Case study analysis

Otago BMBA Cohort 20

Syndicate A

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This analysis has been written using information provided in the case study titled "Apple's Electric Vehicle" (Cohan & Hariharan, 2023). All data, unless referenced otherwise, has been taken from this source.

Executive Summary

In the face of strategic challenges and a shifting technological landscape, Apple Inc. (Apple), valued at nearly $3 trillion, is facing a crossroads. With its diverse product offerings — hardware, software, and services — it faces risks as the market matures; evident by its reported revenue dip and an 8.2% decline in iPhone sales. To ensure sustained growth, Apple must pivot strategically, setting its eyes on the electric vehicle (EV) market, aligning with its infamous strengths in innovation, premium branding and seamless integration of its work and lifestyle products as well as its commitment to the environment. Proposed strategies recommend a focus on autonomous driving technology that allows for a seamless and flexible experience that leverages its innovative technology and infrastructures to provide customisable vehicles.

Apple's entry into the EV industry not only signifies a transformative opportunity but also offers a suggested solution that could save valuable time for busy workers. To navigate these challenges, it must use a calculated approach, drawing on its goodwill and relationships to form strategic alliances, allowing it to compete in a new ecosystem. By embracing autonomous technology and aligning with consumer demands, Apple can emerge as a key player in reshaping the future of electric and autonomous vehicles.

Strategic Issues Faced by Apple Inc

Apple is a US based organisation with present market capitalisation of almost $3 trillion. It sits comfortably as the second most valuable organisation on the stock market after Microsoft (Oguh, 2024). In alignment with the company's mission and vision (Appendix 1.1) its overall product offerings are divided into three categories; products, software, and services, that altogether serve as a lifeline of the organisation (*Apple Mission Statement 2024 | Apple Mission & Vision Analysis*, n.d.). Although Apple's offering is leveraged by virtue of superior technology and design, it simultaneously belongs to diverse industry segments which lie in different stages of their life cycle (Appendix 1.2) (Garry, 2024).

To date, Apple has diversified its offerings effectively, however, presently, the sustainability of its business operations is at risk. This is because many of its offerings are at the maturity stage of their respective industries (Appendix 1.3). If not proactively addressed, this situation could lead to a considerable drop in overall income. Notably revenue has already declined by 5.5%, and iPhone sales by 8.2%. To maintain the organisation's market leader position and achieve steady growth, the company must streamline its strategy in alignment with future trends. Apple needs to consider new market segments to enter such as the electric and autonomous vehicle industry. Positioning itself well from the get-go will enable it to capture an adequate share of the market. The challenge in doing so, will

be to manage the often volatile, complex, uncertain, and ambiguous (VUCA) industry conditions as well as ensure the company's sustainability in alignment with its vision while avoiding the strategic drift ('VUCA' likely to become the next buzzword for the automotive industry, 2022).

Macro Forces Impacting Hybrid / EV industry.

Several strategic frameworks were utilised to comprehensively analyse market forces shaping the Hybrid and EV industry, including ESTEMPLE (Appendix 1.4), ANSOFF (Appendix 1.8) and Blue Ocean (Appendix 1.7)

Over time industry revenue is expected to rise sharply because of increased oil prices causing consumers to look for cheaper ways to refuel, and coupled with a simultaneous decrease in battery price, a significant part of the production cost. Improving global economic conditions similarly help drive the adoption and success of EVs.

Companies must stay at the forefront of technological developments to provide innovative and competitive EV solutions or risk being left behind. Autonomous driving and connectivity features are advancing quickly, making it difficult for new entrants to catch up and deliver value over and above existing manufacturers.

Countries worldwide must meet their respective environmental targets to reduce carbon emissions. This has helped drive the rapid uptake of EVs and PHEVs with many governments mandating the production cessation of fossil fuel powered vehicles and supporting the creation of charging networks. The rate that the market develops will be highly dependent upon the amount of support it is getting.

Environmental sustainability is driving the reduction of carbon footprints, improved manufacturing processes, and overall sustainability, highlighting the imperative for the sector to respond accordingly with eco-friendly practices and products. These considerations not only shape consumer preferences but also drive industry practices toward greater ecological responsibility such as the sourcing of critical minerals for the construction of batteries. Major sources of cobalt and lithium are often located in countries with weak labour and environmental protection laws. With environmental concerns being a key driver pushing consumers towards EV's, Apple must ensure that it works with suppliers to mitigate the risk that it is accused of — participating in the battery equivalent of blood diamonds.

Micro Forces Driving Competitiveness.

Intense competition, including partnerships and collaborations, drives competitive rivalry. There is need for companies in the industry to differentiate themselves and form strategic alliances to gain a competitive edge. Supplier and buyer power are also key drivers of success in the sector.

Apple's negotiation strength with suppliers, particularly in critical components like batteries, introduces a level of dependency that impacts negotiations and the overall resilience of its supply chain. Conversely, Apple's robust brand and customer loyalty serve as potent assets in a market where buyers have alternative choices.

Companies must effectively address evolving consumer preferences and market trends to not only maintain, but also to attract customer loyalty in this competitive landscape. The threat of new entrants into the sector is another micro force driving competitiveness. Tempered by high entry barriers, Apple's financial strength serves as a catalyst to overcome these challenges, including regulatory complexities, the need for manufacturing expertise, and evolving infrastructure requirements. Apple's entrance would make a significant impact on the industry landscape. A moderate threat of substitution is critical to highlight as one of the micro forces at play, considering Apple's emphasis on autonomous features.

Those in the industry need to address external factors influencing the substitution of EVs, including market trends and customer concerns. Illustration of this scenario can be seen in the Porter's Five Forces Analysis (Appendix 1.6).

Competitive Positioning Within the Market

Tesla pioneered the EV movement, with a bold move into the 'Unconventional' space that appealed to the 'Innovators' (Appendix 1.10); those prepared to pay a premium for cutting edge technology that signalled commitment to the environment (Cohan & Hariharan, 2023). Tesla is developing world leading battery technology powered by renewable materials, providing a competitive advantage over those competitors reliant on limited raw minerals, often derived from unethical practices and environmental exploitation.

As new competitors like BYD and similar Chinese counterparts have offered affordable EVs, Tesla has responded with aggressive price cuts, lowering industry margins. Additionally, advancements in battery production and economies of scale are expected to impact industry profits. Establishing a unique selling point will be critical for gaining market share and achieving a commanding presence as a price-setter.

Incumbent vehicle manufacturers are committing billions to developing a competitive edge within the EV & Hybrid market (Appendix 1.12) with economies of scale, greater supply chain control, green tech, and global charging networks, to capture the 'Early' and 'Late Majority' adopters. The European Market has been tipped for earlier widespread adoption driven by increased fuel prices and environmental policies. See Appendix 1.11 and Appendix 1.9 further competitive analysis.

