



Role of Coopetition in the US Electric Vehicle Market

ITM 317

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Abstract

In this case-study, we will investigate the impact of six perils on Electric vehicle market and we concentrated on Tesla's strategies and business model. We will evaluate that how Tesla applies the strategy of coopetition to guarantee its margin of profit on more than 280 million dollars, Whereas its partners, Daimler and Toyota, being new in this industry has no significant profit in this high technology market.

Introduction

Every technology is confronting a fate challenge if its business model works and makes profitability in the market or not. The technological market is threaten by other new start-up and innovations. There is a Phenomenon of "aging" to reinforce a tendency of fail in the high-technology market. This characteristic is generally a natural dynamic of a competitive system. According to Dhebar (2016) a successful market with long-term aging in the high technology environment should care about 6 dangerous traps during its growth:

Firstly, It should address the issue of uncertainty in the market impacting a business from 3 sides; market supply, market demand and market formal rules and regulations.

Market supply issue: Unpredictability occurred in the company's market supply is directly impacted by the market strategies which business opponents take in the market supply to obtain benefits. For instance, S pen as a new feature of Samsung's smartphones made a competitive benefit to rise sales of Samsung by increasing productivity of smart gadgets (Increasing Productivity at Work With the All-New S Pen, 2018). Instead, This new feature boost the uncertainty of market for Apple because Apple's targeted market has been exposed to an external factor impacting the customers' preferences and decreasing the estimation accuracy about sales.

Another issue that company's marketers should address in market supply is the case rose by unprofessional competitors being innovative and usually come from other industries and try to change fundamentally market perspective and definitions by a new business model. what Uber has run by simplifying Cabs' business model on application is a good example of aforementioned scenario. By use of electronically mapping and IT based service, Uber directs cabs by its developing an application which is more smart and cheaper than traditional approach. It increased market uncertainty for traditional taxi system(Koch, 2017). Furthermore, A new technology producer should manage the competitions became open from similar companies working in the market as the complementors. Although, complementors usually release complementary goods in a cooperative atmosphere to get a share of market partially, it does not mean complementors ignore the tempting market for their business. Consequently, complementors cause the uncertainty of market in the areas having conflict with your company's market. For example, Tesla supplies the US electric vehicle (EV) in cooperation with Daimler and Toyota. Although Tesla supply electric engines as the complementary production, It is a competitor in the electric cars for Daimler, and Toyota too (Cheong & Song & Hu, 2016). All of them have their own product with different specifications such as Tesla Model S, Daimler Smart Fortwo and Toyota RAV4 EV. According to Cheong, Song and Hu (2016) survey, Tesla could sell the amount of 18,650 of Model S and got a share of more than fifth in the US EV market. Toyota was in second rank with less than tenth percentage by selling 1,096 of RAV4 EV and Daimler had less than 1 percent by selling Daimler Smart Fortwo in 2013 (Cheong & Song & Hu ,2016).

Market demand issue: Furthermore, high-technology market has a potential of experiencing uncertainty in the market demand by two important factors; price and quantity. So, every mistake

about estimating the future of market can cause the irreparable harm to the market. For instance, Artificial Intelligence (AI) experienced a significant growth to 126 billion dollars in 2015. There was the estimation that AI industry will continue this trend till 2024 and will reach to 3000 billion dollar revenue globally. However, this market could not have enough demands from all over the world because, It was deprived of having a provable measure to forecast the market future. A forecast might be provided the company's trend correctly specially when it has experienced a similar trend for one product. It help company to model the growth accurately based on the previous market behavior.

Market formal rules and regulations: Last but not least, market system has some degree of uncertainty from regulations. It means a successful business model should be compatible with the regulations of targeted market to decrease consequence of market uncertainty. Planned economies have market usually having a tendency to “wait and see” approach and restrict the market locally. As a case in point, Cryptocurrency had a slowly growth in eastern countries such as China and Korea because of market inertia and regulations making the cumbersome policy against innovative ideas (Bovaird, 2018).

