

LEVEL 7 ASSESSMENT SPECIFICATION



Student name:	Earnest LI	Student ID number:	1715380
Programme:	DBA		
Module:	Managing in Complex Environments: Strategies, Insights and Solutions		
Module code:	SBPD7006	Contribution to Overall Module Assessment (%):	100%
Lecturer:	Dr Leo Ho	Internal Verifier:	
Assignment Title:	Management Report	Word count (or equivalent):	7500 (+/- 10%)
Submission deadline:	24 March 2019	Return date of provisional marks & written feedback:	30 April 2019
Submission method:	All written assessments, where practical and possible, must be submitted via Turnitin unless otherwise instructed by the Lecturer. (Please DO NOT put this assessment specification into Turnitin or it will match many similarities with other students' submissions.) Alternative submission method (if applicable): Late submission of the assessment will result in a late penalty mark. Penalties for late submission: Up to one week late, maximum mark of 50%. Over one week late, 0%. Only the Extenuating Circumstances Panel may approve a change to submission dates.		
Academic honesty / referencing:	Academic honesty is required. In the main body of your submission you must give credit to authors on whose research and ideas your work is based. Append to your submission a reference list that indicates the books, articles, etc. that you have used, cited or quoted in order to complete this assessment.		

STUDENT FEEDBACK FORM

This section details the extent to which the assessment criteria are demonstrated by you, which in turn determines your mark. The marks available for each category of skill are shown. Lecturers will use the space provided to comment on the achievement of the task(s), including those areas in which you have performed well and areas that would benefit from development/improvement.



Generic Assessment Criteria	Marks available	Marks awarded
1. Engagement with Literature Skills	15%	
Critique of the case and literatures related to the case and people management		
2. Knowledge and Understanding Skills	25%	
Understanding of the business challenges in related to people management		
3. Cognitive and Intellectual Skills	25%	
Analysis of the case and related articles on people management Ability to analyse the root causes of the issue for further development of possible recommendations		
4. Practical Application Skills	25%	
Analysis the strength and limitation of the different alternative suggestions Justify the recommendation		
5. Transferable Skills for Life and Professional Practice	10%	
Independent critical strategic thinking skill Analytic skill		

Communication skill		
Ability to write and business management report		
Referencing		

Assessment Mark (Assessment marks are subject to ratification at the Exam Board. These comments and marks are to give feedback on module work and are for guidance only until they are confirmed.)	Late Submission Penalties (tick if appropriate)		%
	Up to 1 week late (50% Max)		
	Over 1 week late (0%)		

What is happening to the Project Titan?

Table of Contents

Executive Summary	5
Introduction: Project Titan is a “big” pressure	6
Trend Spotting Analysis (PESTLE Analysis)	7
Political	9
Economic	10
Social	11
Technology	12
Legal	13
Environment	13
POP/POD Analysis on Competitors of EV and Self-Driving Automakers	14
SWOT Analysis	15
People Management Issues	16
Leadership of Tim Cook: Democratic Style	18
Problem of Inclusion & Diversity	20
Recommendation	21
Inclusion and Diversity Strategy: Gender Power	22
Mixing of 4Ps to focus on Female Drivers	22
Speed Up Inclusive & Diversity Hiring	22
Real Collaboration	23
Cross-functional Project Team	23
Managing Emotions of Female Colleagues	24
Conclusion	24
Reference	25

Executive Summary

In this report, one of the world's largest tech companies and, Apple Inc. is selected for a real-case study after the restructuring exercise of the Project Titan, its autonomous vehicle initiative. As a multinational corporation (MNC), Apple is reported to develop the project in 2016 and it is estimated to launch Apple's car in 2019, but it will be delayed and may launch in 2021. In the same year, competitors from over the world's carmakers such as BMW and Volkswagen will launch their products. It means Project Titan is surrounded by wolves.

If Apple believes that the company has the competency and competitive advantages to fight with the key players of electric vehicle (EV) and self-driving car, why the company decided to take layoff action and continue to invest the project? To learn more from this case, we will use 4-steps strategic thinking to create value for the project. In step one, PESTLE analysis will be used to spot the critical trend. Then, we will connect the dots of the different factors to see the big picture including the finding of people management issues of the company. Having identified the objectives and set the goal, we will recommend the ways such as inclusion and diversity strategy to catch the opportunities, and prioritize the options for better implementation.

Introduction: Project Titan is a “big” pressure

In Jan 2019, CNBC reported Apple dismissed over 200 employees from the Project Titan. The layoff action was described as a restructuring under the new leadership. Six months ago, Apple hired Doug Field, who is a Tesla engineering vice president and Apple veteran, to lead the Titan team (Kolodny et al. 2019). Business Insider, an American financial and business news website, said Project Titan is a secretive car project suffered from series of setbacks and changed the target to launch from 2019 to 2021 (Muolo, 2016). Regarding the article published by Fortune, investors believe the project will be a long-term growth driver. Morgan Stanley analyst said if Apple releases a car, it will be one of the most important moments in the history of transportation (Vanian, 2016). It shows a “big” expectation for Apple’s autonomous vehicle, and it also creates “big” pressure to the top management of the company.

According to Apple’s 7 Leadership Principles, the first principle is “great product” (Croitor, 2017). If the company aims to build an EV with a great self-driving system, Apple is facing fierce competition today. In the EV market, Tesla is the market leader (Glon et al. 2018), and Waymo is the leader of the autonomous vehicle market (Welch, 2018). Under this complex environment, the company needs to rethink its strategy. Moreover, people management issues such as leadership and diversity are affecting the development of Project Titan. Several questions will be asked and answered in this report.

