The Future of Ownership in a Vehicle 2.0 World

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About Me

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20 yrs E-commerce
4-time Serial Entrepreneur
Vehicle 2.0

CONVENIENT | TRUSTED | PROFESSIONAL | GREEN
Spiffy Vehicle 2.0 Framework
Agenda:
• Brief History of Car Ownership
• What’s at Stake?
• Where are We Today?
• What’s the Future Hold?
• Q+A
A Brief History of US Car Ownership Models
Three Phases of Auto Ownership

1908-1945
BIRTH

1946-2006
ADOLESCENCE

2007-2019
DIGITAL
Three Phases: BIRTH

1916 - First Rental Car

1919 - GMAC Introduces Financing

1908-1945 BIRTH
First UBER?

1908-1945
BIRTH
Three Phases: ADOLESCENCE

1946-2006 ADOLESCENCE

1950’s
Leasing Introduced

1999
Zipcar Brings Carshare network to US from DE
Three Phase: DIGITAL

2007 iPhone 1.0
Introduced
Three Phases: DIGITAL (RideSharing)

2007-2019 DIGITAL

2008 UBERCAB

2012 LYFT

2012 UBERX
Three Phases: DIGITAL -> Car Sharing

2007-2019 DIGITAL

DIGITAL: Car Sharing (P2P)
- $438m Raised
- TURO
- getaround

$443m Raised

DIGITAL: Car Sharing (Network)
- MAVEN
- CAR2GO
Conclusion: Seven Auto Ownership Models

1908-1945 BIRTH
- Outright Ownership
- Finance
- Rent

1946-2006 ADOLESCENCE
- Lease
- Car Sharing (Network)

2007-2019 DIGITAL
- Car Sharing (P2P)
- Ridesharing
- Subscriptions
What’s at Stake?
The Stakes are VERY High

- $1.2T - US Consumer Spend on Transportation/yr
- 1.5T miles/yr driven in US (passenger vehicles)
- 280m vehicles on road in US
Vehicle Costs and TCO on Rise

Average cost of owning and operating an Automobile was $8,850 in ’18
(source: U.S. DOT, AAA)

Source: Statista, U.S. DOT, AAA, Jefferies
Car Ownership: Where are We Today?
Seven Ownership Models

1. Outright Ownership
2. Finance
3. Lease
4. Rent
5. Ride Sharing
6. Car Sharing (Network and P2P)
7. Subscriptions
Ownership/Finance/Lease

17.2m cars sold in 2018 in US
(11.8m truck/suv // 5.5% passenger vehicles)
Average Loan > $30,800 and 68m term
Rental Car Market Today

Over 2m Vehicles Active -> $28b/yr
Little to No Impact from RideShare
Industry growing 3-5% y/y
Despite all the Buzz, still very very small

Figure 11.

US Passenger Miles & Rideshare Share

Sources: US Government, SFG Research

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Today’s Ridesharing Use Cases?

**FIGURE 3.** Airport Transportation is the Largest Use Case of Lyft Rides, Accounting for 46% of Total Rides

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport</td>
<td>46%</td>
</tr>
<tr>
<td>Leaving a club/bar at night</td>
<td>33%</td>
</tr>
<tr>
<td>Going to a party</td>
<td>16%</td>
</tr>
<tr>
<td>Work commute</td>
<td>10%</td>
</tr>
<tr>
<td>Going to dinner</td>
<td>10%</td>
</tr>
<tr>
<td>Concerts/Music festivals</td>
<td>10%</td>
</tr>
<tr>
<td>Going to sporting events</td>
<td>4%</td>
</tr>
</tbody>
</table>

*What trips do you use ridesharing services for most often?*

*Source: JMP Securities LLC survey*
RideShare: UBER

• Active Drivers: ~6m
• Active Riders: 62m
• Q1 19 Rides: 1b
RideShare: Lyft

- Active Drivers: 2m
- Active Riders: 20.5m
- Q1 19 Rides: 205m
Ridesharing: Uber vs. Lyft Share In US

Figure 22. TAM analysis

US Ridesharing Market Share

Source: Company Reports, SFG Research
Ridesharing: TNC (Transportation Network Company) Suppliers

HyreCar

Rent a car, drive for Uber & Lyft
No contracts. No sign up fees. No waiting.

Lyft Drivers Will Soon Be Able to Rent Cars Through Avis

Buggy

TLC Rentals
Car Sharing Network: Zipcar

• Founded 1999
• Took off in 2009 with app
• Subscription + usage model
• 2011 - IPO
• Acquired by Avis in 2013 for $491m
• Zipcar today:
  • 500 cities globally
  • 12k vehicles
  • Avg trip: 47 miles
  • 100% docked
Car Sharing Network (All Limited Cities)

Docked

zipcar
MAVEN

Undocked

CAR2GO
SHARENOW
ReachNow
DriveNow
enterprise CarShare
HUI

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Car Sharing Network: Issues

- Reach:
  - Cities
    - United States
      - Ann Arbor, MI
      - Chicago, IL
      - Detroit, MI
      - Los Angeles, CA
      - NYC
      - San Francisco, CA
      - Washington, DC

- Security!