The 'Aspirational' space (Appendix 1.15) presents a lucrative, yet untapped market position, leading with 'High Distinctiveness' and 'Mainstream Appeal'. Competitors currently pulling from this market segment are Tesla, known for its superior environmental technologies; VW, soon to launch an autonomous ride-hailing mobility service; and Ford, featuring its Lightning Truck.

Leveraging Apple's existing customer base and device integration capability will be key to carving out this space, while avoiding the crowded 'Mainstream' space, that are competing on cost leadership.

Capabilities and Competencies Needed for Success.

Beyond a multi-billion-dollar investment, there are numerous capabilities required to ensure steady business in this industry:

- The foremost factor includes satisfying customers by convincing them that EVs provide superior value in terms of investment, with the ability to recharge at a cheaper cost than conventional fossil fuel powered vehicles.
- Strategic geographic locations of factories that enable efficiencies with larger production capabilities, easier access to resources and cheaper labour costs.
- A superior design to offer better range off a single charge.
- A supportive product eco-system for consumers that includes availability of charging stations and repair services.
- Strategic partnerships to fill gaps in its own capabilities. This could include suppliers of eco-friendly raw materials, distributors, service providers and financial institutions to offer easy automobile loans.
- Affordability of vehicles. Apple should not compete on price; however it must not price itself out of the market by making the vehicles unaffordable. An analysis of required competencies and their importance is presented in Appendix 1.13.

The Competitive Advantage — An Autonomous, Interconnected Environment

Apple's competitive advantage lies in its multifaceted approach to innovation and technology, particularly in the evolution of autonomous driving technologies and unique design concepts. The integration with its existing ecosystem, connecting various devices and services, stands out as a key differentiator. This integration extends beyond driving, encompassing a user's entire life and work experience with Apple products, creating a holistic and interconnected environment. Additional strengths which play a pivotal role in its competitive edge:

- The strength of Apple's brand and the trust consumers place in it.
- Established brand recognition and customer loyalty, providing a solid foundation for Apple's success in the EV industry.
- Environmental sustainability and commitment to reducing its carbon footprint and aligning its EV offering with the growing emphasis on eco-friendly practices.
- Strategic partnerships with established players in the automotive industry. Collaborations with key stakeholders contribute to the development of cutting-edge technologies and foster a strong market presence.
- Apple’s premium market positioning that not only attracts a specific segment of consumers but also adds to the overall allure of Apple's EVs. Offering high-end EVs that align with its brand image of sophistication and excellence.
- A commitment for delivering exceptional products with a strong focus on user experience, from infotainment systems to user interfaces.

Apple’s emphasis on creating a seamless and enjoyable experience for users sets it apart in the competitive landscape of EVs. An illustration of Apple's sustainable and unused competitive advantage can be found in VRIO Analysis (Appendix 1.14).

Proposed Strategy Recommendations

Apple requires a multistage approach consisting of short term and long-term strategies. It is recommended that it takes advantage of its capabilities and strengths that position it well to revolutionise the industry with its driverless technology. Recognising the burgeoning demand for autonomous features, Apple can leverage its reputation for innovation while also cater to diverse consumer preferences. A SWOT analysis, as illustrated in Appendix 1.5, outlines the strategic initiatives suggested for Apple to proceed with this suggestion.

Short Term Recommendations

Short term success for Apple's autonomous EV Car project would look like launching a fully self-driving vehicle with no steering wheel or pedals, using advanced battery technology, and partnering with a reliable manufacturer. Time to entry is critical here therefore Apple needs to make the best use of its existing strengths and dynamic capabilities Appendix 1.17 to produce a viable product and launch it in a timely manner to seize the window of opportunity. Essential elements of this short-term approach are to:

1. Leverage Apple's legacy of superiority in innovation to design the EV with autonomous driving capability and become positioned as the most advanced EV producer in the market (Appendix 1.8).
2. Establish agreements and collaboration with key partners to produce its vehicles.
3. Establish commercial agreements with EV battery manufacturers that are best suited for its design.
4. Leverage existing relationships with suppliers to establish a large-scale manufacturing plant to produce the vehicles.
5. Collaborate with market leading distributors across the globe to make its EV available to end customers.
6. Collaborate with EV maintenance and repair service providers to support its automotive consumers.
7. Make use of Blue Ocean Strategy to manage and create new factors in its best interest (Appendix 1.7) to deliver higher value to buyers while ensuring the right margin needed for business sustainability.
8. Collaborate with other manufacturers to lobby governments to introduce legislation that is beneficial to EV and Autonomous Vehicle development.
9. Continue highlighting its eco-friendly brand.

Long Term Recommendations

Long term success for Apple's autonomous EV is achieving substantial market share, widespread consumer adoption and industry leadership in electric and autonomous vehicle technology, resulting in exponential revenues. Key salient components that should be adopted over time include:

1. Make adequate investments in R&D for efficient battery and vehicle design that surpasses its competitors' offerings (Appendix 1.12).
2. Establishing its own global distribution and service centres such as its Apple stores that effectively showcases its quality offering to customers.

3. Starting to manufacture and distribute accessory items for its EV's.
4. Starting production and distribution of its charging solutions to its customers.
5. Establishing agreements with various global financial institutions to provide affordable finance options to its customers.
6. Starting to engage its existing Apple eco system to offer added benefits for its vehicles, such as extending its app store for EV software and enabling software developers to design and distribute car-based apps for its end customers.
7. Partnering with start-ups and existing mining companies to secure the provision of critical mineral resources in a socially and environmentally conscious manner.
8. Starting product diversification by introducing different versions of its vehicles suitable for different segments of market — modelling its iPhone & iPad roll-out strategy (mini, pro, and pro-max)
9. Introducing value added vehicle maintenance and service offerings through Apple's portfolio of technology to generate additional income.
10. Ensuring change adoption by periodically launching new models and software to support its vehicles while ensuring the best customer experience and service.

Launching and diversifying new products is nothing new to Apple; the company is already a leader in this field. Strong leadership, in alignment with its vision, is crucial to guarantee success in automotive industry.

Conclusion

Apple's competitive advantage lies in its innovation, brand strength, environmental sustainability, and most importantly, its seamless integration between products. This proposed strategy recommends leveraging autonomous technology, aligning with growing consumer demands for flexibility, cost and time savings, while maintaining its premium market positioning. With a focus on integration and user experience, Apple have the opportunity to reshape the EV industry. Based on the case analysis, the proposed strategy can make Apple successful in leading the Autonomous / EV industry. In the short-term Apple will enter the new market and start gaining adequate market share, preparing for its long-term goal of maximising revenue and growing its consumer base across the world. In pursuance of this strategy, Apple will manage and counter the issues stated in the beginning of the document. Joining this new and emerging market provides Apple an opportunity to increase revenue benefiting its share-holders and stakeholders.

