Worldwide Carsharing Approach and Experiences: Research Results and Indicators to Watch

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Presentation Overview

- Setting the Stage – A Changing Transportation Landscape
- A Growing Number of Services and their Impacts on Carsharing
- The Role of the Built Environment
- Lessons Learned and Recent Developments
- Current and Emerging Issues
- Concluding Thoughts

Public or Private?

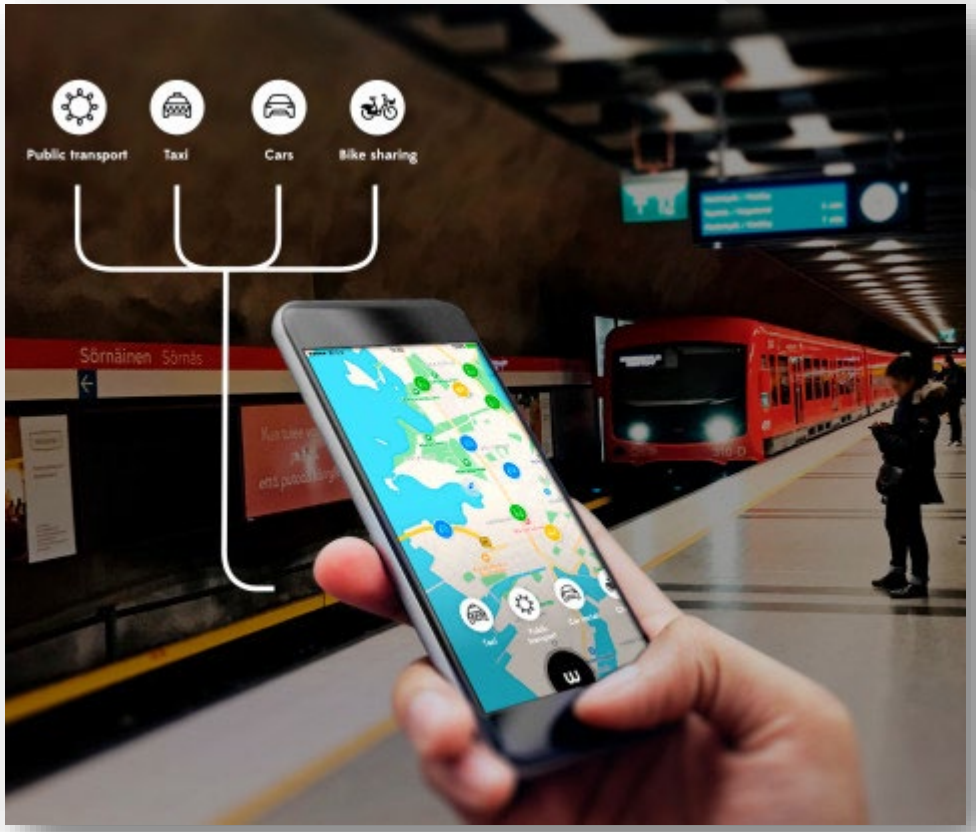
Shared Mobility Services

Shaheen and Cohen 2018

A Shifting Transportation Landscape

Changing Attitudes Toward Technology

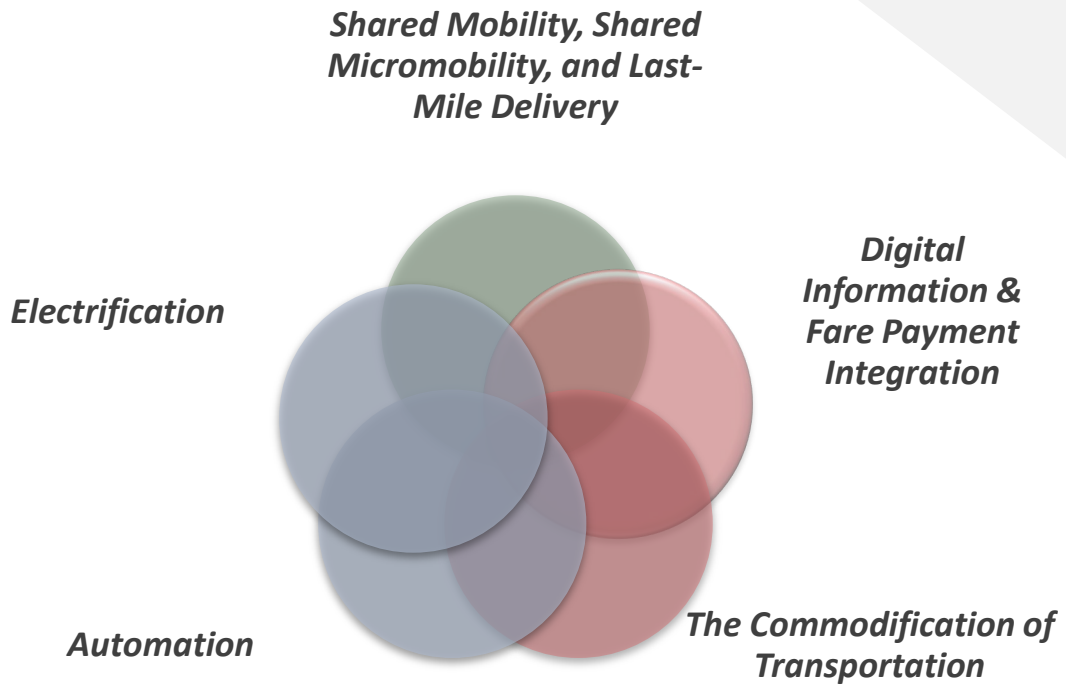
- Millennials have embraced apps and other technologies
- More travelers are substituting physical trips with virtual trips
- Impact of telecommuting and e-commerce on vehicle ownership and use is less clear
- Emerging technologies are reducing need for brick-and-mortar retail consumption and workers to be physically present in an office



