

Orf 467
Transportation Systems Analysis
Fall 2017/18



Due via Blackboard on Tuesday Sept 26 before 7pm

Homework #2

How will the Mobility Environment Change by 2038?

There are many key questions below. Choose any three and write a one page (11 pt, narrow margins) on each that you choose.

Write the question, then the one page answer.

Submit to Blackboard before 7pm Tuesday Oct 26, 2017.

Be sure to view Adam Jonas' video linked on the next page

- What will the mobility environment be 20 years from now?
(Transportation modes, types of vehicles, mobility-related services, etc.)
- What are the most important aspects of change between now and then?
- What could happen that might change the expected evolution?

WHAT ARE THE DRIVING FORCES?

Consumers / Travelers / Shippers

- How will consumer characteristics change by 2038?
 - Demography/ economy/ urbanization
 - Behavior– trends toward increasing mobility
- How are mobility needs changing?
 - Basic mobility characteristics by consumer segment?
 - Time and budget spent on transportation
 - Importance of "ownership" vs. "usage"
- Analysis of changing mobility segments by travel mode or occasion
 - Trip intensity (#, km); identification of heavy traveler segments
 - Mobility needs (e.g., automotive services, telematics services)
 - Car (vehicle) types / concepts

Environment (Regulation, Infrastructure, Nature)

- What impact will regulatory changes have on the mobility environment in 2038?
 - Energy and Emissions
 - Recycling regulations
 - Pollution / noise regulations

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- Safety / security regulations
- Traffic control
- What impact will changes in infrastructure have?
- Will the natural environment change the outcome (global warming, limited resources)?

Technology

- What impact will new technologies have on the mobility environment in 2038?
 - Fundamental technologies (e.g. IT, telecommunications, nanotechnology)
 - Automotive technologies (e.g., car electronics, road electronics, automation, lidars, vision)

Thoughts: Adam Jonas' View on Autonomous Cars

- Since 1975 to Present: ~1.5M Highway deaths in US
- Since 1775 to Present: ~1.3M US Military Conflict Deaths
- (Cars killed more than have died in war; Why are we doing this to ourselves???)
- Maybe we shouldn't allow people to drive cars anymore; We can make computers drive cars much better than we can; so they don't run into each other.
- Instead of investing in "GM" we should invest in the development of autonomous cars.

Will Waymo/Google/Alphabet successfully deliver a driverless car to the market?

Will someone else?