Legal Infrastructure for Road Vehicle Automation

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Today’s product model

<table>
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<tr>
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<th>Incremental automation</th>
<th>or</th>
<th>Full automation</th>
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<td>1</td>
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<tr>
<td>2</td>
<td>“Autonomous” (self-contained)</td>
<td>or</td>
<td>“Connected” (DSRC)</td>
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<td>3</td>
<td>R&amp;D testing</td>
<td>or</td>
<td>Production models</td>
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Tomorrow’s service model?

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<tr>
<th></th>
<th>Incremental automation</th>
<th>or</th>
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<th>→</th>
<th>Disruptive concepts (driverless shuttles, delivery robots, ….)</th>
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What’s a government to do?
Infrastructure (broadly defined)
Law *is* infrastructure

- Increase certainty
- Influence behavior
- Manage relationships
“Safe space” for automation
“Safe space” for innovation

Flexibility ↔ Certainty
“Autonomous driving” bills
“So who is responsible”?

- “Legal obligations and liabilities”

- Liability is *not* binary!

- Owners, operators, users, OEMs, suppliers, service providers, and data providers may be civilly [or criminally] liable
Human operators

- **Obligations**
  - Be licensed; be insured; register vehicle
  - Exercise due care; drive reasonably
    - *May or may not require attentiveness!*

- **Liabilities**
  - Civil infractions (parking, some speeding)
  - Crimes (reckless driving, negligent homicide)
    - *Driver generally has to do something culpable!*
  - Civil liabilities (civil negligence, other torts)
Upstream companies

- **Obligations**
  - Certify new vehicles; recall unsafe vehicles
  - Don’t lie or obstruct

- **Liabilities**
  - Crimes (mostly lying and obstructing)
    - Corporation or its employees may be punished
  - Civil liabilities
    - Defect in manufacture
    - Defect in design or warning
    - Misrepresentation
Automakers will face liability…

- Automated vehicles won’t can’t be perfect: Design decisions and omissions will cause, exacerbate, and fail to prevent injuries
- More of these choices will shift from the human driver to the human designer
- If these choices are *unreasonable*, companies will be civilly liable for the resulting injuries
- Even if these choices are reasonable, companies may suffer reputational losses
...and the costs are uncertain

- In theory, companies can charge more for their products and services to cover these expected liability and reputational losses.
- The problem (for companies) is that predicting these costs is difficult.
- The problem (for society) is that this uncertainty means consumers may pay too much or wait too long.
Law, engineering, and the marketplace reflect what “we” think is reasonable.

When a compelling technology is perceived as reasonably safe, law will accommodate it.

The key policy challenge is therefore defining what risks are reasonable.

What is reasonable for a human driver may not be reasonable for an automaker.
Law, engineering, and the marketplace reflect what “we” think is reasonable.

When a compelling technology is perceived as reasonably safe, law will accommodate it.

The key policy challenge is therefore defining what risks are reasonable.