

# Understanding EV Drivers

Report  
March 2022

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# Executive Summary

# Agenda

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Executive Summary

Market Landscape

Purchasing Drivers

Features Analysis

Usage and Occasion

Source of Information





# Executive Summary

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- After China's successful launch of their Ultium 1.0 GM campaign in 2021, research was needed to further understand EV buyers' view of brands, purchase drivers, and car features to aid in preparation for an Ultium 2.0 campaign in 2022.

## Topline Findings

1. Tesla, NIO and XPeng lead in awareness and consideration
2. EV brands are recognized for 'innovative' while traditional brands have 'established heritage'
3. Among all sources of information, drivers mostly stay updated using company-Branded APPs.
4. Sustainability factors are influential in driving EV purchase vs. traditional fuel cars
5. Consumers feel it's more acceptable to have features included in the overall cost. Sentinel mode with Tesla is an exception.
6. A considerable number of drivers have participated in the brand's community activities, especially in Online Discussion



# Executive Summary

Tesla, NIO and XPeng lead in awareness and consideration

1

- Tesla garners strongest awareness and consideration and leads the pack, following by NIO and XPeng and BYD forming the secondary cluster
- Traditional fuel car brands all trail behind in the EV space while Cadillac, Buick and Chevrolet show relative strength over others

EV brands are recognized for “innovative” while traditional brands related with “established heritage”

3

- Among all brands, new EV brands such as NIO, XPeng are regarded as more “Smart & Connected.”
- Established brands such as BMW/Mercedes show strong heritage
- Brands don’t appear distinctly differentiated indicating the early stage of category development that presents the opportunities for driving branding territories

Occasions associated with different features vary, indicating a complex network of feature usage under circumstances.

5

- On average, Smart Navigation features are used in more than  $\frac{1}{3}$  occasions
- Assisted Driving and AI-Powered Voice Control features apply mostly to occasions that are time long or happen with higher frequency
- Remote Control, Smart Battery and Operating System features are related to a single-purpose occasions

Among all sources of information, drivers mostly stay updated using Branded APPs.

7

- Social media and vertical auto platforms are also important channels/sources of information
- Other possible sources include peer-to-peer communication (Wechat and F2F) and traditional media channels (TV/Radio)

Sustainability factors drive EV purchase vs. traditional fuel cars

2

- Most recognizable sustainability factor with EV is reduced carbon emission, esp. among 25-34 YO
- Battery features (including the availability of charging station) is cost of entry driver
- Assisted Driving and Smart Navigation factors show potential as core category driver while connected apps and co-created services/system can be brand differentiators

Awareness and ownership of features on group level appear high but not very high on individual level

4

- Only a selected few features are known to about half of the drivers while majority of the features score 20-40% of awareness
- Noteworthy, usage conversion from ownership of features appears in the range about 60-80%
- Smart battery and operation system appear less often used at group level

To include features in a one-off price payment is more acceptable for consumers.

6

- Almost all features were considered being included in the standard selling price
- “Sentinel Mode” is an exception, more people think it is suitable to subscribe to this feature on a periodic manner.

A considerable number of drivers has participated in brand’s community activities, namely – Online Discussion

