CONSUMER VIEW OF FUTURE AUTOMOTIVE MARKET TRENDS
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THE AUTO INDUSTRY IS EMBRACING A PERIOD OF SIGNIFICANT CHANGE AS SOCIETY EVOLVES, CONSUMER PREFERENCES SHIFT, AND TECHNOLOGY OPENS UP NEW OPPORTUNITIES

GIVEN ALL THESE CHANGES, OEM’S AND ANALYSTS ARE WORKING HARD TO PREDICT THE FUTURE OF THE INDUSTRY

CONSUMER OPINIONS OFTEN POINT TO DIFFERENT PREDICTIONS ABOUT THE FUTURE THAN THE MAINSTREAM THINKING FROM OEM’S AND ANALYSTS.....AND OVER TIME HAVE PROVEN TO BE VERY ACCURATE
Future Market Myth #1: Millennials less interested in driving and owning cars than prior generations
REALITY: MILLENNIALS DELAYED OBTAINING A LICENSE DUE TO INCREASED COST AND REQUIREMENTS; RESEARCH WITH YOUNGER BUYERS CONFIRMS INTEREST IN OWNING

Graduated Driver’s License Program:
- minimum age of 16 years for a learner’s permit
- mandatory holding period of at least 12 months
- restrictions against nighttime driving between 10:00 p.m. and 5:00 a.m. (or longer)
- limit of zero or one young passengers without adult supervision
- minimum age of 18 years for full licensure

Even Millennials love cars!

Do you consider yourself a car person / someone who is passionate about vehicles you drive?

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Yes, very much</th>
<th>Yes, somewhat</th>
<th>Yes, a little</th>
<th>No, not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total U.S.</td>
<td>59%</td>
<td>41%</td>
<td>33%</td>
<td>18%</td>
</tr>
<tr>
<td>18-34</td>
<td>67%</td>
<td>38%</td>
<td>41%</td>
<td>14%</td>
</tr>
<tr>
<td>35-54</td>
<td>50%</td>
<td>50%</td>
<td>33%</td>
<td>17%</td>
</tr>
<tr>
<td>55+</td>
<td>59%</td>
<td>38%</td>
<td>33%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Source: Ipsos Spring 2018 WTF

Among youth that don’t own a vehicle, it is NOT lack of interest but rather affordability issues...

- Cost / Cannot afford to (62%)
- Use other ways to get around (32%)
- Friends/family can drive me (31%)
- Use a vehicle in my household (30%)
- Cannot afford insurance (28%)
- Have access to good mass transit (21%)
- Cannot afford gas prices (14%)
- Parking costs difficult or prohibitive (13%)
- Not interested in getting one (10%)
- Parents won’t let me get one (10%)
- I am currently shopping for one (10%)
- Credit issues / Cannot get financing (6%)
- Environmental concerns (4%)
- Other (Please specify) (5%)

Source: GM Youth Market Research Study

Myth-Buster
ALTERNATIVE POTENTIAL FUTURE: MILLENNIALS BALANCING RELATIVELY HEAVY EDUCATIONAL DEBT BURDENS, AND RISING COSTS FOR HOUSING, BY REDUCING LEVEL OF HOME OWNERSHIP, BUT CONTINUING TO BUY VEHICLES AT RATES SIMILAR TO PRIOR GENERATIONS

Millennials buying vehicles at the exact same rate as Gen X did at their age

Figure 9. Real Average Annual Household Expenditures on Vehicles by Age and Generation

Source: Federal Reserve Board Millennials Study

Millennials home ownership rate is lower than Gen X were at similar ages (34% vs. 50%)

Home Ownership Rates by Generation

Source: Federal Reserve Board Millennials Study
Future Market Myth #2:

Ridesharing will significantly shrink the size of the new car market
REALITY: WHILE USE OF RIDE-SHARING CONTINUES TO INCREASE, CONSUMERS USE AS AN ADDITION TO VEHICLE OWNERSHIP AND NOT AS A REPLACEMENT; MAJORITY NOT USING IT DAILY/WEELY

Only 1-in-10 users say they use ride-hailing services weekly...meaning a mere 4% of the U.S. adult population today uses ride-hailing apps on a weekly basis (unchanged from 2015, when 3% of Americans reported being weekly riders)

Source: PEW 2018 Ridehailing U.S. Survey

Frequency of Use among Ride-Hailing Users

- **Daily**
  - 2% (2018)
  - 3% (2015)

- **Weekly**
  - 8% (2018)
  - 14% (2015)

- **Monthly**
  - 22% (2018)
  - 26% (2015)

- **Less Often**
  - 56% (2018)

- **No Answer**
  - 67%

Source: PEW 2018 Ridehailing U.S. Survey

US Ride Share Users

- **93%** OWN A VEHICLE

- **80%** PERSONAL VEHICLE IS PRIMARY MODE OF TRANSPORTATION
ALTERNATIVE POTENTIAL FUTURE: THE FUTURE OF MOBILITY IS MULTI-MODAL—INVOLVING A WIDE ARRAY OF FULLY INTEGRATED AND CONNECTED OPTIONS, INCLUDING A STABLE DEMAND FOR VEHICLE OWNERSHIP (INCREASINGLY AUTONOMOUS).