Secondly, uncertainty in the technology is another concern which new high technologies are struggling. According to Dhebar (2016) technological uncertainty is caused by the area related to quality of product, services, delivery system which are not real concerns in the market uncertainty category. In the other world, It represents the uncertainty from technology view. For example, Uber used IT infrastructure to facilitate the process of booking cabs as an competitive benefit. This technological feature being based on smart request of cabs increases demands by

quality of service and delivery. Consequently, It reduced the amount of booking cabs in traditional system from technological perspective.

Thirdly, The high technology product should be user friendly compatible with the multi-environment systems and not complicated for the general users. For example, installing and configuring IT equipment in different industry, such as data bases and complementary infrastructural tools require a professional manner. It is imperative that the production and complementary equipment keep their functioning tools applicable for people with different backgrounds and professions.

Fourthly, The impact of externalities known by Network effect refer to the situation in which companies are impacted by external factors. Network effect can disturb the resource balance in the market. For example, imagine there is only one common resource among the marketers, network effect causes some companies hit the lack of resources. In this condition, a good strategy model can reduce cost of network effect and can help the companies independence from externalities and keep their business profitable again. For instance, Oil as an important factors of production can easily impact those companies which do not have alternative energy for their product line. A good business model should think about alternative for oil to overcome hardship of uncertainty if the oil market is in the fluctuation.

Fifthly, Practicing coopetition in ecosystems; one of vital point about which a successful marketer should care is finding the company's role in the market to decrease potential of ecosystem war. In the balance of supply and demand, a market will continue its life and guarantee profitability, when the role of market become unique and the presence of a company is essential for that market. It requires a business model based on the combination of cooperation

and competition with other market players. Having strong relationships with other complementors, defining a reasonable supply and demand system make your company more powerful in the market.

Sixthly, Marketers are the horns of dilemma if they should participate in all parts of a market and produce multiple product at the same time or should play powerful role in the specific branch of a specific industry and then gradually increase their roles in the other branches. For example Google started its business model by concentrating on search engine and then develop it to Email, social media, banking, sharing document services(Google, 2018).

With regard to aforementioned categorizations, We can determine a value net showed in Fig 1. The factors surrounded a company include Supply side, Demand side, Competitors and Complementors which might be source of uncertainty for a company in the market.

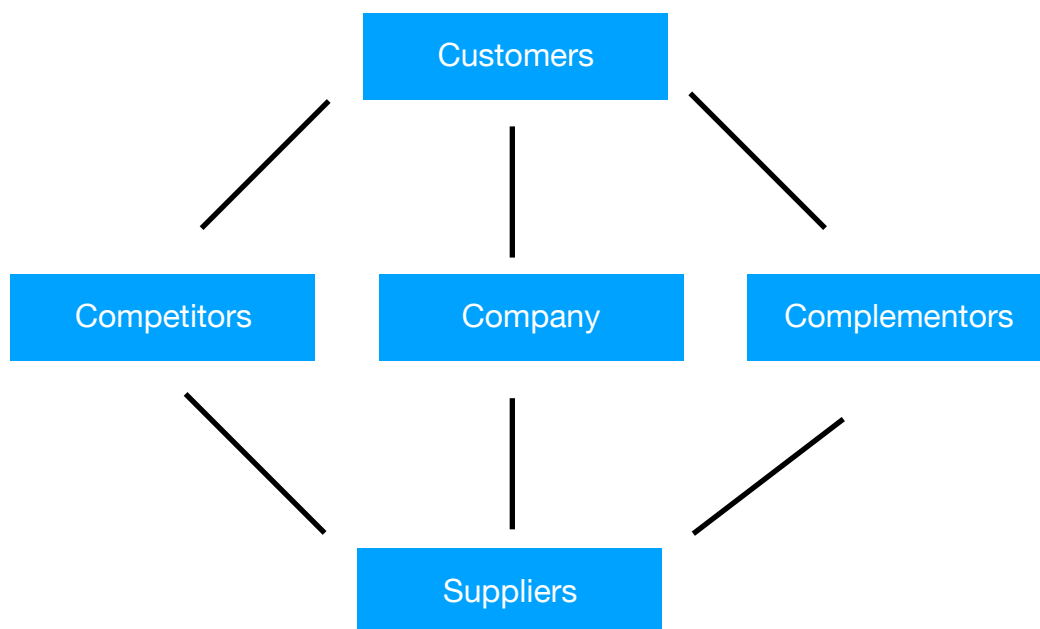


Fig1: Value net (Cheong & Song & Hu, 2016)

