Introduction to Shared-Use Mobility: Definitions, trends, and understanding

Susan A. Shaheen, Ph.D.
University of California, Berkeley
Innovation in Mobility Public Policy Summit
June 10, 2014
Overview

- Research & definitions
- Trends and new developments
- Highlights from 2013 Shared-Use Mobility Summit
- Next steps
- Acknowledgements
Research & Definitions
Shared-use mobility is defined as mobility services that are shared among users including:

- Traditional public transportation services, such as buses and trains;
- Vanpools, carpools, shuttles, on-demand ride services/TNCs;
- Carsharing, bikesharing, scooter sharing in all its forms; and
- Flexible goods movement

Can be b2c and p2p
Evolving system of services and operators

**Ridesharing**

- **Carpooling:** Grouping of travelers into a privately owned vehicle, typically for commuting.
- **Vanpooling:** Commuters traveling to/from a job center sharing a ride in a van.
- **Real-time ridesharing services:** Match drivers and passengers, based on destination, through app before the trip starts.
RIDESHARING IN NORTH AMERICA: A SNAPSHOT (July 2011)

- 612 carpooling services
- 153 vanpooling services
- 127 services offer both carpooling & vanpooling
- Includes both online and off-line programs

Chan and Shaheen, 2011
Roundtrip Carsharing: A fleet of autos used for round trips that require users to pay by hour or mile.

Peer-to-Peer Carsharing: Shared use of private vehicle typically managed by third party.

One-Way Carsharing: A fleet of autos used for point-to-point trips, facilitated by parking agreements.

Fractional Ownership Carsharing: Individuals sublease or subscribe to a vehicle owned by a third party.

Carsharing: Many forms of carsharing.
Carsharing Statistics: Americas
as of July 2013

46 operators (excluding PVS/p2p operators)

- U.S.: 24
- Canada: 20
- Mexico: 1
- Brazil: 1

Shaheen, 2013
Carsharing Membership Growth: Americas

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<tbody>
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<td>U.S.</td>
<td>12,098</td>
<td>25,640</td>
<td>52,347</td>
<td>76,420</td>
<td>102,993</td>
<td>184,292</td>
<td>279,234</td>
<td>323,681</td>
<td>448,574</td>
<td>560,572</td>
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<td>Mexico</td>
<td>750</td>
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<td>347</td>
<td>910</td>
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<td>Brazil</td>
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<tr>
<td>Americas</td>
<td>16,007</td>
<td>32,647</td>
<td>62,348</td>
<td>88,352</td>
<td>118,656</td>
<td>211,170</td>
<td>318,898</td>
<td>377,597</td>
<td>516,198</td>
<td>639,775</td>
<td>909,494</td>
<td>1,149,13</td>
</tr>
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</table>

Shaheen, 2013
Almost **1.15 million members** (excludes PVS/p2p members)
Carsharing Vehicle Growth: Americas

Shaheen, 2013
Carsharing Statistics for the Americas

as of July 2013

Over **20,800 vehicles** (excludes PVS/p2p vehicles)

<table>
<thead>
<tr>
<th>Country</th>
<th>Vehicles</th>
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<tbody>
<tr>
<td>U.S.</td>
<td>16,811</td>
</tr>
<tr>
<td>Canada</td>
<td>3,910</td>
</tr>
<tr>
<td>Mexico</td>
<td>40</td>
</tr>
<tr>
<td>Brazil</td>
<td>46</td>
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</table>

Shaheen, 2013
Member Share by Business Model

Carsharing Operators in the Americas

July 2012

<table>
<thead>
<tr>
<th>Business Model</th>
<th>Percentage</th>
<th>N</th>
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<tbody>
<tr>
<td>Rental</td>
<td>17%</td>
<td>47</td>
</tr>
<tr>
<td>One-Way</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Indep</td>
<td>76%</td>
<td></td>
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</table>

July 2013

<table>
<thead>
<tr>
<th>Business Model</th>
<th>Percentage</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rental</td>
<td>80%</td>
<td>46</td>
</tr>
<tr>
<td>One-Way</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Indep</td>
<td>8%</td>
<td></td>
</tr>
</tbody>
</table>
Vehicle Share by Business Model

Carsharing Operators in the Americas

- **Rental**: 14%
- **One-Way**: 10%
- **Indep**: 76%

**July 2012**

- **Rental**: 14%
- **One-Way**: 16%
- **Indep**: 14%

**July 2013**

- **Rental**: 70%
- **One-Way**: 16%
- **Indep**: 14%

*N = 47*  
*N = 46*
2008 N. American Carsharing Survey

Key Findings

- Between 9 to 13 vehicles removed, including postponed purchase
- 4 to 6 vehicles/carsharing vehicle sold due to carsharing
- 25% sell a vehicle; 25% postpone purchases
- Net CO2 reduction of ~27%

Martin, Shaheen, Lidicker, 2010
Scooter Sharing:
An operator-owned fleet of motorized scooters made available to users by the hour or minute

Scooter Sharing Fills niche between cars and bicycles
Public Bikesharing: Fleet of bicycles for short, point-to-point trips usually found at stations

Closed Community Bikesharing: Campuses and closed membership, mainly roundtrip

Peer-to-Peer Bikesharing: Rent or borrow hourly or daily from individuals or bike rental shops

Bikesharing Exponential growth in urban areas
WORLDWIDE & US BIKESHARING:
June 2014

• **712 cities** with IT-based operating systems
  ✓ **806,200 bikes**
  ✓ **37,500 stations**
• **47 new city programs** since January 2014
• **US: 56 cities** with IT-based systems
  & 2 universities
  ✓ **20,100 bikes**
  ✓ **2,000 stations**

Source: Russell Meddin, 2014
2013 Member Survey: Demographics

Compared to general population, bikesharing users tend to be...

