



# Driverless?

## Autonomous Trucks and the Future of the American Trucker

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USA

# A robot apocalypse?

Fears of massive job loss

**1.8 million American truck drivers could lose their jobs to robots. What then?**

One of the last well-paying working-class jobs is basically doomed.  
By David Roberts | @drovo | david@vox.com | Aug 3, 2016, 8:40am EDT

**Self-Driving Trucks Are Going to Hit Us Like a Human-Driven Truck**

...imminent need for basic income in recognition of our machine-driven future

**GOLDMAN SACHS: Self-driving trucks will kill 300,000 jobs per year**

JON LESAGE, OILPRICE.COM  
NOV. 15, 2017, 6:06 PM

# My research

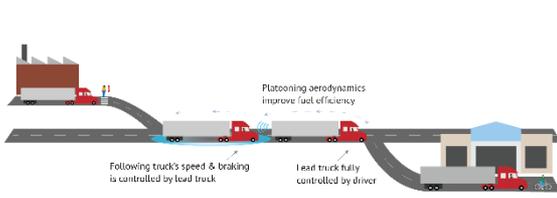
## Data:

- In-depth industry research
- Extensive interviews with: computer scientists and engineers, Silicon Valley tech companies, venture capitalists, trucking manufacturers, trucking firms, truck drivers, unions, and academic experts

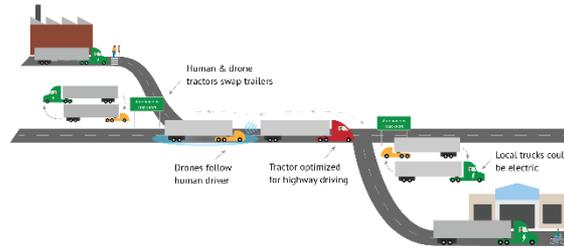
## Methods:

1. Understand the technology
2. Develop possible scenarios of adoption (scenario forecasting)
3. Estimate potential labor impacts
4. Identify alternative adoption scenarios and policy responses

