TOYOTA

Federica Italia, Nityashri Sankaran, Jezabel Rodriguez, Isabella Maria Rangel, Ethan Noell

Executive Summary

Situation

Toyota is struggling to stand out in the **tech and sustainability focused** Chinese EV market

Question

How can Toyota **leverage its reputation to gain market share** in the Chinese EV market

Solution

Three-Tiered Approach

Toyota Family — **Sustainability** — **Digitalization**

Impact

$0.55B
Cost of the Initiative

35%
Increase in BEV sales

4%
BEV Market Share

Source:

Toyota is late to the EV industry in China

EV Lines in China

→ Released the **Beyond-Zero EV line** in China with 4 models

→ First model released in October 2022 did not receive much revenue

Past CEO

→ Past CEO, Akio Toyoda was hesitant toward the EVs

→ Under-estimated the **growth potential of the EV industry**

Market Share

→ Toyota's market share for EVs in China is only **0.25%**

→ Entered Chinese EV market in **2018** when market was already saturated

Although Toyota's entry into the EV industry is delayed, the new focus is **expanding the EV business**

New CEO, Koji Sato wants to release **10 new EV lines by 2030**

Source: Reuters, Statista

There is exponential growth in the Chinese EV market

EVs are the future of cars in China

53%	**US$190billion**	**14.18%**
Share in the global EV market	Projected market value for EVs	CAGR for EVs

China plans to ban gas cars by 2035

Toyota needs to **adapt to the fast-paced EV market** in order to stay relevant in China

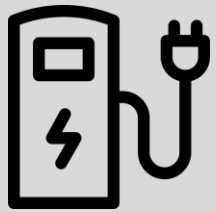
Source: Statista, SCMP

Toyota needs to target specific customer pain points

Preferences

Tech features, environmental impact, and ease of purchase are the main factors

Accessibility



Access to charging ports and support services are highly valued

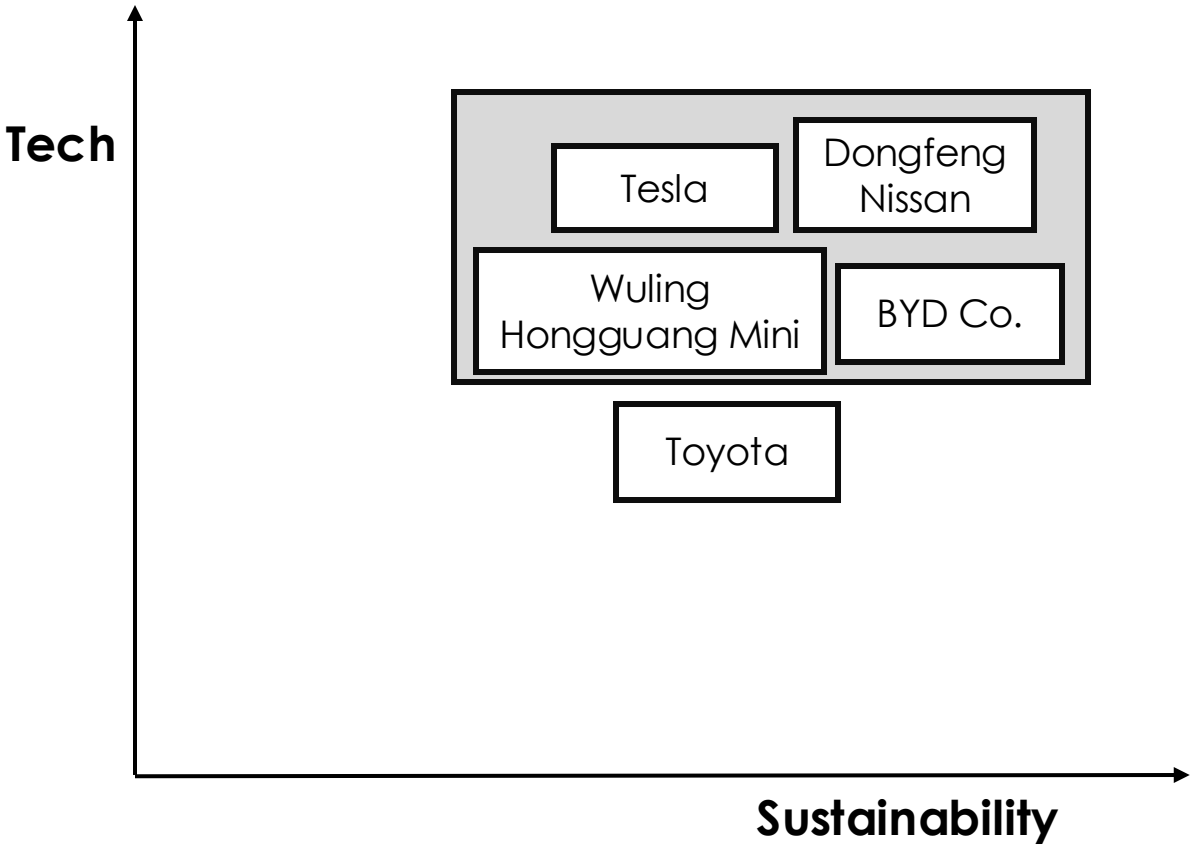
Mass EV Adoption

Government pressure towards EVs caused a shift in purchasing patterns

Customers are willing to **pay a premium** for an EV that meets these needs

Source: Washington Post, Bangkok Post

Toyota needs to supplement its brand image with other core competencies



TOYOTA NEEDS TO CATCH UP WITH ITS COMPETITORS

1. The brand image is strong but insufficient to stand out in the market

2. Technology and Sustainability are the 2 essential competencies in an EV in China

Competencies in **Tech and Sustainability** define the Chinese EV market

Source: Nikkei Asia

Key Question

How can Toyota leverage its reputation to gain market share in the Chinese EV market

1

Toyota Family

2

Sustainability

3

Digitalization

1

Toyota Family

2

Sustainability

3

Digitalization

Toyota should leverage its existing customers

Middle-aged owner of a gas-powered Toyota

Incentivized to purchase EV for future generation

Shifting focus to fit needs of next generation

Toyota should promote **generational adoption** of EVs by focusing on **tech and sustainability**

Source:

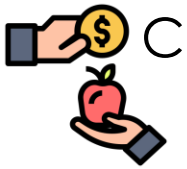
Toyota Family enhances loyalty to create an effective trade-in program

1.  Owner of a gas-powered Toyota needs a new car

2. They want to continue using a Toyota, but invest in the EV model

3.  Toyota provides a loyalty discount on a new EV

OR

 Customers can trade-in gas car for an EV

Toyota can leverage its **existing customers** when entering the EV market

Source:

1

Toyota Family

2

Sustainability

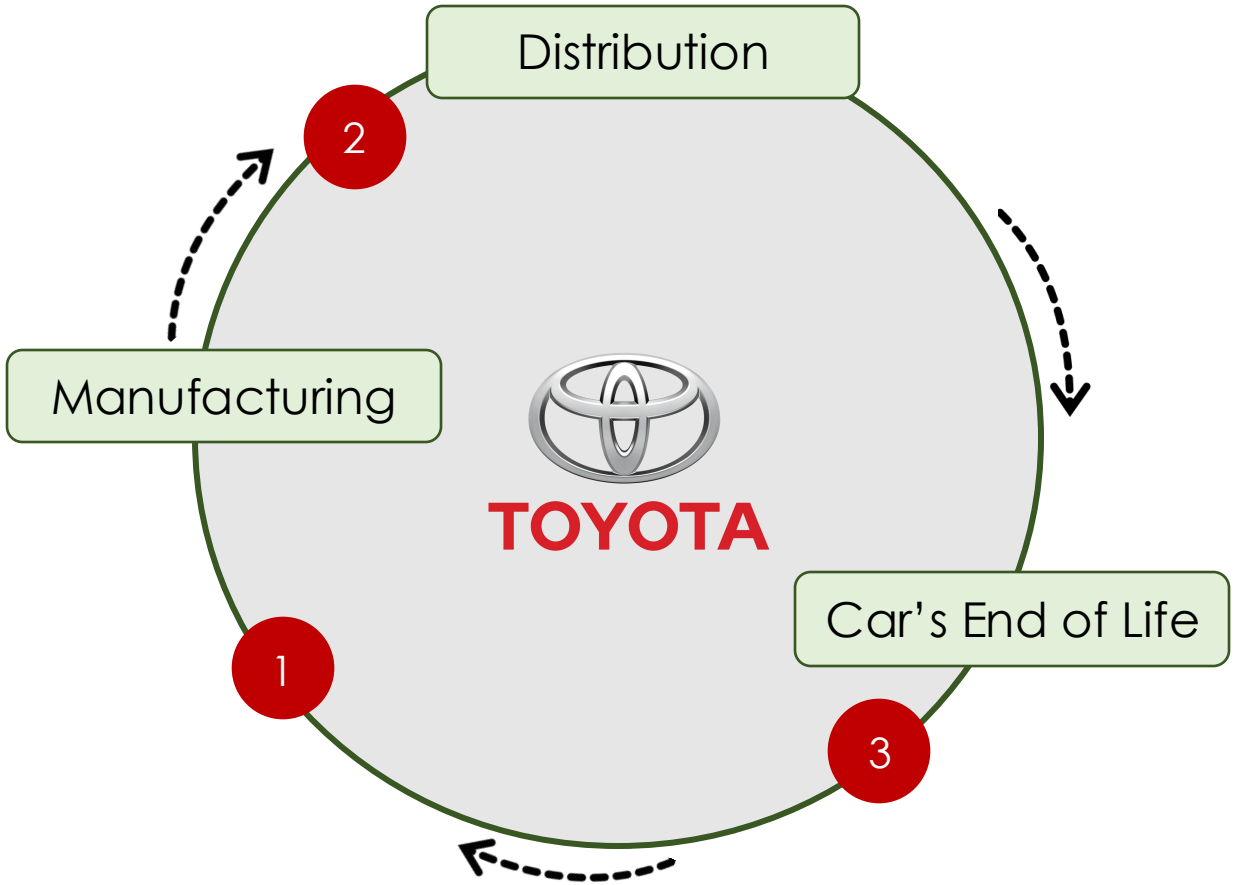
3

Digitalization

Implementing Circular Manufacturing enhances sustainability for Toyota

Implement Framework for Circular Manufacturing from Existing Operations

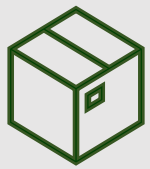
1. Use re-usable packages instead of cardboard for transport of materials
2. Recycle thermoplastic polyurethanes (TPU)
3. Recycle metals to make batteries



Source: Toyota

These Circular Initiatives Save Resources and Funds

Reusable Shipping Containers [EU Parts Centre]



65 million pounds of cardboard

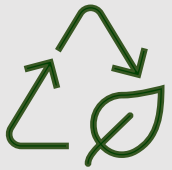
171 million pounds of wooden crates

$273 million saved

Recycling Metals

Limited need to rely on **politically volatile** locations with risk of supply chain **disruptions** and uncertain future **pricing**

Recycle Thermoplastic Polyurethanes [North America]



Mats cost **30% less** than the going market rate

Save **300,000 pounds** of TPU scrap annually

Source: New York Times, Toyota

1

Toyota Family

2

Sustainability

3

Digitalization

Consumers in China are shifting towards online purchases and technological advancements

Virtual and Augmented Reality

App with **AR**

VR headsets

Visualize the full EV car experience

Virtual test drives

More **accessibility** for test drives

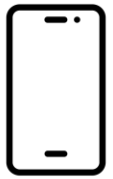
More likely to purchase an EV with **experience**

Realistic test drive from **anywhere**

Source: Consumer Reports

Omnichannel marketing builds a cohesive experience for consumers

Social media



Social media platforms in China

Posts on Douyin, Kuaishou & Xiaohongshu

Direct traffic

Increases reach and engagement from customers

Virtual and augmented reality

Increase user experience

App with Virtual Reality and Augmented Reality to get full car experience

Order online and pickup in store

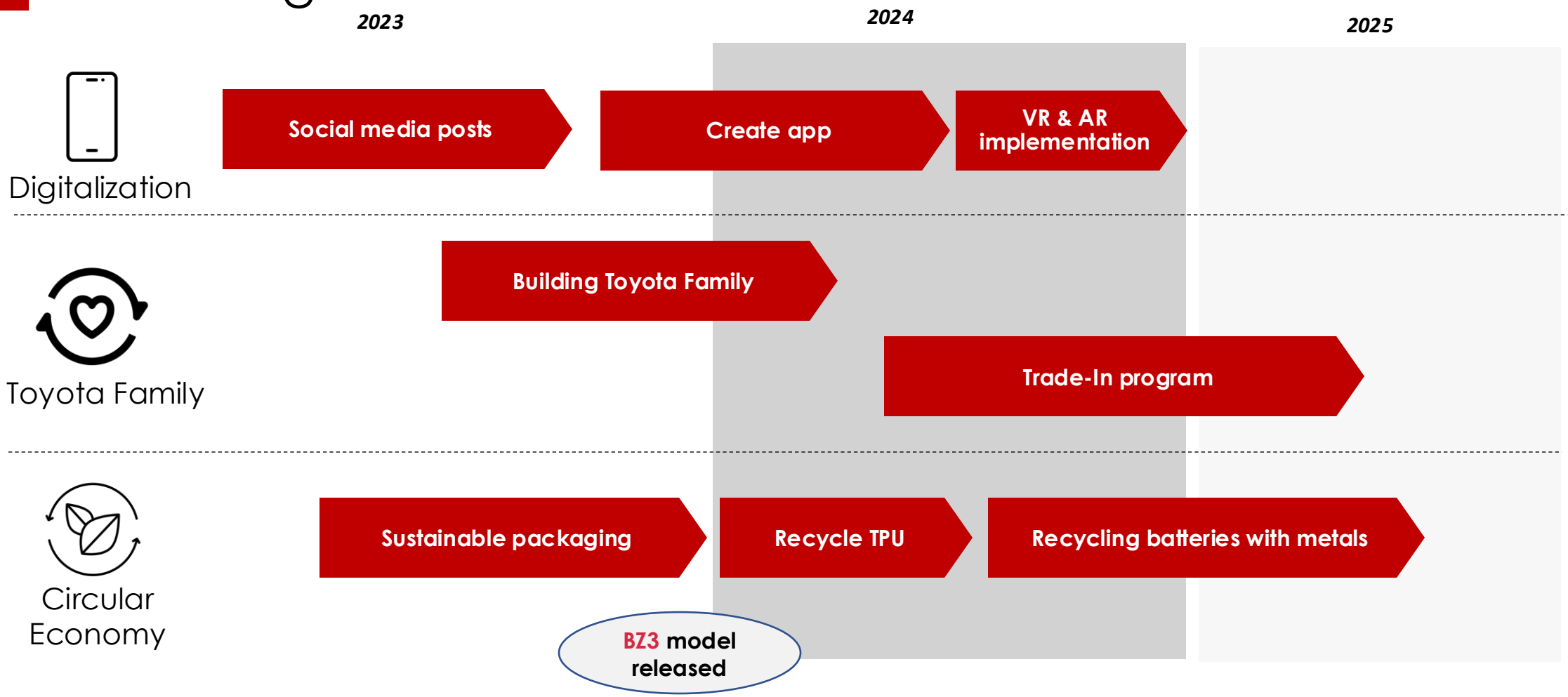
Builds **omnichannel** marketing for a more seamless customer journey

