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ENVIRONMENTAL ANALYSIS OF AN ELECTRIC
VEHICLES INDUSTRY - ASSESSEMENT 1

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Introduction

Modern life is identifying to globalisation and advances in technology - and interaction between people, industries, economy, commerce, culture, and every other aspect of human activity. The structure of the environment in which companies operate is changing rapidly. Therefore, the macro factors that accompany the events are gaining importance. In the broadest sense, the structure of organisations, their activities, business methods and decision - making are changing. Responsibility for the environment we live in, the resources we use and what we will leave to future generations is of utmost importance. In this line of thought, the decision to replace conventional internal combustion engines (ICE), with electric ones and to change the organisation of transport are politically, economically, environmentally responsible sound and show a reasonable responsibility to humanity.

The business environment in which the automotive industry operates is divided into three levels - Macroenvironment, Microenvironment, and Internals environment.

The report covers PESTLE analysis which assists managers to know about the impact of macro-environmental factors on the performance of the industry. In addition to this, there is a discussion about Porter's Five forces, which identify the competition level prevailing at the marketplace. As well as is the organisational changes and reasons for their implementations.

For the present study is taken into consideration "Electric vehicles in Europe", as well as some research the electric cars industry worldwide.

According to the broadest understanding of electric vehicles (EVs) introduced by the International Clean Council transport, "These are specific vehicles that in addition to all-electric and plug-in hybrids, they include the group of vehicles using hydrogen fuel cells. They are much more compatible with renewable energy sources. They can produce no emissions at the vehicle tailpipe and much lower life-cycle ("well to wheel") emissions." (ICCT, 2020).

Macro and micro environmental analyses

The macro-environment examines the external factors that affect production. Based on economic theories, different models and analyses, estimates are made of the ability of an industry to reach its potential.

In this study, I will try to analyse the business environment in which the automobile manufacturing of electric vehicles operates.

PESTEL analyses

This analysis has two main functions - firstly, it identifies the environment in which the industry operates and, second, it allows to anticipate situations and circumstances that may occur in the future. External environment impacts the business organisation, and it is uncontrollable, but PESTEL analysis is helpful to identify these factors. This is a useful tool which helps recognise the influence by examining the Political, Economic, Social, Technological, Environmental, Legal factors in the market (Yuksel, 2012).

Political factors

The International agreements to reduce CO2 emissions - for example, the Paris Agreement from November 2016. The issue of harmful emissions has long been on the negotiating table. By 2050, the strategy is to reduce harmful gas emissions by up to 89-95% (EEA, 2020).

Subsidies and tax breaks incentivise demand at the EU and the world. Many European governments and cities encouraged consumers to opt for electric mobility—each used their schemes.

Special parking permits in dense urban areas; ability to drive in a bus and taxi lanes - the save time, decrease congestion charge for cities centre.

Economic factors

These factors have a notable impact on business organisation. They are – the growth of economic, interest rates, exchange rates, consumer's income inflation, the introduction of innovations, new investments etc.

For example, in Europe, the inflation rate is high, which affect the buying behaviour of the consumer, and this becomes an issue for the companies. Same variations or changes in interest rates change Volvo car sales.

Another moment is to involve innovative business models, for example - Vertical OEM offering – some car manufacturers are playing a role and becoming active on the infrastructures side (Hall and Lutsey, 2017).

For instance, Tesla offers exclusive access to the Supercharges stations which are compatible only with Tesla models and is rolling them out across the USA and Europe (Tesla, 2020).

From the other side, battery leasing or using battery second hand (Reinhardt at al., 2017).

Change and redirection of the workforce from the production of conventional vehicles to electric ones, as well as the creation of new jobs in the energy, produce battery, modern infrastructure, and R&D sectors, etc.

Social factors

Social-cultural factors comprise the area of shared belief, faith, reliance, and point of view of people. These factors involve growth in population, age distribution, health awareness, health and safety, lifestyle, consumer's purchasing habits. Social issues also affect business.

The desire of people to save money, live in harmony with nature and reduce public health costs, as well as insurance cost, are part of the social factors (Malmgren, 2016).

The market trends switch or change rapidly, and this affects the buying behaviour of consumers this create an influence in the automobile sector.

Technology Factors

Now a day's fastest and rapid changes only happen in the technological sector, and this affects the whole market. Technology factors consist of fundamental infrastructure level, technological changes rates, level and incentives of technology used in the automobile sector. This is a fastest-changing factor with various issues. For example - Rapid technological changes create issues as well as for Volvo and the other producers to accept these changes easily because it takes time and resources. Technological sector is also including various rules and regulations which affect the electric vehicles manufacturing in Europe and all world. The innovation of new machines and replacement of old this affect the cost of a company.