8

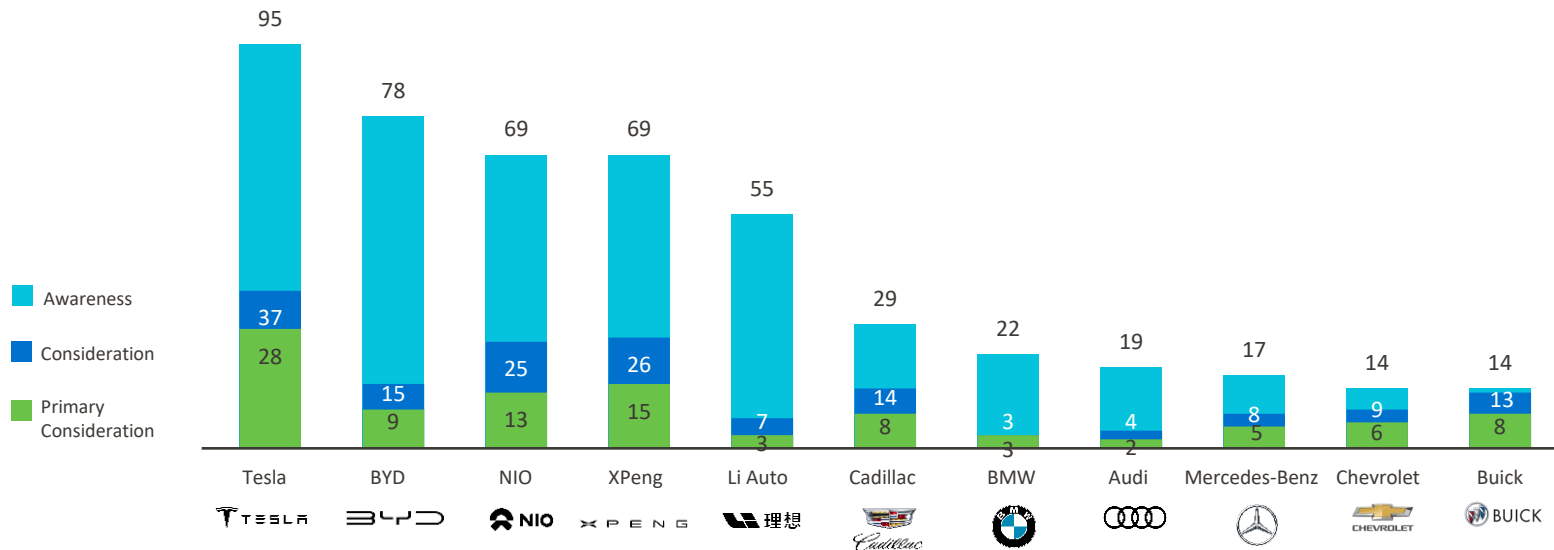
- Drivers mostly participate in online discussion via branded app or group chat in Wechat.
- Offline events still has influences, especially auto-related seminars/expos.
- EV brands like Tesla, NIO, XPeng all have their own community activity styles.



# Market Landscape

# Competitive Landscape

- EV brands represented by Tesla NIO and XPeng lead on awareness and consideration over traditional mainstream auto brands such as Cadillac, BMW and Mercedes-Benz







Q1: Which of the following brands offer EV in your knowledge? Awareness  
 Q2: Which brand(s) would you seriously consider for your next EV? Consideration  
 Q3: Which brand would be your first choice? Primary Consideration  
 Base: 600 | Question 1 to 3 | All numbers are in percentages.