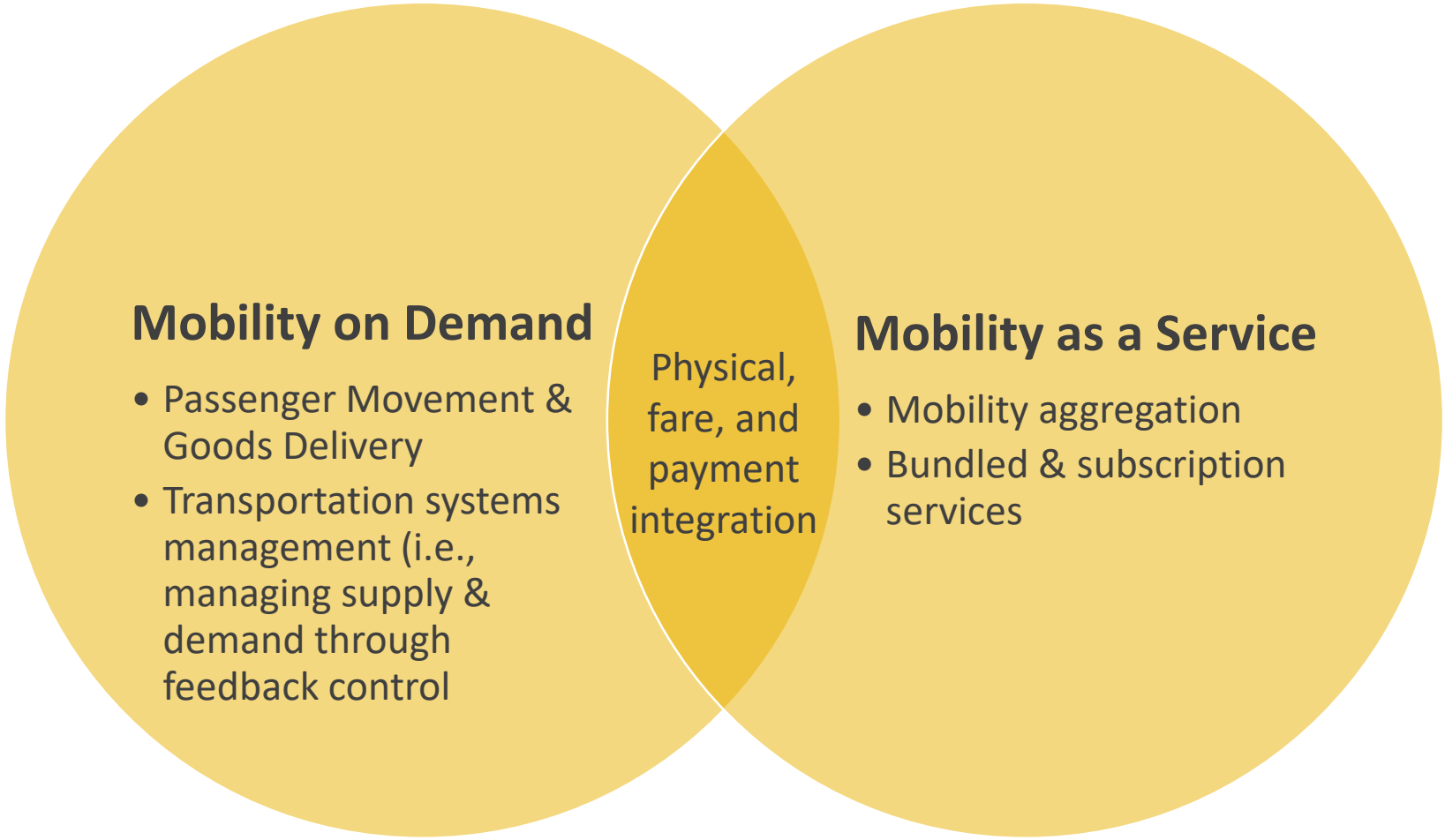
A Shifting Transportation Landscape

Innovative partnerships and emerging technologies are changing how consumers travel

- The public sector is leveraging shared mobility to address service gaps
- Integrated multimodal apps providing more public and private options
- Auto manufacturers and technology companies are rebranding as mobility companies, acquiring start-ups, and pursuing self-driving vehicles
- Mobility on Demand (MOD) piloting in the U.S.
- Mobility as a Service (MaaS) piloting in Europe (e.g., Finland, Sweden, Netherlands)