Attractive innovation is the use of bi-directional batteries that can cumulate energy and the EVs themselves to charge other consumers of electricity. In Denmark, attempts made to pilot a B2G program (at 2016) and use this type of EVs. These cars can use during emergencies and disasters as energy sources (Travers, 2018).

Environment Factors

Reducing carbon emissions (CO₂), leading to air and soil conservation, climate change and therefore to protecting human health and improving agricultural production, these are essential factors, which ordering safety environment place for first place.

This means that at the present stage are brought to the fore the positives of using electric cars, especially in urban environments. Opportunities to extract renewable electricity is a reality that develops both in the dimensions of their diversity (energy from the sun, water, wind, geothermal sources, etc.) and in their accessibility. The optimistic proportion of the problems for the environmental friendliness of the production of EVs and the consumables used in them are in the process of continuous improvement and are mainly presented in their comparative advantages over "polluting the environment, noisy internal combustion engines" (Mom, 2013).

Legal factors

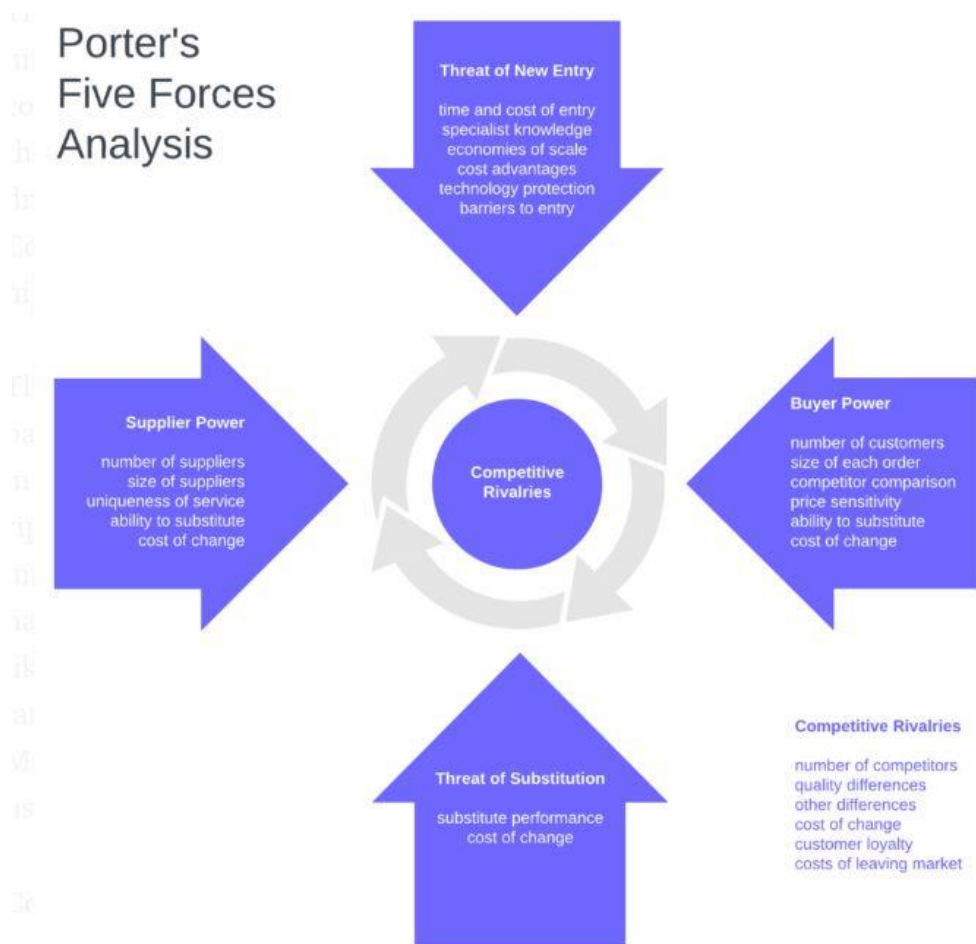
These factors reflect changes in the law, such as rules and regulations on environmental protection, pollution from manufacturers, traffic, and parking regulations in each country, binding international provisions and agreements. For example, the United Nations Framework Convention on Climate Change (1992), followed by the Protocol of Kyoto (1997) and an essential Paris Agreement (2015) on climate change set the conceptual framework on combating climate change and guidelines for the development of the electric car industry (Stojanov, 2018).