- Are the EV trend and autonomous vehicle market showing a big market that is worth to invest?
- Do Apple’s leaders especially the leadership style of the CEO, Tim Cook know how to catch the opportunities?
- Can Apple’s leadership help to adopt an MNC global regionalized strategy to gain or sustain in the autonomous vehicle market?
- Can Apple’s leadership create a high performing team for Project Titan to win the competition?

Trend Spotting Analysis (PESTLE Analysis)

What is the trend of EV and autonomous vehicle market? The Project Titan is surrounded by wolves. Digital Trend said the overall rating of Tesla Model 3 is 5 out of 5. It means this model is the best EV in the mind of customers. Chevrolet Bolt EV gets the rating (4 out of 5) as the best long-range EV alternative (Glon et al. 2018). With regards to global autonomous vehicle market, more key players are battling. The article published by Market Watch identified the key players from MNC tech company or major car manufacturers including Google, Baidu, Tesla, GM, Ford, Jaguar, Volkswagen, Audi, and Toyota (Market Watch, 2018). It reflects the autonomous vehicle market is a global competition including the MNC from the US, UK, Germany, Japan, and China (see table 1).

Table 1: Key Players of Autonomous Vehicle Market

Country	Player
US	Google General Motors (GM) Ford Motor Company Tesla
UK	Jaguar
Germany	Volkswagen Audi
Japan	Toyota
China	Baidu

Source: marketwatch.com

Though Apple is famous in product design and innovation to make profitable products such as iPod, iPhone, iPad, and Apple Watch, can the company produce a unique, safe, affordable, and profitable self-driving car and be the best key players? Bloomberg has published a feature reporting the winners of the self-driving car race. It shows Waymo is the “leader” (Welch, 2018). Google started the testing of its autonomous vehicle in 2009 and collected more data on road test than its competitors. To strengthen the competitive advantage of Waymo, Google is working with key partners from Italian-American automaker (Fiat Chrysler), UK automaker (Jaguar Land Rover), and Japan automaker (Honda Motor).

If Apple started the road test in 2016, the company obtained data with less than 3 years. The market and investors may doubt the level of accuracy and safety of Apple's autonomous vehicle when comparing Waymo. In Jan 2019, Waymo announced that it would build a driverless car-only manufacturing plant in Michigan (Emem, 2019). Before the news of Waymo is reported, Uber Technologies resumed the testing of its self-driving car.

Besides, if Apple is planning to launch its self-driving car in 2021, the product will face three competitors including BMW, Volkswagen, and Baidu. The first two car manufacturers are famous in making luxury and practical cars with recognized driving pleasure in the market. It explained why Apple has recruited dozens of auto experts from Ford and Mercedes-Benz, and senior executives toured the carmaker's Leipzig factory to learn the manufacturing of the i3 electric car (Reuters, 2016).

Table 2: Who is winning the self-driving car race?

Brand	Estimated launch	Annual budget	Current ride
Waymo	2018	Undisclosed	Jaguar I-Pace
GM	2019	Over \$1b	Chevy Bolt doing the road test
Daimler	2020	Over \$9m	Mercedes V-class van
BMW	2021	\$6.3m	Fully autonomous cars testing
Volkswagen	2021	\$8.4b	Audi A8
Baidu	2021	Undisclosed	Lincoln MKZ Hybrid
Uber	To be determined	Undisclosed	Volvo XC90
Titan	2021	Undisclosed	66 vehicles testing

Source: Bloomberg.com

To further evaluate the market trend of EV and self-driving car under complex environment, PESTLE analysis is used (see table 3). From the six factors including political, economic, social, technology, legal, and environmental factors, both positive and negative impacts are affecting the development of the Project Titan.

Table 3: PESTLE Analysis

Political
(-) Trump administration; potential changes to legislation; tax credit (EV rebate)
(-) US-China Trade War
(-) Rise of China
Economic
(+) both EV and self-driving car markets are expected to growth
(-) the US had few positive dynamics on market and industry EV sales
Social/Cultural
(+) charging infrastructure
(+) customers expect EV will get bigger and better
(-) Tesla Model 3 is the best rating EV
Technology
(+) battery costs are falling
(+/-) cognitive and cloud computing
(+/-) development of autonomous driving system
(+/-) development of sensors, cameras, communication hardware and software
Legal
(+) Innovative Clean Transit (ICT) rule
Environmental
(+) climate change impacts
(+) clean car standard promoted by California

Political

Regarding political factor, three negative factors may slow the growth of EV in the US and even in Asian markets. First, the administration of Donald Trump, the current president of the US, may change the policy of EV rebate (Myers, 2019). It means the US government may cut

the tax credit that will affect the customer decision making to buy EV. In 2018, EV policies helped the US to reach \$1m total sales. Change of policies will have a negative impact on EV sales.

Second, Trump started the US-China Trade War in 2018. If the political relationship between the two countries cannot be improved, it may have a negative impact on the EV sales.

According to the article published by McKinsey & Company, the EV market of China expanded 72% in 2017. China's EV adoption rate represents 2% on a national level (Hertzke, 2018). EV can be seen on the road in large cities such as Beijing, Hangzhou, Shanghai, Shenzhen, and Tianjian. It shows China will be a high potential EV market.

However, if the trade war continues to damage the US-China relation, China may cut the demand for the EV or self-driving cars produced by the US automakers. Even though Apple can produce an EV with good design and advanced self-driving vehicle, the company may not be allowed to import to the Chinese market or has to pay a high tariff.

Third, the rise of China affects not only the global market but also the product development of Chinese EV and the autonomous vehicle. Baidu (China) sets the goal to have the system tested in the bus in 2019 (Welch, 2018). The product is described as "the dark horse" and it is estimated to launch in 2021. The market expects global autonomous vehicle sales reaching \$65.3 billion by 2017 (Market Watch, 2018). Asia Pacific market will be the fastest growing market. Therefore, Chinese autonomous vehicle may be a strong competitor to Apple's Project Titan.

