GENERAL MOTORS

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

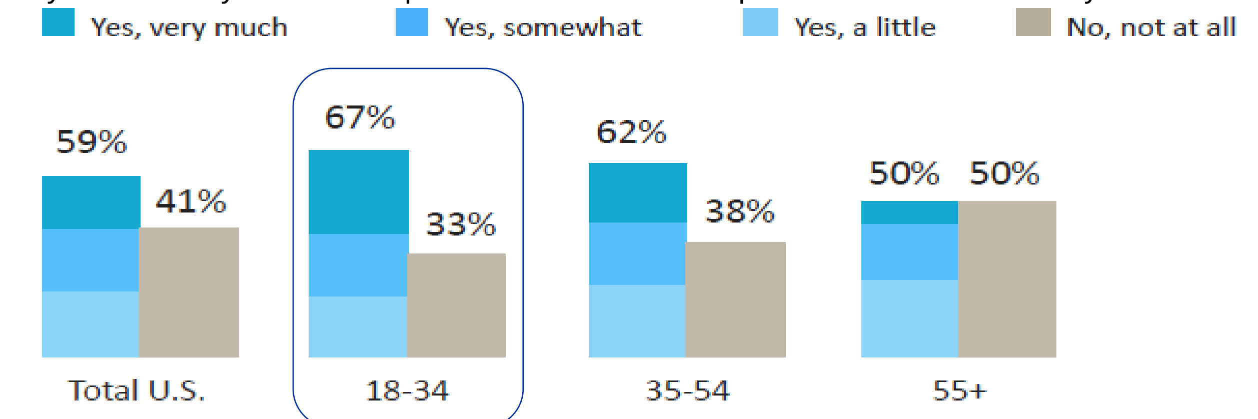
REALITY: MILLENNIALS DELAYED OBTAINING A LICENSE DUE TO INCREASED COST AND REQUIREMENTS; RESEARCH WITH YOUNGER BUYERS CONFIRMS INTEREST IN OWNING

Graduated Driver's License Programs

- 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

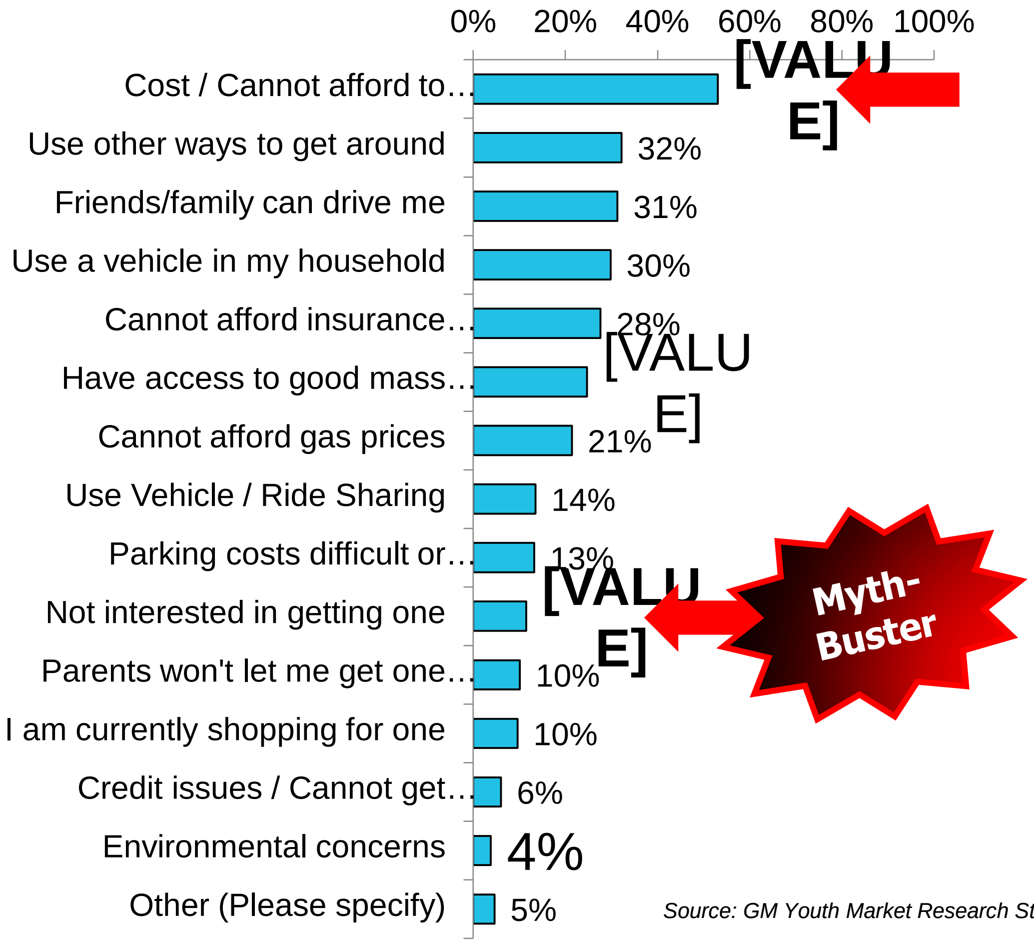
Even Millennials love cars!