# Meet Our EV Drivers

## 4 Types of EV Drivers on the road

	Practicality-Driven 	Sophisticated and Premium 	Young Aspirers 	Life Explorers 
Basic Demographics	Female Skewed (All Ages)	Mature with Families (35-45)	25-34 Young Adults	25-34 Young Adults (Some with Family)
Popular Brand Choices	<ul style="list-style-type: none"> <li>BYD sedans</li> </ul>	<ul style="list-style-type: none"> <li>Premium SUV owner:               <ul style="list-style-type: none"> <li>NIO ES6/ES8</li> <li>Tesla Model Y/Model X</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Premium sedan owners               <ul style="list-style-type: none"> <li>Tesla Model S/Model 3</li> <li>NIO EC6</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>XPeng and Li Auto owners</li> </ul>
Attitudinal Traits	<ul style="list-style-type: none"> <li>Focus on low cost of total car ownership</li> <li>Seeking maximum comfort and operating convenience</li> </ul>	<ul style="list-style-type: none"> <li>Want to have the ultimate driving experience</li> <li>Must have all-round safety assurance               <ul style="list-style-type: none"> <li>NIO AQUILA</li> </ul> </li> <li>Enjoy the all-round services               <ul style="list-style-type: none"> <li>NIO community (on/offline)</li> <li>Tesla club</li> <li>Social gathering</li> <li>Volunteering</li> </ul> </li> <li>Detail-minded (on design/function)</li> <li>Interested in enhanced human-vehicle relationship:               <ul style="list-style-type: none"> <li>More advanced AI (e.g., NIO NOMI)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Strong career minded and ambitious               <ul style="list-style-type: none"> <li>Have a purposeful life</li> </ul> </li> <li>Willing to pay for comprehensive tech ecosystem:               <ul style="list-style-type: none"> <li>Tesla's technology e.g., Tesla autopilot</li> <li>NIO's ecosystem</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Keep up with brands that always provide latest innovation in the tech space</li> <li>Likes novel and futuristic interior/product design:               <ul style="list-style-type: none"> <li>Dashboard</li> <li>Central controlling pad</li> <li>Unique in-vehicle entertainment</li> </ul> </li> <li>Care about visible/tactile/audible features:               <ul style="list-style-type: none"> <li>AI voice control</li> <li>Smart navigation</li> <li>In-vehicle entertainment features</li> </ul> </li> </ul>
	"It is very convenient to control my BYD sedan via my phone, save me a lot of time." <i>- 25-34 female BYD owner</i>	"NIO have a safer system, and NOMI is a very smart AI." <i>- 35-45 male NIO owner</i>	"Tesla has very advanced and comprehensive 'smart connected' functions." <i>-25-34 female Tesla owner</i>	"My Li ONE is a 'must-have' if you love camping. It's a super mobile power bank." <i>-35-45 male Li Auto owner</i>





# Purchasing Drivers



## Purchase Consideration (EV vs. Fuel Car)

**71%** consider sustainability factors followed by technology and cost compared to fuel cars.



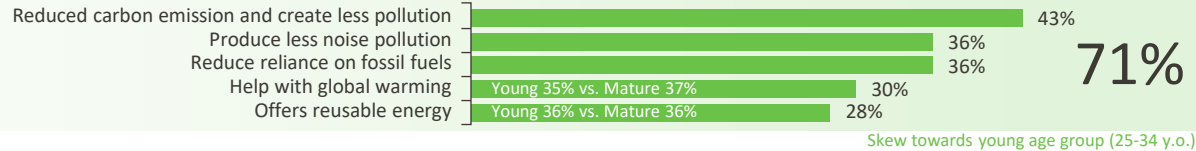
Q4: Which of the following factors are important to people like you in the decision about buying an EV vs. a traditional fuel vehicle? (Select all that apply)  
Base: 600 | Question 4 | All numbers are in percentages.



# Purchase Consideration (EV vs. Fuel Car)

- As claimed, purchasing EV is more driven by sustainability and technology factors comparing with fuel cars

## Sustainability



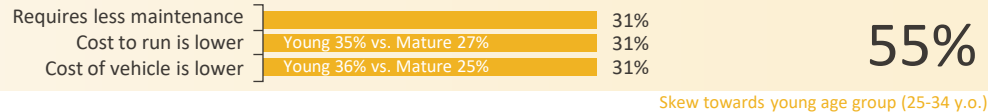
### What?

- Sustainability pillars drive consideration for purchasing EV cars
- Followed by technology collectively

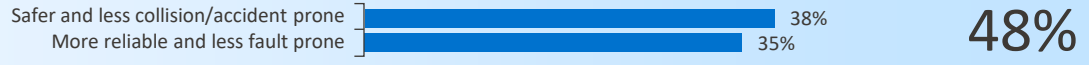
## Technology



## Cost

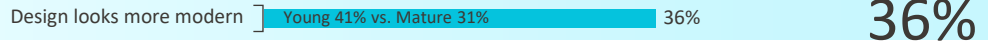


## Safety & Quality



Rationalization for cost is not only the ticket price of the car itself, but also cost of total ownership

## Design



Q4: Which of the following factors are important to people like you in the decision about buying an EV vs. a traditional fuel vehicle? (Select all that apply)

Base: 600 | Question 4 | All numbers are in percentage

# Double Normalization

- We used double normalization technique to moderate halo effect and bring out the true brand distinctions relative to each other



# 1

In **absolute terms**, Mr. Big & Mr. Small have exactly the same foot size.