Economic

From some economic forecasts, both EV and the autonomous vehicle markets will rise in the near future showing a positive impact. With regards to McKinsey's Electronic Vehicle Index, EV sales are estimated to reach 4.5 million units in 2020. Pure electric vehicles will share 66% of the market, and the rest will be shared by Plug-in hybrid vehicles (Hertzke, 2018).

International Energy Agency (IEA) forecasts the number of EV on the road around the world is going to hit 125 million by 2030. It will be a big jump from 2017 and only 3.1 million EVs driving on the road (DiChristopher, 2018). This is a sign of positive impact because the EV market is a very big market.

Nonetheless, both Market Electric Vehicle Index and Industry Electric Vehicle Index reported by McKinsey show that the US is not the EV leadership (see table 4 and 5). It also says the US has few positive dynamics on both market and industry side. Market share of the US EV slightly grew from 0.7% to 1.2%. China is becoming an upcoming EV leadership. Besides, the EV adoptions in Norway, Japan and Germany are performing better than the US. Therefore, the negative impact may affect the competitive advantage of Project Titan.

Table 4: Market Electric Vehicle Index

Country
1. Norway
2. China
3. Switzerland
4. Sweden
5. Netherlands
6. US

Source: McKinsey & Company, 2018

Table 5: Industry Electric Vehicle Index

Country
1. China
2. Japan
3. Germany
4. US
5. South Korea

Source: McKinsey & Company, 2018

Social

An eco-friendly lifestyle is becoming a trend and it affects the buying decision of EV. McKinsey forecasts the trend of EV market adoption, China will take the leadership (Hertzke, 2018). France, Germany, India, Norway, and South Korea are following the EV trend. One of the positive impacts is caused by the charging infrastructure making the charging process more convenient. For example, California is promoting EV adoption and constitutes half of the US market. 5 million ZVs are expected to drive on the road by 2030,

and 25,000 EV chargers operating in the ground by 2025 (Myers, 2019). The charging infrastructure may encourage consumers to step into an eco-friendly lifestyle.

Moreover, customers are expecting to buy bigger and better EV. It will be a positive impact on the demand for EV. Nevertheless, Tesla Model 3 is ranked number one in the overall rating of EV, and Apple has to design and produce an EV with more unique selling points to attract customers. Otherwise, the product of Tesla will create a negative impact on Project Titan.

Table 6: EV market adoption

Country
1. China
2. France
3. Germany
4. India
5. Norway
6. South Korea
7. Sweden
8. US

Source: McKinsey & Company, 2018

Technology

The progress in EV creates a major force to decrease the price of lithium-ion battery by 80% between 2010 and 2018 (Kane, 2018). Under this trend, the production cost of EV will be lowered, and the selling price of EV may also drop to attract more users. On one hand, the falling battery price will have a positive impact on Apple's self-driving car production. On the other hand, the competitors also enjoy the benefit.

Although Apple is one of the world's tech giant, the trend of several technological factors may have positive and negative impacts on the development of Project Titan. First, many tech companies are investing resources to develop cognitive and cloud computing to improve the level of user experience and the quality of services with the technology of artificial intelligence (AI). Compared with the competitors of the self-driving car such as Waymo

developed by Google, Apple gets lesser data. If Project Titan is making an autonomous vehicle, it needs not only the technology of AI, but also the data generated by users.

Second, we heard Apple is developing the autonomous driving system for Project Titan. However, competitors are doing the same products. If Apple wants to build a competitive advantage and have a positive impact, it needs to develop a reliable and safer self-driving system.

Third, a self-driving system needs to catch up with the development of sensors, cameras, communication hardware and software. With regards to the type of sensor, we can find ultrasonic sensor, radar sensor, lidar sensor, and image sensor. To differentiate the type of autonomous vehicle, we can find semi-autonomous vehicle, fully autonomous vehicle, and driverless fully-autonomous vehicle (Market Watch, 2018). Unlike producing iPhone, iPad or Apple Watch, it is a challenge for the tech giant to make a self-driving electronic car that can compete with the key players.

Legal

The authority of California can have a positive impact on the trend of EV sales through legislation. For example, the California Air Resources Board (ARB) will pay effort to drive electronic bus adoption by implementing Innovative Clean Transit (ICT) rule by 2040 (Myers, 2018). It shows a potential demand for industry EV or electronic bus fleet in the near future. If Apple can produce a safer electronic bus, the company may share the adoption market.

Environment

Climate change may be a positive impact on the development of EV. In the US, greenhouse gas emission is generated by the transportation sector (O'Sullivan, 2019). Therefore, EV will be one of the many solutions to tackle the problem of climate change. It explains why the media focus will address EVs in the North American International Auto Show of Detroit. Japanese carmakers include Nissan and Infiniti announce new electric concept vehicles. It shows a high potential demand for EV in the US and the global market.

POP/POD Analysis on Competitors

In this part, we will use Points-of-Parity (POP) and Points-of-Difference (POD) Analysis to score the attributes of Tesla Model S which is one of the key competitors of Apple's autonomous vehicle. Researchers have conducted a national survey to study the attributes affecting the willingness to pay for EVs. There are five attributes including (1) driving range, (2) charging time, (3) fuel cost saving, (4) pollution reduction, and (5) performance (Hidru et al. 2011). The market may expect the Apple's self-driving EV can perform better in the similar attributes of Tesla's EV (see table 7). Nonetheless, Project Titan is an open secret in the industry and we cannot obtain sufficient information to analyze the strengths and weaknesses of Apples' EV.