Theft of 75 Vehicles in Chicago Exposes Carsharing's Vulnerabilities
BMW and Daimler will invest $1B in new joint venture that brings car2go and ReachNow under one roof
Car Sharing P2P

- 5,500 cities
- Thousands of cars
- Porsche Host program
- Turo Go - lock/unlock
- $250m from IAC

- 300 cities
- Just went intl with Drivy M+A
- Avg car earns $500/m
- GetAround Connect - technology for unlocking/locking vehicle.
- $300m from Softbank
- Uber partnership
Car Sharing P2P: Turo vs. GetAround

Divergent Paths
Share of U.S. quarterly sales for car-sharing companies Turo and Getaround since 2017.

Source: Second Measure
Subscriptions

- Slow consumer adoption due to high monthly costs
- Cadillac closed down ‘book’ program / Hertz experimenting
- Operational complexity - operate out of dealers? Operate with 3PL?

Do the Math: Car Subscriptions as Lease Alternative Don't Add Up

By Kelsey Mays
Car Ownership:

What’s the Future Hold?
Future: Drivers

Facts:
• Vehicles are only used 5% of the time
• 89% of trips are single rider
• Average cost of a vehicle is now >$33k
• Cost per mile is $3

Key Drivers:
• Driving cost/mile to $3, $2, $1, < $1
• EV/AV Adoption
Future Models: Slow

EXHIBIT 5 | Vehicle Sales Will Shift, Not Shrink

US light-vehicle sales (millions)

- Conventional vehicles
- SAEVs
- Private autonomous electric vehicles

Source: BCG analysis.
Future Model: CRAZY FAST

Figure 5. The Speed of Adoption

Sources: Authors’ analysis based on U.S. Department of Transportation data

» Speed of TaaS adoption

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Future Model: Comparison

Mobility-revenue scenario, based on spend in 2017 and 2030, $ billion

- **2017**: 3,600
- **2030 limited AV disruption**: 5,600
- **2030 full AV disruption**: 7,200

### Disruptive technologies
- BEV and AV sales
- Data-enabled services
- Shared mobility
- Aftermarket for new tech

### Disruptive business models
- Aftermarket for traditional sales
- Traditional-vehicle sales

### Traditional business models
- Note: Figures may not sum to 100%, because of rounding.
- 1Battery electric vehicle and automated vehicle.
Rideshare 1.0 TAM

0.5%-1.0% of miles

< $20B
(Today ~$5B)

AV TAM @ $1.00
~20% of miles
~$750B

AV TAM @< $1.00
75% of miles
~$1.6T

>150x vs. Today

>300x vs. Today

← Most expensive  Vehicle Miles Traveled Distribution  Least expensive →
Sharing more affordable with driverless cars
Estimated annual cost of ride-sharing (with driverless cars) vs. ownership

Ride sharing:
- 2017: $13,859
- 2027: $7,598

Car ownership:
- 2017: $8,469
- 2027: $6,311
Future: Telsa RoboTaxi

GROSS PROFIT FROM A SINGLE ROBOTAXI

< $0.18
Price per mile

$0.65
Gross profit per mile (assuming 50% empty miles)

90,000
Annual mileage (16 mph x 16 hrs per day)

$30,000
Total gross profit per car per year

11 years
Vehicle longevity
Future: Multimodal

DISRUPTING THE CAR
Alternatives to car ownership by trip length

**Micromobility**
0-5 miles

**Medium distance**
5-15 miles

**Long distance**
15+ miles

**BIKES & SCOOTERS**
- Lime
- Bird
- Jump
- Scoot
- Spin
- Razor

**RIDE HAILING**
- Uber
- Lyft
- Via

**CAR SHARING**
- Maven
- Car2Go
- Getaround
- Turo

60% of trips in the US

25% of trips in the US

15% of trips in the US
Future: Multimodal

Lyft Multimodal Platform

Ridesharing Marketplace

Whim covers all your journeys

1. Choose how you want to travel
2. Grab a ticket
3. You’re ready to go

Public

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More than half of e-hailing trips are new passenger-vehicle miles, causing public concerns over growth in traffic and congestion.

E-hailing growth sources, % of trips that would have been taken by alternative mode of transport

<table>
<thead>
<tr>
<th>Traditional mobility</th>
<th>New vehicle trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal vehicle</td>
<td>25</td>
</tr>
<tr>
<td>Taxi or limousine</td>
<td>18</td>
</tr>
<tr>
<td>Rental car</td>
<td>3</td>
</tr>
<tr>
<td>Bus</td>
<td>19</td>
</tr>
<tr>
<td>New trip</td>
<td>12</td>
</tr>
<tr>
<td>Walk</td>
<td>11</td>
</tr>
<tr>
<td>Train</td>
<td>6</td>
</tr>
<tr>
<td>Bicycle</td>
<td>4</td>
</tr>
<tr>
<td>Total e-hailing</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>53</td>
</tr>
</tbody>
</table>

Note: Figures may not sum to 100%, because of rounding.

Sources: US Department of Transportation, ITS Collegiate Forum
If 50% of miles from TaaS:

- Who owns the vehicles?
- Who maintains them?
- What happens to dealers?
- What happens to OEMs?
- What happens to Rideshare/carshare?
- What opportunities does this create for you?
$1.2T/yr
1.5T miles/yr
280m Vehicles

Car Sharing Network
(Docked)

Car Sharing Network
(Un-docked)

Car Sharing P2P

Subscriptions

Rental Car Co’s

Ridesharing

AV RoboTaxis

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