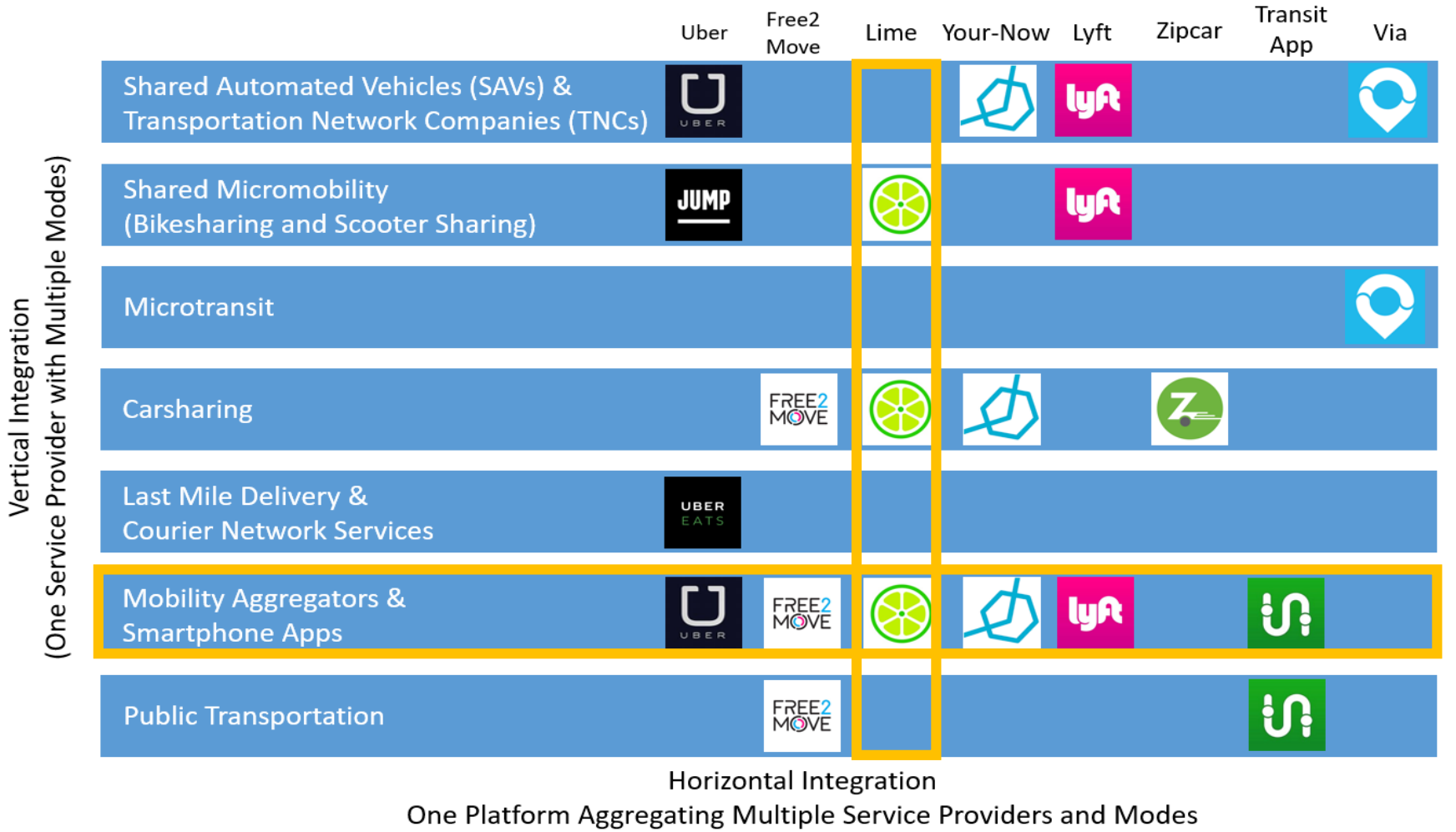


MOD & MaaS
Similarities and Differences



Shaheen and Cohen 2018

Vertical vs. Horizontal Integration