Social media and technology enhance the customer journey

Source:

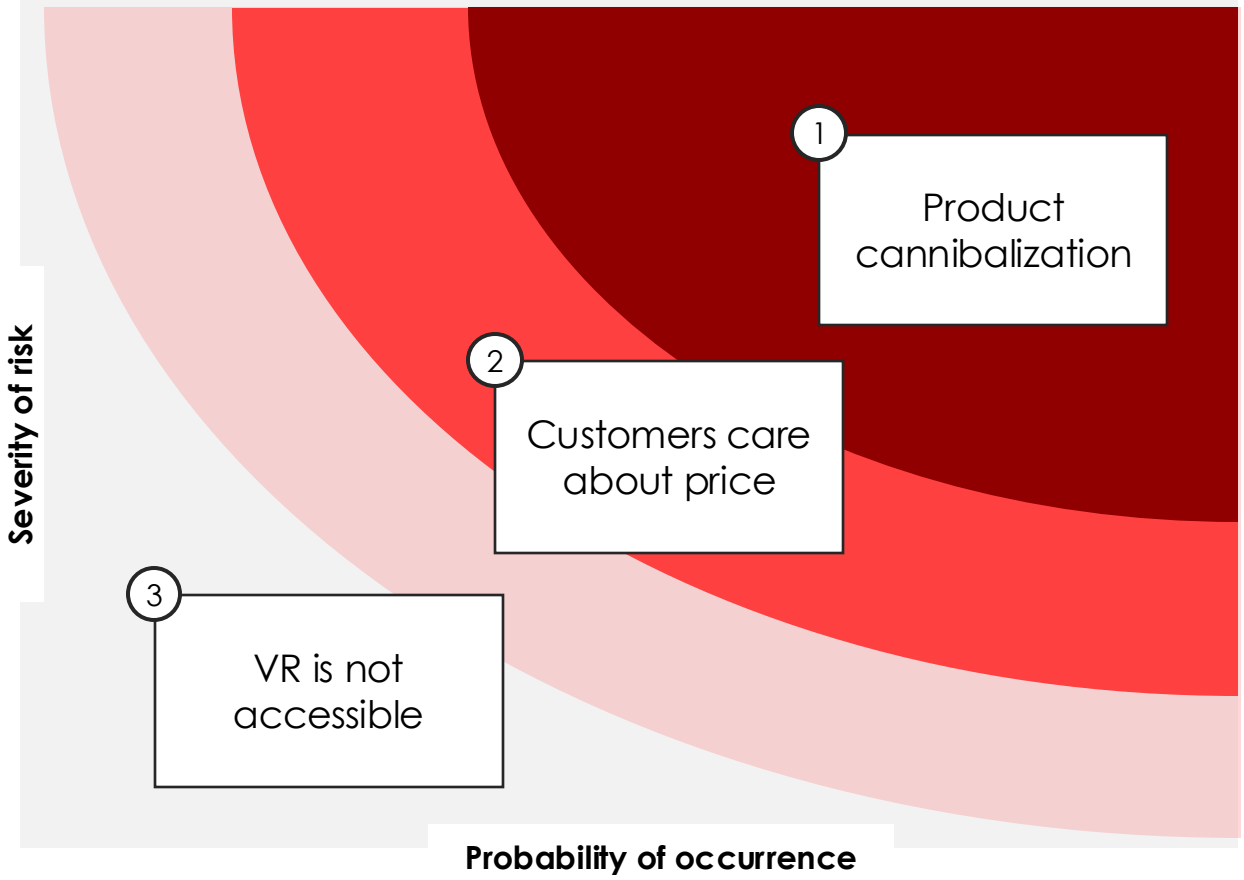
Timeline

Toyota will gradually transition to more sustainable and technological innovations



Source:

Toyota can implement strategies for possible risks



1 Cannibalization

Conduct market research and ensure products are distinctive to each other

2 Price as a choosing factor

Instead of a price war, customers are also focused on technology and sustainability

3 VR accessibility

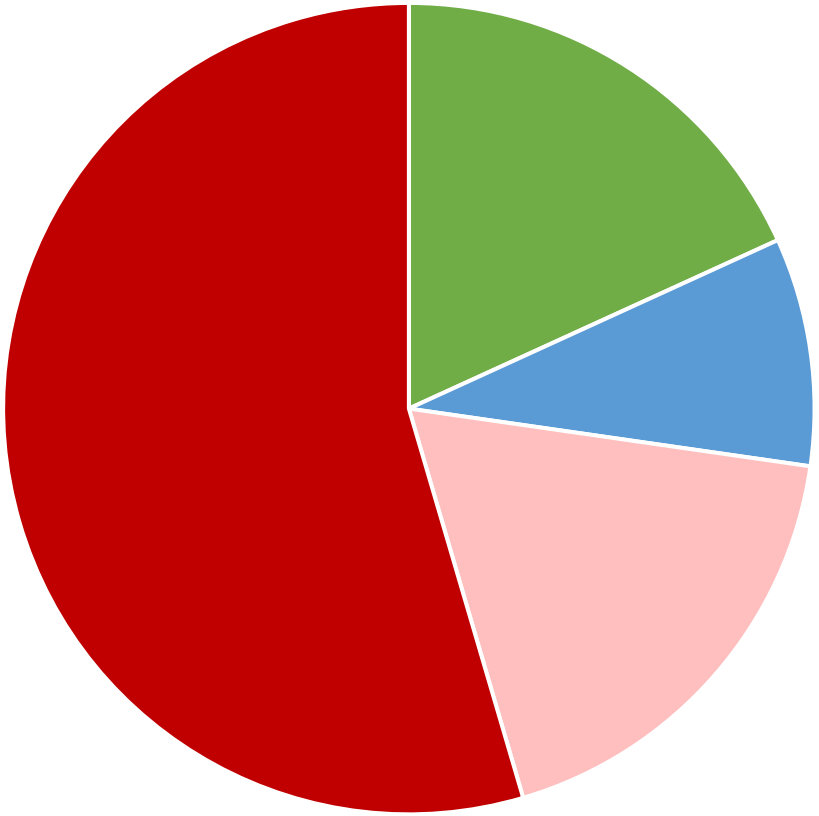
There is an increasing use of virtual reality in China, and people without VR headsets can use the AR app

