

# Digital Disruption: More Cars on Railcars?

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# Post-recession, railroads have lost market share to trucks and short sea from Mexico for finished vehicle transport

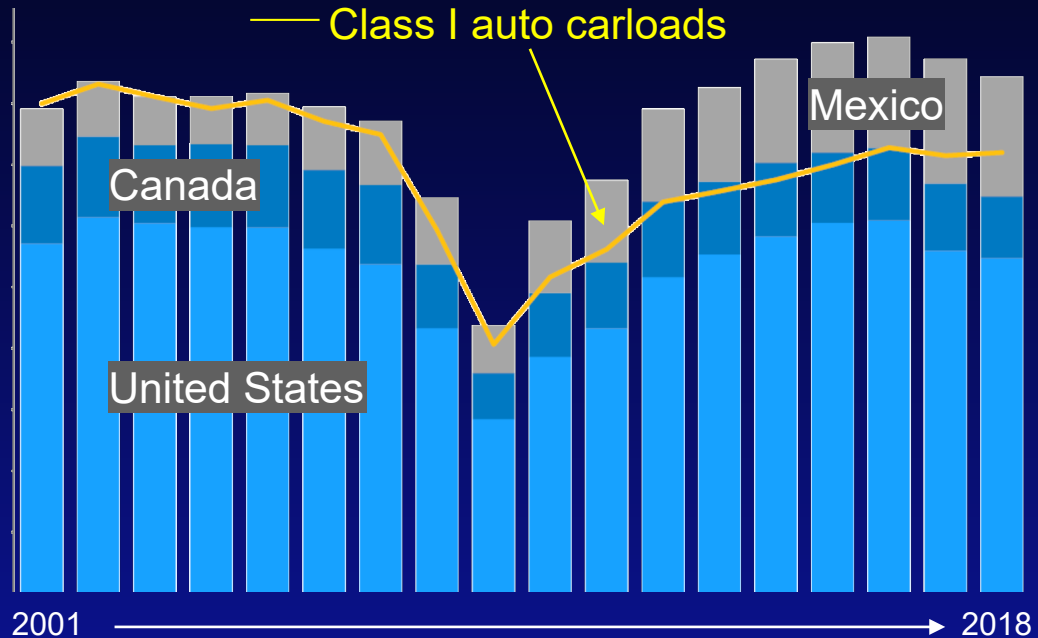
## Finished vehicle production

- Pre-recession peak production: ~16.8M in 2002
- Post-recession peak production: ~18M in 2016

## Vehicle carloadings

- Finished vehicle carloadings peaked in 2002 at ~2.5M
- Post-recession peak in 2016: ~2.2M, despite record production levels

North American vehicle production vs. rail carloads  
Millions



# There may be several reasons for this slump

## Changing vehicle distribution patterns = more empty car-miles

- No production in large consuming markets such as the West Coast and Northeast
- Increasing production in Mexico, but little finished vehicle movement into Mexico
- Empty car-miles increase costs and lead to higher rates
- The TrailerTrain multilevel reload distribution program is trying to reduce empty car-miles

## Final distribution is still done by truck

- The cost of unloading railcars and loading vehicles to truck is labor intensive and tends to penalize shorter hauls
- Trucks are faster and more flexible, so can often deliver shorter haul movements direct from plant to dealer more efficiently

## Railcar shortages

- Congestion episodes post-recession led to railcar shortages and lost business
- Managing a specialized, 40-year life asset to routine business cycles and mix changes leads to inevitable mismatches between supply and demand

# One near-term innovation is the convertible auto rack – this growing railcar fleet provides more flexibility



- Not convertible on the spot: Takes about one day at a car shop facility
- Allows better fleet flexibility to meet changing mix of sedans and SUVs/trucks



- A bit more expensive than a fixed rack
- Expect an eventual fleet of:
  - 40% bi-levels
  - 40% tri-levels
  - 20% convertibles