According to the article published by CNBC, the Tesla Model S gets many "coolest" features that are the unique attributes of the product (Hogan, 2017). Therefore, the market may expect Apple will produce an EV with other unique features or attributes to attract customers. For example, the car key of Tesla is designed like a car shape and described as a "pretty clever key" (see table 8). It gives a pressure to the product design of Project Titan to have more points-of-difference to attract customers. How Apple can keep on making products that become icons and inspire customer (Turner, 2007)?

Again, we cannot obtain more information or data to analyze the levels of product differentiation of Project Titan, and it is difficult to score of the POD against Tesla. One thing we know is Apple may use Siri, AI-powered virtual assistant to support the self-driving system. In 2018, Mercedes-Benz showed the intelligent multimedia system MBUX at the Consumer Electronics Show in Las Vegas (Mercedes-Benz, 2018). The strengths of MBUX include high-resolution widescreen cockpit. Driver can use the touchscreen to operate the vehicle functions plus the support of intelligent voice control. To customers, MBUX is a kind of user experience differentiation, product differentiation, and technology differentiation. Can Project Titan deliver a unique autonomous vehicle to win the competitors?

Table 7: POP Analysis

Attributes	Apple's Titan	Tesla Model S
Driving range	unknown	594km
Charging time	unknown	less than 1.5 hours
Fuel cost saving	unknown	save 30%+
Pollution reduction	unknown	reduce CO2
Performance	unknown	0-100km: 3.1 seconds

Table 8: POD Analysis

Attributes	Apple's Titan	Tesla Model S
Driving system	Siri	autopilot
Performance	unknown	ludicrous Plus Mode
Charging Infrastructure	unknown	superchargers
Software updates	unknown	over-the-air updates
Streaming services	unknown	yes
Web browser	unknown	yes
Suspension	unknown	auto-raising suspension
Parking sensor	unknown	advanced parking sensors
Car key	unknown	pretty clever key
The app	unknown	yes

SWOT Analysis

With regards to PESTLE and POP/POD analysis, external and positive factors can be seen to show the opportunities of a big EV and autonomous vehicle market in the near future. On one hand, Apple, one of the world's tech giant, will aim to use Project Titan to capture the opportunities with the consideration of external and positive factors. On the other hand, Project Titan is facing a big challenge from the competitors regarding the external and negative factors. The company needs to eliminate the threats, but how to do?

Having looked into the internal factors of Apple's leadership, we can find the strengths and weaknesses of people management issues. If the company can maximize the strengths to build sustainable competitive advantages with the team, and minimize the disadvantages that may have a negative impact on the development of the self-driving EV.

People Management Issue

To review the people management issues of Project Titan, it appeared in 2016. The auto mastermind of Apple car, Steve Zadesky who was overseeing the company's electric car project from 2014 to 2016, left the company for personal reasons (Reuters, 2016). He was a 16-year veteran of the company and previously worked with iPod and iPhone teams. In 2014, Apple had decided to triple its staff of 600 workers dedicated to the car project. It shows the company is aiming to develop the product.

Unlike producing tech gadgets such as iPod and iPhone, EV or self-driving car is a "big" product involving different production processes and technology that are not the strengths of Apple. Therefore, the company has recruited dozens of auto experts from carmakers including Ford and Mercedes-Benz to support Project Titan. However, top talents will be poached by competitors. Alexander Hitzinger, the former senior director of hardware engineering at Apple, has switched to Volkswagen to take the responsibility to develop autonomous vehicle (Emem, 2019).

In order to strengthen the leadership of the car project, Apple selected its legendary hardware executive Bob Mansfield to lead its effort, and work with Dan Dodge, the founder and former CEO of QNX (commercial Unix-like real-time operating system). Two leaders lead the team to continue the development of the autonomous driving system (CB Insights, 2018). In 2018, the company hired Jaime Waydo, former Waymo and NASA engineer (robotics expert) to head Project Titan. It shows Apple may be aware of the force of competitors, and the company needs to recruit the "right" person from the top competitors of the self-driving car.

A series of human resource actions can be explained by the organizational analysis on Apple. This research describes the tech giant is a good structural fit to technology and environment to deal with contingencies (Tasnim, 2018). The talents are capable of identifying contingency

at an early stage and deal with it. The characteristics of contingency will lead to high performance, effectiveness, and existence.

Moreover, the organizational structure and culture of dealing with contingencies may help the team to cope with most complex, least routine or non-routine research technology to develop no pre-packaged solutions. Under this circumstance, the leaders of Apple can make fast decisions and technological corrections in the past. It explains the HR actions of Apple to handle the people management issues of Project Titan, and why the company appoints the talents recognizing Apple's culture and being innovative to deal with the car project.

Furthermore, investors may worry about the change of Titan's leadership will have a negative impact on the development of Apple car. Is it just luck that Apple can be one of the world's tech giant? To produce products with high quality and cost effectiveness, the company is using its operations management (OM) applying 10 decisions to ensure all aspects of the business are running smoothly (Rowland, 2019). The 10 decisions help management to consider the following aspects:

- product design
- quality management
- process and capacity design
- location strategy
- layout design and strategy
- job design and human resources
- supply chain management
- inventory management
- scheduling
- maintenance

Although the leadership or the auto mastermind of Project Titan is changed, Apple can handle the people management issues with OM to keep the team to perform coordinated efforts in product design and development, sales and marketing, and the firm's supply chain. It is why we believe Titan can take the advantage of operational effectiveness and strategies

involving technological innovation to help the car project thrive in a competitive environment.

