**Distribution System Design**

- Plants/Suppliers
- Warehouse
- Retailer
- Retailer
- Retailer
- Retailer

**Different distribution structures**

- Direct shipment
- Warehousing
- Cross docking
Crossdocking is...

moving products directly from inbound to outbound vehicle without storage in between.
The main attractions

- Reduce inventory holding costs
- Reduce transportation costs

Wal-Mart

- **Staple stock** — items that customers expect to find in the same place in every Wal-Mart (toothpaste, shampoo, etc.).
  - These items are warehoused so there are no stockouts.
  - Pull based distribution

- **Direct ship** — items that Wal-Mart buyers have gotten a great deal on and are pushing out to stores.
  - These items are crossdockd; stores don’t know what they’re getting until the truck arrives!
  - Push-based distribution
Cross docking

The right products

- High demand
- Low variance
- Easy to handle

Cross docking

Other examples

- Computer firms consolidate CPU, monitor, and printer in merge in transit centers.
- LTL and package carriers (UPS, FedEx) crossdock to consolidate freight.
- JIT manufacturers crossdock inbound supplies in a nearby warehouse.