# 2

But, **relative to his size**, the feet of Mr. Small are much larger...

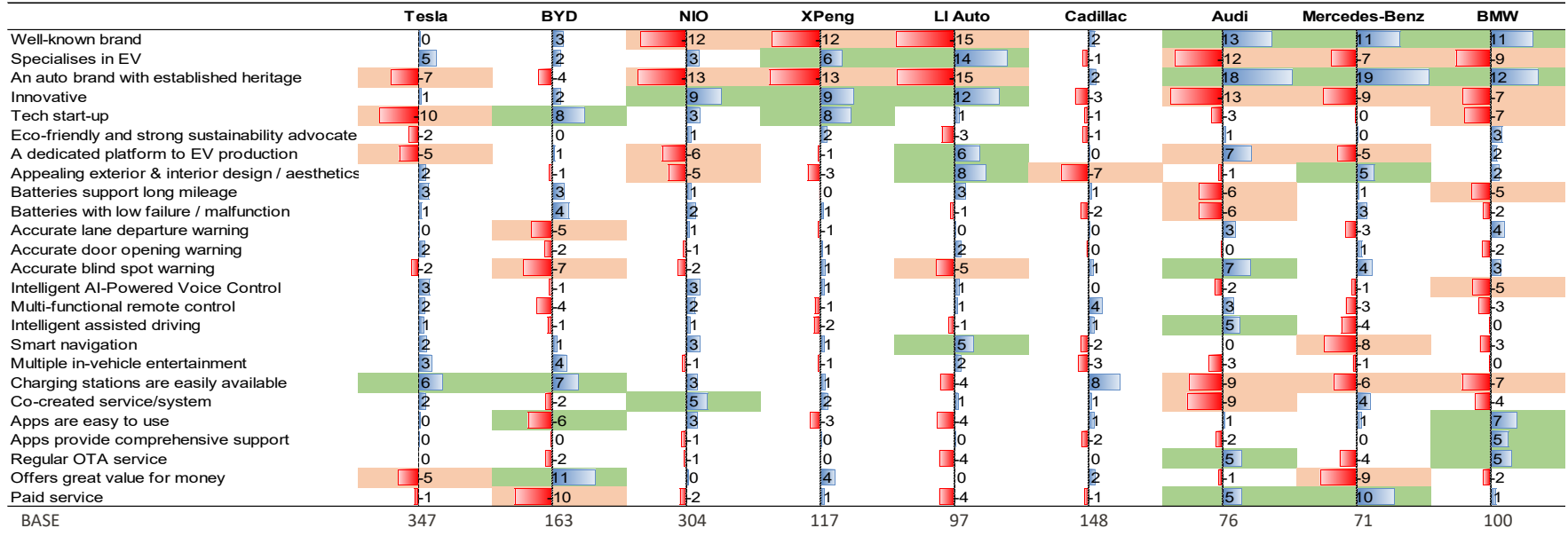
# 3

In effect, we could then use the big feet as a distinguishing feature, or characteristic, to describe Mr. Small. His feet are what makes him different, **relative to his size**.

Similarly, with a Brand-Image Grid, we want to identify the distinguishing features, or characteristics, that each brand has, **relative to their size**.