Main risks can be overcome by ensuring market research is conducted effectively for product cannibalization and choosing factors

Source:

Costs

Our initiative costs $0.55B (1.6% of Toyota's $35B investment into BEVs)



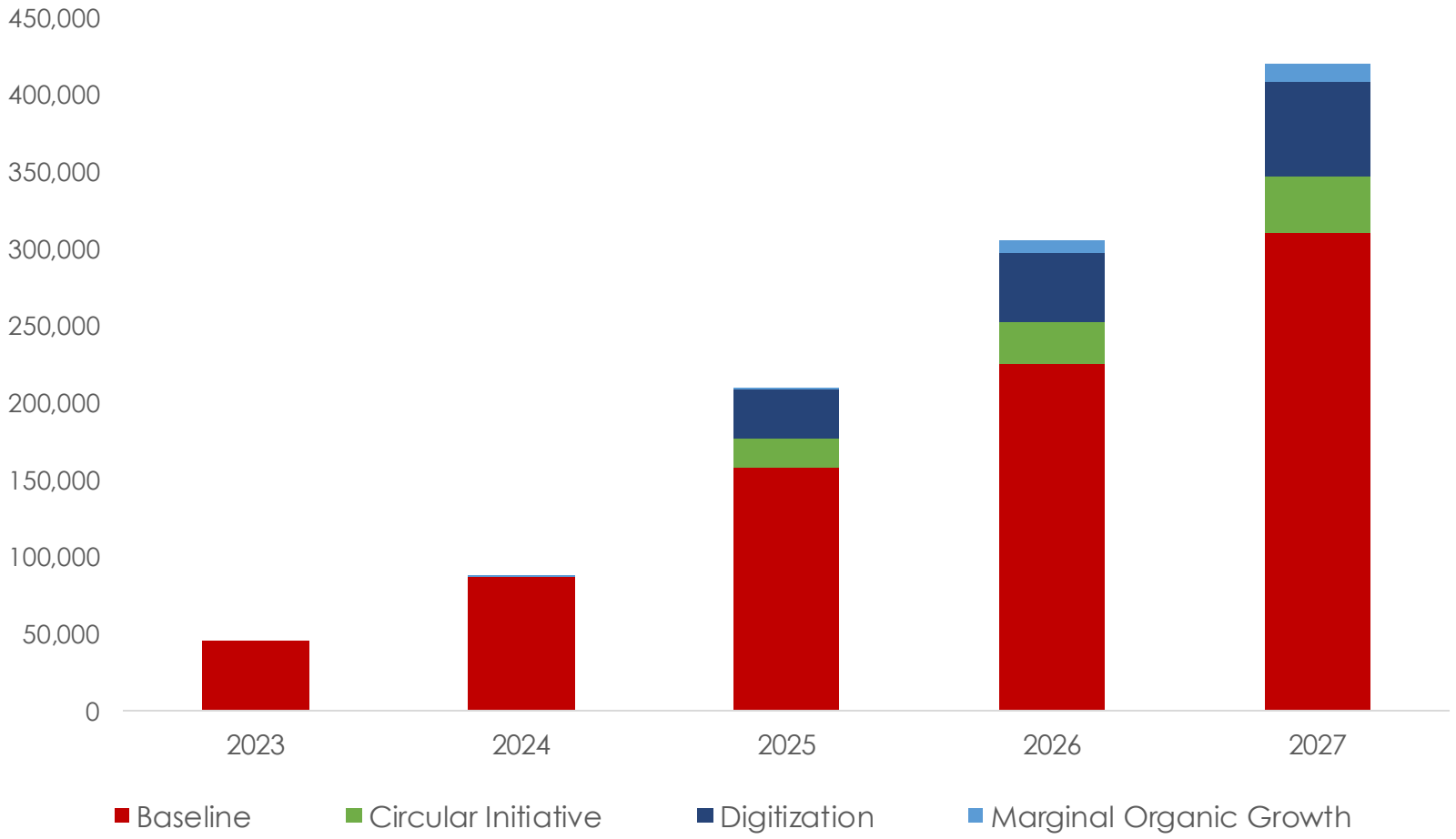
- Trade-In Promotion (18%)
- Social Media Marketing (9%)
- VR/AR Digital Development (18%)
- Circular Infrastructure (55%)

Our recommendation is impactful for **brand positioning** while allowing Toyota to allocate the majority of its **$35B investment** to product development

Source:

Our recommendations accelerate the adoption of BEVs in China

Projections



Impact

35%

BEV Sales driven by recommendations

4%

BEV Market Share by 2027

20%

Total BEV Sales from Chinese Market

Source: Toyota Internal Projections, Statista, Renault Case Study, Morning China Post

Executive Summary

TOYOTA

TOYOTA

Situation

Toyota is struggling to stand out in the **tech and sustainability focused** Chinese EV market

Question

How can Toyota **leverage its reputation to gain market share** in the Chinese EV market

Solution

Three-Tiered Approach

Toyota Family — **Sustainability** — **Digitalization**

Impact

$0.55B
Cost of the Initiative

35%
Increase in BEV sales

4%
BEV Market Share

Source:

Appendix

Source:

Appendix A

Cost Explanations

Costs (Millions)		Explanations
Trade-In Promotion (18%)	100	A $0.1B budget for this promotion provides a 10% discount for 40,000 units. For context, Toyota sold ~4,000 total EVs (from both new and existing customers) in 2022's Q4.
Social Media Marketing (9%)	50	Toyota spends 62% of its ~$2B digital advertising budget on Facebook (~$1.24B). Currently, none of this budget is allocated to Chinese social media. Given the urgency of the situation, we suggest allocating 2.5% of this total to Chinese platforms.
VR/AR Digital Development (18%)	100	The global ecosystem for AR and VR in the automotive industry is projected to rise to $1.2B by 2023. This $0.1B investment represents 8% of industry-wide investment -- consistent with Toyota's market share.
Circular Infrastructure (55%)	300	Renault is financing a global circular initiative with $330M, and we expect Toyota's investments to be of similar size.

Source: NBC News

Appendix B

Financial Projections

	2023	2024	2025	2026	2027
Number of EV models	3	5	8	10	12
Units Sold per model	15,000	17,175	19,665	22,517	25,782
CAGR (Sales per Model)	*14.5%*				
Baseline	**45,000**	**85,875**	**157,323**	**225,169**	**309,382**
Toyota Family	20,000	15,000	5,000	-	-
Less: Cannibalization	(8,000)	(4,500)	(1,000)	-	-
Circular Manufacturing	-	-	18,879	27,020	37,126
Digitization	-	-	31,465	45,034	61,876
Marginal Organic Growth	-	1,740	1,775	8,137	11,628
Total	**57,000**	**98,115**	**213,441**	**305,360**	**420,011**

Source:

Impact Explanations

35%

BEV Sales driven by recommendations

Sales Driven from our recommendations / Total Sales

4%

BEV Market Share by 2027

Statista predicts 11M BEV sales in China by 2027, of which we predict Toyota will sell ~400k

