** | **Advantages** | **Disadvantages** |
| **Warehousing** | Immediate Inventory | Limited Product Variety |
| **Cross-Docking** | Efficient Transportation  No Warehouse Holding Cost | Information Requirements & planning |
| **Direct Shipment** | No Warehouse Cost  Simplifies Logistics | Higher Transportation Costs |
| **Transshipment** | Product Availability  Virtual Customer Support | Distributor Coordination |

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| ***Drivers*** |
| Warehousing 🡪 Cross-Docking |
| Warehousing 🡪 Direct Shipment |
| Cross Docking 🡪 Direct Shipment |
| Distributed Inventory 🡪 Centralized Inventory |
| Distributed Information 🡪 Centralized Information |

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|  | Modes of Transportation |  |

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| *Mode* | **Distance** | **Size of Load** | **Overseas** | **Cost** | **Speed** |
| **Truck** | Short | Small | No | Medium | Medium |
| **Air** | Long | Small | Yes | High | High |
| **Rail** | Long | Large | No | Low | Low |
| **Water** | Long | Large | Yes | Very Low | Very Low |