

Implementation options

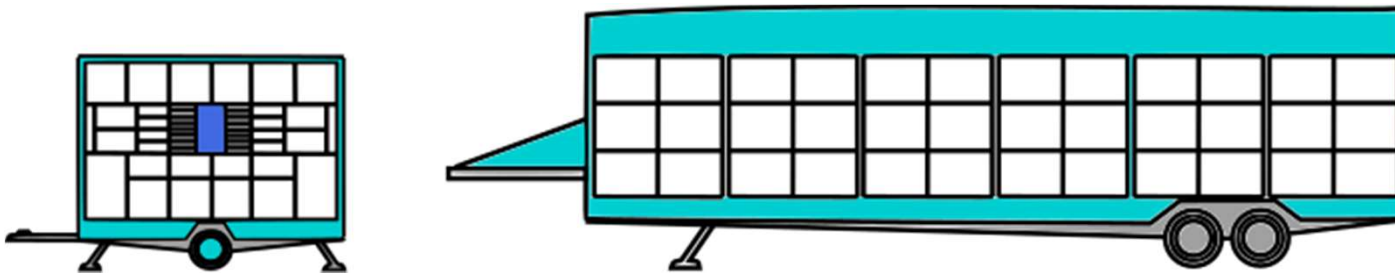
Delivery trailer concept is versatile

www.pickdelso.com

7.8.2019

What kind of trailer?

- Delivery trailer is transportable with a road vehicle from a picking site to a delivery site
- Capacity can be flexibly used such that one or more lockers are reserved for an order
- Delivery trailers can be of various size and they are possibly intended for various purposes:

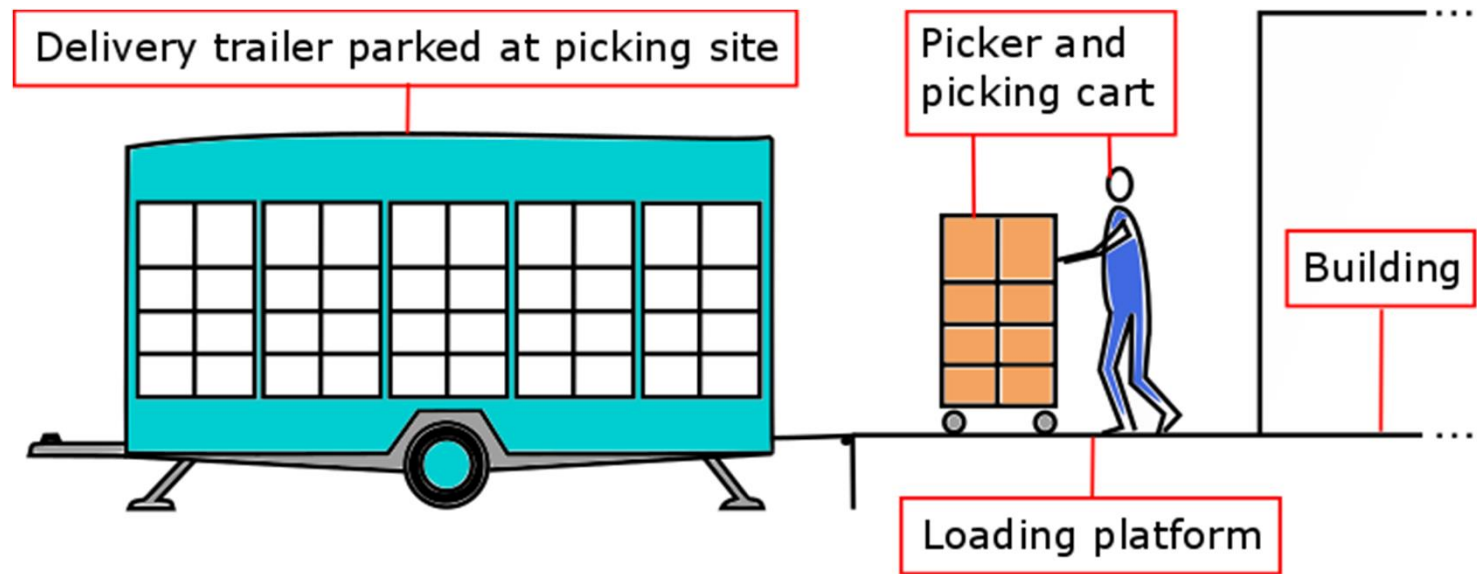


When to use it?