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



Source: Ipsos Spring 2018 WTF

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

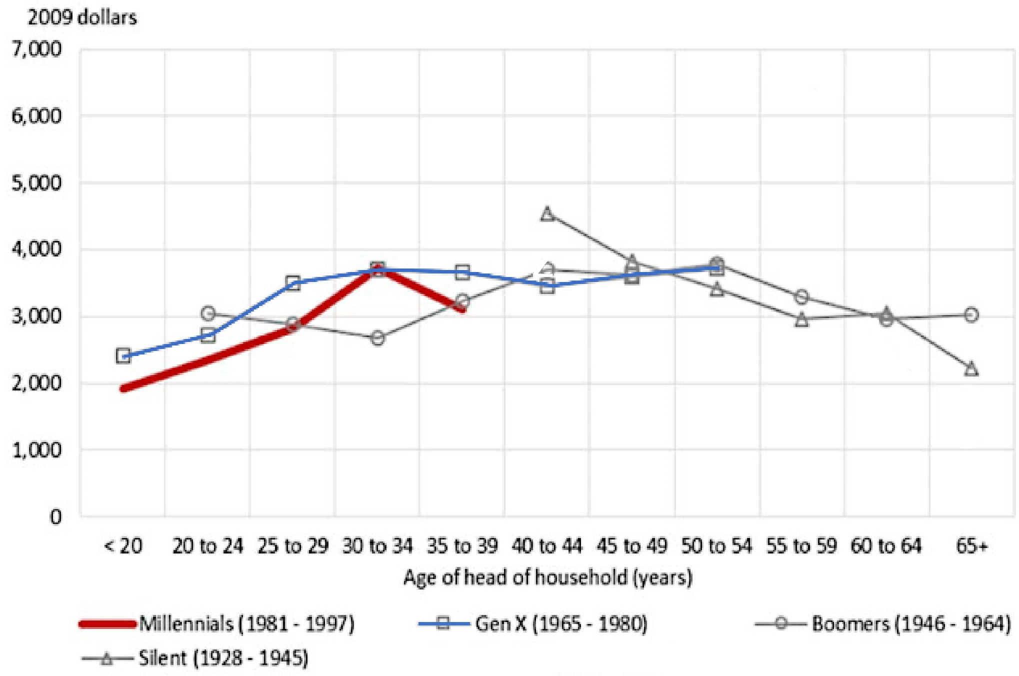


Source: GM Youth Market Research Study

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

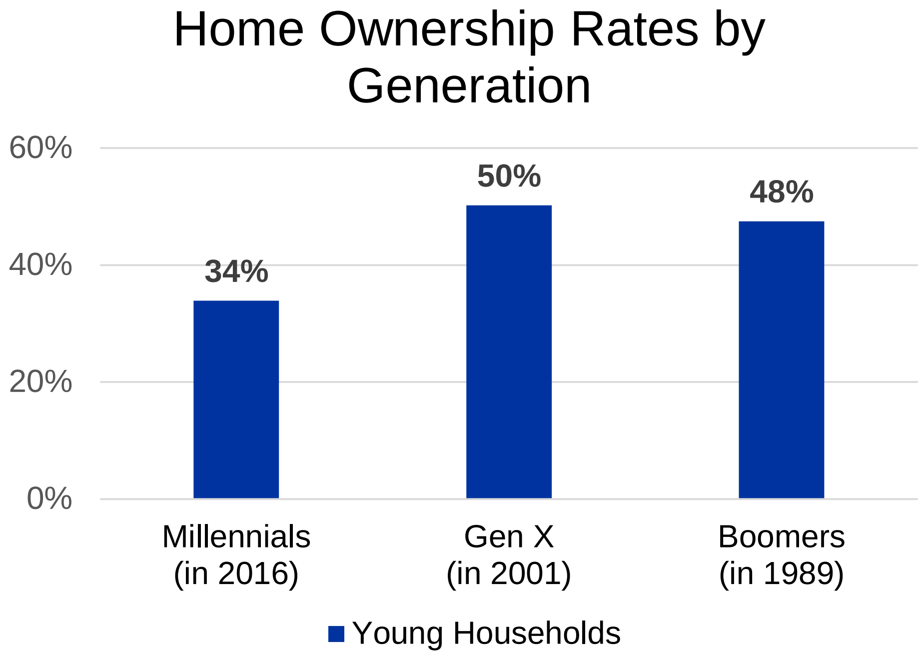
Millennials buying vehicles at the exact same rate as Gen X did at their age

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%)



Source: Federal Reserve Board Millennials Study

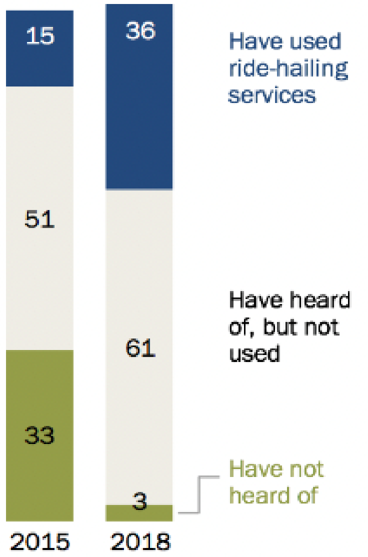
Future Market Myth #2:

Ridesharing will significantly shrink the size of the new car market

REALITY: WHILE USE OF RIDESHARING CONTINUES TO INCREASE, CONSUMERS USE AS AN ADDITION TO VEHICLE OWNERSHIP AND NOT AS A REPLACEMENT; MAJORITY NOT USING IT DAILY/WEEKLY

Share of Americans who have used ride-hailing services has more than doubled since 2015

% of U.S. adults who say they ___ ride-hailing services like Uber or Lyft

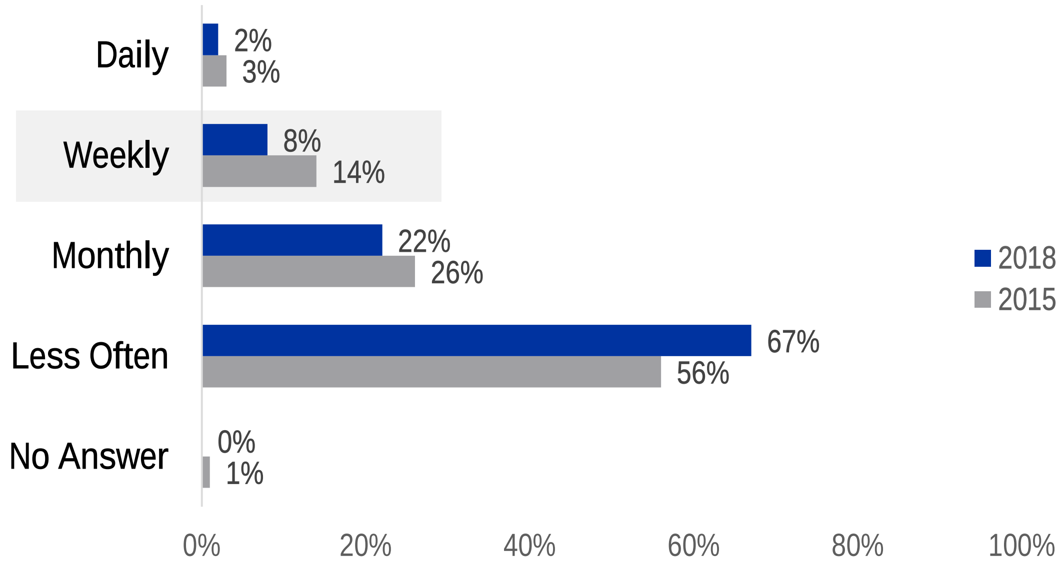


Note: Respondents who did not give an answer are not shown.
Source: Survey conducted Sept. 24-Oct. 7, 2018.