Back to the future, who will be responsible for making the final decision of hiring the leadership of Project Titan? It is Tim Cook, the CEO of Apple. Researchers say the company is a flat, organic structure centralized from the top with horizontal differentiation (Tasnim, 2018). As the CEO, Tim Cook is the most powerful top management to have an intervention on the decision making of the second level and even a third level of management or leaders. Therefore, can Tim Cook lead the company to build sustainable competitive advantage under the fierce competition of EV and autonomous vehicle market, though the company can spot the market trend and opportunities?

Leadership of Tim Cook: Democratic Style

In 2011, Tim Cook replaced Steve Jobs to be the CEO of Apple. During that time, media always compare the leadership style of two talents, and some may question the ability of Tim Cook to lead the company to have superior performance.

Unlike the autocratic leadership style of Jobs, Cook is using democratic leadership to run the business (Investopia, 2018). Cook would like to have mutually consented decision making to build consensus among the team. Some describe Cook's style is a combination of "lower" decision-making and loss of innovative drive compared the Jobs's style putting innovation first. It is a negative comment about the leadership of Cook.

The fact is Cook coping with the company culture to delegate the duties of product engineering to members of his executive cabinet to develop Apple Watch. In 2018, Apple's fourth-quarter results showed the revenue increased 20%, and services revenue of \$10 billion reached a new all-time high (Apple, 2018). Besides, Fortune reported that Apple was taking over the watch industry (Donnelly, 2018). The company sold more watches than Rolex, Omega, and Swatch combined last quarters in 2017.

Facing the challenge of the EV and self-driving car market, we believe Cook can make tough decisions to focus on existing strengths of the organization to develop Apple car. Regarding Cook's style, he follows the organizational culture to a certain extent including to strive for

top-notch excellence, and fire employees who do not meet the expectations (Meyer, 2019). It may be the reason why Apple cut 200 employees from Project Titan.

To work with young professionals, Cook has changed the communication between leaders and followers with a moderate combativeness approach to building a sociable workplace for optimum employee morale (Meyer, 2019). We believe Cook wants to have a positive impact on the leader-member exchange (LMX) to encourage creativity and innovative work behavior that may help the business. It is because Apple's leaders need to work with multi-gens workforces including baby boomer, gen X, and gen Y. Different ways are used to cope with the leader-member exchange and leadership training to manage changes and innovation.

From the 7 core values or Apple's 7 Leadership Principles promoted by Cook (Croitor, 2017), we can learn more about the strengths and weaknesses of the people management issues of Project Titan. The core values are shown as follows:

1. Great products
2. Simple, not complex
3. Ecosystem to own and control primary technologies
4. Excellence
5. Say No to less meaningful projects
6. Collaboration to innovate a unique way
7. Accept mistakes

Undoubtedly speaking, Apple can obtain resources to make a self-driving EV, but it is a challenge for the company to make a great Apple car with the principles of great product and excellence. It explains why Project Titan has to delay the product launch until the company can produce the product that can "surprise" the market. We can understand the design and production of an autonomous vehicle is not a simple thing. To produce a great self-driving EV with simple touch and control, it is another tough challenge for the company.

To make the Apple car, the organization has to collaborate with different experts and talents from different countries or races to build the ecosystem to own and control primary technologies. Even though Cook can be treated as a competent leader, the company is

criticized by investors about its recruitment policy not embracing the principle of collaboration. Tony Maldonado, an investor was worried about the people management issue of inclusion and diversity will hurt the business of Apple in the years to come (Kastrenakes, 2017).

Problem of Inclusion & Diversity

According to the Inclusion and Diversity Report 2016 of Apple, analyst says the company was facing complex problems and risks when it tries to pay effort to embrace inclusion and diversity. The fact was the fraction of underrepresented minorities among new hires grew from 21% to 27% between 2014 and 2016 (Gaudian and Hunt, 2016). Moreover, 82% of Apple's leadership was white, versus only 56% of its retail employees. Furthermore, 29% of leaders at Apple are women. It reflects a one percent point slightly increase from July 2016 to July 2017 (Apple, 2019).

Maldonado has submitted a shareholder proposal asking the company to adopt an accelerated recruitment policy to increase the diversity of senior management and its board of directors. In 2017, Denise Young Smith, a black woman and a 20-year veteran at Apple, was appointed to be the first head of diversity (Mohdin, 2017). However, she left the company after six months in the role. Analyst believed her leave relating to her comment of “12 white, blue-eyed, blonde men” could be diverse, and it drew criticism (Ghosh, 2017).

One of our questions about Apple's people management issue is the “Sumer Boys”. Brian Sumer, who was the software engineer of Siri infrastructure, hired his two brothers to help the company to develop sensor and software for the self-driving vehicle (Efrati, 2016). A traditional organization may worry about three brothers working in the same team, and their family issues and emotions may affect their performance. Will the company allow female engineers to hire sisters to work together?

The last principle of Apple's leadership is accepting mistakes. It means leaders will self-honestly to admit mistakes when they are wrong and they will have the courage to change. With regards to the report, the company says several actions were taken to train the existing staff to recognize unconscious biases. The company tried to upgrade recruitment, hiring and promotion process to minimize the impact of biases. To increase the diversity of new hires,

the organization expands the pipeline (Gaudian and Hunt, 2016).

If Cook really believes the principle of collaboration will have a positive impact on cross-pollination allowing Apple to innovate in a way that others cannot, we suggest the company to implement the strategy of inclusion and diversity. It will help the marketing strategy of product differentiation to battle with the key players of EV and autonomous vehicle.

Recommendation

To create value for the Project Titan, we need to identify the items that will have a big positive or negative impact on the EV or self-driving car market. Apple gets the unique advantages of its culture of design thinking, execution, and contingency. Its products including iPhone, iPad, and Apple Watch have shared a big market. The company or Project Titan is led by Apple's experienced team and experts. The company has a strong track record for promoting and marketing new products.

