Urbanism Next

How New Mobility, Autonomous Vehicles, e-Commerce, and the Sharing Economy Impact Cities

Presented by Leah Treat

May 7, 2019
Urban residents now account for more than 29 million Americans, which is 17% of the total population in just 1% of the land area in the 50 largest metropolitan statistical areas.
BABY BOOMERS
MILLENIALS
I own and use my own transportation.

I own my transportation and access emerging mobility options.

I access a menu of emerging mobility options to meet my needs.
MOBILE APP DATA COLLECTION

- 75+ COMPANIES RECEIVE PRECISE LOCATION

CONSUMER ALERT

APPS CAN TRACK YOUR MOVEMENTS
GOVERNMENT OVERSIGHT AND REGULATION
NEW MOBILITY’S IMPACT ON TRANSIT

Transit ridership fell in 31 of 35 major metropolitan areas in the United States last year.
TNC’S IMPACT ON TRANSIT
# TNC’s Impact on Transit

## Table 4: Effect of Changes in Select Variables

<table>
<thead>
<tr>
<th>Change</th>
<th>Mode*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Commuter Rail</td>
</tr>
<tr>
<td>Bike Share Enters Market</td>
<td>-7.4%</td>
</tr>
<tr>
<td>Binary Effect</td>
<td></td>
</tr>
<tr>
<td>TNCs Enter Market</td>
<td>2.0%</td>
</tr>
<tr>
<td>Year 1</td>
<td>4.0%</td>
</tr>
<tr>
<td>Year 2</td>
<td>6.0%</td>
</tr>
<tr>
<td>Year 3</td>
<td>8.1%</td>
</tr>
<tr>
<td>Year 4</td>
<td>10.2%</td>
</tr>
<tr>
<td>Year 5</td>
<td>12.4%</td>
</tr>
<tr>
<td>Year 6</td>
<td>14.6%</td>
</tr>
<tr>
<td>Year 7</td>
<td>16.9%</td>
</tr>
</tbody>
</table>
TRANSIT:

- Increases Mobility
- Improves Quality of Life
- Stimulates the Economy
- Improves Social Well-being
- Improves Health
Amount of space required to transport the same number of passengers by car, bus or bicycle.
AVOID PARKING WARS!
TRANSIT MAKES CITYSCAPES BETTER

More of this  Less of this
PREMIUM TRANSIT INCENTIVIZES ECONOMIC DEVELOPMENT
Greenhouse Gas Emissions Per Person Per Trip

3,600 grams of CO₂

1,700 grams of CO₂

450 grams of CO₂

170 grams of CO₂

Single Occupancy Vehicle (SOV) Trip

SOV + Light Rail Trip

Bus + Light Rail Trip

Bike + Light Rail Trip

Units are approximate grams of CO₂ equivalent from life-cycle assessment based on long-term emissions projections.

Transit trips are based on average emissions over peak and off-peak times.

FOR SOME, IT’S THE ONLY OPTION
Health: More Active and Healthier Lives
76% of survey respondents want new transportation options specifically for trips that are two miles or less.
Don’t pin your hopes to the altruistic nature of TNC’s or AV’s.
It is in our best interest to root out racial inequities before people of color literally bear the brunt of them.
CONGESTION PRICING

Regular Stop and Go Traffic → Congestion Pricing → Raises Funds

More Walk, Bike, Carpool, Telecommute → Fewer People Driving → Pays For Transportation Alternatives

Cleaner Air and Safer Streets → Fewer Delays for Essential Vehicles → Better Bus and Transit Service

Transportation Network Fixed, Better Quality of Life
Single Occupancy Vehicle Autonomous Vehicle

Congestion Pricing

Increased price for peak period highway use

Expanded mobility

Improved transit service

Opportunities for New Capacity

The Virtuous Cycle

1. Higher transit ridership
2. Less highway congestion
3. Higher transit speeds & more reliable transit service
4. Higher transit ridership; lower costs for transit providers
5. More frequent service & lower fares
WHY CHARGE
Support Local and Regional Goals

- Climate and Health – GhGs and particulates
- Equity – job access and travel cost
- Economy – productivity and avoided loss
- Mobility – travel time and reliability
- Safety – improved road safety

$100 Billion Cost of Traffic Congestion in Metro New York

$20 billion annually includes:

- $9.17 bn Travel Time Cost
- $2.54 bn Excess Fuel and Vehicle Operating Costs
- $5.85 bn Increase in Operating Costs by Industry
- $2.42 bn Total Revenue Loss by industry
# US Crowdsourced Delivery Players

<table>
<thead>
<tr>
<th>Name</th>
<th>Instacart</th>
<th>Postmates</th>
<th>Grubhub</th>
<th>Deliv</th>
<th>UberEATS</th>
<th>UberRUSH</th>
<th>DoorDash</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funding raised to date</td>
<td>$675 million</td>
<td>$278 million</td>
<td>IPO 2014</td>
<td>$40 million</td>
<td>N/A</td>
<td>N/A</td>
<td>$187 million</td>
</tr>
<tr>
<td>Delivery segments</td>
<td>Grocery &amp; retail delivery</td>
<td>Delivers anything</td>
<td>Restaurant delivery</td>
<td>Retail delivery</td>
<td>Restaurant delivery</td>
<td>Delivers anything</td>
<td>Restaurant delivery</td>
</tr>
</tbody>
</table>

*BI INTELLIGENCE*
MOBILITY SERVICE ADOPTION IS SPREADING FASTER

Sources: Populus Groundtruth; Clewlow & Mishra, 2017; Clewlow, 2016
“Head injuries, broken bones plague e-scooter users as more data rolls in. A three-month period in Austin, Texas, saw 20 injuries per 100,000 rides.”

JONATHAN M. GITLIN - 5/3/2019, 8:22 AM
SAFETY ISSUES
THE PRICE OF CONVENIENCE IS SURVEILLANCE
Technology spending for the global smart city market is expected to reach $27.5 billion by 2023.
WHAT I HOPE YOU’VE LEARNED

• New mobility is eroding transit systems. This is not okay and needs immediate attention.

• The geometry of our streets is pretty much fixed – focus on throughput for the most people within the space you have.

• Safety and equity issues are paramount and cannot take a back seat to technology.

• It’s time to get serious about congestion pricing.

• The curb zone is one hot commodity. Manage it that way.

• There are serious data and privacy issues to consider in this brave new world of mobility.
THANK YOU!

Leah Treat
ltreat@nelsonnygaard.com