# Disruption is the name of the game though and will lead to major supply chain changes

## Direct purchase/delivery

- The “Amazon economy” is:
  - Bypassing traditional B&M sales channels
  - Creating customers who expect fast delivery
- Alternative sales channels are forging ahead:
  - Tesla looking to cut out dealerships
  - Channels such as Costco are taking customer orders, soliciting dealer fulfilment



## Autonomous vehicles

- Could reduce terminal and first/last-mile costs
  - Stage themselves at terminals in the proper queues for processing and loading
  - Drive themselves on/off railcars – a relatively simple task, although human intervention likely still need to secure the vehicle to the railcar
  - Drive themselves from the destination terminal directly to the customer



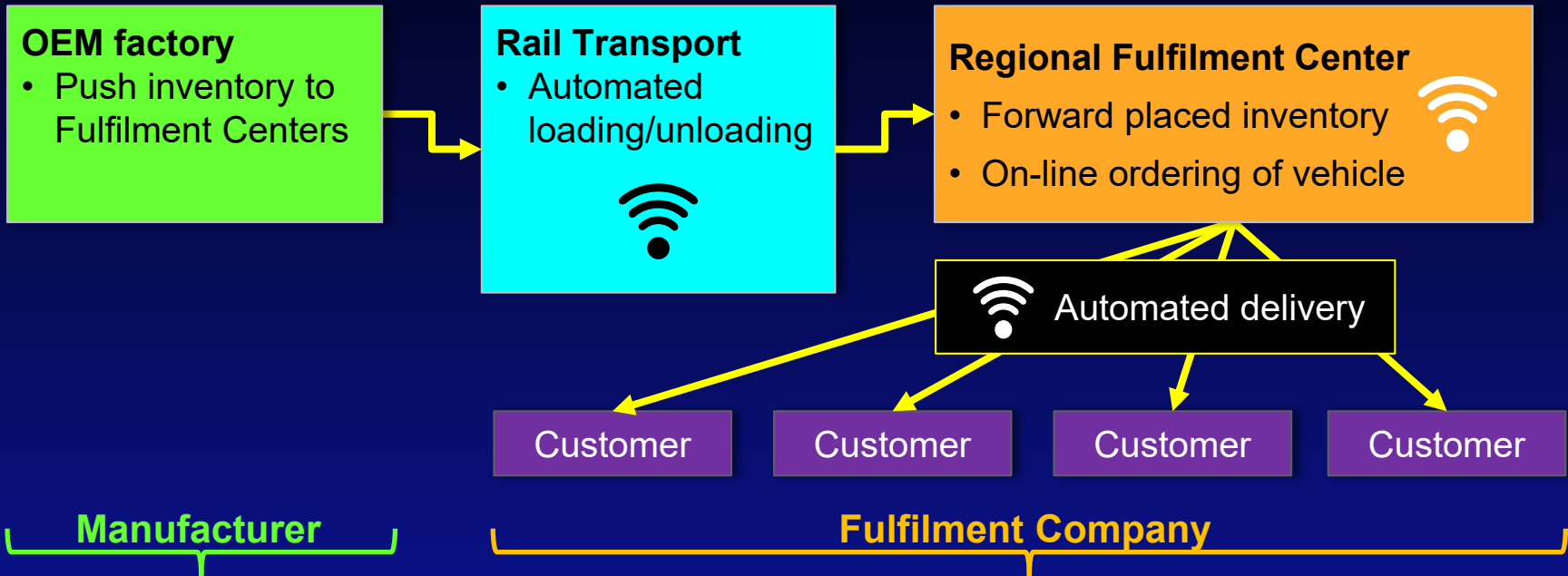
## Mobile phone apps

- Likely to replace car keys, simplifying transfer of control between parties in the supply chain

# Fulfilment companies take an 'Amazon-like' role in FVL

## Rail transport gets an advantage through automation

### Finished vehicle supply chain reimaged





OLIVER WYMAN