Company's History and Growth

Tesla, Inc. is a multi-product international company located in Palo Alto, California was established by Martin Eberhard and Marc Tarpenning in July 2003. Musk joined TESLA as the board of directors and chairman with operational roles in 2004 and then could provide 7.5 million dollars in position of controlling investor. Tesla could produce electric engines and generally vehicles, energy storing equipment such as batteries and solar panel. Tesla exhibited 3 types of electric cars in the market; Model S, Model X and Model 3. In terms of battery product, Tesla produces Powerpack and Powerwall in the Giga factory for its vehicles and by another subset company, SolarCity, It produces solar panels, solar roof tiles and etc (Tesla., n.d.). Musk could gain 2 series of the investment in range of 13 million and 40 million dollars from Google, Sergey Brin and Larry Page before 2007 and then 45 million dollars in May 2007. Among the electric cars, the most popular model would be Model S with 18,650 sales in 2013 (Cheong & Song & Hu, 2016) and best sales in 2015 and 2016 (Cobb, 2017). Global sales of the Model S reached 100,000 in December 2015 and 200,000 in 2017 (Tesla., 2018). Martin Eberhard resigned from CEO by request of board of director in August 2007 and then he accepted to be in charge of "President of Technology". Tesla started producing "gliders" in cooperation with Roadster in 2005 (Tesla., 2018). The first product line of car was Tesla Roadster using lithium-ion batteries. Tesla employed Michael Marks, and then Ze'ev Drori for the position of CEO instead of Eberhard to increase the profitability and then Musk accepted the role of CEO. He fired a quarter Tesla's extra staff in 2008 and then added 40 million dollars to prevent going bankrupt. Moreover, It got a low-interest loan in amount of 465 million from a Loan program of US department of Energy in 2009. Daimler AG and Toyota bought a 10% stake being about 50

million dollars in 2009 and 2010 respectively. In 2009, Tesla's could sell 147 cars and increase its income to 187 million dollars where, Musk had injected third of total investment. Tesla could sell over than 2,250 of this vehicles in more than 30 countries from 2008 to 2012 and stopped product line of Tesla Roadster in August 2011. Tesla hired 3000 full-time staff in 2012 and with a dramatic growth, number of employees reached to 30000 in the world includes subset companies. IN 2012, Tesla had 13,300,000 shares of common stock on NASDAQ which each share value was 17 dollars. Tesla delivered Model S sedan in June 2012 and Model X in September 2015. The company changed its name from Tesla Motors to Tesla in 2017. In late March 2017, a well-known company in China, Tencent Holding Ltd., bought a stake of 5% with value of for \$1.8 billion in Tesla. Tesla could keep its capital briefly higher than Ford Motor Company and General Motors for some months and placed its name among the list of Fortune 500 companies which shows a dramatic growth for a high technological company in less than ten years. If we want to investigate the key point of this unexpected growth we should refer to the strategies which Tesla took to overpass all 6 perils. According to Dhebar (2016) categorization and the value net we introduced in above, there were 4 players in EV market to form a coopetition model including Tesla (Firm 1), Daimler (Firm 2) and Toyota (Firm 3) and outsiders (Firm 4). Although Daimler and Toyota had their own shares in the automobile market, they were very new in EV industry. Therefore, Tesla made two coopetition partnerships with them, First Tesla Motors-Daimler AG alliance and second Tesla Motors-Toyota alliance. Tesla in cooperation with Daimler and Toyota provided a high technological powertrain equipment for their cars. Moreover, there were some other companies such as GM and Ford not having cooperation with Tesla. GM and Ford were considered as the competitors in this business with

Tesla Motors-Daimler AG alliance and Tesla Motors-Toyota alliance(Cheong & Song & Hu, 2016). We want to evaluate if Tesla's strategies about cooperation with Daimler and Toyota has made a market proficiency or not and evaluate strangeness, weakness, opportunities and threat of the coopetition environment for Tesla.