Nonetheless, the competitors of EV or autonomous vehicle have a strong partnership with automakers or tech companies. Project Titan has to show a tech breakthrough with defensible IP or patents. These factors will have a negative impact on the strategy of Project Titan to increase customer value, service offering, and lowering the cost in order to launch the product in 2021.

Therefore, we suggest using the reconstructionist approach to implement high-performing and sustainable strategy (Kim and Mauborgne, 2009). Apart from value and profit proposition, leaders of Project Titan are recommended to focus more on people proposition especially the strategy of inclusion and diversity. Right people can form a high performing team and it means "together we achieve more". To achieve the value of making a great Apple car with reasonable economic return, the company should strengthen its leadership, create the culture, drive for team performance and being collaborative with others.

Inclusion and Diversity Strategy: Gender Power

The major challenge in most of the industries is to attract and retain knowledgeable manpower. Why do we recommend the strategy of inclusion and diversity? Regarding the article from the book *Reinventing the Company in the Digital Age*, the trend of feminization of leadership styles, the decline of hierarchy, the rise of soft power, and the importance of female purchasing power are showing a gender power starting to happen (Maitland, 2015). If Cook or the leaders of Project Titan can implement the strategy, it may increase the internal and external customer values.

To recruit more women to work in the frontline, it is not a problem for Apple or Project Titan. Nevertheless, it may be a challenge to appoint more women to enter the top management. What if Cook can make a change, the positive impact on the decision-making may make the difference to develop the Apple car with the perspective of female users including housewives and single mom. This market is underdeveloped. Therefore, the new appointed female leaders can initiate the idea and delegate the product design team and production team to make one type of the Apple car for women and assembled by women.

Mixing of 4Ps to focus on Female Drivers

In 2014, an article published by SCMP said: “it’s time for the ladies to press the pedal to the metal” (Scheffler, 2014). It quoted the information from Women-Drivers.com and Forbes talking 80% of car purchasing by women, and marketers were starting to target women and their needs. Under this assumption, making the Titan’s EV and autonomous vehicle for women may create high customer values. When we look back at the past success of Apple, creativity is come from the mixing of 4Ps (price, product, promotion, and place) to satisfy customers' expectations and preferences. If the company can make use the gender power to add values on Project Titan, female talents may develop unique selling points to promote Apple car.

Speed Up Inclusive & Diversity Hiring

Investors or shareholders may worry about the recruitment policy and the coaching competence of Apple’s leaders and top management. With regards to its talent culture, the

organization has a system in recruitment and selection. If the company can speed up the new hires with the principle to embrace diversity and equal employment opportunities, we believe Apple or Project Titan can recruit high potential female product designers, engineers, and programmers to support the business of autonomous vehicle. Cook has revealed the reason for maintaining its culture to make Apple keeps growing (Baer, 2015). He says: “It starts with hiring”.

To build the gender power as the sustainable competitive advantage for Project Titan, we suggest the company has to implement inclusion and diversity strategy with economic reward, employee recognition, career opportunity, internship, and on-the-job training (Bohat Ala, 2018). The rewards for female talents with high performance are not only provided for individual, but also for the team. It will help to create a “real” collaborate culture for Titan’s self-driving EV.

Real Collaboration

The gender power may help the company to build an interconnected ecosystem affecting the behaviors employees, clients, competitors, and regulators. It is also a PCMM (People Capability Maturity Model) to strengthen the human resource capabilities individually and as a team to handle increasingly complex projects. Apple can follow its culture of Direct Responsible Individual (DRI) to delegate high will and high skill talents who are embedded the core values of the company to generate ideas and implement good ideas to produce unique autonomous vehicle (Tasnim, 2018).

Cross-functional Project Team

Under the challenge of "competitive forces", the gender power of Titan can form the cross-functional project group or team. It is one of the choices for high-technology organizations to generate and deploy new products and processes (Keller, 2001). A coin has two sides. The method of the cross-functional project team will have positive or negative effects on technical quality, meeting schedule, budget performance, group cohesiveness, job satisfaction, and job stress.

Managing Emotions of Female Colleagues

The dark side of gender power may have a negative impact on team performance. A female tech leader noticed several shortcomings of her female colleagues (Iandiorio, 2016). First, they do not speak up. If the leaders want to have new ideas to brainstorm solutions during the meeting time, female colleagues who do not speak up will make no contribution and waste the time. Second, the female colleagues speak up but they do not provide hard data to support. Again, such kind of opinions cannot help idea generation and decision making. Third, they may openly display insecurities affecting the climate of the workplace. Fourth, they sometimes apologize too much when they make mistakes. The last thing is crying at work. The emotional factor shows the “dark side” of gender power in the workplace.

Conclusion

Are the EV trend and autonomous vehicle market showing a big market that is worth to invest?

Having conducted PESTLE Analysis, we can find positive factors showing the EV trend and autonomous vehicle will be a big market that is worth to invest in the coming ten and twenty years. It explains why Apple is aiming to develop the Project Titan that is stimulated by the financial motive to obtain revenue from the product and service of Apple car.

Do Apple’s leaders especially the leadership style of the CEO, Tim Cook know how to catch the opportunities?

To a certain extent, Cook may know how to catch the opportunities by hiring the experts from Tesla (the best EV maker), Waymo (the leader of the autonomous vehicle), Ford and Mercedes-Benz working with the software engineers and product designers to run the Project Titan. On one hand, the company can take the production advantage, resources advantage and technological advantage to lower the cost and develop a unique self-driving EV. On the other hand, the company is facing the challenge of many competitors who also have similar attributes. Apple needs to find a way to differentiate its autonomous vehicle.