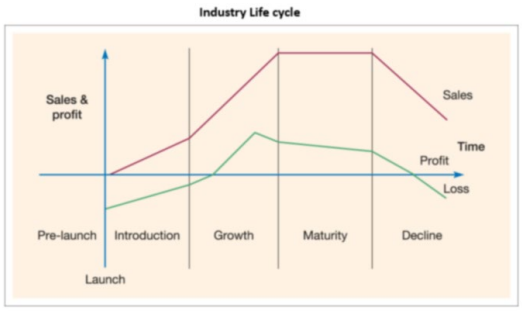
Appendices

Appendix 1.1 - Apple Mission Statement

Apple mission statement is "**bringing the best user experience to its customers through its innovative hardware, software, and services.**" Tim Cook, Apple's current CEO, stated this as the company's mission statement and included it in the 2018 annual report. Through their mission statement, Apple highlights that it exists to offer its clients the best service that it can. The statement also describes how the company intends to achieve this.

https://mission-statement.com/Apple/

Appendix 1.2 - Industry Life Cycle



https://www.investopedia.com/terms/i/industrylifecycle.asp

Appendix 1.3 - Maturity of Apple Inc Offering

	Offering	Details	Stage
Hardware's	**Macintosh**	Personal computers are designed and manufactured by Apple.	Maturity
	iPod	Portable media players manufactured by Apple.	Maturity
	iPhone	Smartphones are designed and manufactured by Apple.	Maturity
	iPad	Tablet computers designed and manufactured by Apple.	Maturity
	Apple Watch	Smartwatches designed and manufactured by Apple.	Growth
	Apple TV	A micro-console designed and manufactured by Apple.	Growth
	HomePod	Smart speakers designed and manufactured by Apple.	Introduction
Software's	**macOS**	Graphical operating systems developed and marketed by Apple.	Maturity
	iOS	Mobile operating system created and developed by Apple.	Maturity
	watchOS	Mobile operating system created and developed by Apple (for Apple smartwatches).	Introduction
	tvOS	Operating system created and designed for Apple TV.	Growth
	iLife	Software suite for macOS and iOS developed by Apple.	Introduction
	iWork	Office suite of applications created by Apple for its macOS and iOS operating systems.	Introduction
	Final Cut Pro	Video editing software programs.	Maturity
	Logic Pro	Digital audio workstation and MIDI sequencer software application for the macOS.	Maturity
	Garageband	Digital audio workstations for macOS and iOS, which let users create music or podcasts.	Maturity
Services	**Apple Pay**	payment and digital wallet service that allows users to make payments in person	Growth
	Apple Store	Multi stores owned by Apple that sell Apple products to the public.	Maturity
	iTunes Store	An online digital media store operated by Apple.	Decline
	App Store (iOS)	A digital distribution platform, which was developed and maintained by Apple.	Maturity
	Mac App Store	A distribution platform specifically for the macOS apps, created by Apple.	Maturity
	iBooks Store	An eBook application for its iOS and macOS operating systems and devices.	Decline
	iCloud	Cloud storage and cloud computing service by Apple Inc.	Maturity
	Apple Music	A streaming service developed and managed by Apple.	Growth
	Apple Arcade	A subscription-based gaming service that features over 100 new and exclusive games.	Introduction
	Apple Fitness+	A fitness service that offers guided workouts with Apple Watch and Apple TV.	Introduction
	Apple News+	A subscription service that provides access to hundreds of magazines and leading newspapers.	Introduction
	Apple Podcasts	A platform that offers millions of shows, from the biggest names to the best independents.	Maturity
	Apple Books	A service that lets users read, listen, and discover books in one place.	Decline
	Apple One	A bundle that includes up to six Apple services and offers more for less.	Introduction