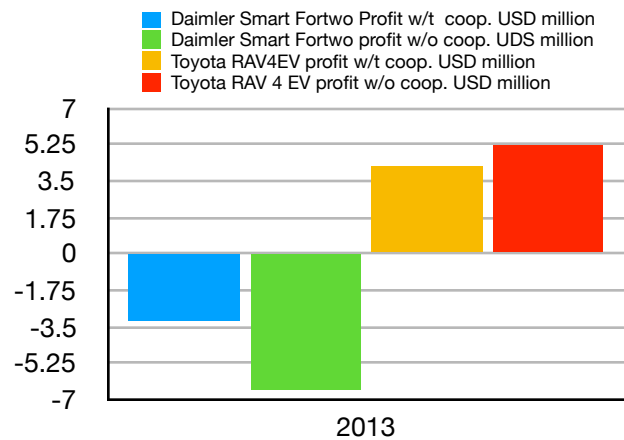
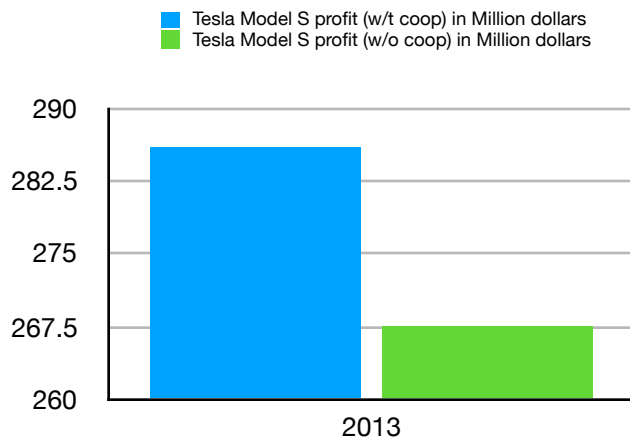
Strengths:

Coopetition as the combined strategy of cooperation and competition allowing the various firms with various technologies to reach a vast share of the market. Tesla was benefitted from coalition with Daimler and Toyota in EV market and serviced its alliances by high technology. According to Cheong, Song and Hu (2016) represented in Fig 1, coopetition has made two ways benefit for Tesla in the value net of supply chain model because it provided 2 dimensions strategy. It means Tesla could considerably decrease its supply uncertainty by providing complementary goods for its competitors while it had a share of EV market and competed with other firms. Table 1 reported statistical data about aforementioned firms being in the coopetition in 2013.

Table 1: statistical data about Tesla Model S, Daimler Smart Fortwo and Toyota RAV4 EV including powertrain cost in 2013 (Cheong & Song & Hu, 2016)

Year = 2013	Tesla Model S	Daimler Smart Fortwo	Toyota RAV4 EV
Number of sold cars	18,650	923	1,096
Cost not including powertrain	40,050	10,050	30,050
powertrain cost	3000	15,000 (w/o coopetition) 7,356 (w/t coopetition)	15,000 (w/o coopetition) 7,474 (w/t coopetition)
Price	57,400	17,890	49,800

It can be seen that firms 2 and 3 can not compete with Tesla as the only provider of powertrain equipment. They were new in this technology and had to select one of 2 options; staying in their coalition with Tesla and using Tesla's powertrain or quitting from their cooperation contract and starting production of powertrain by their own-selves which made their market smaller with more technological uncertainty. Interestingly, Tesla by this business model of coopetition reduced the risk of investment and succeed in better allocating resources. Daimler and Toyota could also use the powertrain prototype as the high technology equipment in their vehicles. Fig 2 compares the market benefit of Tesla, Daimler and Toyota with assumption of coopetition and without coopetition respectively. It can be seen that although coopetition made an extra cost such as monitoring, Tesla positively made a profit with/without coopetition. Tesla could respectively experienced 285.84 and 267.63 million dollars in 2013, whereas Toyota was impacted negatively by coopetition in this year. Toyota paid extra cost of monitoring for powertrain equipment, however it reduced its profit from 5.21 million dollar to 4.17 million dollar. In the another firm, Although Daimler had negative profits for both coopetition and without coopetition senarios, This company could save 3.33 million dollars by coopetition and decrease the margin of its loss from 6.61 to 3.38 million dollars which shows positive imp of coopetition for Daimler. Moreover, on account of being green industry, Tesla was supported by government and could gain lots of financial support during its growth. It means Tesla's market system had a good model to defeat the uncertainties rose by regulations and it was compatible with the regulations.



