



AUTONOMOUS VEHICLES  
&  
THE TRANSPORTATION THEORY OF EVERYTHING  
BY WILLIAM F. LYONS JR, PE, PTP, ENV SP

STRATEGIC PERSPECTIVE. EXCEPTIONAL RESULTS.

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# WHAT DOES TRANSPORTATION MEAN TO YOU?

Transit?

Urban Land?

Headways?

Fixed Schedule?

Fixed Routes?

High Occupancy?

Highways & Roads?

Suburban Land?

Capacity?

Safety?

Freedom?

Low Occupancy?

# CONVERGENCE!

- ❑ Disruptive Technology!
- ❑ Sharing Economy!
- ❑ Highways that act like transit systems
- ❑ Transit systems that act highways

# LAND USE IMPLICATIONS

- ❑ Parking as a Land Use Goes Away
- ❑ Urban Density can Go UP
- ❑ Quality of Urban Life Can Improve
  - ❑ Safety, Air Quality, Mobility/Access to Employment
- ❑ Sharing Economy Moves Forward
  - ❑ Coworking

# MOBILITY IMPLICATIONS

❑ Vision Zero – No Accidents!



❑ Capacity of highways goes UP



❑ Reduced congestion



❑ Parking lanes become extinct



❑ Convergence of auto and transit



❑ No more traffic signals!



# QUALITY OF LIFE IMPLICATIONS

- Increased productivity during commute
- Improved mobility for aging drivers
- Reduced stress due to commute
- Increased disposable income

# SO WHAT IS IT?

- ❑ Connected vehicles
- ❑ “Smaht” vehicles
- ❑ Sensor based infrastructure
- ❑ Global positioning systems
- ❑ **Intelligent Transportation Systems**





# WHO'S DOING IT?

- Who Isn't?



# WHAT DOES IT LOOK LIKE?



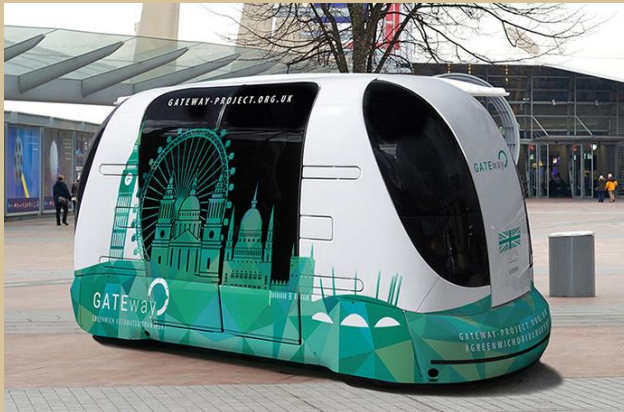
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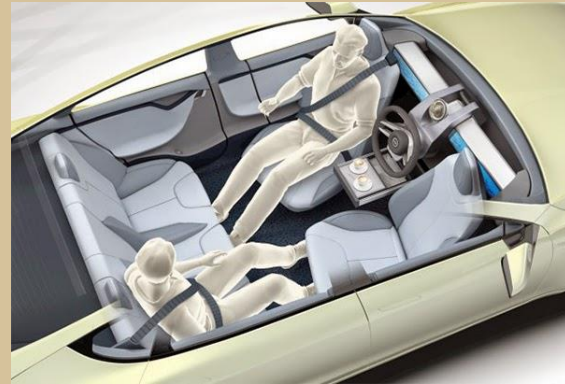
# WHAT DOES IT LOOK LIKE?



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# POSSIBLE DOWNSIDES

- ❑ Induced demand due to increased capacity
- ❑ Induced demand due to shortened travel times
- ❑ Inability to realize environmental benefits
- ❑ TOD less attractive
- ❑ Potential to induce urban sprawl



# BARRIERS TO IMPLEMENTATION

- ❑ Regulations
  - ❑ Level 4 automation, which the government defines as a car that can make all critical decisions for an entire trip
- ❑ Technology
  - ❑ Weather degradation of sensors
- ❑ Deployment of smart highways
  - ❑ Very Capital Intensive

# RECAP!

- ❑ Next Disruptive Technology Trend
- ❑ Logical Extension of the Sharing Economy
- ❑ Radical Changes to Our Understanding of:
  - ❑ Transportation Systems
  - ❑ Land Use
  - ❑ Quality of Life
- ❑ Convergence of Auto and Transit Modes

# RECAP!

There You Have It!

The Transportation Theory of Everything!



# QUESTIONS

STRATEGIC PERSPECTIVE. EXCEPTIONAL RESULTS.