Appendix 1.4 - ESTEMPLE

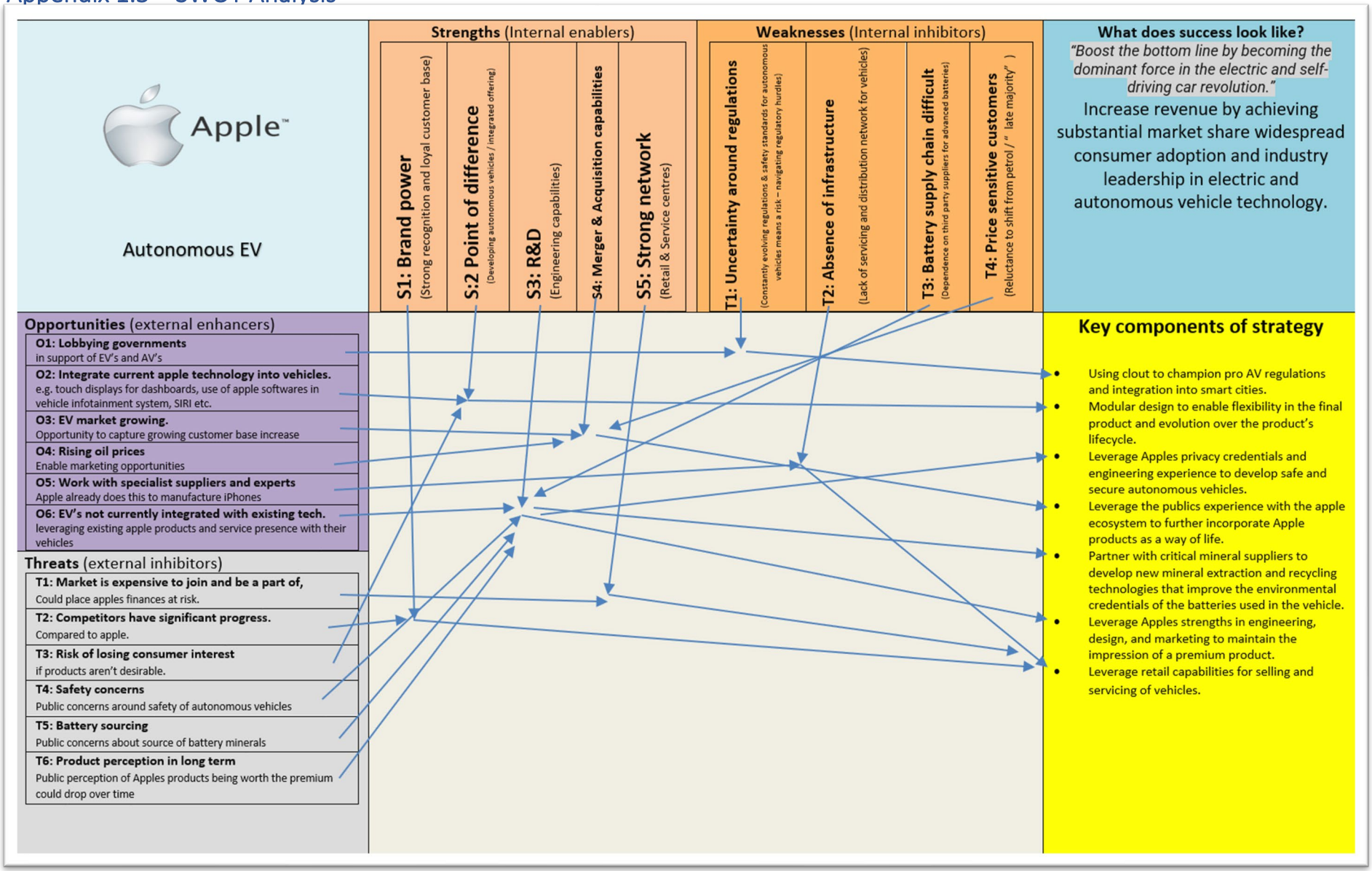
Driver	Macro Factors	1 Year			3 Years			10 Years				ESTEMPLE Analysis
		I	P	I*P	I	P	I*P	I	P	I*P	Trend	Strategy impact
Economic	EV Market growth	1	0.8	0.8	2	0.7	1.4	3	0.6	1.8	Increasing	Opportunity to join market
	Apples financial resources	2	0.9	1.8	2	0.8	1.6	2	0.6	1.2	Decreasing	Threat that involvement in market could erode Apples financial resources.
	Competitors development of EV and SDV.	-3	0.6	-1.8	-2	0.7	-1.4	-1	0.8	-0.8	Increasing	Threat - Watch competitors progress
	Oil prices	1	0.9	0.9	2	0.7	1.4	3	0.6	1.8	Increasing	Opportunity to leverage raising oil prices to promote value offering of product
	Battery prices	-1	0.9	-0.9	-1	0.8	-0.8	-1	0.6	-0.6	Increasing	Opportunity to work with battery suppliers on new cheaper batteries
	Revenue of EV sector	-1	0.7	-0.7	2	0.6	1.2	3	0.5	1.5	Increasing	Good market to join to help keep Apples revenue growing.
Social	Consumer base who may be interested in Apple vehicles	3	0.9	2.7	3	0.8	2.4	3	0.6	1.8	Decreasing	Over time Apples consumer base has been eroded by the likes of Samsung. Apple will need to keep front and centre of consumers' minds by delivering exceptional product and effective marketing.
	Trust or social acceptance of autonomous vehicles	-3	0.4	-1.2	-1	0.5	-0.5	2	0.7	1.4	Increasing	Opportunity to work with other manufacturers to contribute to and shape the public discourse on AV's.
	Consumer desire to reduce carbon footprint	1	0.6	0.6	2	0.6	1.2	3	0.7	2.1	Increasing	Apple as a company can afford to lead the way with reduction of its own carbon footprint. Market the companies carbon credentials so that its front and centre with carbon conscious customers.
	Consumer demand for hybrid vs. EV	1	0.8	0.8	2	0.6	1.2	1	0.4	0.4	Decreasing	As fuel prices increase and the charging network develops it is expected that demand for Hybrids will decrease especially with urban consumers. Apple should focus on development of AV technology that can be applied in a PHEV or BEV.

Technological	Technical challenges in manufacturing particularly if relying on partners	2	0.9	1.8	2	0.6	1.2	2	0.5	1	Decreasing	Opportunity to engage with partners early. Leverage existing partners and explore new partnerships with specialists in vehicle technology.
	Battery technology and autonomous driving capabilities	-2	0.9	-1.8	2	0.7	1.4	3	0.5	1.5	Increasing	Apple has a significant in the abilities of its engineering and R&D teams, but there is an opportunity to work with or even acquire other companies with experience in this area.
	Mining and mineral extraction technology	-3	1	-3	-2	0.8	-1.6	-1	0.6	-0.6	Increasing	opportunity to develop partnerships with companies who are focussed on developing new and innovative technologies for acquiring important minerals (recycling and extraction) Opportunity to work with affected communities and promote responsible mineral extraction.
	Distribution and service networks	-1	0.9	-0.9	1	0.7	0.7	3	0.5	1.5	Increasing	Invest in quality distribution and service networks. Leverage existing stores for the presenting of products.
Ethical	Social impacts sourcing of critical minerals	-3	1	-3	-2	0.8	-1.6	1	0.7	0.7	Increasing	opportunity to develop partnerships with companies who are focussed on developing new and innovative technologies for acquiring important minerals (recycling and extraction) Opportunity to work with affected communities and promote responsible mineral extraction.
	Ethical concerns in relation to data privacy in autonomous vehicles	-1	0.7	-0.7	-1	0.6	-0.6	-1	0.5	-0.5	Decreasing	Focus on developing existing data privacy technology.
	Balancing safety with innovation of autonomous driving technology	-2	0.9	-1.8	-2	0.7	-1.4	-2	1	0.6	Increasing	Opportunity to work with other manufacturers to contribute to and shape the public discourse on AV's. Ensure design process has built in safeguards to make the tech as safe as possible.

Media	Media coverage and consumer interest in Apple's entry into the EV market	2	0.9	1.8	2	0.8	1.6	2	0.5	1	Decreasing	Threat to Apples position as a news maker. Continue to develop the most desirable products with a focus on design and leading technology. Promote them.
	Potential for negative media attention possible in case of safety or regulatory issues	-2	1	-2	-2	0.8	-1.6	-1	0.5	-0.5	Increasing	Threat to Apples reputation. Develop technology in private and ensure it is safe and reliable prior to release to the public.
Political	EV Growth rates dependence on government support	2	0.9	1.8	1	0.6	0.6	1	0.2	0.2	Increasing	Threat to potential sales. Over time it is expected government support for EV's is expected to drop making Apples vehicle more expensive. Ensure product is class leading to maintain market share. Opportunity to lobby government on PHEV, BEV, and AV issues.
	Reliant on existing FTAs, e.g. US-MCA – potentially limited depending on US elections (could also be an opportunity to build strong relationship with governments and ministers)	-2	0.9	-1.8	-1	0.6	-0.6	-1	0.4	-0.4	Increasing	Opportunity to leverage FTA's. Manufacturing plants could be located in Mexico, Canada, and USA.
	Uncertainties in terms of what future regulations will be	-1	0.8	-0.8	-1	2	-2	-1	1	-1	Increasing	Threat. Mitigate by ensuring company is in constant contact with the government of the time and the future. Invest in lobby members of governments to ensure Apple is aware of any possible legislation changes as soon as possible.
	Government mandates for increase increased EV use.	3	0.9	2.7	2	0.7	1.4	2	0.4	0.8	Decreasing	Threat. Mitigate by ensuring company is in constant contact with the government of the time and the future. Invest in lobby members of governments to ensure Apple is aware of any possible legislation changes as soon as possible. Opportunity to lobby governments for favourable legislation.