PEW RESEARCH CENTER

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)*

Frequency of Use among Ride-Hailing Users



Source: PEW 2018 Ridehailing U.S. Survey

US Ride Share Users

93%

OWN A VEHICLE

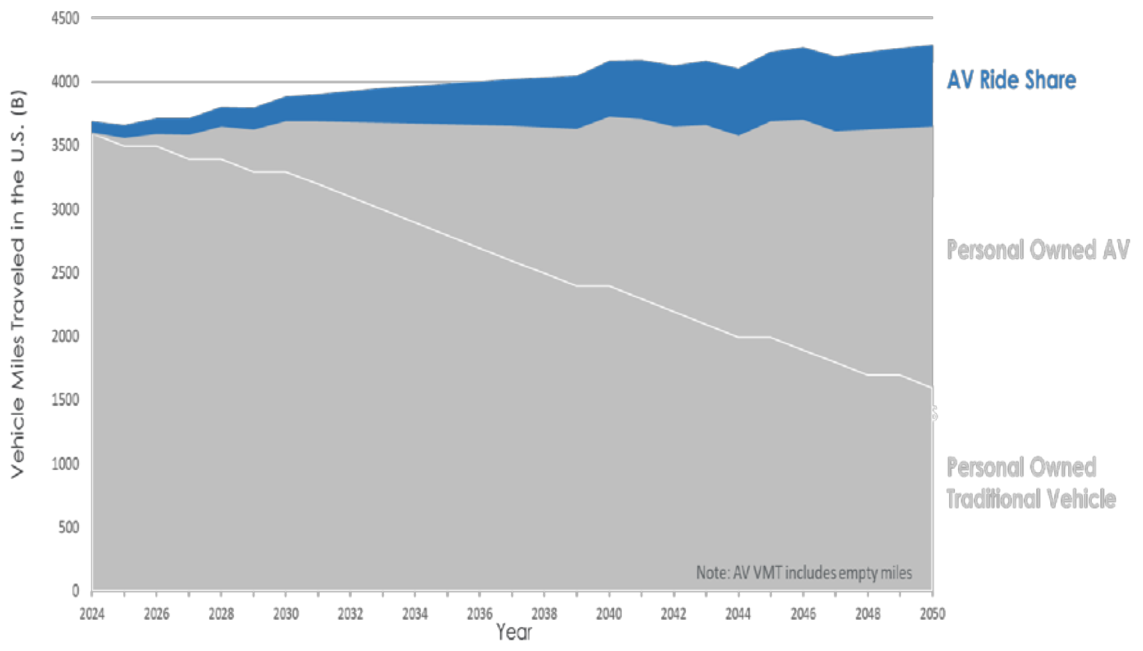
80%

PERSONAL VEHICLE IS PRIMARY MODE OF TRANSPORTATION

Source: GM RideShare Users U.S. Survey

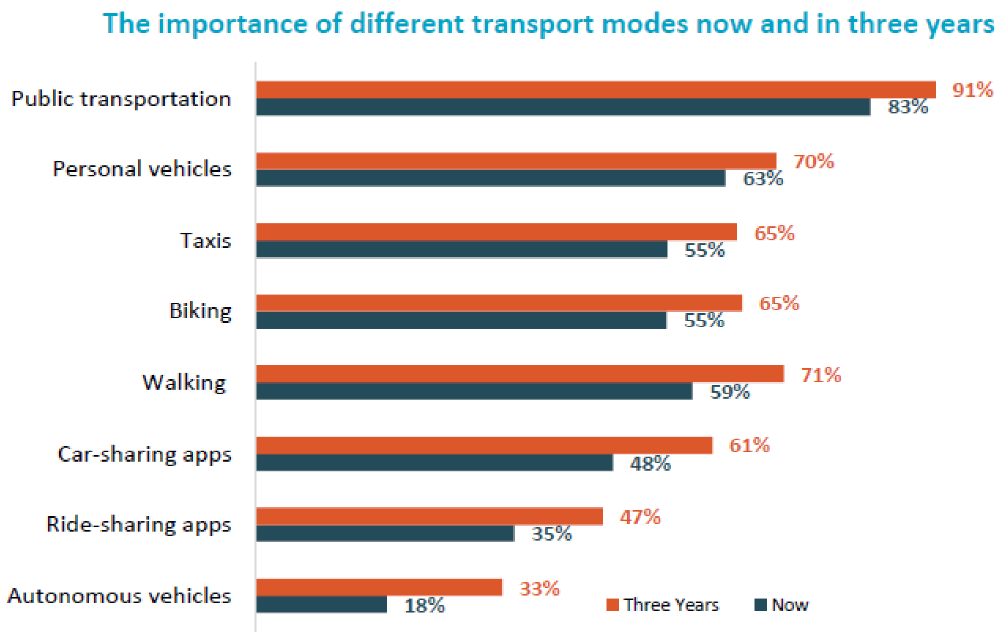
ALTERNATIVE POTENTIAL FUTURE: THE FUTURE OF MOBILITY IS MULTI-MODAL—INVOLVING A WIDE ARRAY OF FULLY INTEGRATED AND CONNECTED OPTIONS, INCLUDING A STABLE DEMAND FOR VEHICLE OWNERSHIP (INCREASINGLY AUTONOMOUS).

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



Source: GM U.S. Nationwide Market Study

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



Source: GM & ESI Thoughtlab "Smart Cities 2025" Study

Future Trend Myth #3:

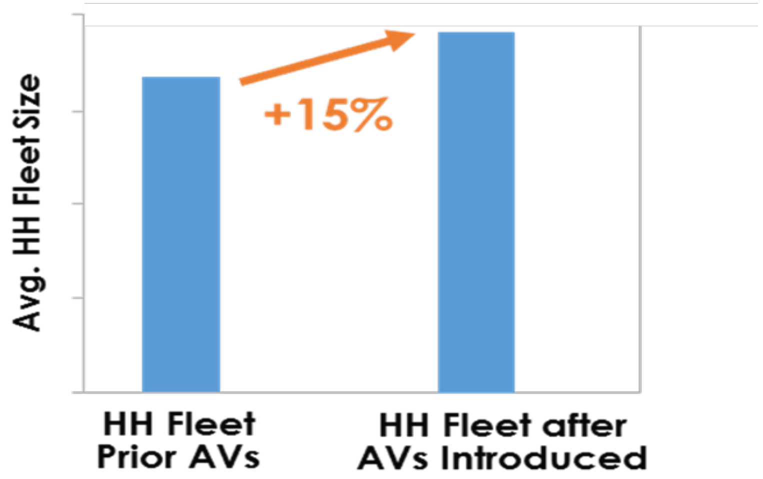
Personally owned autonomous vehicles will cause households to downsize fleets, contributing to a shrinking car market

REALITY: GLOBALLY, CONSUMERS ARE VERY POSITIVE TOWARD AUTONOMOUS VEHICLES AND INDICATE THAT POTENTIAL TO OWN MAY INCREASE SIZE OF HH FLEETS

Autonomous Vehicle Alliance
Global Consumer AV Study (2018)

OPINION ABOUT AVs *(Very/somewhat positive%)*	n=400	n=400	n=400	n=400
Pre-Definition	35%	68%↑	30%	61%↑
Post-Definition	48%	71%	41%	86%↑

