Autonomous Vehicle Policy Issues


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Are Robotaxis Safer?

- Nobody knows when Autonomous Vehicles (AVs) will be safer than human drivers
  - Press releases overstate company study results
  - Reduced fatality rates are aspirational

- Proving safety will take 100+ Million miles
  - Currently about 5 million miles/company in S.F.
  - Current studies have significant assumptions

- Declaring safety “victory” at this point is like getting a medal... ... after the first mile or so in a marathon
There is more to safety than lots of sensors

Before deployment
- “Lidar, cameras, radar, mean a robotaxi would never rear-end a city bus”

After deployment
- Robotaxis have software defects... including rear-ending a city bus
- Safety is about bad days, not good ones
  - One bad day cancels a lot of good days
Quick List of Overstated Claims

■ “Humans are terrible drivers” / “94% Human Error”
  ● Humans are imperfect, but good at avoiding the worst crashes
  ● Computers lack common sense; they make mistakes too

■ “We have 5 MILLION miles of testing”
  ● Proof of saving lives requires 100+ million miles

■ “We follow best practices”
  ● Companies do not conform to their own industry safety standards

■ “Future net risk improvement justifies taking chances”
  ● Policies should emphasize a “do no harm” deployment strategy
NHTSA uses a “non-regulatory” approach
- No rules, no safety tests for automated driving
  - Federal self-certification does not address this area
- Recalls only after field reports of problems

State driver license with no proficiency test
- Computer drivers should be accountable – just as human drivers are
  - Tort law should apply to crashes, not just product liability
  - Manufacture responsible for computer driver duty of care
Benefits accrue only after AVs are **safe, reliable, and trusted**

- A lot more work needed to establish those properties
- Near term, “safe” might mean lower reliability

Ask the hard questions

- Will stated benefits actually occur?
  - Does PUC require accessibility, equity?
- What public costs will there be **right now**?
  - Ride hail & delivery driver displacement
  - Congestion and blocked emergency responders
  - Risk of harm from still-under-development software on public roads

Societal Benefit

Recommendations To Cities

- Require outcome-based metrics
  - Should be no fatality at all for several years
  - Report injuries, crashes, road rule violations
  - Report emergency response disruption
    - Need to be able to audit self-reports
    - Includes deployment, not just initial testing

- Safety & Trust come from transparency
  - Technology will not succeed without public trust
  - Trust must be earned on a continual basis