Factors	Issues	Ranking
Political	- Many rules and regulations by the world government - Subsidies and tax breaks - Unique modes for parking and traffic facilitation	high
Economic	- High inflation rate - Expensive new business models - Change and redirection of labour resources	high
Social	- The market trends switch or change rapidly - The rise in prices of insurances and an increase in the desire of people to save money - Creating a new generation of consumers - for a healthy and naturally ecological life	medium
Technological	- New technologies are being created very quickly - The implementation of innovations must be fast, and there are not always trained specialists - Need for high levels of investment and free cash flow	high
Environmental	- The drastic changing climate in the world which is life-threatening - Presence of various natural resources for energy production - The scarcity of raw material used to now - oil	high
Legal	- Various legal acts related to the environment and pollution - Legislation on the new sources of electricity - Need to harmonise the regulations in each country with the adopted international rules	high

Source (author M Mavrodieva)

Porter's Five Forces

This framework includes five competitive forces, which shape industry and help in determining strength as well as weaknesses (Grundy, 2006). Porter's Five Forces model can be applied to any industry and segment of an economy and increases long-term organisation profitability.



Source (medium.com 2019)

Competition in the automotive industry is high

This is due to the limited number of participants in the industry.

There are small differences in the quality of the EV, which they produce.

Other substantial differences are not observed, i.e. cars have similar parameters.

The difference is proposed in comfort.

The switching price is medium-high.

Loyal customers are almost constant, and they have a considerable influence (Wesseling et al., 2014).

For example, Volvo will soon launch its new model - XC 40 Recharge - an all-electric car. The company relies many on the choice of loyal customers (Volvocars, 2020).

The threat from new entrants is medium to high

It takes a lot of investment, and it is not easy to enter the EVs market.

Specific knowledge and skills of manufacturers are required, but in today's world, they are easily accessible.

Often the new entrants are high-tech companies that diversify their portfolio.

High barriers are set by the legislation and specific regulations of this industry.

The large scale of manufacturers leads to low costs, which attracts new entrants (Wesseling et al., 2014).

The bargaining power of suppliers is high

There are many suppliers in the industry, and in most cases, these are significant producers of materials for production.

In most cases, suppliers are specialised because the rapid development of technology creates conditions for strict differentiation.

It is rarely possible to make a quick replacement of a supplier; the modern free market implies accurate and timely deliveries without creating surpluses and buffers in case of delays.

A high price can be paid to replace a supplier.

For example, the concerns of carmakers in the UK are of changes in the contracts with suppliers. However, the plan of the Government in the UK to be a home of electric vehicles in the future after Brexit (Murray, 2019).

Negotiating power of buyers is low to medium

In this industry, clients can choose from a small number of companies that offer EVs. At the same time, the number of customers themselves is still small, and the price of each purchase is high.

The differences between manufacturers are small, and buyers cannot easily find substitutes.

The services after the purchase turn out to be attractive - such as full service and support, as well as the loyalty to a specific brand (Musonera and Cagle 2019).

The threat of substitutes is shallow

At this stage, the availability of substitutes in this industry is almost impossible.

Some manufacturers can offer lower prices, but the quality is at a significantly lower level.

In this case, the cost of changing the manufacturer can be extremely high for customers, given the requirements for safety, comfort and quality of service (Musonera and Cagle 2019).

Organisational change

Organisational change is a "response" to a change in the external and/or internal environment of the organisation. It is an important concept that attracts the interest of scientists and researchers. The survey of the external macro and internal microenvironment in which each company operates is essential to answer the question of organisational change. How to improve and enhance organisational effectiveness and/or ensure corporate growth. They, in turn, lead to stability, efficiency and ensure the profit of the organisation.

Organisational change is part of the companies' strategy. The process of change involved - development, evolution, transformation, regeneration, metamorphosis, transmutation, innovation, revolution, and transition. (Aravopoulou, 2016).

Reason for the organisational change

The foremost reason for the change is to get are the fastest growth and success in business. Change is also required to attract more and more customers towards the company.

The goal is to reach new ones: attitudes, behaviours, processes, structures, and culture to be successfully adopted (Aravopoulou, 2016).

Conclusion

The above study analyses the environment in which the EVs industry is positioned. Determines the factors that influence it and the effect of their existence. Helps to understand the causes of certain events, as well as the laws that govern the EVs market. Despite the global aspect of the industry, economic factors and patterns are in place and should not be overlooked.

According to Deloitte's expectations, the EV market will reach a turning point in 2022, when the prices of EVs and ICEs are to equalise. To 2035, BEVs will occupy 70 % of all sales by the electric vehicles (Walton et al. 2019)

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