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



Source: GM U.S. Nationwide Market Study

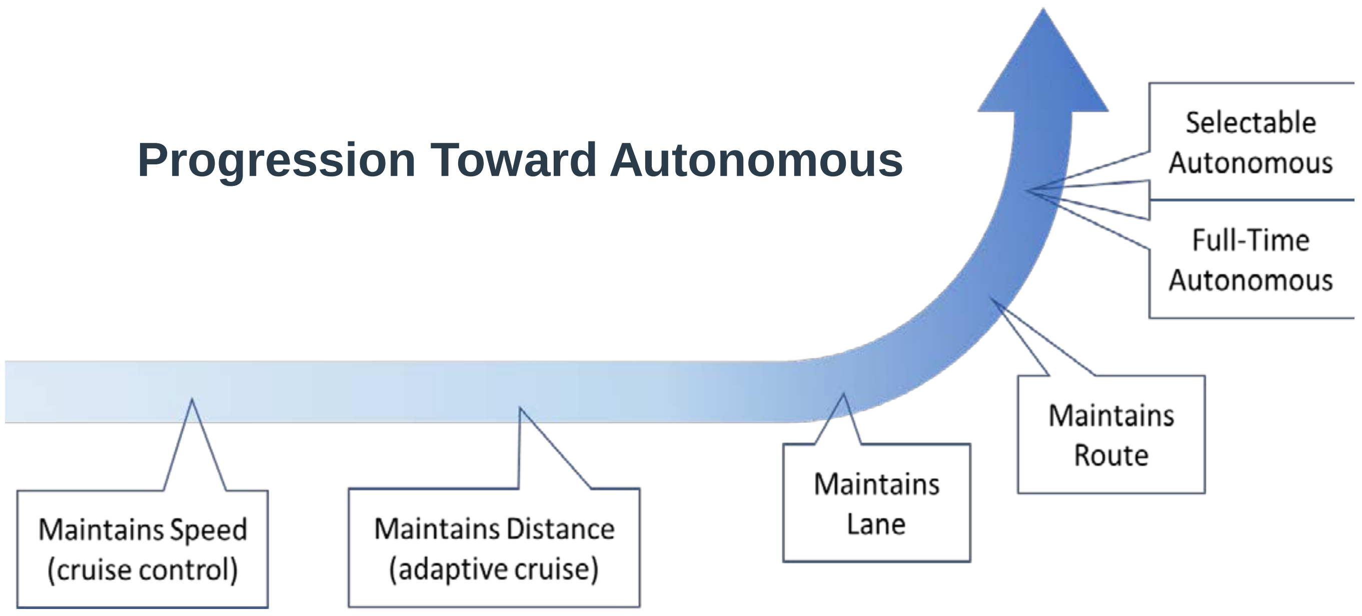
Autonomous expands the capability of vehicles to new uses

- **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

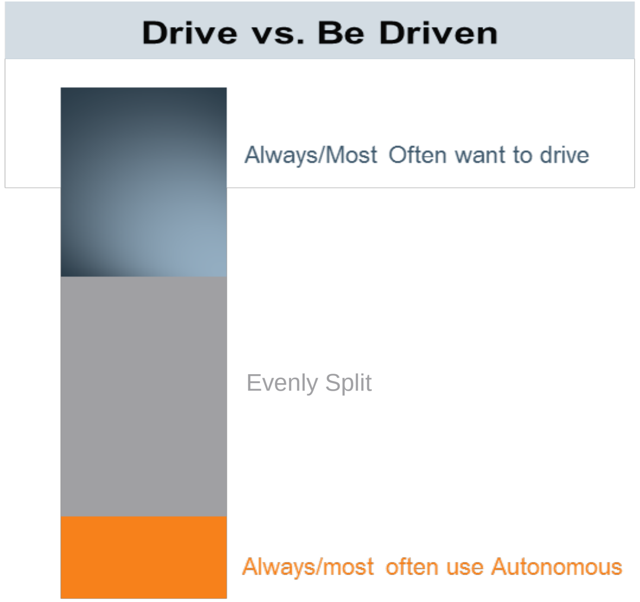
ALTERNATIVE POTENTIAL FUTURE: CONSUMERS SHIFT BROADLY TO PURCHASING AUTONOMOUS VEHICLES, WITH STEADY TO POTENTIALLY GROWING HH FLEET SIZES…BUT STILL DESIRE THE ABILITY TO DRIVE THEMSELVES