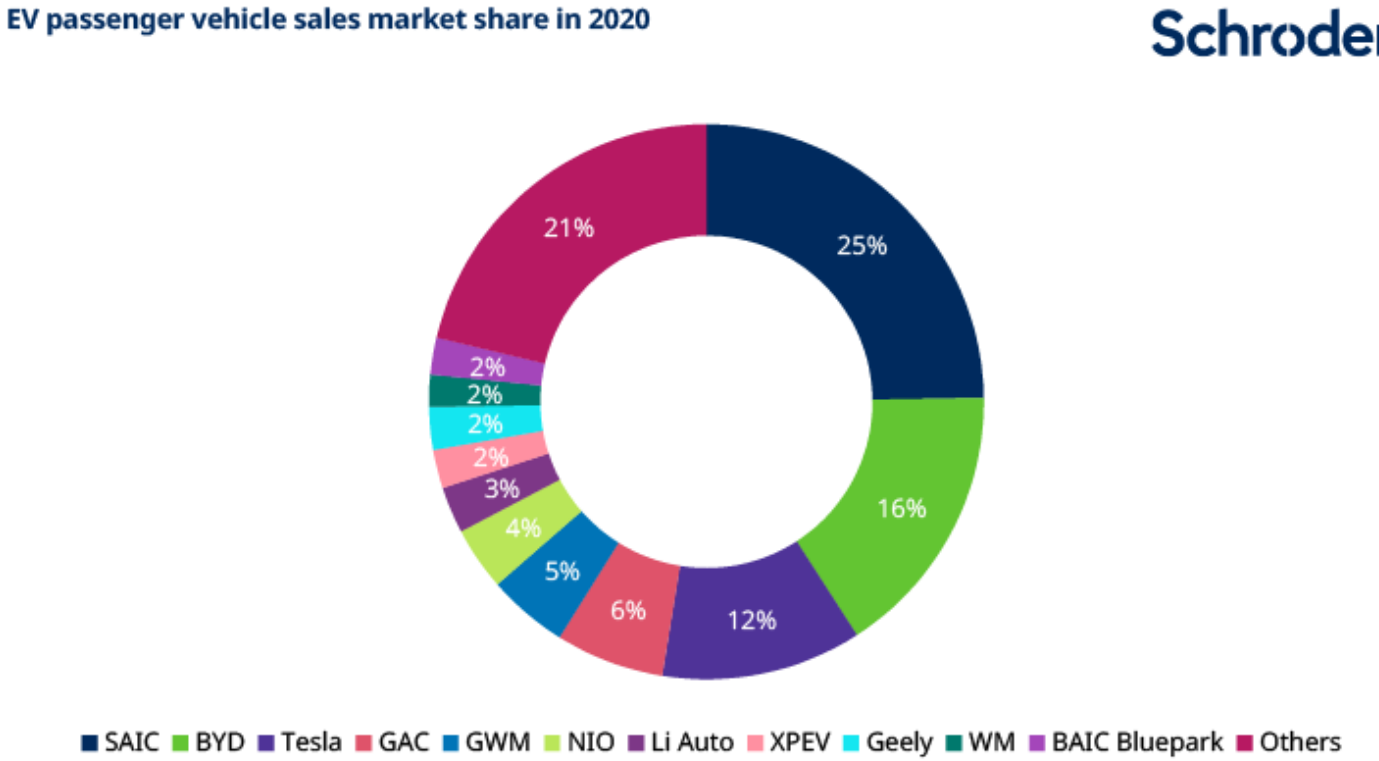
20%

Total BEV Sales from Chinese Market

Our China market projections account for 20% of Toyota's goal to sell 1.5M BEVs by 2026

Source:

Market Share for EVs in China



Source: China Association of Automobile Manufacturers, as at 31 December 2020. 600615.

Tech and sustainability are the two most valued features in an EV

Source: Schroders

Toyota is More Sustainable than its Competitors

The Chinese government provides subsidies to car manufacturers that minimize carbon impact.

→ Credits are offered based on %age of emissions reduced

→ Carmakers must earn credits of at least 14% of total production

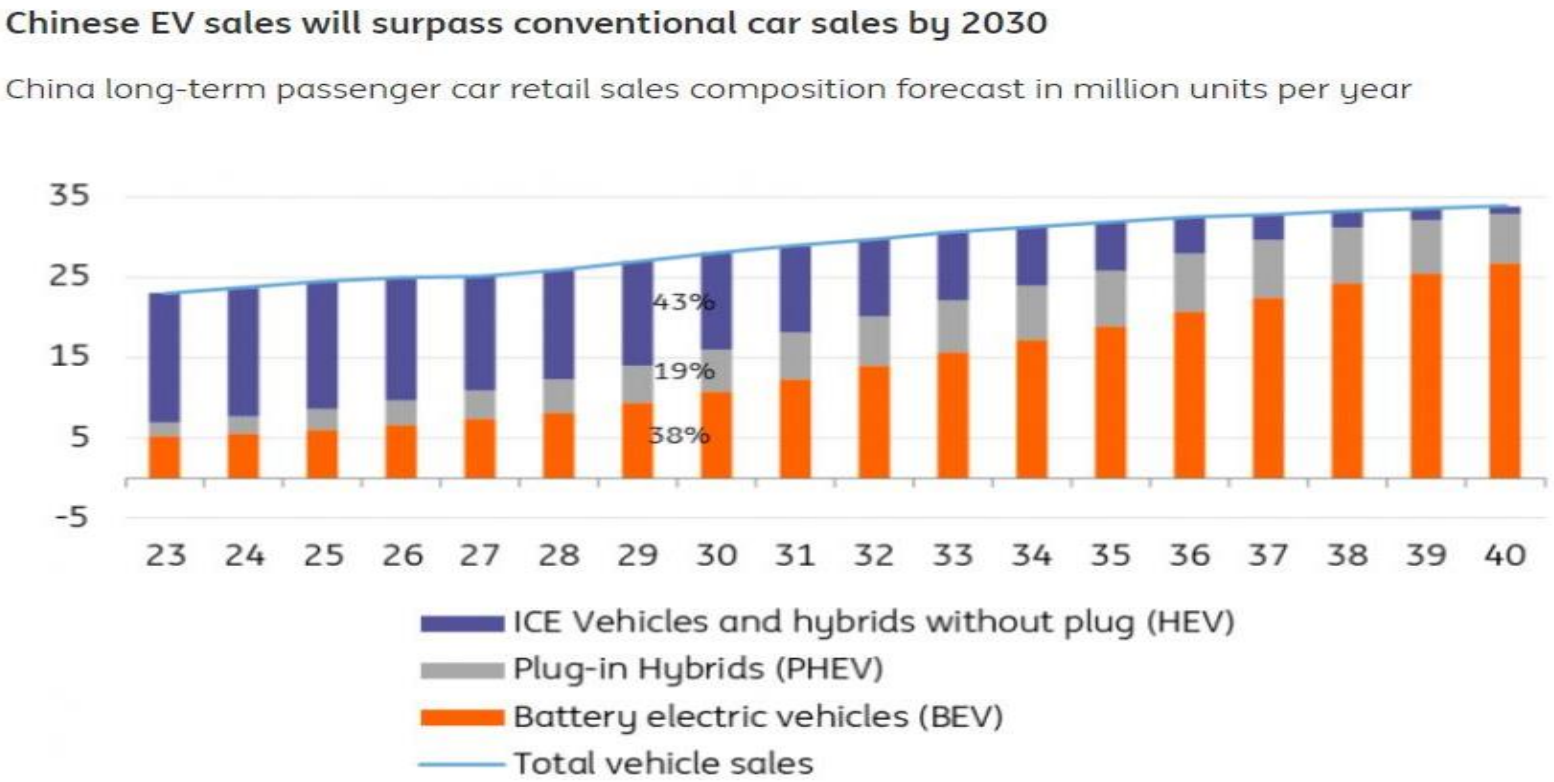
→ Toyota ranks higher than its competitors because of the hybrid models

Toyota	SAIC	VW Group
80,628	116,763	231,720

Carbon Credit fallback by each company

Source: AutoNews

China will soon become an EV-only market



EVs are steadily taking up a greater %age of total car sales

EV sales will surpass conventional car sales by 2030

Source: CNBC

Toyota EV Brand Lines

October 2022

bZ4X large SUV

- 500 km mileage compared to Tesla at 644km and BYD at 450km

April 2023

bZ3 Sedan model

- 517 km mileage
- Cheaper than bZ4X

Late 2023

bZ Small Crossover

- Designed for high traffic roads and swift movement
- City focused

Late 2023

bZ Compact SUV

- Futuristic sports car design
- Expected to release in the US

Source: Motor Trend

Case Study: Renault

RE:Factory – Europe's first site dedicated to circular manufacturing of vehicles

1. 'Re-trofit': Recondition vehicles, converting thermic vehicles to less carbon intense versions including a specialist 3D-printing service for manufacturing rare parts.
2. 'Re-energy': Optimise the first life of batteries, give used batteries a second life and manage end of life batteries and the exploration of new energy sources such as hydrogen.
3. 'Re-cycle': Dismantling of end of life vehicles, the remanufacturing of parts and the reuse and recycling of materials.
4. 'Re-start': Accelerating research and disseminating knowledge about the circular economy.

Reverse Supply Chain:

- Collecting old parts, checking conformity, reassembles, and then selling as genuine and guaranteed parts within the Renault sales network
- 40% cheaper than producing new parts

RE:Factory generated €120 million in 2019

Source: Ellen McArthur Foundation

Toyota's Circular Economy in Europe

As part of the 2030 Paris Agreement, Toyota practices circular manufacturing in the EU

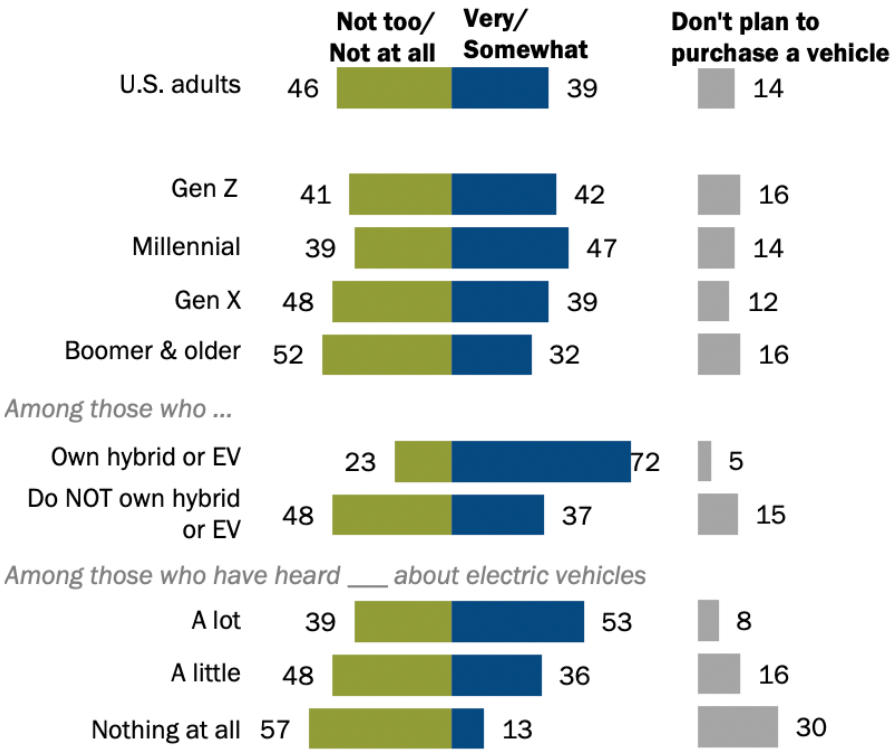
→Collect parts from European retailers for remanufacturing
→Repurpose and recycle batteries from hybrid vehicles

Source: Toyota Global

Consumer Preferences for EVs

Those who have heard more about electric vehicles are more likely to consider purchasing one

% of U.S. adults who are ___ likely to seriously consider purchasing an electric vehicle for their next vehicle purchase

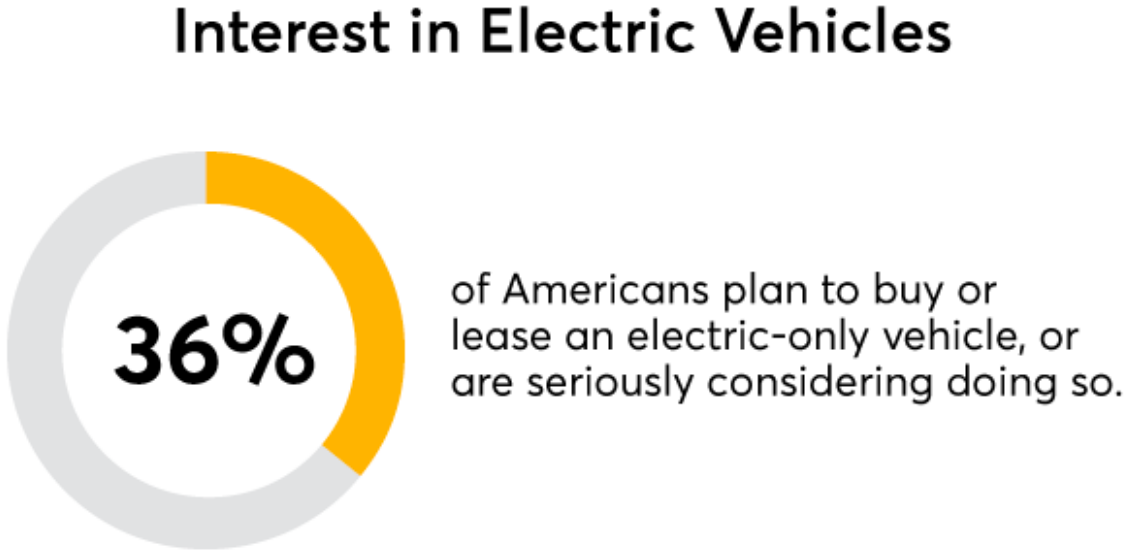


Note: Respondents who did not give an answer are not shown.
Source: Survey conducted April 20-29, 2021.

PEW RESEARCH CENTER

Source: PewResearch

Interest in Electric Vehicles



Americans who have **experience** with Evs, including simply being a passenger in one, are more likely to be interested in purchasing one

In the US, **10-30%** of consumers indicated their preference for an EV as a next purchase. In China, it was over **70%** given the presence of strong government incentives for EVs.