Legal	Legal challenges ahead for self-driving vehicles (this is also a political issue)	-3	0.8	-2.4	-3	0.7	-2.1	-2	0.6	-1.2	Decreasing	Threat. Mitigate by ensuring company is in constant contact with the government of the time and the future. Invest in lobby members of governments to ensure Apple is aware of any possible legislation changes as soon as possible. Opportunity to lobby governments for favourable legislation.
	Availability of specialised legal advice to help navigate legal complexities	-1	0.9	-0.9	1	0.6	0.6	1	0.5	0.5	Increasing	Opportunity to Work with and invest in the best legal minds in the field. Develop in house capabilities in this area. consider upskilling key engineering staff in relevant legal areas.
Environmental	Limited availability and poor environmental conditions when sourcing critical minerals	-3	0.9	-2.7	-3	0.7	-2.1	1	0.5	0.5	Increasing	Opportunity to develop partnerships with companies who are focussed on developing new and innovative technologies for acquiring important minerals (recycling and extraction) Opportunity to work with affected communities and promote responsible mineral extraction.
	Availability of recycling technologies for end of life of batteries	-2	0.9	-1.8	-1	0.6	-0.6	1	0.7	0.7	Increasing	Opportunity to partner with specialists in battery recycling technology. Consider investing in and/or acquiring key businesses in this area.
	Businesses and consumers contribution to their sustainability goals through EV adoption	2	0.9	1.8	2	0.6	1.2	2	0.5	1	Decreasing	Opportunity to market benefits of Apple vehicle to potential customers.

Appendix 1.5 – SWOT Analysis



Appendix 1.6 - Porter's Five Forces

Threat of New Entry

Force Analysis: Low to Moderate
The automotive industry has high entry barriers, but Apple's financial strength and brand recognition could facilitate entry.
Regulatory challenges, manufacturing expertise, and the need for an extensive charging infrastructure present barrier.

Supplier power

Force Analysis: Moderate
Apple has negotiating power with suppliers due to its strong brand and financial position.
However, dependency on specific suppliers for critical components, such as batteries, can impact negotiations.

Competitive Rivalry

Force Analysis: High
Apple faces intense competition from established players like Tesla, traditional automakers, and emerging EV manufacturers.
Tesla's strong market presence and innovative approach intensify rivalry.

Buyer Power

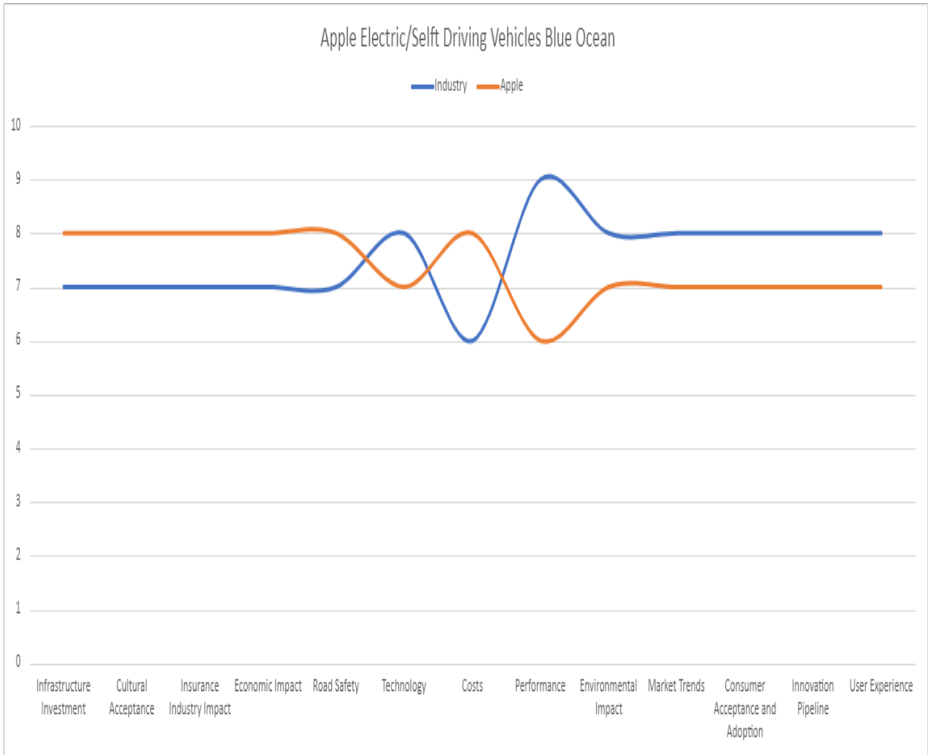
Force Analysis: Moderate
Apple has a strong brand and customer loyalty, giving it some power.
However, consumers have various options, and pricing strategies, product features, and overall market trends influence their choices.

Threat of substitution

Force Analysis: Moderate
There exists a moderate threat of substitution for EVs, particularly considering Apple's potential emphasis on autonomous and innovative features, which currently have limited substitutes. However, external factors such as the rising costs of inflation and increasing interest rates add complexity to the analysis. Additionally, the growing trend of people opting for hybrids over EVs due to concerns about power cuts and the escalating costs of fuel further heightens the threat.

The traditional automobile market and alternative modes of transportation, including hybrid vehicles, present notable challenges. As consumers seek alternatives that address their concerns about power reliability and fuel expenses, the threat of substitution for EVs is pushed towards the medium-to-high range. It is imperative for Apple to navigate these market dynamics strategically to maintain a competitive edge in the evolving landscape.