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

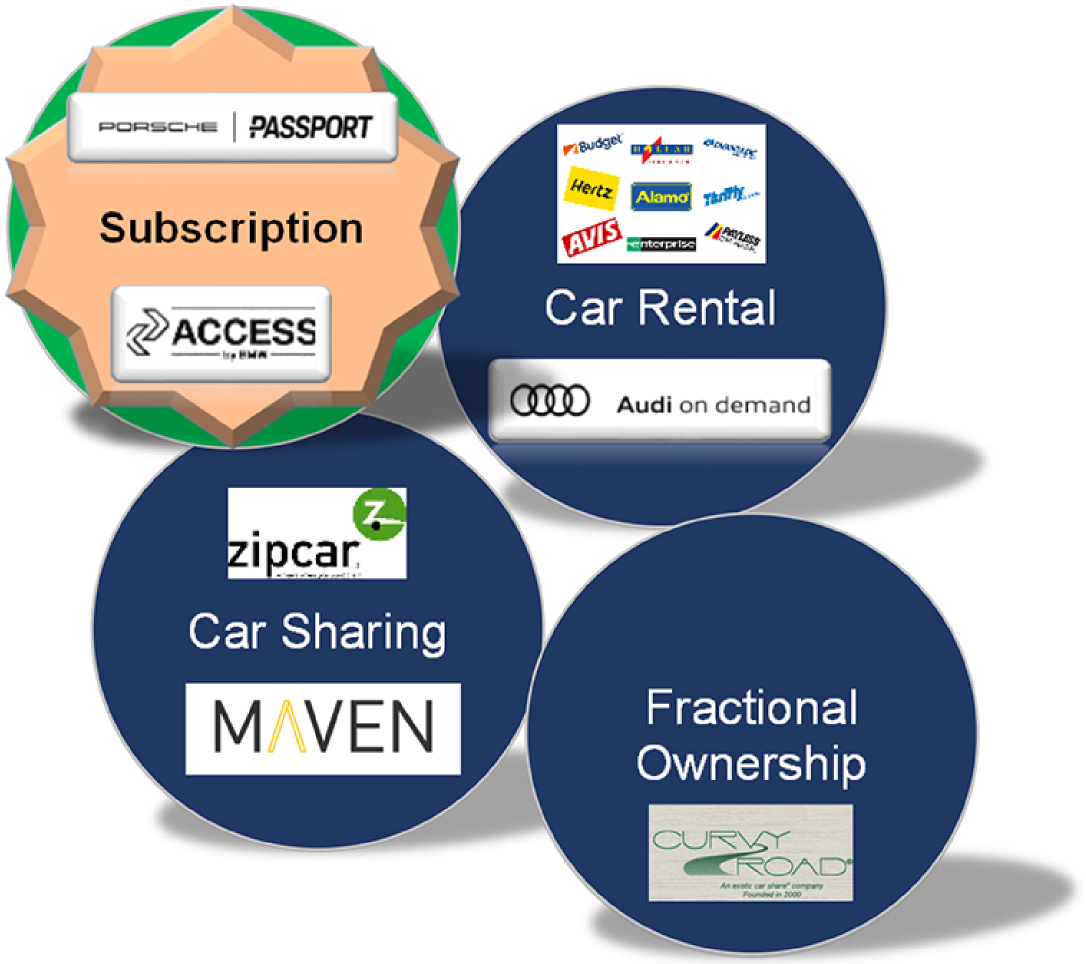


Source: GM U.S. Nationwide Market Study

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



Source: GM U.S. Nationwide Market Study



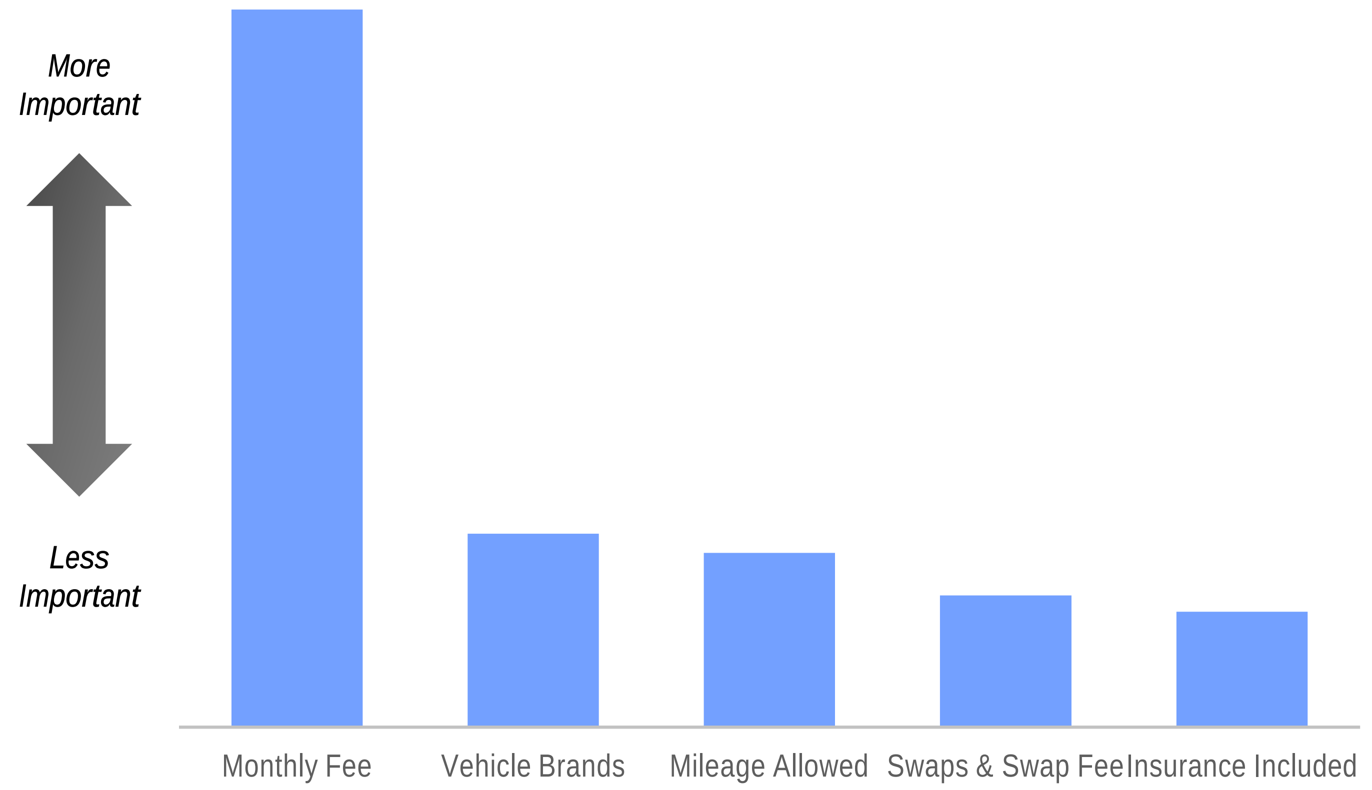
Future Trend Myth #4:

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…

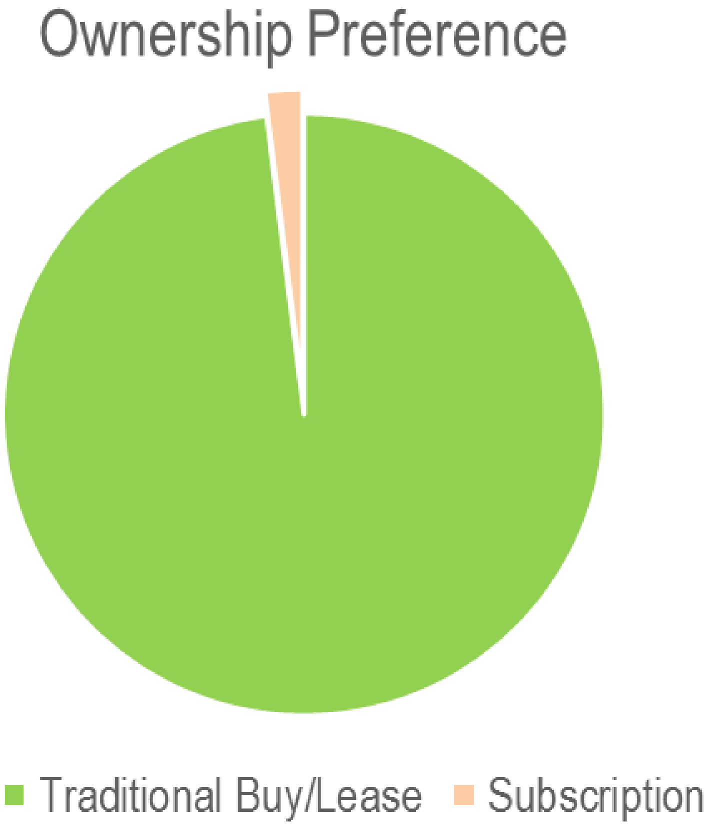
- **Managing “Sticker Shock”**
  Consumers greatly underestimate their monthly ownership costs
- **Quality & Clean Vehicles**
  Don’t want signs of prior drivers in swapper vehicles; want latest safety technology
- **Cautious of a New Service**
  If this is going to be a true “ownership” solution, need confidence the service will be around for the long term