Weaknesses

Market supply will be the main problem of Tesla about which this company should concern. It should change its business model in some circumstances, because Tesla's supply model will not be able to answer the demands of powertrain requested from 3 firms its own factory, Toyota and Daimler in the near future. Based on the current capacity, Tesla's product line could answer only 35,000 orders of power train equipment which was only enough for beginning of 2016 whereas total demands of 3 firms in cooperation model would be 74,060 by 2020. Moreover, This company supported the limited prototypes of powertrain equipment for its partners. Tesla produced powertrains for specific light vehicles such as model S, Daimler Fortwo and Toyota RAV4EV. Lack of diversity in the prototypes of powertrain equipment prevents Tesla to develop its market to have more partners in cooperation model. Consequently, this problem encourage competitors such as GM to apply this weakness to start an ecosystem war by providing all prototypes and services.

Opportunities

There is an estimation that the sales of EV in the US in 2020 is about 10 times bigger than 2016. Providing a diversity of equipment such as powertrain, gear assembly can keep the vast market share of EV market for Tesla in 2020. Providing more powertrain equipment can reduce the its cost and consequently it will increase margin of profits for Tesla's partners and consequently, it will fix Tesla's brand and role in this market and decrease market uncertainty. Tesla can invest more on R&D department and Gather more experience in labs to have an efficient product line and employ Qos technology. It goes up quality of service in assembling processes and leads to considerable fall in technological uncertainty. Moreover, Building Giga factory and battery factories by an investment of 5 billion dollars were an ambitious step of strategic planning to guarantee a continuous demand for its powertrain equipment. It will increase Tesla's productivity in 2020 about 15 times bigger than 2016 which means EV has a clear future with positive profit.

Threats

According to Cheong, Song and Hu (2016), Daimler decided to decrease its dependency to Tesla's powertrain equipment. Daimler is going to produce some version of EVs in its factory. It means Daimler want to reconsider its value net and make it more competitive. Daimler focus would be on independent supply in the near future. It will change the role of Daimler from coopetitor to competitor. Moreover, There is a economic principle that all firms never satisfy by a small share of benefit in a coopetition model, because they have a sense of being representative rather than producer in this model. In addition, another alliance, Toyota experienced loss during the cooperation with Tesla. It can never be a stable cooperation model when your partner

experienced negative growth in its sales while Toyota bears 15 percentage of total cost of one EV for powertrain equipment. Those threats increase risk of market which should be considered by Tesla.

Analysis of my findings to this point

According to SWOT analysis, It is clear that Tesla experienced a progressive trend in the EV market and its value net had a balanced pattern caused by effective strategies in the market. Tesla could overcome hardship of market uncertainty by coopetition model and increased its demand by working on EV key equipment. Tesla could get financial support from government which means the regulation uncertainty was not matter in contrast with Tesla's progress. This company easily accept the risk of investment on new technology and Mask's courage makes this business successful in the market. In terms of managerial level, they experiences some changes to find their current arrangement which made lots of correct decision making since 2009. Mask could got involved in cooperation with traditional automobile producers to keep Tesla's profit margin positively and survived this business from all 6 traps.

Recommendations

Tesla should do more Practice in the coopetition model to satisfy all of their partners and give a technological solution for their willings and profitability. Tesla needs to motivate its partners to stay alliances and help Tesla to get bigger share of EV equipment market by finding their roles in the market. Tesla can help them to find their roles in the ecosystem war against other competitors. Toyota after cooperation with Tesla had a sense of loss. Therefore, In addition to playing a role of producer, Tesla should create a role of consultant and supporter in EV market to make a vision for other companies. By the strategy of consulting, Tesla can make its business

coalitions stronger and convert the competition environment to friendly and smoothly atmosphere. Moreover, Tesla should develop its supportive role of producing multiple product to find more partners.