In–depth consumer adoption research conducted globally shows there will be a large and robust emerging industry (AV Ride share) with a stable retail demand for owned vehicles, which become increasingly Autonomous.

City Planner research shows all modes of transportation rising in importance . . . supporting the future of mobility to be multi-modal.

Source: GM U.S. Nationwide Market Study

Source: GM & ESI Thoughtlab “Smart Cities 2025” Study
Future Trend Myth #3:

Personally owned autonomous vehicles will cause households to downsize fleets, contributing to a shrinking car market.
REALITY: GLOBALLY, CONSUMERS ARE VERY POSITIVE TOWARD AUTONOMOUS VEHICLES AND INDICATE THAT POTENTIAL TO OWN MAY INCREASE SIZE OF HH FLEETS

<table>
<thead>
<tr>
<th>Autonomous Vehicle Alliance Global Consumer AV Study (2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPINION ABOUT AVs (Very/Somewhat positive%)</strong></td>
</tr>
<tr>
<td></td>
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<tr>
<td>Pre-Definition</td>
</tr>
<tr>
<td>Post-Definition</td>
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Source: GM U.S. Nationwide Market Study

Long term, Autonomous Vehicles have the potential to increase Household Fleets:

- **Autonomous Vehicle for Those Unable to Drive** (disabled, no-license)
- **Autonomous Vehicle for Caregivers** (aging/elderly)
- **Zero-Occupant Autonomous Vehicle** (errand-running)
- **Autonomous Vehicle that Replaces Air Travel**
- **Multi-Modal Autonomous Transportation Service** (1st mile / last mile)

Source: GM U.S. Nationwide Market Study
ALTERNATIVE POTENTIAL FUTURE: CONSUMERS SHIFT BROADLY TO PURCHASING AUTONOMOUS VEHICLES, WITH STEADY TO POTENTIALLY GROWING HH FLEET SIZES...BUT STILL DESIRE THE ABILITY TO DRIVE THEMSELVES

In a world with AVs, consumers have a strong interest in Full-Time AV’s and Selectable AV’s for their next vehicle

Consumers desire to maintain the capability to drive in addition to riding autonomously

Source: GM U.S. Nationwide Market Study
Future Trend Myth #4:
People will be replacing traditional ownership with subscription services
REALITY: CONSUMERS ARE ONLY WEAKLY INTERESTED IN SUBSCRIPTIONS WITH “STICKER SHOCK” BEING THE PRIMARY CONCERN, ALONG WITH LITTLE INTEREST IN FEATURES SUCH AS ABILITY TO SWAP VEHICLES OR IN BUNDLING INSURANCE/MAINTENANCE ETC.

Lack of Interest due to…

• Managing “Sticker Shock”
  Consumers greatly underestimate their monthly ownership costs

• Quality & Clean Vehicles
  Don’t want signs of prior drivers in swapper vehicles; want latest safety technology

• Cautious of a New Service
  If this is going to be a true “ownership” solution, need confidence the service will be around for the long term

Source: GM U.S. Market Study
ALTERNATIVE POTENTIAL FUTURE: NICHE ADOPTION OF SUBSCRIPTION SERVICE OFFERINGS, WITH TRADITIONAL OWNERSHIP AND LEASING REMAINING THE PREDOMINANT FORM OF PURCHASE

Ultimately, car subscriptions are still early in their development, and most still operate in a limited number of markets; such experiments will be worth keeping an eye on.

Source: GM U.S. Market Study
Future Market Trend
Myth #5:

Lower gas prices drove current SUV boom and higher prices will drive people back to cars
REALITY: SHIFT TO SUV’S HAS BEEN A MULTI-GENERATIONAL 40 YEAR TREND; WITH CONSUMERS CONTINUING TO INDICATE INCREASING PREFERENCE IN ALL GLOBAL MARKETS; SHIFT EVEN CONTINUED DURING THE 2007-2013 FUEL PRICE SPIKES.

Source: GM U.S. Market Study
ALTERNATIVE POTENTIAL FUTURE: CONTINUING LONG TERM TREND TOWARD SUV BODYSTYLES WITH GROWING DIVERSITY OF PRICES, STYLES, & ROOF HEIGHTS; BETTER FUEL ECONOMY NOW, AND SHIFT TOWARD EV’S IN THE FUTURE
THANK YOU