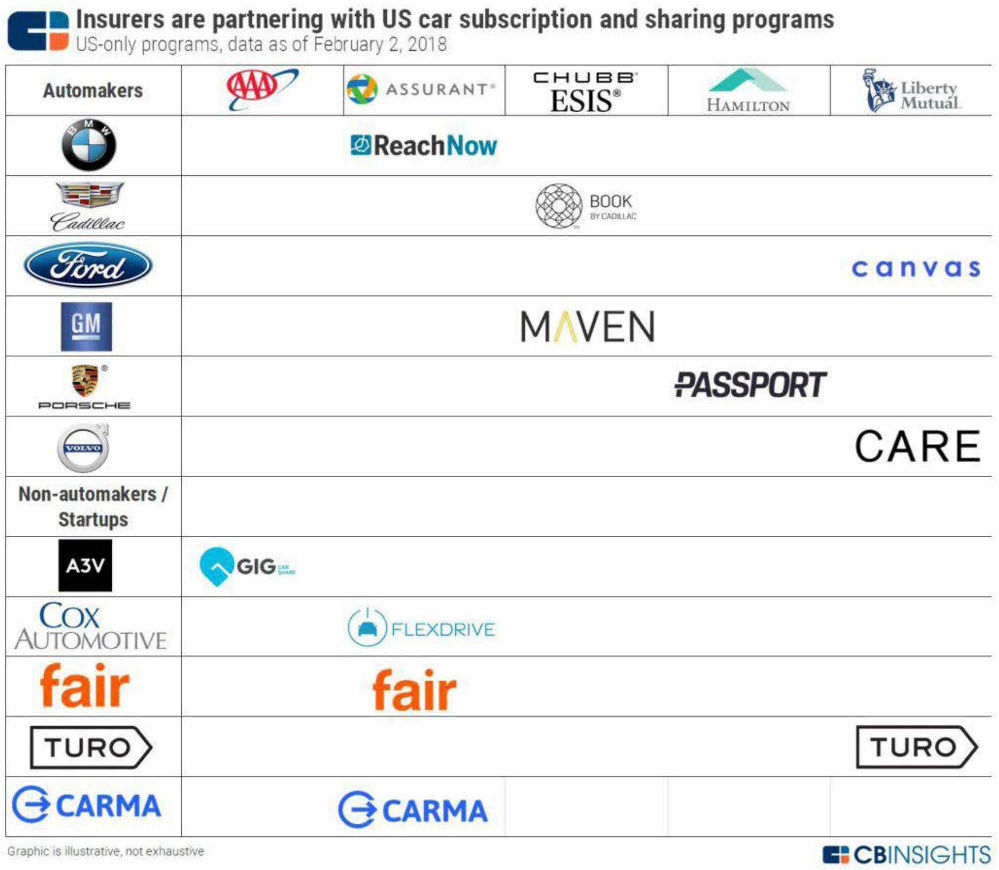
Source: GM U.S. Market Study

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



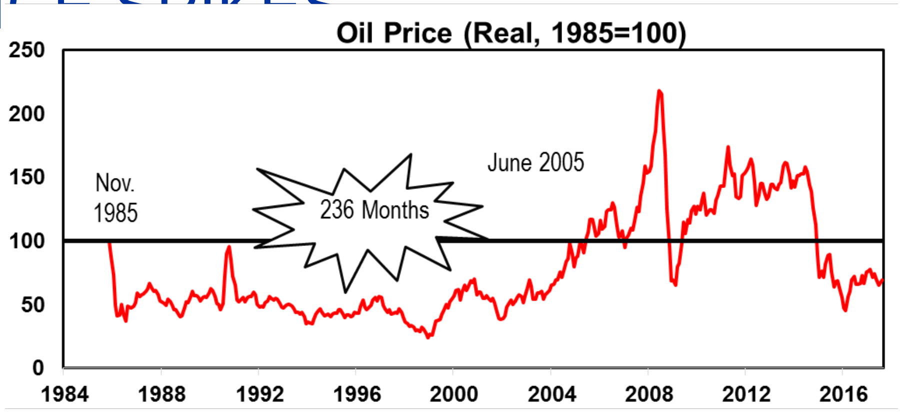
Source: GM U.S. Market Study

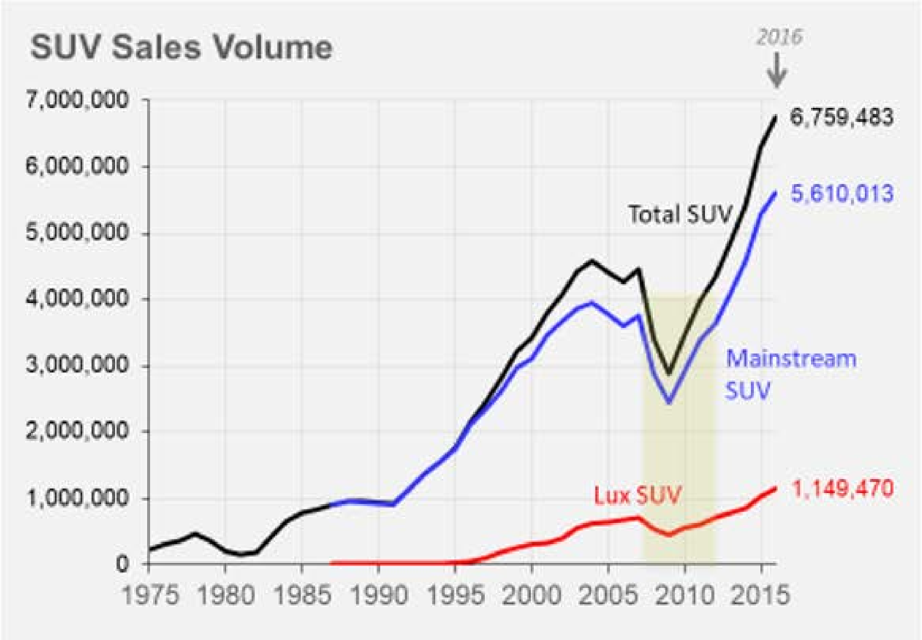


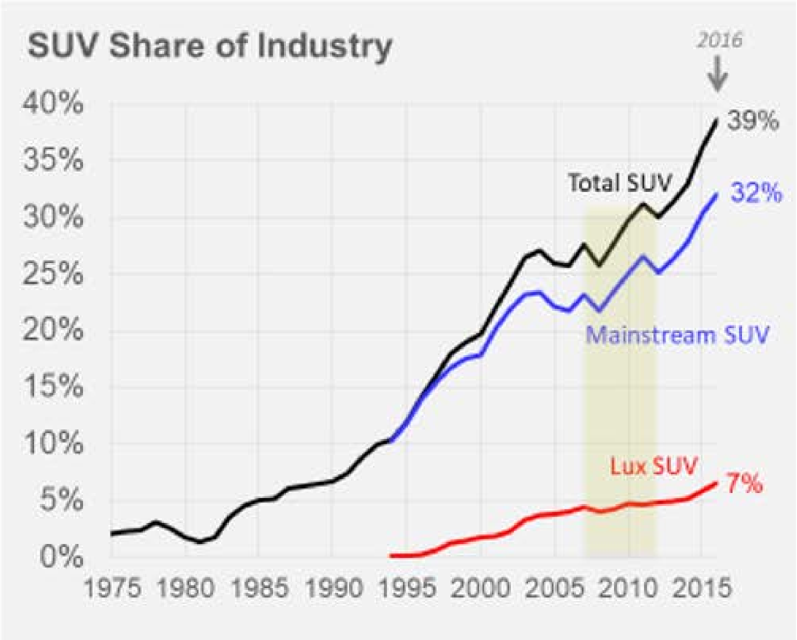
Future Market Trend Myth #5:

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


Chevy Blazer RS


Cadillac XT4


Mercedes EQC


Jaguar I-Pace


Audi E-TRON Quattro


Audi Q8


BMW iNext


Nissan iMx


Buick Enspire EV


VW I.D. Crozz

New Vehicles and Pending Launches → New Concepts


THANK YOU