Appendix 1.7 - Blue Ocean Leadership

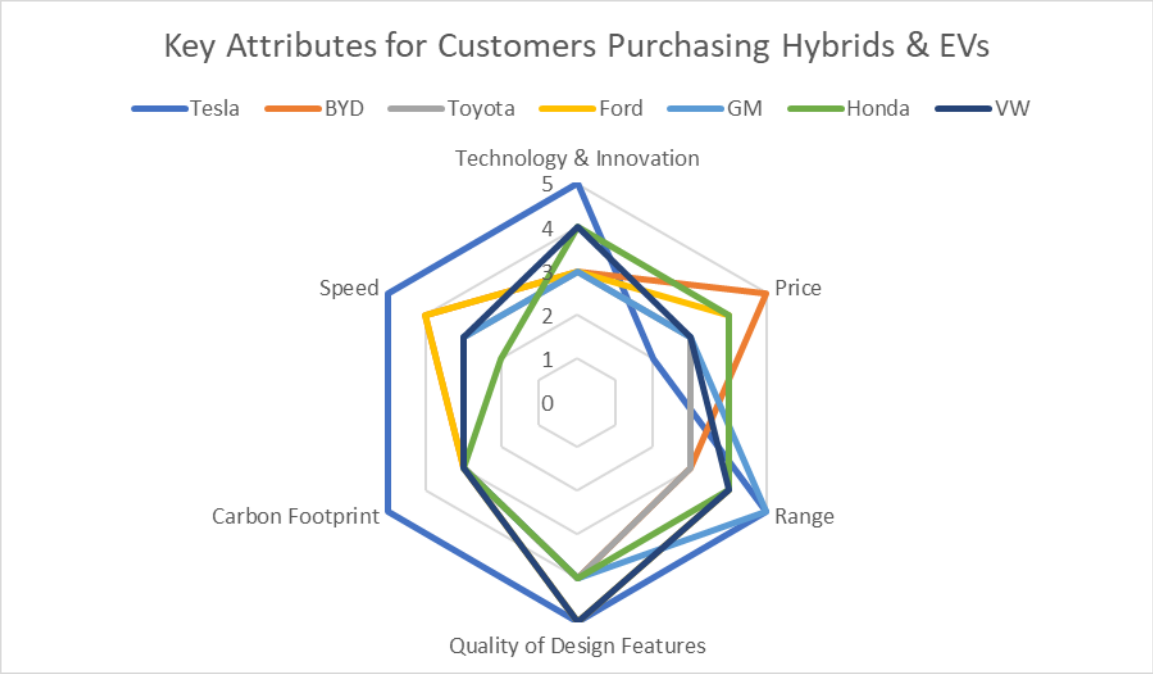


Factors	Industry	Apple	Action
Infrastructure	7	8	Eliminate
Regulation & Policy	6	8	Eliminate
Brand awareness & Perception	7	8	Eliminate
Collaboration & Partnerships	7	8	Eliminate
Global market presence	7	8	Eliminate
Data security & privacy	7	8	Eliminate
Supply chain	7	8	Eliminate
Infrastructure Investment	7	8	Eliminate
Cultural acceptance	7	8	Eliminate
Insurance industry impact	7	8	Eliminate
Economic impact	7	8	Eliminate
Road safety	7	8	Raise
Technology	7	7	Raise
Costs	8	8	Reduce
Performance	6	6	Raise
Environmental impact	9	7	Create
Market trends	8	7	Create
Consumer Acceptance & adoption	8	7	Create
Innovative pipeline	8	7	Create
User Experience	8	7	Create

Appendix 1.8 - ANSOFF

ANSOFF	Existing products (EVs)			New Products (Advanced EVs)		
	Market Penetration	*Description*	*favorability*	*Market Penetration*	*Description*	*favorability*
Existing Markets	Increase sales of existing EVs	Implement aggressive promotion strategies and expand marketing efforts to boost sales of Apple's current EV models in the existing market.	+	Introduce next-gen EV models	Launch innovative and advanced electric vehicleEV models with cutting-edge features to attract existing customers seeking technological upgrades.	++
	Enhance customer loyalty	Develop and implement loyalty programs, exclusive benefits, and customer-centric initiatives to strengthen customer loyalty and retention within the current market.	++	Expand product range	Diversify the product lineup by introducing variations, such as electric SUVs or compact cars, to cater to different preferences within the existing market.	++
	Expand distribution channels	Increase the availability and accessibility of Apple EVs by exploring new partnerships, dealerships, or sales channels in the existing market.	+	Leverage existing customer base	Utilize data from existing customers to identify preferences and needs, informing the development of new Apple EV models that align with market demands.	++
	Introduce limited editions or upgrades	Launch special editions or upgraded versions of existing EV models to attract existing customers and stimulate repurchases.	+	Complex product development	Undertake extensive and intricate product development projects, risking delays and increased costs due to the complexity of introducing highly advanced features.	--
	Declining demand	Experience a decline in demand for existing electric vehicleEV models due to changing customer preferences or external factors.	--	Failure to meet expectations of market	Introduce new products that fail to meet customer expectations, resulting in potential dissatisfaction and a negative impact on Apple's reputation.	-
	Market saturation	Face challenges in increasing sales due to market saturation, limiting the growth potential of current electric vehicleEV offerings.	-	Misalignment with market trends	Develop products without a thorough analysis of current market trends, leading to the potential release of models that do not resonate with customer preferences.	-
New Markets	Increase global market presence	Enter untapped geographical markets with current Apple EV models. Leverage strong brand recognition to capture new customer segments.	++	Innovative market entry	Introduce entirely new and innovative electric vehicleEV models tailored to the unique needs and preferences of the new target markets.	++
	Enhance brand recognition	Leverage Apple's strong brand recognition to establish a foothold in new markets.	+++	Technological leapfrogging	Leapfrog competitors by incorporating cutting-edge technologies and features in the new electric vehicleEVs for a significant competitive edge.	++
	Capture new customer segments	Tailor marketing strategies to address the preferences and needs of new customer segments in different geographical markets.	++	Regulatory compliance challenges	Face challenges in complying with diverse and complex regulatory environments in new markets, leading to delays and increased costs.	--
	Lack of market adaptation	Enter new markets without adapting existing products to meet specific market needs, leading to poor reception and low customer adoption.	--	Mismatch with local preferences and lifestyles	Develop electric vehicleEVs that do not align with the preferences, lifestyles, or cultural norms of the new markets, resulting in poor reception.	-
	Regulatory noncompliance	Fail to adhere to local regulations and compliance standards in new markets, resulting in legal challenges and potential market rejection.	--	Intense competition and rivalry in new markets	Encounter fierce competition from established local players in the new markets, making it challenging to gain a significant market share.	-

Appendix 1.9 - Differential Advantage Spider gram



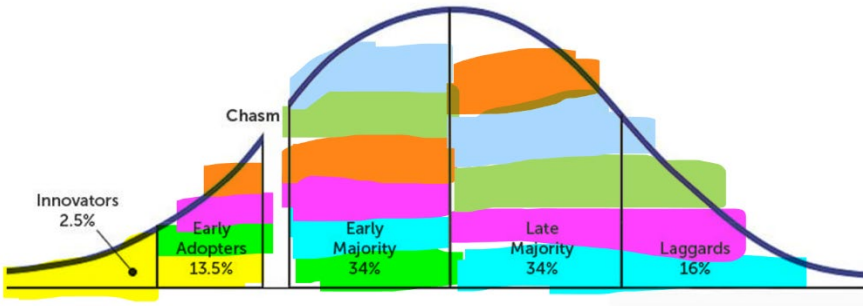
As Apple Inc. is yet to enter the EV & Hybrid market, this diagram depicts where each of its future competitors sit in terms of perceived key attributes in terms of its relevant vehicle offerings.