# Driver Analysis: Brand Strength

- Audi, Mercedes-Benz and BMW are highly regarded as established well-known brands while EV brands such as Xpeng, Li and Nio are considered more innovative. Tesla and BYD are considered to offer charging stations that are easily available

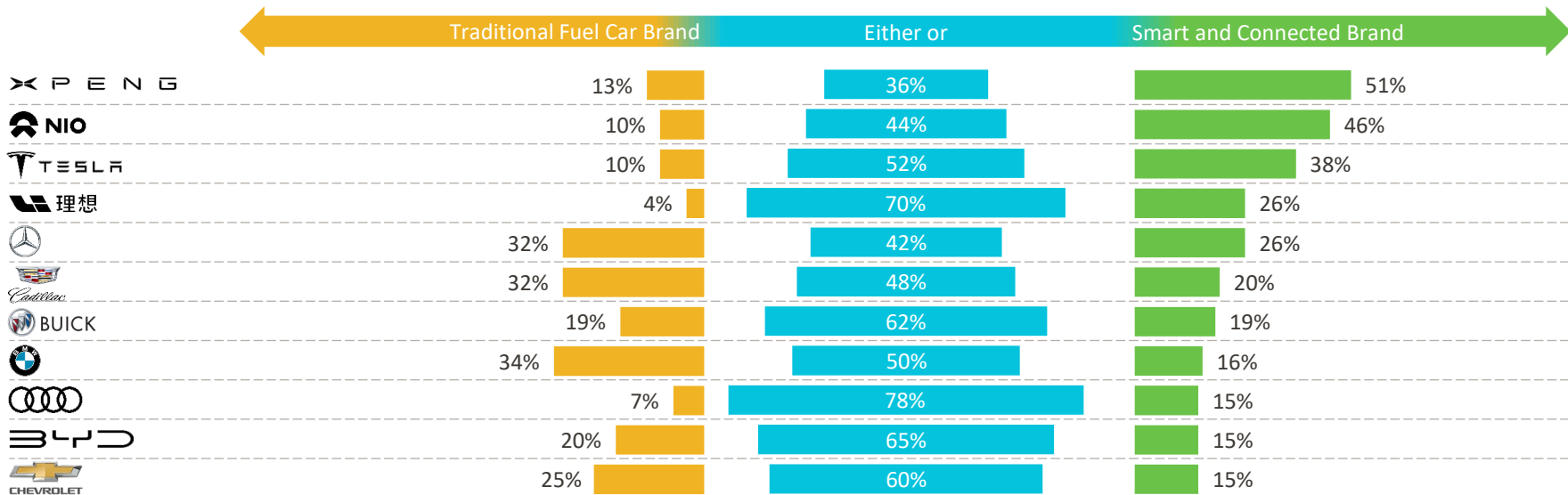


Q6: Now, please think specifically about [PN: PIPE IN SELECTED AT Q1, BOLDDED]. Please select all the statements you think that can be used to describe this brand in terms of its EV offerings, not other vehicles or products offered by the same brand. (Select all that apply) N=Floating base for brands | Question 6. Note: Chevrolet and Buick were excluded due to small sample size.



# Brand Image: Traditional vs. Smart and Connected

- As typical EV brands, XPeng, NIO and Tesla are more strongly associated with smart and connected dimension while Mercedes, Cadillac and BMW skew more towards traditional fuel car unsurprisingly. Audi and Li Auto appear more in the middle of the road



Q7: We would like to better understand your perceptions of these EV brands. Please rate the extent to which you perceive each of these brands as “traditional” on one end and “smart and connected” on the other. (Select one in each row). Base: 600 | Question 7 | All numbers are in percentage



# Features Analysis

# Currently Established Knowledge About Smart Connected Features



- Drivers' knowledge about smart connected features are centered around convenience, driving experience, driving safety, entertainment and operating system related

## Convenience



### AI-Powered Voice Control

- Functional control (A/C, seating, steering wheel, seat heating, demist etc.)
- Software/app voice control ...



### Remote Control

- Vehicle status report
- Remote A/C
- Remote lock
- Distant locating
- ...



### Internet of Things

- Phone and Car
- Home and Car
- ...

## Driving Experience



### Assisted Driving

- Auto pilot
- ACC/LCC/ALC
- Auto parking/assisted parking
- ...



