Regulatory Overdrive or Informal Chaos

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3 Revolutions in Transportation

- Automation
- Electrification

Sharing
Three Revolutions in Urban Transportation

**Business-as-Usual Scenario**
20th Century Technology
Through 2050, we continue to use vehicles with internal combustion engines at an increased rate, and use transit and shared vehicles at the current rate, as population and income grow over time.

**2 Revolutions (2R) Scenario**
Electrification + Automation
We embrace more technology. Electric vehicles become common by 2030, and automated electric vehicles become dominant by 2040. However, we continue our current embrace of single-occupancy vehicles, with even more car travel than in the BAU.

**3 Revolutions (3R) Scenario**
Electrification + Automation + Sharing
We take the embrace of technology in the 2R scenario and then maximize the use of shared vehicle trips. By 2030, there is widespread ride sharing, increased transit performance—with on-demand availability—and strengthened infrastructure for walking and cycling, allowing maximum energy efficiency.

**Number of Vehicles on the Road by 2050**
- 2.1 billion
- 2.1 billion
- 0.5 billion

**CO2 Emissions by 2050**
- 4,600 megatonnes
- 1,700 megatonnes
- 700 megatonnes

[www.itdp.org](http://www.itdp.org)
### Rough guide to the three scenarios

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Use of Automation</th>
<th>Use of Electrification</th>
<th>Use of Shared Vehicles</th>
<th>Urban Planning/Pricing/TDM Policies</th>
<th>Aligned with 2°C (or Lower) Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAU, limited intervention</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>No</td>
</tr>
<tr>
<td>2R with high electrification, automation</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Maybe</td>
</tr>
<tr>
<td>3R with high shared mobility, public transport, walking and cycling</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Source: Fulton, Lew, Jacob Mason, Dominique Meroux. “Three Revolutions in Urban Transport.” 2017, UC Davis and ITDP.*
FIGURE 1 Spectrum of publicness

Source: Paget-Seekins, Laurel. “Shifting Regulatory Frameworks for Public Transport in Developing Countries.” 2016, TRB.