SCALE 0 (lowest) to 5 (highest) SCALE.

Key Attribute Definitions:

- Technology & Innovation: *Incorporates cutting edge technologies into car design & battery system.*
- Price: *Initial cost of vehicle, without upgrading for more efficient batteries.*
- Range: *How far the vehicle can travel when fully charged/filled up with fuel.*
- Quality of Design Features: *Care is taken with the design quality, look and feel as well as the execution of it.*
- Carbon Footprint: *How environmentally friendly vehicle/brand is perceived to be.*

Appendix 1.10 - Technology Adoption Life Cycle



(Moore, G. A., 2014)

The Technology Adoption Life Cycle illustrates the distinct market segments targeted by each vehicle manufacturer. As adoption progresses, companies must adapt their marketing strategies to resonate with those who are more hesitant, resistant or don't see the need to change.

- Tesla
- BYD
- Toyota
- Ford
- GM
- Honda
- VW

Appendix 1.11 - Competitor Analysis

	Tesla	BYD	Toyota	Ford	GM	Honda	VW
About	Fully Electric. Cutting-edge technology. Environmental leader. Developing sustainable battery substitutes, sodium.	Plug-in Hybrid & EVs. Cheap battery production. World's largest EV (PLEVs & EVs combined). High demand in China, white collar workers wanting to economize.	Incumbent Vehicle Maker. 16.9% of automobile manufacturing industry's revenue. Dominates US Market for hybrid and EVs. Carbon neutrality by 2050. (Reducing battery costs by 30%).	Incumbent Vehicle Maker. 2nd largest manufacturer of hybrid vehicles in the U.S. with 18.8% of the market in 2021. 1st to launch an electric truck. Known for its EcoBoost engines.	Incumbent Vehicle Maker. Investing into an extensive EV charging, U.S. highways Ceasing gas-powered vehicles by 2035 Carbon neutrality by 2040.	Incumbent Vehicle Maker. 1st to produce/market Hybrid. 18.2% of the U.S. Piloting solid-state battery technology. Aims to manufacture two million EVs by 2030.	Building factories in Europe, Spain, and China to control battery production. Building extensive charging networks, U.S., Europe, China Launching commercial autonomous ride-hailing mobility service.
Challenge	Poor customer service. Lowest quality of design features within the industry. Expensive. Price expected to decrease, scale & battery advancements.	Limited supply of lithium available. Unethical & non-environmental extraction practices.	Risk of being unable to develop the capabilities to go fully electric.	200,00 pre-ordered Lightning Truck Supply chain constraints & rising cost of lithium and nickel. Potential software issues.	Significant fire risk with its Bolt batteries, removing its once coveted position as a leader in the Electric VehicleEV Market.	Relies on lithium for its batteries.	
Positioning	Premium, Ecofriendly	Affordable, Cost Savings	Sustainable, Reliable, Trustworthy	Family-friendly, Efficiency	Sustainable, Convenient, Affordable	Flexible, Accessible, Family-friendly	Luxury, Speed
Target Market	Innovators, Early Adopters	Early Majority	Early Majority, Late Majority, Laggards	Early Adopters, Early Majority, Late Majority	Early Adopters, Early Majority, Late Majority	Early Majority, Late Majority, Laggards	Early Majority, Late Majority, Laggards
Price	High	Low	Low to Mid	Low to Mid	Low to Mid	Low to Mid	Mid to High
Partners	Panasonic (Design)	None	None	None	Honda, Pilot Company	GM	Sweden's Northvolt (cell production), China's Gotion High-Tech; Apple (previously, AI), Argo AI (current AI)

Appendix 1.12 - EV Investment Pledges by Incumbent Vehicle Makers

Incumbent Vehicle Maker	EV Investment Pledged ($ In Billions)
Ford	11.4
Nissan	17.7
Toyota	35
GM	30
VW	100

Appendix 1.13 - Capabilities & Competencies needed for success.

1	*Satisfy customer purchase criteria by convincing customers that EV is better value than GPV.*
2	Mass market consumer to reach significant scale.
3	Optimised cost for battery and other raw materials
4	Technologically advanced design of EV to offer greater milage at single charge.
5	Production Factories at best suitable locations for large scale manufacturing
6	Skilled workforce to carry out research and support customers.
7	Compatible ecosystems for re-charging the cars and offering service.
8	Initial investment
9	Partnership or acquisitions of other companies (suppliers / distributors)
10	Software / self-driving capability (Car OS like IOS) drive.ai
11	Branding
12	Affordability
13	Strong leadership and focused vision

Appendix 1.14 - Apple's competitive advantages (VRIO)

Strengths of Apple Inc.	V valuable	R Rare	I Inimitable	O Organised	Inference
Availability of surplus capital for massive investments	YES	NO			Competitive parity
Massive Brand and millions of loyal customers	YES	YES	YES	YES	Sustainable competitive advantage
Skilled workforce	YES	YES	NO		Temporary competitive advantage
Experience of launching and diversifying innovative products	YES	YES	YES	YES	Sustainable competitive advantage
Presence of Apple eco-system like Appstore and Apple cloud	YES	YES	YES	YES	Sustainable competitive advantage
Global exposure having presence in China India and US	YES	YES	NO		Temporary competitive advantage
Superiority and unique in autonomous EV product design	YES	YES	YES	NO	Unused competitive advantage
Trust of customers and investors	YES	YES	NO		Competitive parity
Innovation and technology	YES	YES	YES	YES	Sustainable competitive advantage
ESG Commitments	YES	YES			Competitive parity
Strategic partnership and collaborations	YES	YES	NO		Competitive parity
End user experience	YES	YES	NO		Temporary competitive advantage

Valuable

- Inherent trust in the brands products to 'just work' together seamlessly and protection of customer data.
- Engineering and design capabilities
- Integration of Apple ecosystems

Rare

- Ev's are common. However, levels 4&5 automatic vehicles are rare
- Ability to integrate EV's fully into a technology ecosystem such as Apple's is rare