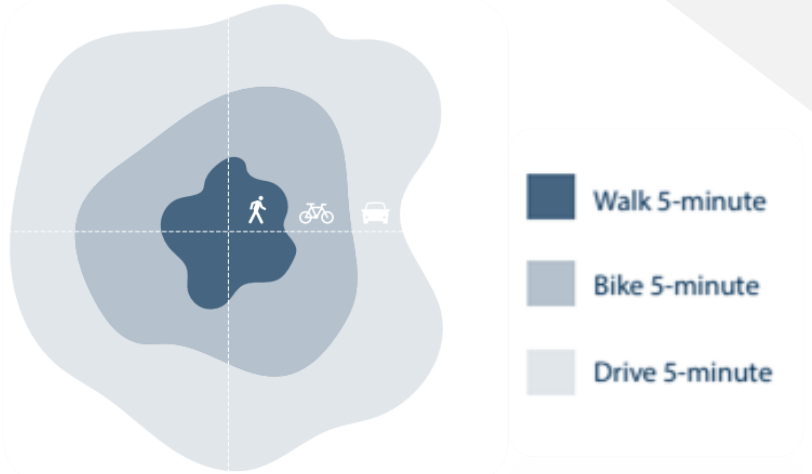
A Growing Number of Services

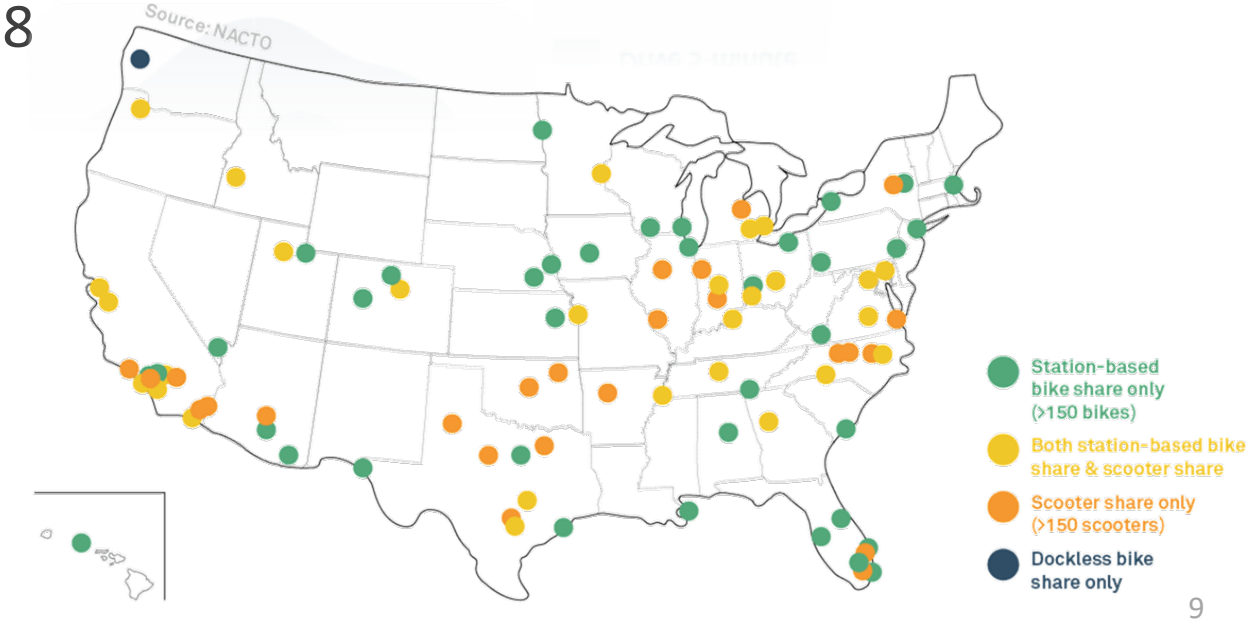
In the U.S. ….