- Especially when there is a need to transport a large number of items to a delivery point
- Delivery trailer can be used, for example, to deliver (postal) packets, products, or laundry to customers
- Racks of Delivery trailer suit for goods-to-man methods to be used in sortation hubs or dark stores
- Racks (picking carts) suit for a man-to-good method, if walking distances are short enough

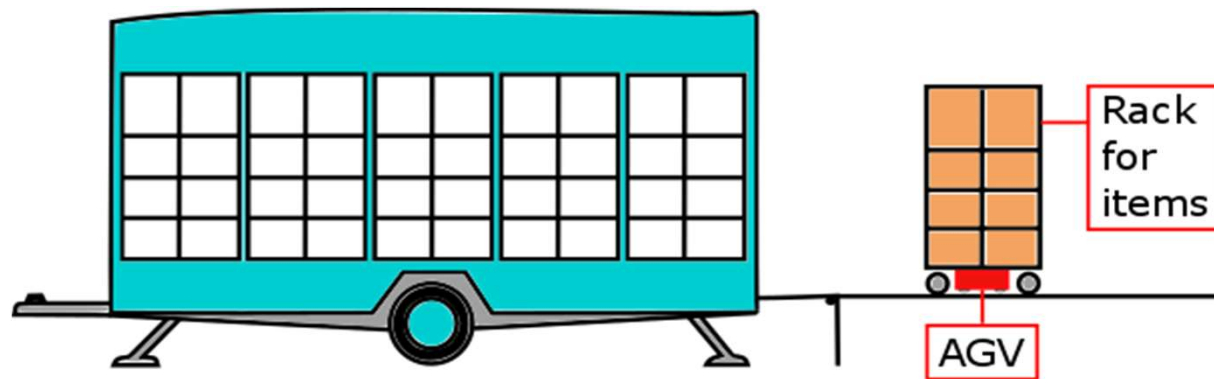
Manual loading

- Loading and storing can be the same process phase
- Picking phase ends such that a picker pushes a picking cart into Delivery trailer:



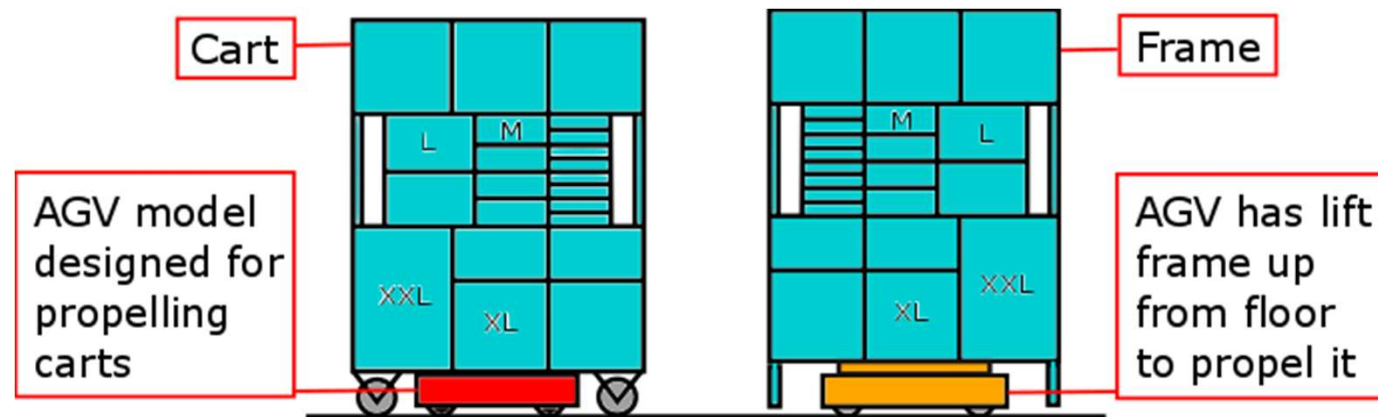
Loading by AGVs

- Loading of Delivery trailer can be performed using an AGV (automated guided vehicle)
- Loading dock or a loading platform (as here) is used
- Picking phase ends such that the AGV moves a rack into Delivery trailer:



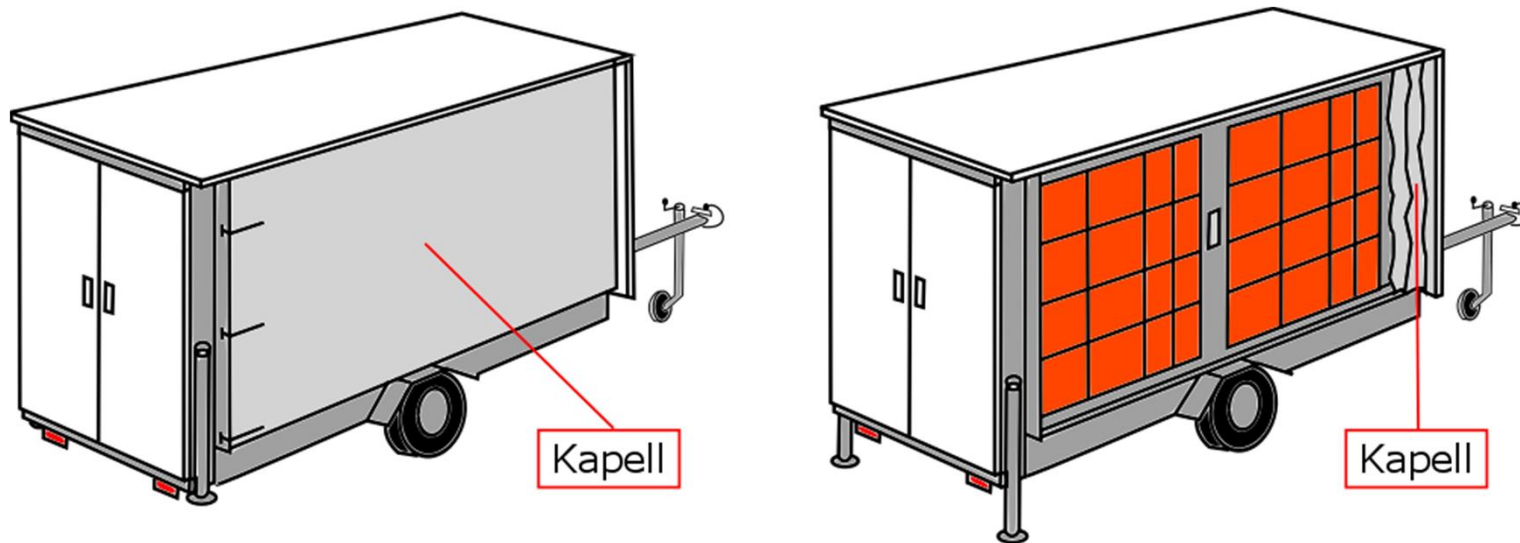
AGV models

- AGV attaches itself to the bottom of a rack
- Rack is a cart with wheels or a frame with legs
- Some known manufacturers: Amazon Robotics (previously Kiva Systems), Swisslog (CarryPick), PEK3
- Examples:



Covering of locker doors

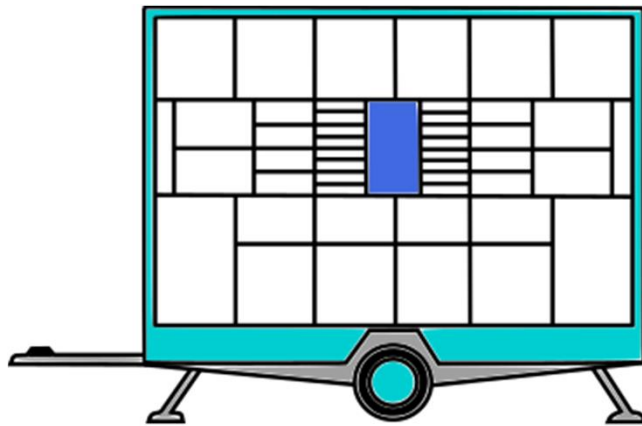
- Dust, rain water, snow, and ice may cause troubles
- Locker doors can be covered for transportation
- Then the locker doors stay clean and operational
- Example:



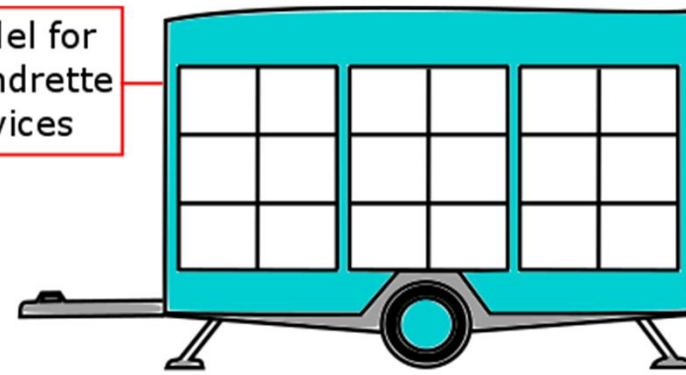
Different needs

- For example: a model for laundrette services, another model for (postal) parcels, and another model (with cool lockers) for shopping bags
- Refrigerator and/or freezer temperature are needed for certain foodstuff
- Instead of electric cooling, ice gel packs can be used
- Ice gel pack may have a pledge payment
- Instead of AGVs, carts or racks can be conveyed by other apparatus

Examples

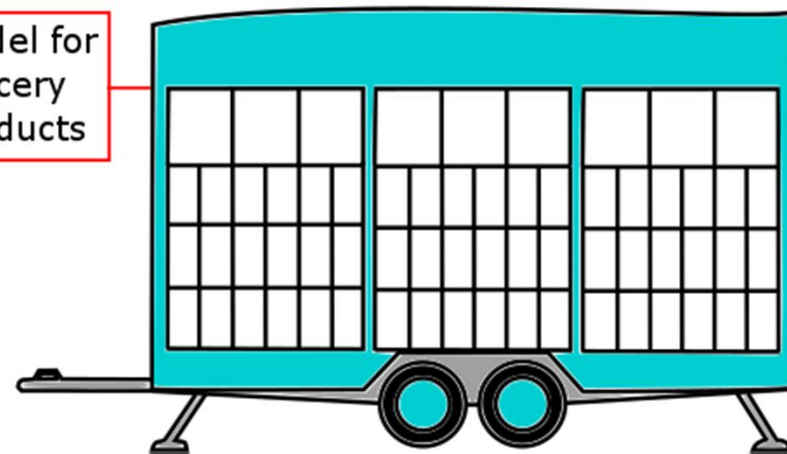
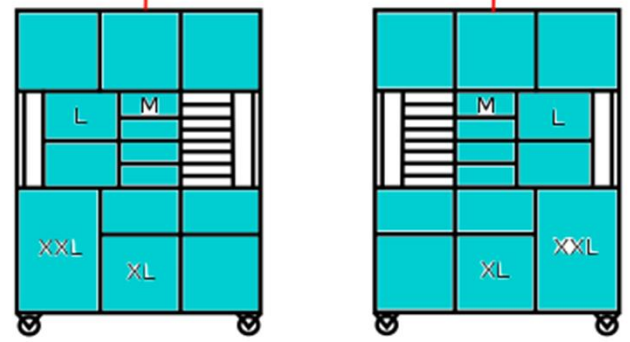


Model for (postal) parcels



Model for laundrette services

Racks for the above model



Model for grocery products

Heavy duty trailer

- Average volume of a grocery order is quite high, for example, five shopping bags
- In addition to grocery orders, the delivery capacity is needed for large-sized items such as TV monitors
- Capacity can be increased by manufacturing large-sized Delivery trailers:

