Analysis of the electric vehicle market and the company's competitive development strategy on it (on the example of "Faraday Future")

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Abstract. Today, an unusual mode of transport, namely an electric vehicle, increasingly be seen on highways and traffic jams. The demand for such a trendy wild is constantly increasing. In addition, it is not surprising, because there are plenty of reasons for it. Due to the economic crisis, the increase in the price of gasoline and oil, many began to wonder whether to buy the usual car for us and further save and purchase an environmentally friendly product. By 2020, more than 120 different models of electric vehicles will be on the market. These are great machines. The internal combustion engine against their background will look old-fashioned. The purpose of this work is to analyze the current activity of the company and offer to develop a real-world marketing model based on the requirements of the modern market. Faraday Future, an electric machine company with progressive growth rates, chosen as the subject of the study. The article is relevant and useful to all interested electric vehicles, entrepreneurs and other interested persons.

1 Introduction

Faraday Future, a young company that emerged from the walls of the former Nissan R&D centre in California, started its activities in 2014 and currently employs over 400 people. Faraday Future's employees include the chief designer of the BMW i8, a SpaceX battery specialist and a former Ferrari designer. Others prior to Faraday Future worked at Facebook, Google, Ford, General Motors and Volvo. In addition, the release of her first car took place in 2017 [1].

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Rumours that Apple is developing its own car have been circulating for a long time. Recently, more and more information appears. Thus, the publication Apple Insider learned that Apple itself might be behind the ambitious new manufacturer of electric vehicles Faraday Future.

At the end of 2014, more than 200,000 electronic vehicles registered in the world, which is 0.02% of the total world car market. According to forecasts, by 2020 the electric transport market may grow to a share of 2%, that is, 100 times. Japan and the United States will be the growth leaders in the global electric vehicle market [2].

2 Results and discussion

The purpose of the publication is to analyse scientific literature and research results on the development of the electric vehicle market in order to develop a competitive strategy for Faraday Future. The study used the following methods: systematic approach, analysis of official statistics, document analysis method, abstract-logical method, methods of strategic analysis of the company.

Figure 1 shows that electric vehicles will account for 35 % of total new car sales by 2039 [3].

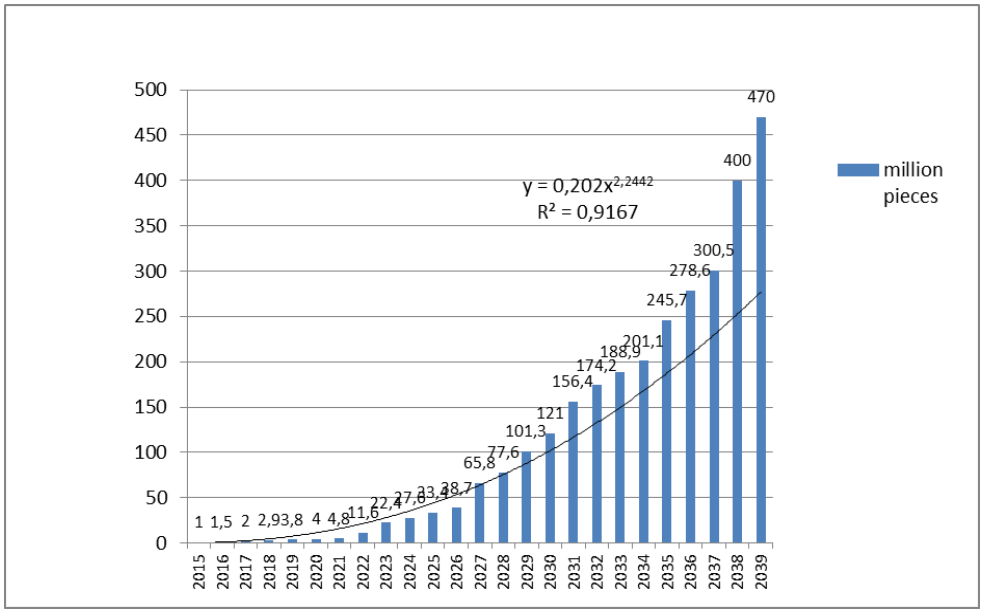

Fig. 1. Electric vehicle era (sales forecast)

Figure 2 shows that more than 20 million electric vehicles will be sold by 2030. By 2040, 35 to 47% of new cars will be equipped with an electric motor 3 [4].

Sales of electric vehicles around the world have been steadily increasing over the past decade, as can be seen in Figure 3 [5].

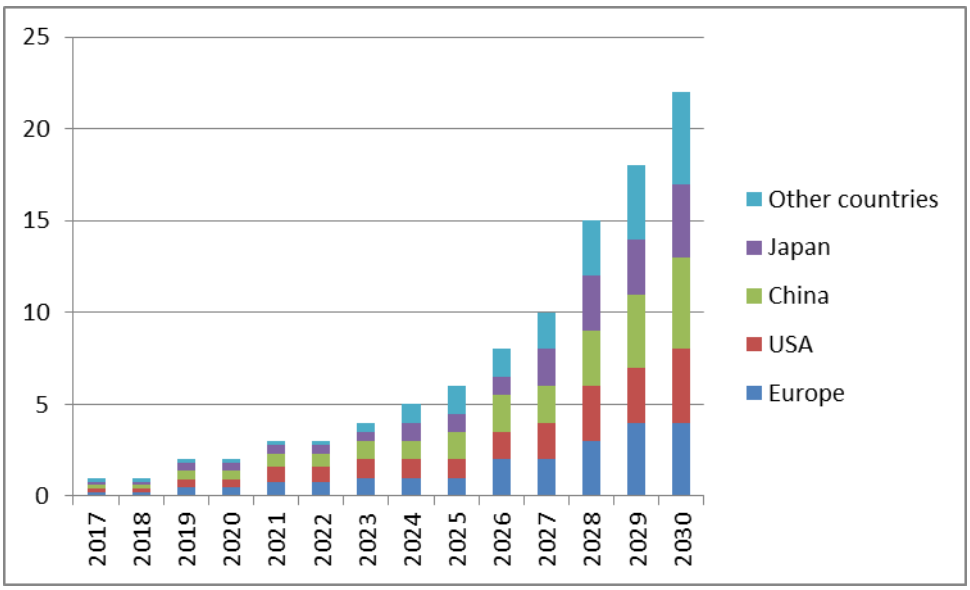

Fig. 2. Growth forecasts for the electric vehicle market, million units

Analysis of the external and internal environment of the enterprise is one of the most important tasks of marketing research, because it is the process of identifying the critical elements for an organization that have the strongest impact on the achievement of its objectives [6, 7, 8]. It also allows you to determine the boundaries of the company's activities in the main areas: consumers, costs, competition [9].

Now it is worth examining the activities of Faraday Future from the point of view of the consumer and determining what they value in the machines produced by this company.

The Faraday Future trade line includes FF 91, FF ZERO1.

There are several reasons why buyers choose to buy Faraday Future cars over gasoline counterparts.

The first and most important thing that catches the eye of any car enthusiast and passer-by is the magnificent design and style.

After the appearance, an important point in the consumer's assessment of the car is technical characteristics. Faraday Future cars can compete with their gasoline competitors.

Faraday Future intends to destroy this ingrained myth. The FF 91 will be equipped with several electric motors, which will vectorise the torque through a special scheme for transferring energy to the rear wheels. In addition to the mono drive, it will not be a problem for Faraday to connect the front axle, which will only increase the recoil during intensive acceleration. In 4WD mode, the rear wheels will also affect cornering, albeit to a lesser extent. The model will accelerate from 0 to 100 km / h in ... 2.39 (!) Seconds. This first unusual fact will make the model the fastest production car in the world when it goes into production.

Instant charging "Currently Available"

Faraday installed a 130 kWh battery on the FF 91, which is capable of providing uninterrupted power for 700 km on the European cycle. The numbers are doubly impressive when you consider the power generated by the electric motors.

Polymers and crystals of liquid glass (instant tinting)

Instead of tinted glass with film, you can adjust the amount of darkness for each glass (except the windscreen) by lightly hitting the glass. This is not a figure of speech, changing the dimming done by lightly tapping on the glass. The future is closer than we think.

Face recognition technology

The system is similar to the work of Siri on the latest iPhone models, when the owner's voice record in the device's memory and only he will be able to control the phone with his voice. The same functions provided on the Faraday Future, but instead of a voice, the car will recognize its owner by the face. After identification, the car will automatically apply all the settings for this particular individual.

Rear seats inspired by NASA

Faraday Future claims with some pride that the rear seats designed with NASA inspiration, which means that passengers will sit in them like astronauts and astronauts in spaceships, reclining. According to data from the bowels of the design bureau of the novelty, "the rear seats will offer biomechanical and ergonomic positions for maximum comfort."

They also provide ventilation, massage and heating to maximize passenger comfort. Such features are often overlook by most automakers, and Faraday is game changing in such "little things".

Expenses.

In 2012, thanks to modern technology and an increase in the scale of enterprises, the cost of producing a battery for an electric vehicle reduced from $ 1000 / kWh in 2008 to $ 485 / kWh. h. Such changes are taking place because it was the United States that became the first to actively carry out expenditures on R&D in the field of electric vehicles, which can be seen in the graph [10].

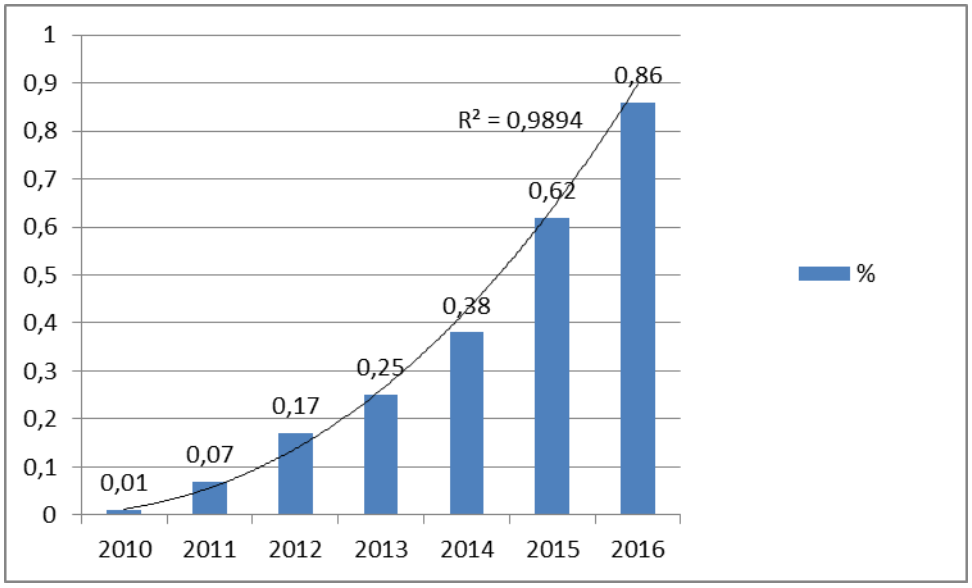

Fig. 3. Global electric vehicle sales market (retrospective analysis)

Currently, EV companies are facing cost challenges for key components, especially batteries. The cost of using a kWh of lithium-ion battery now ranges from $ 500 to $ 650, which is one of the highest cost items.

In the near future, the price of an electric vehicle will continue to stay above the price of an internal combustion engine, despite government subsidies in many countries. However, the price of an electric motor is up to 30% of the cost of an entire electric vehicle.

Competition.

We will only consider a group of competitors in the electric vehicle market.

1) One of the best (if not the best) examples in this group is Lucid Motors and the Lucid Air electric car, introduced at the end of 2016.

The history of Lucid Motors begins with the company Atieva, which was founded in 2007 and was engaged in the development of software for batteries, and then in the production of batteries.

So far, the company's plans are modest: to launch Lucid Air into series by the end of 2017 or early 2018 with an initial annual production of 20 thousand electric vehicles; until 2020-2021 to present a couple of new models (there will certainly be a crossover) and to increase production to 120-130 thousand electric cars a year.

2) The sensational company Tesla Motors.

A company that manufactures electric vehicles and their components founded by the pioneer of this field (as well as the pioneer of the field of space tourism and space commerce) Elon Musk. Among the company's investors are Larry Page and Sergey Brin, the owners of the Google Corporation. The main task of the company is to make electric vehicles available to users of the middle price segment; reduce dependence on gasoline engines, and therefore exhaust emissions.

3) After a series of hot new start-ups that promised to turn the world around, traditional carmakers seemed to be behind. Rare electric versions of existing models, small-scale production, often selling electric cars only to corporate parks ... But it seems that this is a case from the category of "calm before the storm".

Just a few examples. BMW already has a separate line-up of electric cars and hybrids BMW i3 and BMW i8. Over the next few years, an "intermediate" BMW i5 should also appear. There will be many electric vehicles in the main line of the company: electric versions of the BMW X3, X4, 3-series are expect during 2018-2020 (everywhere we are talking about the next generations of the main model); MINI electric car may appear. Mercedes and VW are going to go in a similar way.

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Competition.

Table 1 shows the Matrix of SWOT analysis for the company "Faraday Future", which was published in [1].