Source: Consumer Reports, McKinsey

Rising use of VR in China

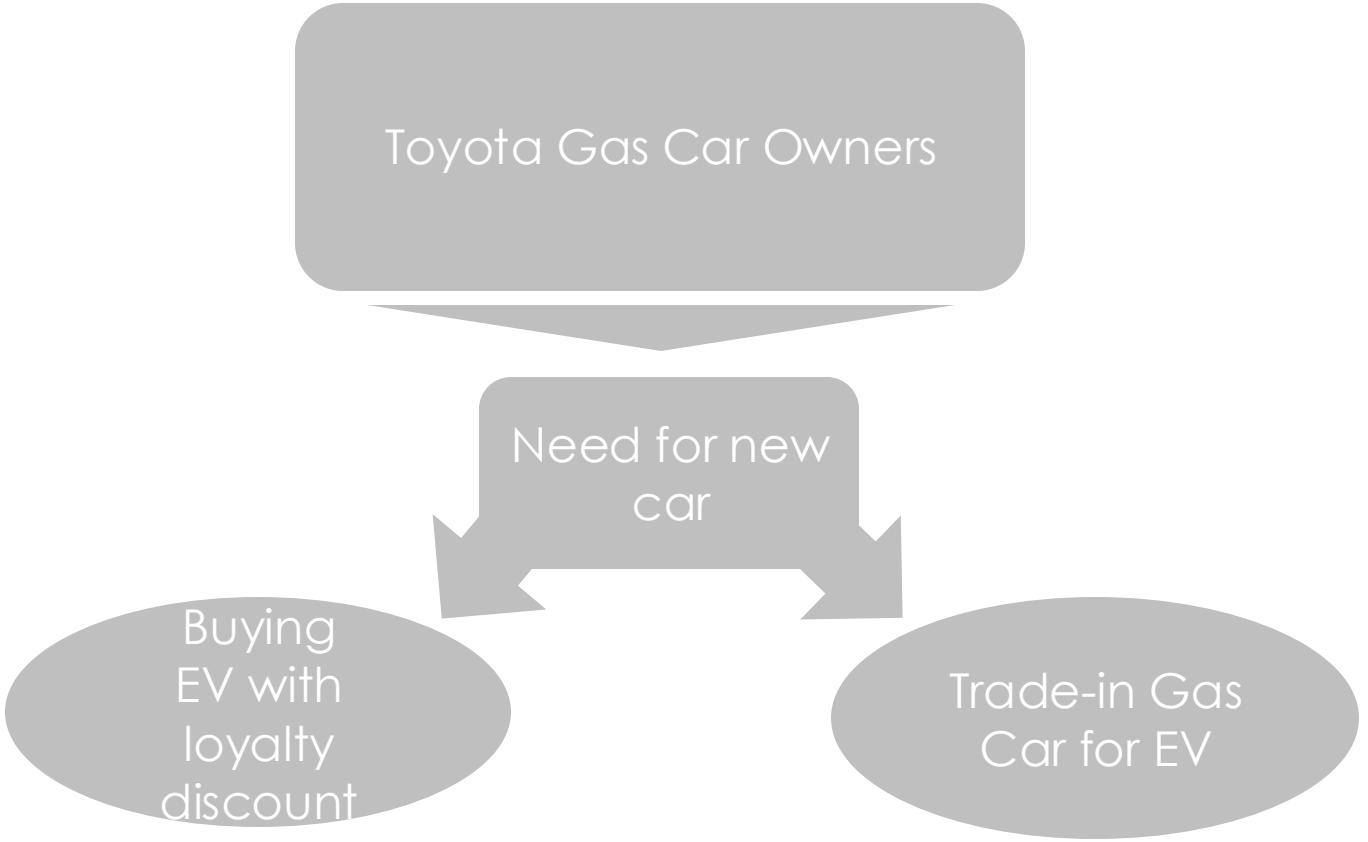
Virtual Reality investment **doubled** in China in 2021

By 2026, China aims to expand the industry output to **350 billion** yuan,
6x more than last year

VR sales will surpass **25 million units**

Source: South China Morning Post

Toyota Family Model



Toyota can leverage its existing customers when entering the EV market

Source:

Challenges in Circular Manufacturing

Aluminum has challenges in being re-transformed into sheets because of cast alloy.

Large variety of parts: over 20,000 components.

Limited opportunities to effectively capitalize on circularity

Source:

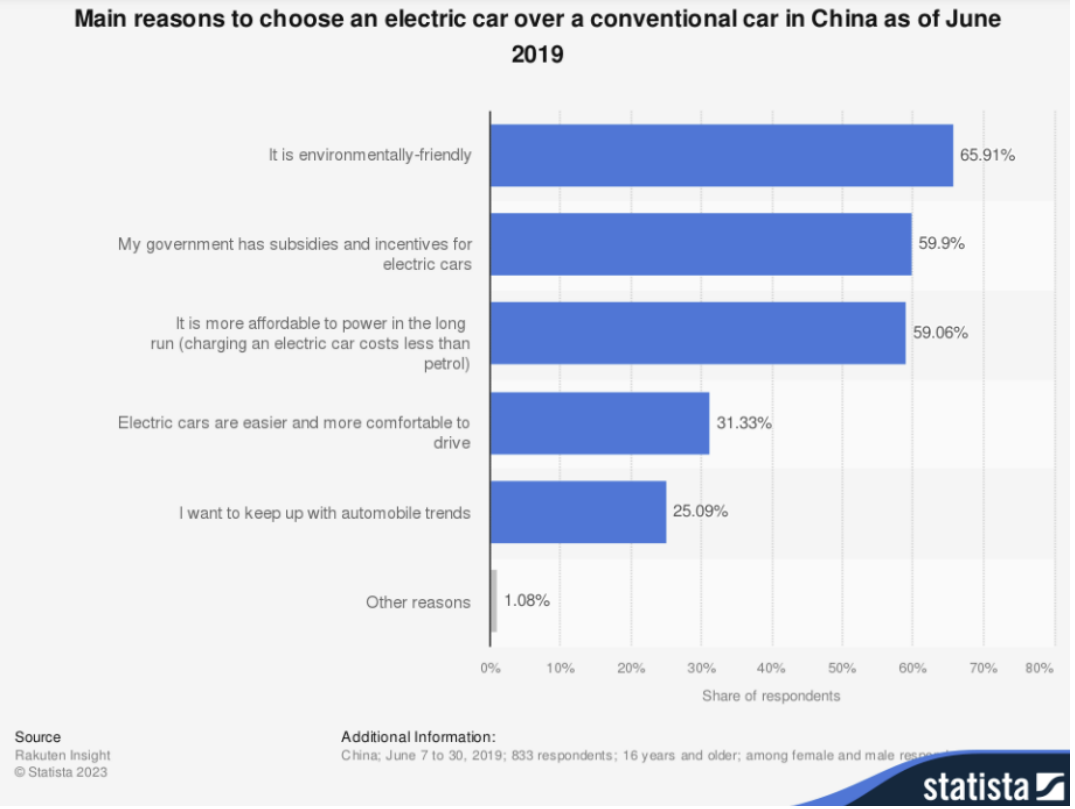
Thermoplastic Polyurethane Recycling

Toyota North America:

"Each year, Toyota's assembly plants generate TPU scrap. TPU, or thermoplastic polyurethanes, are a category of plastic used as a soft engineering plastic or as a replacement for hard rubber. For the last few years, Ergo Advantage Inc has been working with Toyota and Green Metals Canada Inc to create a durable anti-fatigue matting solution using Toyota's scrap TPU. After rigorous testing, a matting solution made in North America and suitable for all Toyota manufacturing plants was developed. Team members say the matting is more comfortable and more durable than previous mats. We estimate that each year, 300,000 pounds of TPU scrap can be repurposed into 67,000 anti-fatigue mats covering 150,000 square feet. The mats are estimated to cost 30% less than comparable mats on the market, and they can be recycled at their end of life. This sustainable solution reduces waste, lowers Toyota's carbon footprint and provides cost savings."