Action Plan

As a first step, Tesla should increase investment on R & D department. It makes rather potential for Tesla's market basket to include the required equipment and services ordered by different companies in EV industry. So, as the first step, Tesla should develop the department of Business Analytics not only for evaluating direct profit of sales, but also for giving solutions to partners for indirect benefits specially those are the long-term profits. Data analyzers can make partners aware of their own wrong decision making in this industry. This department should get involved in all steps of order to installation of Tesla's equipment in the partners' factory and get feedback statistically from their market demands. If partenrs' strategies are not effective and experiencing loss, This team should report the situation to Tesla's board of directors to reconsider the range of profit which Tesla is taking from Company as a supportive reaction. In this way, because of having positive margins of profit for partners, the amount of demand from partner will increase. Consequently, It can guarantee margin of profit for Tesla in the long term.

Conclusion

In this case-study, we could investigate the role of Tesla's business model and strategies to overpass six perils on Electric vehicle market. We evaluated that how coopetition as a powerful strategy played an important role to fix margin of profitability for Tesla, Whereas its partners, Daimler and Toyota, could not gain the same percentage of profit by wrong decision making.

References:

- Dhebar, A. (2016). Bringing new high-technology products to market: Six perils awaiting marketers. *Business Horizons*, 59(6), 713. Retrieved from <https://0-search.proquest.com.library.ggu.edu/docview/1835694340?accountid=25283>
- Moriarty, R. T., & Kosnik, T. J. (1989). High-tech marketing: Concepts, continuity, and change. *Sloan Management Review*, 30(4), 7. Retrieved from <https://0-search.proquest.com.library.ggu.edu/docview/224962597?accountid=25283>
- Increasing Productivity at Work With the All-New S Pen. (2018, January 10). Retrieved from <https://insights.samsung.com/2017/08/29/eliminating-paper-based-workflows-with-the-galaxy-note8-and-s-pen/>
- Koch, R. (2017). How Uber Used a Simplified Business Model to Disrupt the Taxi Industry. Retrieved from <https://www.entrepreneur.com/article/286683>
- Liu, S. (2008). *The impact of uncertain supply on marketing and inventory decisions* (Order No. 3321588). Available from ABI/INFORM Collection. (304648666). Retrieved from <https://0-search.proquest.com.library.ggu.edu/docview/304648666?accountid=25283>
- Cheong, T. & Song, S. & Hu, H. (2016). Strategic Alliance with Competitors in the Electric Vehicle Market: Tesla Motor's Case. Retrieved from <https://www.hindawi.com/journals/mpe/2016/7210767/>
- Bovaird, C. (2018). Cryptocurrency Markets Gripped By Wait-And-See Mentality. Retrieved from <https://www.forbes.com/sites/cbovaird/2018/02/12/cryptocurrency-markets-gripped-by-wait-and-see-mentality/#5a1b8e723712>
- Google. (2018, July 29). Retrieved from <https://en.wikipedia.org/wiki/Google>

The zacks analyst blog highlights: Tesla motors, Toyota motor, fox factory holding, twitter and omnicom media. (2014, May 29). *PR Newswire* Retrieved from [https://0-](https://0-search.proquest.com/library.ggu.edu/docview/1529979979?accountid=25283)

[search.proquest.com.library.ggu.edu/docview/1529979979?accountid=25283](https://0-search.proquest.com/library.ggu.edu/docview/1529979979?accountid=25283)

Cobb, J. (2017, February 03). Tesla Model S Is World's Best-Selling Plug-in Car For Second Year In A Row. Retrieved from <https://www.hybridcars.com/tesla-model-s-is-worlds-best-selling-plug-in-car-for-second-year-in-a-row/>

Tesla. (n.d.). Retrieved from <https://www.crunchbase.com/organization/tesla-motors#section-funding-rounds>

Tesla. (2018, July 28). Retrieved from <https://en.wikipedia.org/wiki/Tesla>