# 6 potential adoption scenarios



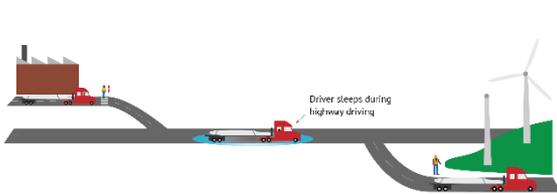
Human-human platooning



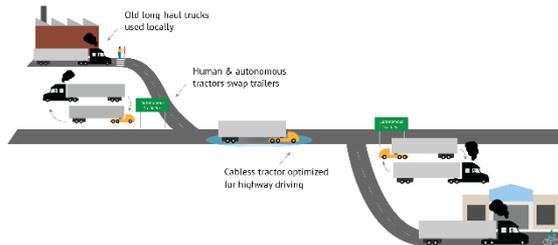
Human-drone platooning



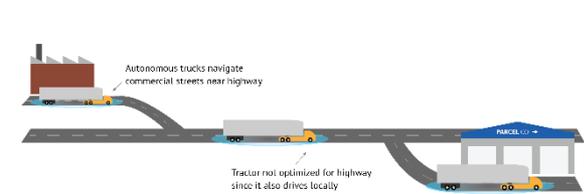
Highway automation + drone operation



Autopilot

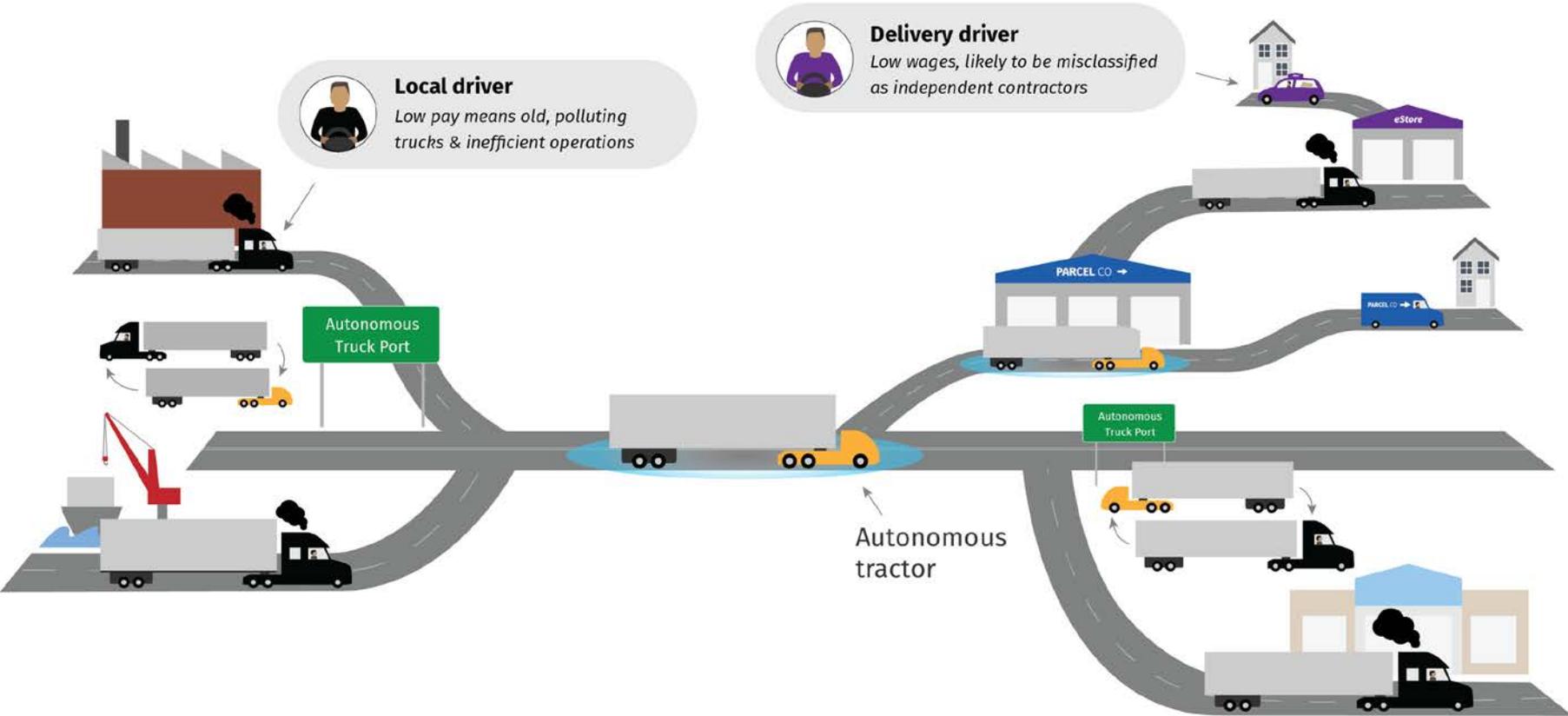


Highway exit-to-exit automation



Facility-to-facility automation

# Most likely adoption scenario absent policy intervention



# Most at risk: Long-distance drivers

## CHARACTERISTICS AFFECTING ADOPTION

■ Strengthens case for adoption     
 ■ Weakens case for adoption     
 ■ Obstacle to adoption

INDUSTRY SEGMENTS

	Primary driving environments	Uninterrupted highway driving	Non-driving tasks	Customer facility Type	Route regularity	Union presence	Typical carrier size
For-hire truckload (dry and refrigerated)	Highway	Extensive	Minimal	Large Warehouse	Moderate	None	Medium/Very Large
Less-than-truckload and parcel linehaul	Highway	Extensive	Minimal	Internal Terminal	High	Moderate	Medium/Very Large
Port driving	Urban/Highway	Minimal/Significant	Minimal	Large Warehouse	Moderate to High	Low	Small
Specialized truckload	Highway/Complex	Significant/Extensive	Significant/Extensive	Varied Commercial	Varied	Low	Small/Medium
Intermodal	Urban	Minimal	Minimal	Large Warehouse	Moderate	Varied	Small/Medium
Local pickup and delivery (part of LTL and parcel)	Local/Urban	Minimal	Significant/Extensive	Commercial or Residential	Varied	Varied	Very Large
Local – other	Local/Urban	Minimal	Significant/Extensive	Varied	Varied	Varied	Small

High risk of automation

Lower risk of automation

Key segments of the trucking industry	Average annual wage	Number of drivers	Independent contractors	Potential impact of autonomous trucks
<b>LONG DISTANCE DRIVING</b>				
Full truckload	\$46,641– \$53,690	211,000	Common	Significant job loss
Less-than-truckload	\$69,208	51,000	Uncommon	Significant job loss
Parcel	\$59,660	32,000	Uncommon	Significant job loss
<b>LOCAL DRIVING</b>				
Ports	\$28,783 (contractors) \$35,000 (employees)	75,000	Predominant	Uncertain
Pickup and delivery	\$35,610	877,670	Mixed, potential to shift towards contractors	Strong job growth
<b>POTENTIAL NEW SEGMENT (PROJECTED)</b>				
Autonomous truck ports	?	100,000+	?	Strong job growth

**Lose better-paying jobs**

**Gain bad jobs**

# Disparate impacts

Older & rural workers lose better-paying jobs, urban & younger workers gain bad jobs

## Demographics

- Displacement likely to be concentrated in current long-distance workforce (older white men)
- New workers coming into the industry and employed in growth jobs (local driving) will likely be younger and disproportionately workers of color and immigrants
- They will feel the impact of how public policy shapes the wages and workings conditions of future driving jobs

## Geography

- Growth in driving jobs will likely be in urban and suburban areas
- Rural areas will likely be left behind