Table 1. Matrix of SWOT analysis for the company "Faraday Future"[1]

Internal environment	External environment	
	Capabilities	Threats
Strengths	Development • Open patents • Activity is focused on the use of innovative developments • Highest product quality • Created infrastructure in-house • Technical customer support Threat compensation	Threat compensation •Expansion of the network of charging stations • Increase in production volumes • Expansion of the model range
Weak sides	What to change • High cost of production • Lack of advertising campaign • Small production volumes Problems • Low awareness of motorists • Technologies of electric vehicles in the early stages of development • Search for resources to increase production volumes	Problems • Low awareness of motorists • Technologies of electric vehicles in the early stages of development • Search for resources to increase production volumes

Conclusions on the SWOT matrix:

Development. Faraday Future has opened up a completely new market that never existed before - the massive consumption of electric vehicles. Therefore, the development of the company is proceeding at a strong pace in the following areas:

- focusing on the company's innovative activities and granting open patents to everyone who wants to make their way in this area;
- creation of products of the highest quality;
- Self-created infrastructure system for providing enterprises, companies and consumers.
- Faraday Future cars communicate via the Internet with the main databases of the company; this makes it possible to quickly release an update for cars.

Flexible response. The automotive market is very competitive. Successful development requires a flexible response from a company to incoming threats. Internal threats can manifest themselves in the form of technical malfunctions of vehicles made at the factory, or errors in software.

Improvement. The key to the success of Faraday Future lies in the continuous improvement of its products with fundamentally new and innovative solutions. To improve their products, they use constant updating of the car software via the Internet, as well as improving the technical characteristics of cars with the help of high R&D costs.

Strategic threat. The main strategic threat to Faraday Future is not the actions of competitors, since the electric vehicle, market was created with the help of Faraday Future and the company occupies a leading position there, but the search for resources to create cars and the constant development and improvement of existing electronic battery technologies to keep up with gasoline competitors...

After the SWOT analysis (Table 1), it is possible to finally formulate the task of the enterprise development and determine the priority directions of the enterprise resource allocation.

Enterprise development objectives.

• Improving lithium-ion battery technology. Reducing the production cost of one kW/h of electric batteries to $ 300 and below;

• Minimization of costs for the production of electronic batteries, finding partners for the delivery of resources and reducing the share of the electric battery in the formation of the cost of one machine (reduction to 15-20 %);

• Expansion of the range of products and start of production of new cars.

• Increase in production volumes. In 2016, the production volume was over 80,000 electric vehicles. The company plans to increase this figure to 100,000 units.

• Final construction of the Apex Industrial Park mini-plant. It will occupy an area of six hectares. This venture is necessary to begin mass production of the FF 91 electric crossover as soon as possible, which is due to enter the US market in 2018.

Table 2 shows the Matrix of growth strategies according to I.Ansoff for the company "Faraday Future", which was also published in [1].

Table 2. Matrix of growth strategies according to I. Ansoff for the company "Faraday Future" [1].

Markets	**Commodities**	
Existing	Existing	New
New	FF 91	FF ZERO1
		FF ZERO1

Conclusions on the matrix of I. Ansoff:

Strategy Development.

According to Ansoff's matrix, Faraday Future's main growth strategy should be a strategy to penetrate the market or increase consumption by existing customers.

This strategy is acceptable for the following reasons:

1. The market is growing. The number of potential consumers and investments in the sector is increasing.

2. Faraday Future is a leader in its industry, as it sells its goods through its own distribution system, maintains a very high loyalty of consumers and potential consumers to the brand.

The company should implement a penetration strategy by developing primary consumer demand:

1. A brand and movement created to fight for a clean environment by eliminating gasoline cars - new customers are attracted;

2. Continuous expansion of opportunities for use Analysis of activities after the first two years of work in the highly competitive and complex automotive market shows the successful application of the basic principles of the company's mission, which became fundamental to its activities, and successful marketing of the company. Research and development of new products, an emphasis on marketing and employee creativity, and as a result, providing the market with new innovative products is exactly what the global electric vehicle market demands from new companies.

The company has a significant share of raised capital. To attract this capital, the competent marketing activities of the company played the first role.

3 Conclusion

It is safe to say that Faraday Future has few competitors in terms of price-quality ratio today, which explained by the use of new technologies, as well as an individual approach to all developed projects.

Experience in investing in production allowed the company to determine further development priorities. Now, negotiations are underway on further plans for cooperation with foreign companies. Collaboration is essential to achieve the best product quality and the fastest expansion of the electric vehicle market. Multidimensional projects require many

components, some of which can be most efficiently produce by partner organizations. In addition, companies that produce raw materials and manufacturing enterprises that produce electronics are also regular partners.

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