Automated *Shared* Electric Taxis
2017

Sharing

Ownership

mobility as a service: any time, any place

future

fully automated private luxury
In Brussels

cars:  450.000  = 41 per 100 inhabitants

35 minutes of actual driving

+ 130.000 cars of commuters/day

on-street parking:  250.000  = 1 per 5 inhabitants
Research by design

Sharing/low tech scenario

Current situation

Herrmann-Debroux
Sharing/low tech scenario

Projection + Spatial measures

Herrmann-Debroux

Shared office, Co-working spaces, Move to a PT accessible location

Promote carpooling by providing free parking spaces reserved for car-poolers (at the entrance, clearly identifiable)

Improve the existing means to cover the distance between the establishment and the stop - Promote intermodality

Organize shuttles between the facility and the station, on lunchtime for shopping in activity areas
<table>
<thead>
<tr>
<th>Transportation Barriers</th>
<th>Definition</th>
<th>Shared Mobility Opportunities</th>
<th>Shared Mobility Challenges</th>
</tr>
</thead>
</table>
| Spatial                 | Spatial factors that compromise daily travel needs (e.g., excessively long distances between destinations, lack of public transit within walking distance) | - Public transit operators and ridesourcing first- and last-mile partnerships  
- Microtransit for lower-density areas                                                 | - Higher operating costs in lower-density exurban and rural settings  
- Limited curb space for increasing variety of mobility services                        |
| Temporal                | Travel time barriers that inhibit a user from completing time-sensitive trips, such as arriving to work (e.g. public transit reliability issues, limited operating hours, traffic congestion) | - Dynamic microtransit  
- Late-night ridesourcing and shuttle services  
- Commuter carpooling services                                                         | - Wait-time and travel-time volatility on congested roadways  
- Unpredictable wait times due to supply fluctuations                                    |
| Economic                | Direct costs (e.g., fares, tolls, vehicle ownership costs) and indirect costs (e.g., smartphone, Internet, credit card access) that create economic hardship or preclude users from completing basic travel | - Shared mobility subsidies for low-income users  
- Multiple payment options for shared mobility services  
- Multi-modal hubs with Wi-Fi access                                                  | - Credit/Debit Card payment  
- High cost for longer distance and peak-demand trips  
- Maintaining affordability, while providing livable wages                             |
| Physiological           | Physical and cognitive limitations that make using standard transportation modes difficult or impossible (e.g., infants, older adults, and disabled) | - Older adult-focused shared mobility services  
- Voice activated mobility app features                                               | - Maintaining legacy technology access  
- Ensuring adequate driver training                                                    |
| Social                  | Social, cultural, safety, and language barriers that inhibit a user’s comfort with using transportation (e.g. neighborhood crime, poorly targeted marketing, lack of multi-language information) | - Ridesourcing app interface that minimizes sociodemographic profiling  
- Targeted outreach to low-income and minorities  
- App information in user’s native language                                         | - Attracting marginalized groups  
- Driver prejudice against riders  
- Providing security at un-manned vehicle stations                                     |

(Travel Behavior: Shared Mobility and Transportation Equity. Susan Shaheen, Corwin Bell, Adam Cohen, Balaji Yelchuru, 2017)
Automated Shared Electric Taxis
Figure 1. Percentage of consumers who think fully self-driving vehicles will not be safe (2017 vs. 2018)

Automated: User acceptance

- AV anxiety *
- Perceived enjoyment *
- Subjective norm
- Image
- Result demonstrability *
- Comfort
- Functional risk *
- Physical risk *
- Security risk *

- Perceived ease of use *
- Perceived usefulness

- Technology anxiety
- Technology trust

- Attitude towards AVs *
- Intention to use AVs

- Positive influence
- No influence

* Significant difference in mean pre-and posttest

(Consumer Acceptance of Autonomous Vehicles: A Pilot Project
Automated Vehicle Symposium 2017.)
Automated

Figure 3. Types of companies consumers trust most to bring fully autonomous vehicle technology to market (2018)

Source: 2018 Deloitte global automotive consumer study.