- 1.4M carsharing members shared 15,224 vehicles in January 2018 (Shaheen and Cohen)
- 84M trips on shared micromobility in 2018 (NACTO)

Globally ….

- Uber: 14M daily rides; 3.9M drivers
- Lyft: 1M daily rides; 1.4M drivers





Key Global TNC/VTC Benchmarks

	Uber	Lyft	Grab	DiDi
Area of operation	600 cities in 65 countries worldwide	300 US cities, 2 Canadian	Southeast Asia	400 Chinese cities, Brazil, Japan, Mexico, Australia, Hong Kong, Taiwan
Launched	March 2009	June 2012	June 2012	June 2012
Headquarters	San Francisco, US	San Francisco, US	Singapore	Beijing, China
Users	75 million	23 million	36 million	550 million
Drivers	3.9 million	1.4 million	2.6 million (all time)	21 million
Rides per Day	14 million	1 million	4 million	30 million
Total Trips	10 billion	1 billion	2.5 billion	7.4 billion in 2017

Source: Business of Apps

Shifts to TNCs/VTCs Predominantly from Driving, Public Transit, and Taxis

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Study Authors Location Survey Year Mode	Rayle et al. San Francisco, CA 2014	Henao Denver and Boulder, CO 2016	Gehrke et al. Boston, MA 2017	Clewlow and Mishra Seven U.S. Cities Two Phases, 2014 – 2016	Feigon and Murphy Seven U.S. Cities 2016	Hampshire et al. Austin, TX 2016
Drive (%)	7	33	18	39	34	45
Public Transit (%)	30	22	42	15	14	3
Taxi (%)	36	10	23	1	8	2
Bike or Walk (%)	9	12	12	23	17	2
Would not have made trip (%)	8	12	5	22	1	-
Carsharing / Car Rental (%)	-	4	-	-	24	4
Other / Other TNC (%)	10	7	-	-	-	42 (another TNC) 2 (other)

Shaheen et al. 2018

Note: Mode replacement findings of these studies employ various methodologies, depending on survey instrument used and analysis methods chosen. Different methodologies can have a notable impact on findings.

Summary of Shared Mobility Impacts on Public Transportation

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Mode	Decrease/Increase	Public Transit Impacts
Roundtrip Carsharing (N. America)	Net decrease (-)	For every 5 members that use rail less, 4 ride it more; For every 10 members that use the bus less, 9 ride it more.
One-Way Carsharing (N. America)	Net decrease, although an exception in Seattle (- / +)	In Seattle, where a small percentage of respondents increase their use exceeding the smaller percentage of respondents decreasing their rail use. Across the other four cities, more people report a decrease in their frequency of urban rail and bus use than an increase.
P2P Carsharing (N. America)	Net decrease (-)	Those increasing and decreasing their bus and rail use were closely balanced in number, with 9% increasing bus and 10% decreasing use. Similar effects were found with rail, as 7% reported increasing rail use, while 8% reported decreasing it.
Station-Based (Docked) Bikesharing (N. America Multi-City Studies)	Net increases in bus/rail in small- and medium-sized cities Small net decreases in bus/rail in larger cities (+ / -)	-Small net increases in bus and rail use in small- and medium-size cities (e.g., Minneapolis) -Small net decreases in bus and rail use in larger cities (e.g., Mexico City)
Pooling (Casual Carpooling in Bay Area)	Net decrease (-)	Majority of casual carpoolers were public transit users. In the Bay Area, 75% were casual carpoolers.
Ridesourcing/TNCs (SF Bay Area)	Net decrease (-)	33% competition with public transit, 4% first mile and last mile (destination or origin is public transit stop)

Shaheen et al. 2018

The Role of the Built Environment

- Context in the built environment matters
- One size does not fit all
- Solutions must be tailored to meet a diverse array of needs, use cases, and urban contexts