### Smart Navigation

- Usual routes memories
- Smart navigation plans
- Real road condition alerts
- Weather reports
- ...

## Driving Safety



### Safety Assurance

- Lane departure warning
- Door opening warning
- Blind spot warning
- ...



### Smart Battery Power

- Battery monitoring and reminder
- Smart charging planning
- Other battery health checks
- ...

## In-Vehicle Entertainment



- Built-in entertainment (music and movies)
- Compatible apps (iQiyi, Baidu)
- Audio books, educational contents and games
- ...

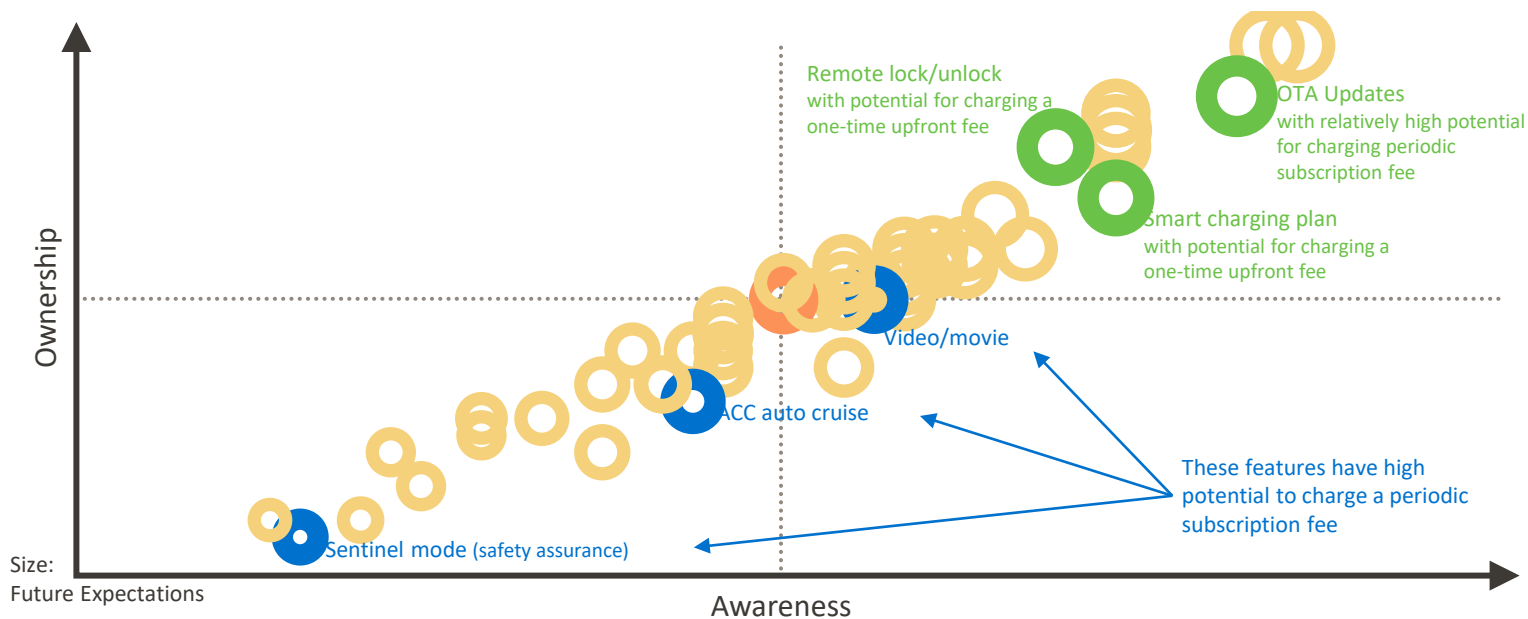
## Operating System



- Vehicle OS compatibility with third-party Apps
- Over the Air updates (OTA)
- ...



The following chart shows the dimension of features' awareness, ownership and future expectations. A linear trend has been observed. Further investigation of pricing preferences reveals OTA updates with highest potential.