Source: Toyota

Consumers demand for Sustainability



In one survey, 66% of all respondents, and 75% of millennial respondents, said they consider sustainability when making a purchase. In China, 41% of consumers say that they want eco-friendly products. And as social media channels continue to burgeon, the voice of younger generations will only increase the demand for sustainability.

Source: WeForum

Subsidies for EVs in China

To further the sales of EVs and help the shift from gas cars, the Chinese government offered subsides towards EVs but they are set to end soon

"The government granted subsidies worth up to RMB 100,000 (around USD 15,000) per vehicle. It is reported that the average EV purchase subsidies in China are the second most generous in the world after Norway.

Originally set to stop at the end of 2020, the subsidy was extended to 2022 due to the pandemic and its economic impact."

Source: CMS Law

Social Media Platforms in China

抖音

- Short videos, similar to TikTok
- One of most popular apps in China
- 750 million daily active users

快手

- Short videos, similar to douyin
- Live-streaming
- 300 million daily active users

小红书

- Social media and e-commerce platform
- Similar to Instagram
- Promotion of products
- 163 million active users

Source: Statista, SCMP

Case Study: Tesla

China became Tesla's 2nd largest market, with a significant increase in sales

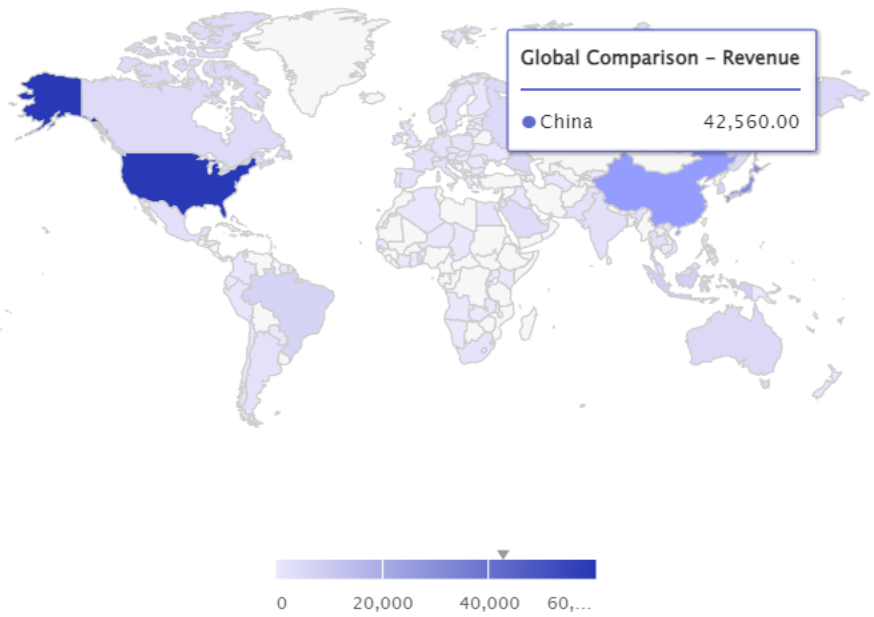
Launched first online flagship store on Tmall and started livestreaming

Had localized promotions and sales activities to increase reach and engagement, including test drives, prize lotteries etc

Posted on social media platforms, for example story-telling on Douyin to connect with consumers

Source: Data Insights

China is Toyota's most important market



Top 5 (2023) in million USD (US$)	
1. United States	59,250.00
2. China	42,560.00
3. Japan	30,770.00
4. Indonesia	7,736.00
5. South Korea	6,566.00

Global Revenue Comparison for Toyota in 2023

China is the **second largest** revenue region for Toyota – around 17% of total revenue

This source will become nonexistent if they don't adapt to the growing EV market in China

Source: Statista

Metals Used in Battery

Toyota is working on rare metals to provide its customers with stable supply of good vehicles

Procurement risks

- The potential extraction period*3 is short.
- Production is concentrated in a few countries.
- Procurement is easily affected by economic and political changes.
- Prices are extremely volatile.

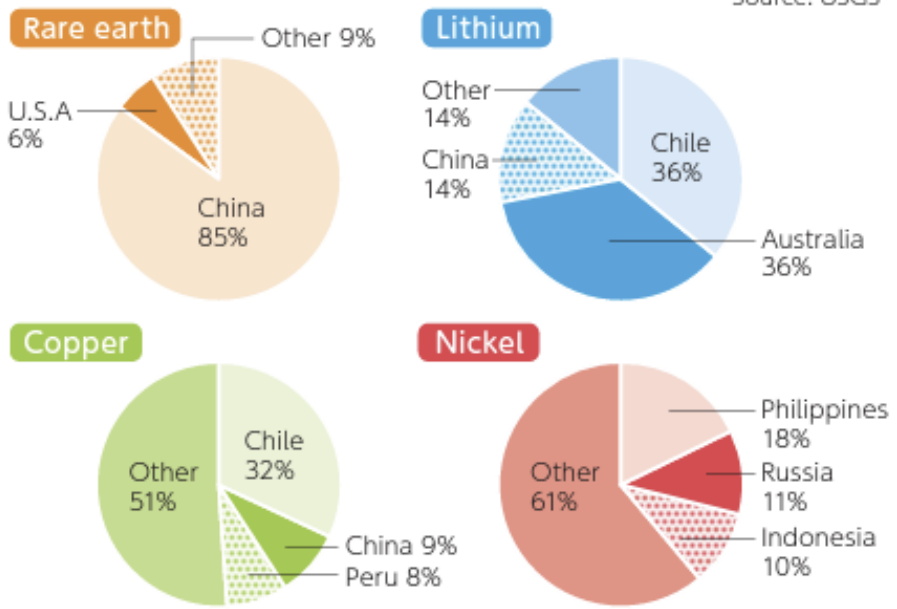
This is one of the factors that can have a major impact on the vehicle production and sales in the future

Countermeasures

①Recycle resources from urban mining.
②Develop the technology both alternative materials and reduce the quantities of materials.
③Stabilize procurement by opening up new routes.

Leading producing countries of non-ferrous metal resources (2015)

Source: USGS



*1 Rare metal : Metals difficult to obtain. Lithium, cobalt, nickel, etc.
*2 Rare earth : 17 metals of similar chemical properties, included in the rare metals
*3 Extraction period : An index to show the remaining underground reserve: how soon resources will deplete if they are kept producing at the current pace.

"Once out of service, their nickel metal hydride batteries can be recycled and materials such as nickel and copper reintroduced into the battery supply chain, where they can supplement raw materials from mines." - Reuters

Source: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://global.toyota/pages/global_toyota/sustainability/report/kururisa_en.pdf

Reuters