Can Apple's leadership help to adopt an MNC global regionalized strategy to gain or sustain in the autonomous vehicle market?

Regarding the trend of inclusion and diversity strategy of tech companies, Apple's leaders have pay effort to hire more women and black people. Nonetheless, some investors are not satisfied and asking the company to appoint more women as the top leaders. To our point of view, gender power may be a positive factor to help Project Titan to make-the-difference and create customer values to target the potential EV and self-driving car market for ladies. Apart from the good side, gender power may have a dark side that can hurt team performance.

Can Apple's leadership create a high performing team for Project Titan to win the competition?

To survive under the competition of EV and autonomous vehicle market, Apple's leaders have to embrace the technology and innovation to avoid falling into the organizational trap (Argyris, 2010). A leader such as Cook or teammates of Apple or Project Titan may be trapped by his or her behavior. To avoid disasters, the company has to make use of the tools including policies, rules, structures that help the company to change game rules with social skills. We believe Cook can avoid the dark side of dominant leader, and coach the leaders of Project Titan to implement inclusion and diversity strategy to battle with key players on the autonomous vehicle market.

Reference

Aamna Mohdin (2017) 'Apple's first ever VP of diversity and inclusion says she focuses on everyone, not just minorities, *Quartz*, 9th October. Available at: <https://qz.com/1097425/apples-first-ever-vp-of-diversity-and-inclusion-says-she-focuses-on-everyone-not-just-minorities/>

Alison Maitland (2015) 'A gender power shift in the making', *Open Mind*. Available at: <https://www.bbvaopenmind.com/en/articles/a-gender-power-shift-in-the-making/>

Amanda Myers (2019) '4 U.S. electric vehicle trend to watch in 2019', *Forbes*, 2nd Jan. Available at: <https://www.forbes.com/sites/energyinnovation/2019/01/02/4-u-s-electric-vehicle-trends-to-watch-in-2019/#29497de75a3c>

Amir Efrati (2016) 'At Apple, the Sumner boys help build a car', *The Information*, 21st July. Available at: <https://www.theinformation.com/articles/at-apple-the-sumner-boys-help-build-a-car?>

Apple Inc. (2018) *Apple reports fourth quarter results*. Available at: <https://www.apple.com/newsroom/2018/11/apple-reports-fourth-quarter-results/>

Apple Inc. (2019) *Inclusion & Diversity*. Available at: <https://www.apple.com/diversity/>

Argyris, C. (2010). *Organizational traps: Leadership, culture, organizational design*. OUP Oxford.

Bohat Ala (2018) *Strategic human resources activities at Apple Inc.* Available at: <https://bohatala.com/strategic-human-resource-activities-at-apple-inc/>

CB Insights (2018) *46 Corporations working on autonomous vehicles*. Available at: <https://www.cbinsights.com/research/autonomous-driverless-vehicles-corporations-list/>

Christine Rowland (2019) 'Apple Inc. Operations management: 10 decisions, productivity', Panmore Institute, 19th February. Available at: <http://panmore.com/apple-inc-operations-management-10-decisions-areas-productivity>

Daisuke Wakabayashi (2016) 'Apple taps Bob Mansfield to oversee car project', *The Wall Street Journal*, 25th July. Available at: <https://www.wsj.com/articles/apple-taps-bob-mansfield-to-oversee-car-project>

Dan Croitor (2017) *7 core values at Apple via Tim Cook* [video]. Available at: <https://www.youtube.com/watch?v=wmo8bmzAyyU>

Danielle Muolo (2016) 'Here's everything we know about Apple's secretive car project', *Business Insider*, 14th August. Available at: <https://www.businessinsider.com/everything-we-know-about-apples-project-titan-electric-car-2016-8>

Daniel Scheffler (2014) 'Luxury car makers focus on women drivers', *SCMP*, 5th June. Available at: <https://www.scmp.com/magazines/style/article/1520512/luxury-car-makers-turn-focus-women-drivers>

Daniel Turner (2007) 'The secret of Apple design', *MIT Technology Review*, 1st May. Available at: <https://www.technologyreview.com/s/407782/the-secret-of-apple-design/>

David Welch and Elisabeth Behrmann (2018) 'Who's winning the self-driving car race?', *Bloomberg*, 4th October. Available at: <https://www.bloomberg.com/news/features/2018-05-07/who-s-winning-the-self-driving-car-race>

Drake Baer (2015) 'How Tim Cook implants Apple's culture into new employees', *Business Insider*, 19th May. Available at: <https://www.businessinsider.com/tim-cook-on-apples-culture-and-employees-2015-3>

Goldman Sachs (2019) *Cars 2025*. Available at: <https://www.goldmansachs.com/insights/technology-driving-innovation/cars-2025/>

Grace Donnelly (2018) 'Apple is officially taking over the watch business', *Fortune*, 20th February. Available at: <http://fortune.com/2018/02/20/apple-watch-sales-smartwatch/>

Greg Satell (2016) 'What's wrong with Apple?', *Forbes*, 30th Oct. Available at: <https://www.scmp.com/magazines/style/article/1520512/luxury-car-makers-turn-focus-women-drivers>

Hierarchy Structure (2018) *Apple Management Hierarchy*. Available at: <https://www.hierarchystructure.com/apple-management-hierarchy/>

Investopedia (2018) *What is Tim Cook's managerial style*. Available at: <https://www.investopedia.com/ask/answers/032515/what-tim-cooks-managerial-style.asp>

Jacob Kastrenakes (2017) 'Apple shareholders are demanding more diversity, but the company is fighting back', *The Verge*, 15th February. Available at: <https://www.theverge.com/2017/2/15/14614740/apple-shareholder-diversity-proposal-opposition>

