

# Freight Technology Challenges

NE Tarrant Transportation Summit  
February 17, 2017

**Allan Rutter**

**Texas A&M Transportation Institute**

# Overview

- Freight Technologies under Study
- Freight HAV Applications
- Future Prospects

# FREIGHT TECHNOLOGIES UNDER STUDY

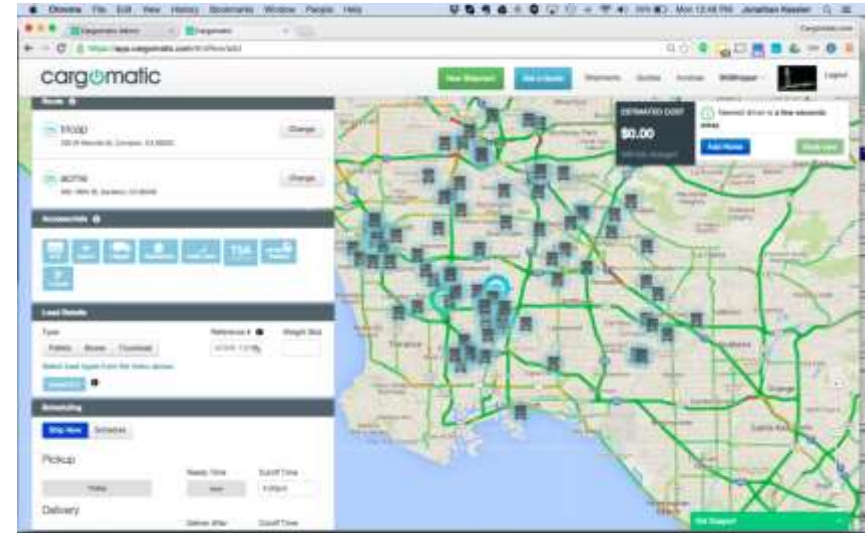
# Automated, Zero Emission Freight Systems

- Examples: Freight Shuttle
- Uses: High-traffic corridors, port terminals
- Barriers: ROW, costs
- Video



# Truck-Shipper Matching Systems

- Examples: Cargomatic, other port-drayage systems
- Uses: Terminal appts., backhaul matching
- Barriers: Shipper usage, company stability



# Truck Parking Information Systems

- Examples: MI, MN, FL, others
- Uses: Safety, HOS compliance
- Barriers: Cost, industry acceptance, public interest



# FREIGHT HIGHLY AUTOMATED VEHICLE APPLICATIONS

# Truck Automation

- Expansion of driver assistance technology to driver replacement
- Private sector initiatives abound
- Adoption will be complicated





# Trucking CV Pilot in Wyoming

- One of 3 USDOT CV pilots
- WYDOT maintenance vehicles on I-80 instrumented to transmit and receive road conditions from TMC
- Roadside DSRC equipment will be involved
- Road weather data shared with motor carriers to transmit to truckers



# Truck Platooning Benefits

- At 65 mph, truck uses 65% of fuel to overcome aerodynamic drag
- Platooning could bring 5-20% fuel savings by closing distances between trucks



# USDOT Truck Platooning Research

- Driver Assistive Truck Platooning—Two Projects
- V2V/Radar
- Longitudinal control only—drivers steer
- CA, AL pilot projects



# TTI-TxDOT Platooning Research

- TxDOT-funded research
- Examine feasibility of 2-truck platoon
- Longitudinal and lateral controls
- Included proof of concept demo this past July
- Study included:
  - Documented lessons from other demonstrations
  - Regulatory or legislative roadblocks
  - Implementation scenarios
  - Develop, test and demonstrate concept
- Team included private trucking component manufacturers

# FUTURE PROSPECTS

# Things to Consider in Forecasting the Future of Freight

- Public response to technology
- Changes in risk acceptance
- Changes in freight business environment



Private application of technology  
always outpaces...



...public sector responses in  
regulation and infrastructure

# The Risk Environment Has Changed

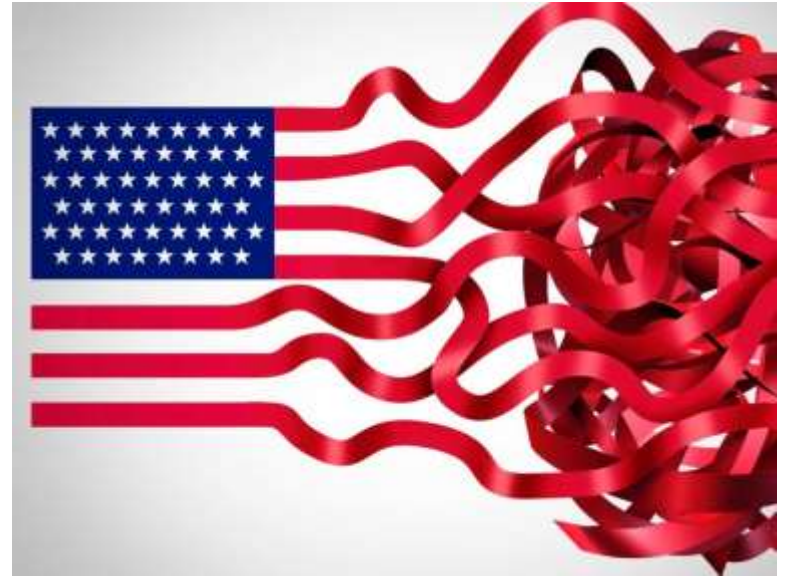
- \$Billion Insurance/Legal Industry now involved
- Costs of failure for industrial sector > tech sector
- Instant access to news > understanding of facts





# Business and Regulatory Environment Is Uncertain

- Business models are shifting
- Will all modes share equally in productivity gains?
- Regulations and demography constraining long term trucking capacity
- Environmental regulations affect freight capacity



**QUESTIONS?**