Shaheen et al. 2017

The Role of the Built Environment

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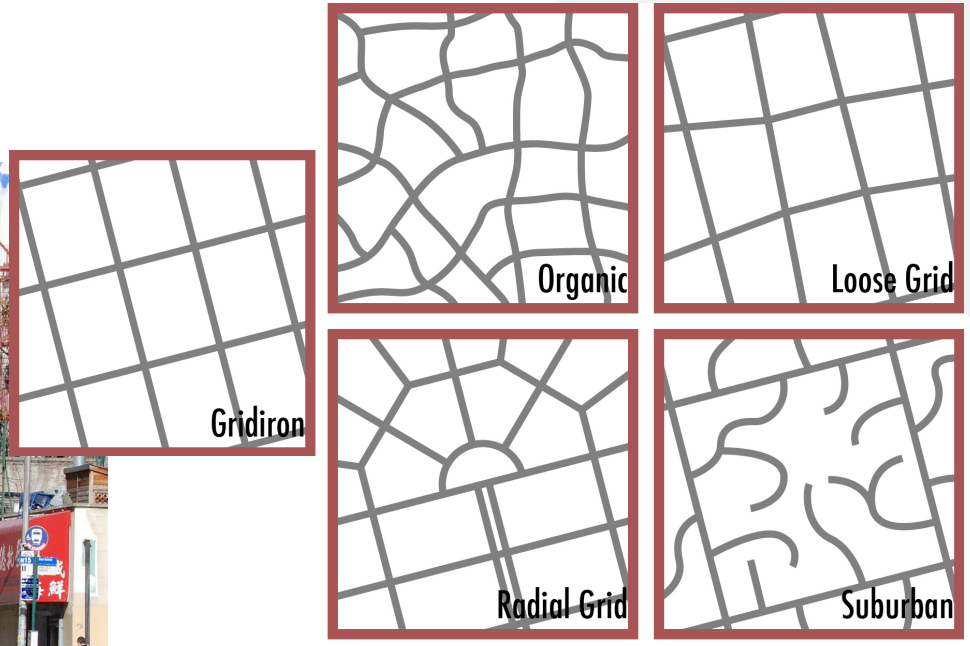
A Tale of Two Cities



- Street layout and density may be the most important factors influencing the types of adoption of new transportation technologies
- Walkability, bikeability, and transit accessibility, are also key

One Industry – Many Models

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Carsharing Market Segmentation

Individuals will likely need more than one mobility solution through their lifetime ...

Digital Business Travelers

Family Travelers

Aging Travelers

Lessons Learned

- On-street parking costs continue to present notable challenges for carsharing service providers in many markets
- EV carsharing has presented a number of challenges, particularly with the one-way model
- Per minute pricing may present challenges for U.S. consumers in some markets


SAIA
EXIT 94
EXIT 1¼ MILE

Lessons Learned

- Carsharing industry should emphasize documented environmental and social impacts and negotiate for free or reduced cost parking
- More recent research is needed to understand the impacts of TNCs and micromobility on carsharing
- Carsharing facing increased competition now; but in the future this may depend on the cost and business viability of micromobility and TNCs
- Risk sharing partnerships with unproven models may be key (e.g., EV, low-income, etc.)

Recent Developments

- Multiple high-profile program downsizing and closures undermining consumer confidence
  - ShareNow and BlueIndy
  - Maven
  - Chicago
- Carsharing operators are quickly expanding fleets to fill gaps left by ShareNow
  - Envoy EV carsharing expansion in Seattle
  - EVO adding 250 vehicles in Vancouver in Summer 2020
- EV carsharing is likely to re-emerge in a roundtrip model, both due to simpler operations and as public agencies seek reduced GHG emissions

Current and Emerging Issues

Changing Consumer Expectations

- Shared mobility can provide a suite of strategies for providing travelers effective choices to enhance accessibility and improve travel reliability
- Travelers use more and different forms of transportation than ever before
- Travelers increasingly expect to have real-time, dynamic, actionable information before and during their tripmaking