Jess Iandiorio (2016) 'The dark side of gender equality', *The Startup*, 5th October. Available at: <https://medium.com/swlh/the-dark-side-of-gender-equality>

John W. Schoen and Jacob Pramuk (2019) 'This timeline shows how the US-China trade war led to the latest round of talks in Beijing', *CNBC*, 6th Jan. Available at: <https://medium.com/swlh/the-dark-side-of-gender-equality>

Jonathan Vanian (2016) 'Top Apple electric car guru to step down', *Fortune*, 23rd January. Available at: <http://fortune.com/2016/01/22/apple-electric-steve-zadesky-stepping-down/>

Kristin Stoller (2018) 'The world's largest tech companies 2018: Apple, Samsung, take top spots again', *Forbes*, 6th June. Available at: <https://www.forbes.com/sites/kristinstoller/2018/06/06/worlds-largest-tech-companies-2018-global-2000/>

Lora Kolodny (2018) 'Apple hired scores of ex-Tesla employees this year, and not just for its car project', *CNBC*, 23rd August. Available at: <https://www.cnn.com/2018/08/23/apple-hiring-many-tesla-employees-not-just-doug-field.html>

Lora Kolodny (2019) 'Apple just dismissed more than 200 employees from Project Titan, its autonomous vehicle group', *CNBC*, 24th Jan. Available at: <https://www.cnbc.com/2019/01/24/apple-lays-off-over-200-from-project-titan-autonomous-vehicle-group.html>

Mack Hogan (2017) 'These are the 11 coolest features of the Tesla Model S', *CNBC*, 17th Nov. Available at: <https://www.cnbc.com/2017/11/17/tesla-model-s-best-features.html>

Mark Kane (2018) 'Bloomberg's latest forecast predicts rapidly falling battery prices', *Insideevs*, 21st June. Available at: <https://insideevs.com/bloomberg-predicts-rapidly-falling-battery-prices/>

Mayesha Tasnim (2018) 'An Organizational Analysis on Apple', *European Journal of Business and Management*, 10(11), pp 35-40.

Mark Emem (2019) 'Apple lays off 200 Project Titan employees – Is the tech giant giving up on the autonomous Apple Car', *CCN*, 24th Jan. Available at: <https://www.ccn.com/apple-lays-off-200-project-titan-employees-is-the-tech-giant-giving-up-on-the-autonomous-apple-car>

Market Watch (2018) *Autonomous vehicles market size, industry growth, share, opportunities, emerging technologies, competitive landscape, future plans and global trends by forecast 2030*. Available at: <https://www.marketwatch.com/press-release/autonomous-vehicles-market-size-industry-growth-share-opportunities-emerging-technologies-competitive-landscape-future-plans-and-global-trends-by-forecast-2023-2018-07-31>

McKinsey & Company (2018) *The global electric-vehicle market is amped up and on the rise*. Available at: <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/the-global-electric-vehicle-market-is-amped-up-and-on-the-rise>

Meghan L. O'Sullivan (2019) 'If all vehicles go electric, that's just step one', *Bloomberg*, 14th January. Available at: <https://www.bloomberg.com/opinion/articles/2019-01-14/electric-vehicles-are-just-one-step-to-address-climate-change>

Mercedes-Benz (2018) *World premiere of the MBUX at the CES*. Available at: <https://www.mercedes-benz.com/en/mercedes-benz/innovation/mbux-mercedes-benz-user-experience-revolution-in-the-cockpit/>

Michael K. Hidrue (2011) 'Willingness to pay for electric vehicles and their attributes', *Resource and Energy Economics*, 33(3), pp. 686-705.

Paolo Gaudian and Ellen Hunt (2016) 'Apple's diversity report reveals problems, risk and opportunities facing all corporations', *Forbes*, 8th August. Available at: <https://www.forbes.com/sites/gaudianohunt/2016/08/08/apples-diversity-report-reveals-risks-and-opportunities/#5ede156c73d6>

Pauline Meyer (2019) 'Apple Inc.'s organizational culture & its characteristics (an analysis)', 15th February. Available at: <http://panmore.com/apple-inc-organizational-culture-features-implications>

Reuters (2016) 'Apple's Zadesky, head of electric car project, to leave company: WSJ', *Business News*, 23rd Jan. Available at: <https://www.reuters.com/article/us-apple-stevezadesky-idUSKCN0V100X>

Robert T. Keller (2001) Cross-functional project groups in research and new product development: diversity, communications, job stress, and outcomes, *Academy of Management*, 44(3), pp 547-555.

Ronan Glon, Abigail Bassett and Miles Branman (2018) 'The best electric cars for 2019', *Digital Trend*, 19th September. Available at: <https://www.digitaltrends.com/cars/best-electric-cars/>

Shona Ghosh (2017) 'Apple's first diversity boss is leaving – not long after making controversial remarks about white men', *Business Insider*, 17th November. Available at: <https://www.businessinsider.com/apple-diversity-vp-denise-young-smith-comments-white-men-2017-11>

Tesla (2019) *Model S*. Available at: https://www.tesla.com/zh_HK/models

Tom DiChristopher (2018) 'Electric vehicles will grow from 3 million to 125 million by 2030, International Energy Agency forecasts', *CNBC*, 30th May. Available at: <https://www.cnn.com/2018/05/30/electric-vehicles-will-grow-from-3-million-to-125-million-by-2030-iea.html>

W. Chan Kim and Renee Mauborgne (2009) 'How strategy shapes structure', *Harvard Business Review*, September 2009 Issue. Available at: <https://hbr.org/2009/09/how-strategy-shapes-structure>