• Wealthier
• More educated
• Younger
• Caucasian
• Male

Shaheen et al., 2014
As a result of my use of bikesharing, I drive a personal vehicle (e.g., car, SUV, etc.)...

Shaheen et al., 2014
As a result of my use of bikesharing, I use urban rail...

Shaheen et al., 2012

Shaheen et al., 2014

Minneapolis/Saint Paul, N = 620
Salt Lake City, N = 72

Montreal, N = 1096
Toronto, N = 1005

Mexico City, N = 3333
<table>
<thead>
<tr>
<th>Response Categories</th>
<th>Montreal</th>
<th>Toronto</th>
<th>Minneapolis-Saint Paul</th>
<th>Salt Lake City</th>
<th>Mexico City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower cost and faster travel</td>
<td>25%</td>
<td>48%</td>
<td>0%</td>
<td>0%</td>
<td>28%</td>
</tr>
<tr>
<td>Just lower cost</td>
<td>5%</td>
<td>9%</td>
<td>7%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Too many connections (not have to transfer)</td>
<td>3%</td>
<td>2%</td>
<td>7%</td>
<td>0%</td>
<td>6%</td>
</tr>
<tr>
<td>Just faster travel</td>
<td>14%</td>
<td>14%</td>
<td>14%</td>
<td>40%</td>
<td>12%</td>
</tr>
<tr>
<td>Improve travel time reliability</td>
<td>4%</td>
<td>7%</td>
<td>0%</td>
<td>60%</td>
<td>6%</td>
</tr>
<tr>
<td>Want to get exercise</td>
<td>31%</td>
<td>8%</td>
<td>50%</td>
<td>0%</td>
<td>17%</td>
</tr>
<tr>
<td>Public transit vehicle is crowded</td>
<td>6%</td>
<td>6%</td>
<td>0%</td>
<td>0%</td>
<td>18%</td>
</tr>
<tr>
<td>No space for my bike, which I use to connect</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>I consider it safer to travel with bikesharing</td>
<td>1%</td>
<td>0%</td>
<td>7%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Not applicable</td>
<td>1%</td>
<td>2%</td>
<td>0%</td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>8%</td>
<td>5%</td>
<td>14%</td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Total N</strong></td>
<td><strong>631</strong></td>
<td><strong>491</strong></td>
<td><strong>14</strong></td>
<td><strong>5</strong></td>
<td><strong>577</strong></td>
</tr>
</tbody>
</table>

Shaheen et al., 2014
Transportation Network Company: A service that allows passengers to connect with and pay drivers who use their personal vehicles for trips facilitated through a mobile application.
Corporate Regional Shuttles: Employer-funded regional transit, closed systems, limited stops

Local Shuttles: Employer or development agreement service, door-to-door, closed systems, workplace to transit hub

Shuttle Services

Growing system of local and regional shuttles
TSRC– UC Berkeley: Research Underway

- 2013 N. American bikesharing study*
- P2P carsharing survey*
- Analysis of casual carpooling in SF*
- On-demand ride services/TNCs survey (SF)*
- Carsharing – electric bikesharing pilot (Bay Area)
- N. American one-way carsharing study*
- Carsharing insurance risk analysis*
- Bikesharing safety study
- Carsharing trends tracking*

*Summer/fall 2014 release of reports or early data findings
Highlights from 2013 Summit
Shared-Use Mobility Summit: **Highlights**

- October 10-11, 2013, SF
- ~270 attendees
  - 105 companies, 62 governmental agencies, 17 universities
  - 26 affiliations from carsharing, 16 from bikesharing, 6 from ridesharing/TNCs
  - Inaugural meeting among key stakeholders
Key Policy Takeaways

Consistent shared-use definitions and standards

- Confusion
- Lack of a consistent policy framework
- Further social & environmental benefits understanding needed

Public funding for shared-use mobility

- Dollars likely to continue to decrease before they increase
- Other means to generate capital and ongoing revenue
- Dialogue should shift from politically-charged discussion toward: job creation, increased efficiency, and economic growth
Key Policy Takeaways (cont’d)

Public transit integration
- Better linkages through multi-modal connections & technology
- Commuter tax break for shared-use modes
- Create more flexible platforms for integrated mobility
- Hurdles: equity, competition, data privacy, logistics (splitting revenues)
- Need: joint-fare payment, updated policy framework, and improved relationships with elected officials
Other Key Issues Identified

• Social equity—system planning and business model development
• “Scaling”—Challenges exist to mainstreaming
• Parking and insurance remain obstacles
• Must balance open data sharing with privacy (individual and industry levels)
• Preparing for the future (e.g., autonomous vehicle, data aggregation, models, etc.)

Source: Google, 2014
Next Steps
What’s Happened in 2014

• 2014 TRB workshop: “Innovations in Shared-Use Mobility and Transportation Demand Management: Trends and Policy Updates”
• You’re here—Innovation in mobility policy summit!
• Shared-Use Mobility Center launch. Join us tonight to celebrate!
• Many other activities…
• 2013 Summit White Paper and videos released, see: www.sharedusemobilitycenter.org
What’s Next

• 2015 Sunday Workshop (Full Day) proposed, sponsored by AP020 and AP040 committees
• Shared-Use Mobility Center activities and outreach
• Next summit in 2015
• Please let us know if you’d like to help!
Acknowledgements

- Shared-use mobility providers from across the Americas
- Mineta Transportation Institute (MTI), Caltrans, and US DOT
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- Sharon Feigon, Shared-Use Mobility Center
- Timothy Papandreou, SFMTA
- Russell Meddin, Philadelphia Bike Share