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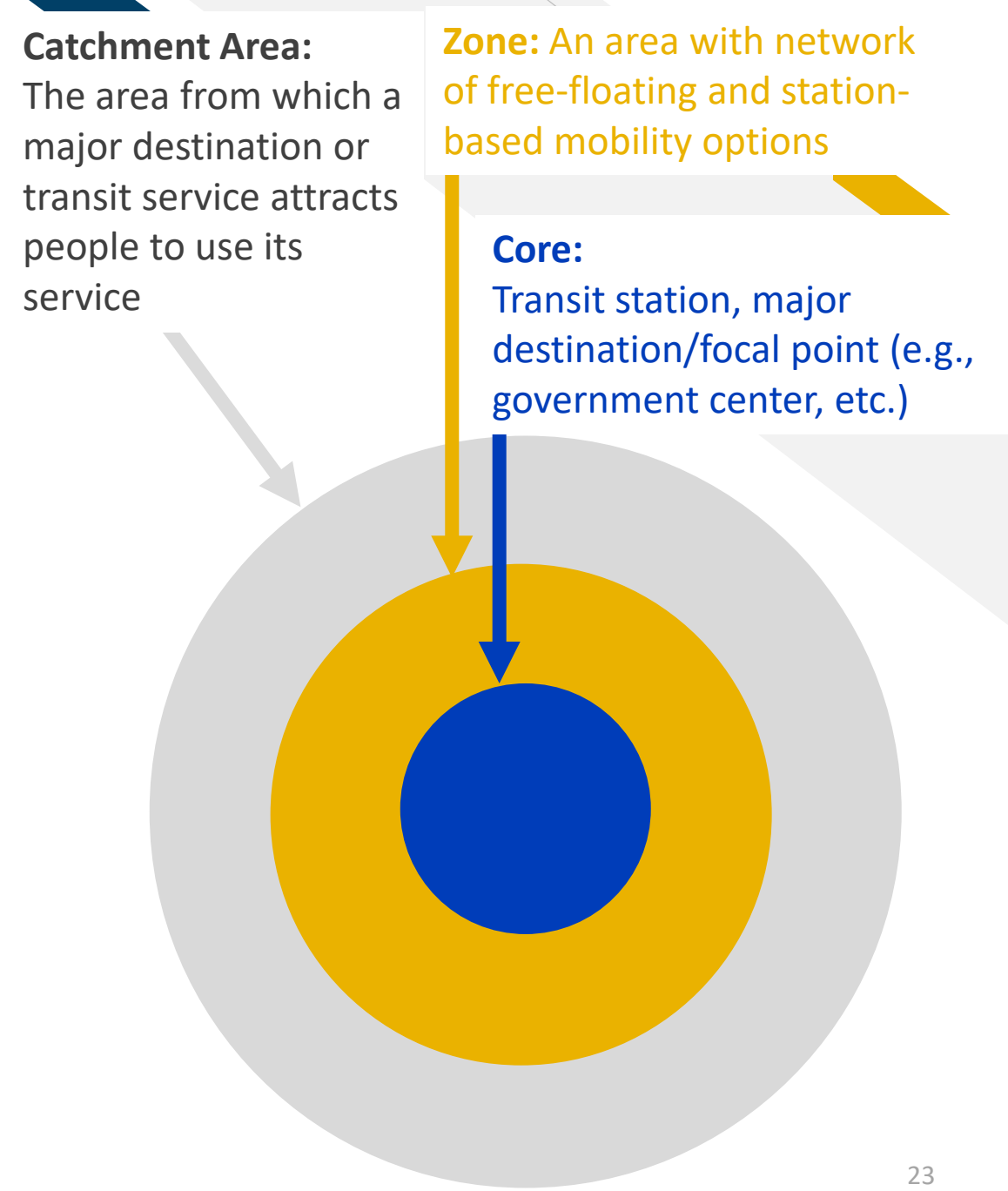
Current and Emerging Issues

An Evolving Industry

- How does carsharing retain its place in an evolving ecosystem of services?
- How do we plan and adapt public rights-of-way? (both street and curb space management)
- How does the carsharing industry prepare for an electric and automated vehicle future?
- When do other shared modes create a network effect and when do they compete with carsharing?

Concluding Thoughts

- Carsharing market share will likely depend on consumer cost, price structures, and market positioning relative to other modes
- Market positioning will likely need to evolve as new services and technologies come online
- More research is needed to understand dynamics of complementarity and competition with other shared modes
- TNCs/VTCs may compete for similar carsharing trips, particularly in auto-oriented built environments with robust for-hire services
- Different modes may target different spatial areas/built environments



Additional Resources

- Shared mobility resource library available on http://innovativemobility.org/?page_id=2762

Thank You.

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