1

Sentinel mode (safety assurance, ACC auto cruise, Video/movie) has limited awareness/ownership/future expectation, but they are considered by consumers as suitable for being subscription-based. They have potential in the future to charge additional periodic fees.

2

Among TOP awareness/ownership/future expectation features, OTA updates has potential to charge periodic subscription fee. Smart charging plan and Remote lock/unlock has some potential to be the ones to charge one-time upfront fee from consumers' perspective.



# Features Usage and Occasions



$\geq 1/3$

On average  
smart navigation features  
are used in more than  $1/3$  occasions  
including road trips, daily commute and traffic jam



Q12: Which of the following best describes the type of occasions in which these features will be used? (Select all that apply)  
Base floating with feature selection in Q11 | Question 12



# 66%

consumers use  
lane keeping assistant  
when driving at a high speed



Q12: Which of the following best describes the type of occasions in which these features will be used? (Select all that apply)  
Base floating with feature selection in Q11 | Question 12

# 40%+

consumers use  
warning, sensory and  
monitoring features  
during the traffic jam

Q12: Which of the following best describes the type of occasions in which these features will be used? (Select all that apply)

Base floating with feature selection in Q11 | Question 12

general motors





# Considerations

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1. Being a legacy automaker does not always work to our advantage when it comes to being perceived as innovation. What reason can we give people to believe and trust in our innovative EV offerings (e.g., differentiators features, experiences, brand partnerships, live and virtual cultural moments, influencers we associate with)?
2. How do we transition from showcasing a feature to showcasing the human benefit?
3. While sustainability is not the primary driver and focus for our campaign work, how do we communicate our actions in a way that shows environmental responsibility?
4. How do we present our cost structure of services in a way that is easily understandable?
5. How does Ultium, and its respective brands, intersect and drive cultural conversation in online communities?



## Next Steps

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1. Identify the features/human benefits of the Ultium offerings
2. Identify the role of sustainability within your campaign architecture
3. Look into cost structure of services to understand how we can make it easily understandable and transparent for our customers
4. Explore online communities we want to be a part of



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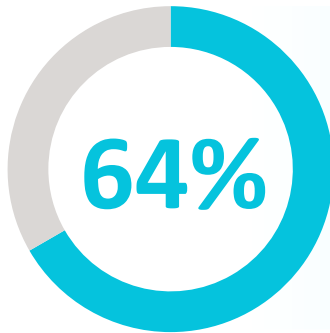


# Source of Information

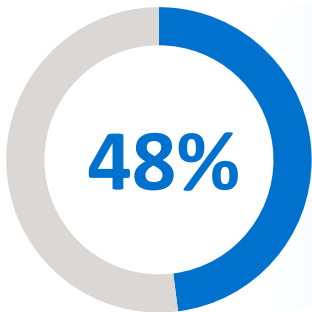
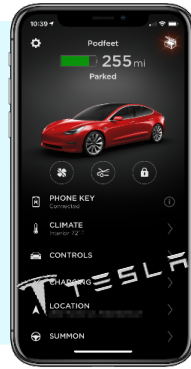
# Source of Information

- Brand own Apps are the most popular source

Consumers have evenly accessed information from vertical platforms and social media to diversify knowledges on electric vehicles



Brand Apps

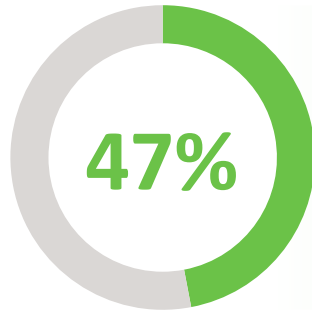


Social Media



新浪微博

小红书



Vertical Platform



汽车之家  
autohome.com.cn

懂车帝

PC auto  
com.cn  
太平洋汽车网

Q14: How do you get EV or Smart System inspiration or information? (Select all that apply)

Base: 600 | Question 14 | All numbers are in percentage.



thank you!