Costly to imitate

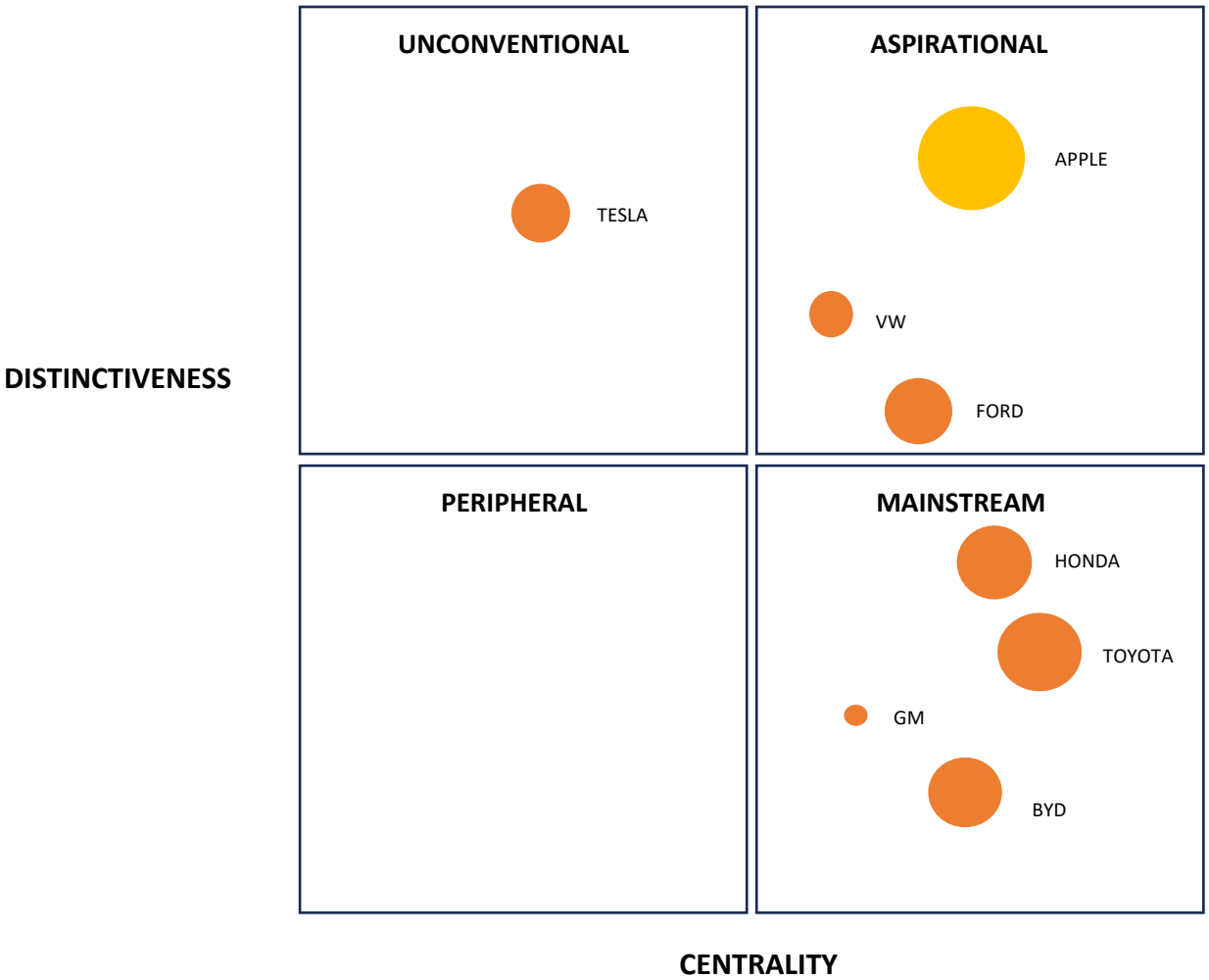
- An autonomous vehicle requires huge investment and a large multidisciplinary engineering and design team
- Apple has a strong internal design language and design team that is costly and difficult for competitors to replicate

Well supported by the organisation

- Apple has immense internal resources in terms of cash and engineering and design capability
- Apple has a proven track record of being able to introduce complex groundbreaking products (iPhone, iPad, Apple watch etc.)

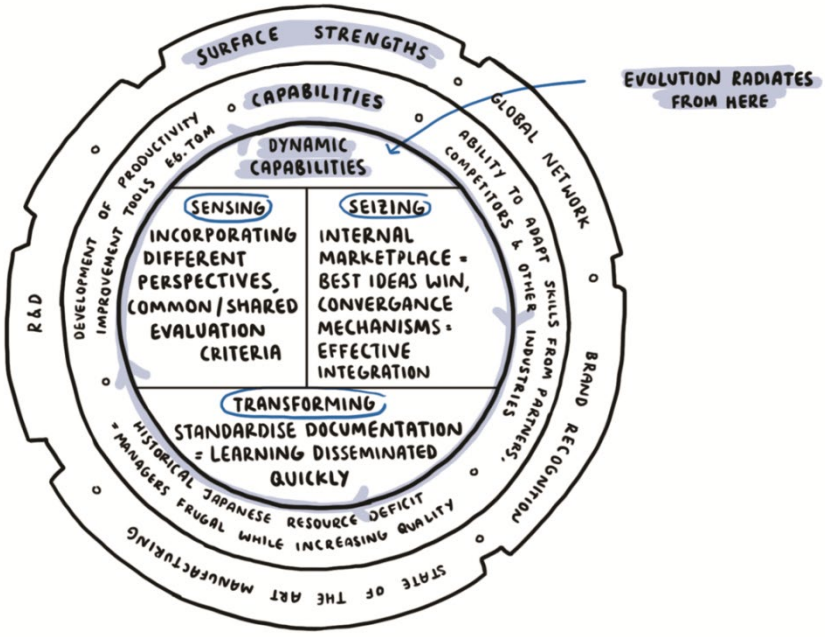
Appendix 1.15 - Centrality versus Distinctiveness (Hybrid & EV Market)

- With Apple's wide appeal and distinctiveness, it can carve out market share in the Aspirational Space.
- Tesla owns the unconventional space however this is becoming increasingly normalised as more full EV providers enter the market.
- BYD is the major player in China.
- Toyota, Honda, and Ford are dominating the U.S. markets.
- Tesla has sold the most EVs globally, surpassed only by BYD who had a greater market share combining EV & Hybrid
- Volkswagen is set to release an autonomous vehicle, and is focusing primarily on the European markets, followed by China & the U.S.



Appendix 1.16 – Characteristics needed for uniqueness.

Appendix 1.17 – Dynamic capabilities



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