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PESTEL Analysis of Automotive Industry in the Czech Republic

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AMSP ČR ASOCIACE MALÝCH A STŘEDNÍCH PODNIKŮ A ŽIVNOSTNÍKŮ ČR

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INTRODUCTION

The automotive industry is essential for the Czech economy. The automotive sector accounts for about 25% of industrial production and exports, and almost 10% of GDP, and employs over 150,000 people (over 5,000 research and development workers).

The automotive industry is currently undergoing several major changes that have the ambition to significantly transform the entire sector. And not only in technical innovations on the cars themselves but also in the production process and business model. The main trends include the continuing pressure of carmakers to reduce costs and increase production efficiency in their factories and suppliers. Another factor that undoubtedly affects and will continue to affect the automotive industry is the continuing tightening of environmental requirements (for CO2 emissions) and safety standards (airbag requirements, ESP - Electronic Stability Control, reducing fuel consumption, etc). A separate chapter of factors which affects the automotive industry consists of alternative vehicle drives, where electromobility plays a key role, but CNG and hydrogen drives are also being developed. The most user-friendly innovations are taking place in connecting cars to mobile phones and autonomous control systems.

It should be emphasized that the automotive industry, and in particular car manufacturing, is on the road to Industry 4.0 the furthest of all industries. Complex value chains, just-in-time production, and networked production require intelligent components, suitable handling technology, and adaptable integrated solutions consisting of pneumatic, electric or mixed technologies. It is these managed productions, supply, and logistics processes that contribute to the increased productivity of this sector, as well as the accelerator of gross domestic product. In the automotive industry, more and more modern technologies, robotics, automation, digitization are used. Emphasis is constantly placed on efficiency and cost reduction. Thanks to the commencement of electromobility and autonomous management, the services of IT and telecommunications companies will be used more. The involvement of the government and energy companies will be needed to build infrastructure. Cooperation and partnership of stakeholders will be essential for the further development of the automotive sector. Czech companies in the automotive industry should take advantage of the opportunities and expected changes in the development of the automotive industry so this sector will remain to be a key sector of the economy.

Image n. 1: Map of the automotive industry, Source: CzechInvest

PESTEL ANALYSIS

PESTEL analysis is a method that analyzes the macro environment of the company, more precisely the political, legal, economic, social, technological, and environmental area in which the industry sector or company is located.

The aim of this analysis is to find the components of individual factors that represent a threat or a significant opportunity for the automotive industry in the Czech Republic. It should also determine the likelihood that these threats and opportunities will materialize. It is important to monitor and evaluate these factors on an ongoing basis because of their importance and influence change over time.

POLITICAL AND LEGISLATIVE FACTORS

Political factors of the automotive industry in the Czech Republic generally include the political stability of a country, tax laws, various restrictions, labor law, and many others. Includes also various international activities, such as exports and imports, the stability of foreign policies, or the regulation of foreign trade.

European Union emission standards

Passenger cars are responsible for 12% of total CO2 emissions in the European Union. Carbon dioxide is the main greenhouse gas. Since 2009, a mandatory emission target for passenger cars has been set. This legislation is still valid today. Another mandatory emission target has been added for 2025 and 2030. The regulation also adds mechanisms to support the proliferation of low-emission and emission-free passenger cars. The new regulation will help meet the European Union's commitments to the Paris Agreement, reduce fuel consumption and associated costs, increase the competitiveness of the EU car industry, and boost employment. Steps associated with the application of the standards will reduce emissions by 2030. The consumer will save an average of 1,100 euros when buying a new car in 2030. These are savings in the average life of a new car. If batteries start to be produced in the European Union, 80,000 new jobs will be created, otherwise, 60,000 jobs will still be created in 2030. The slow gradual transition to electromobility will help retrain workers for new technologies in the automotive industry in advance. Emission target (EU) 2019/631 only applies to newly registered passenger cars. Targeting will start in 2021 and should reduce emissions by 15% by 2025 and by 37.5% by 2030. There is also an exemption from emissions regulations for manufacturers who produce less than 1,000 cars a year. And for specialist carmakers, who produce 100,000 to 300,000 vehicles a year. However, the possibility of an exemption ends after 2028. In the years 2025 to 2028, the emission target will be reduced by 15% than specified in the standard. The EU's concern is the confirmation of the actual emission limit when checking and producing a zero deviation between the emissions measured by the mechanic and in normal operation.

EU support for electromobility

Electromobility is an area in which the European Union has shared competencies with the Member States. Together, they seek to promote and encourage the widespread use of electric cars. These are local, regional and national initiatives to achieve this goal. This can be a lower tax, free parking, free entry into emission zones, etc. The European Union supports these efforts with measures aimed at increasing resource efficiency, recycling, and measures to break oil dependence. There is also an effort to use renewable energy and remove obstacles to the electrification of transport.

Therefore, the EU's efforts to increase the share of low-emission cars to 15% starting in 2025 and to 35% starting in 2030. There is considerable incentive for manufacturers, as they can be partially exempted from emissions if they achieve the following targets, regulations.

State support for electromobility in the Czech Republic

The system for customers in the Czech Republic is set up as follows. If an electric car or a hydrogen-powered car is purchased that emits a maximum of 50g CO2/km, then it does not have to pay registration fees and may have a tax advantage that also applies to other possible types of low-emission cars. (acea.be) According to § 3 letter f) point 1 of Act No. 16/1993 Coll., on road tax, vehicles for the transport of persons or vehicles for the transport of goods with a maximum permissible weight of less than 12 tonnes, which have an electric drive, are exempt from the tax. The most widespread technology for energy storage today is the use of batteries in conventional electric cars, but in practice vehicles using hydrogen fuel cells are increasingly operated, and further development of this technology and wider use in normal operation can be expected.

From the point of view of the road tax exemption, in the case of the use of hydrogen, it is necessary to distinguish whether it is a hydrogen-powered vehicle using hydrogen for its propulsion or an electric car equipped with a hydrogen fuel cell (referred to as FCEV). The exemption from road tax concerns FCEV, for example vehicles that generate electricity from fuel cells. For these vehicles, it is, therefore, possible to apply the exemption for vehicles having an electric drive according to § 3 letter. f) point 1 of the Road Tax Act. On the other hand, the road tax exemption does not apply to vehicles that use a hydrogen combustion engine for their propulsion.

The amendment to the Road Traffic Act allows cars with alternative propulsion to drive on Czech motorways free of charge. This advantage complements other previously introduced measures, such as free registration of a vehicle with a special registration plate or free parking in the capital city of Prague and other cities.

Infrastructure – charging stations

One of the biggest obstacles to the rapid expansion of electromobility is the underdeveloped charging infrastructure. But the situation is changing relatively quickly. A major investor in this area is the largest Czech energy supplier, ČEZ, which has already opened almost 180 public charging stations throughout the Czech Republic. ČEZ has been promoting electromobility since 2009. In the horizon of three to five years, ČEZ plans to build and operate a total of 500 charging stations and in the horizon of five to seven years 1,000 charging stations. Of course, it will depend on how fast electromobility in the Czech Republic develops.

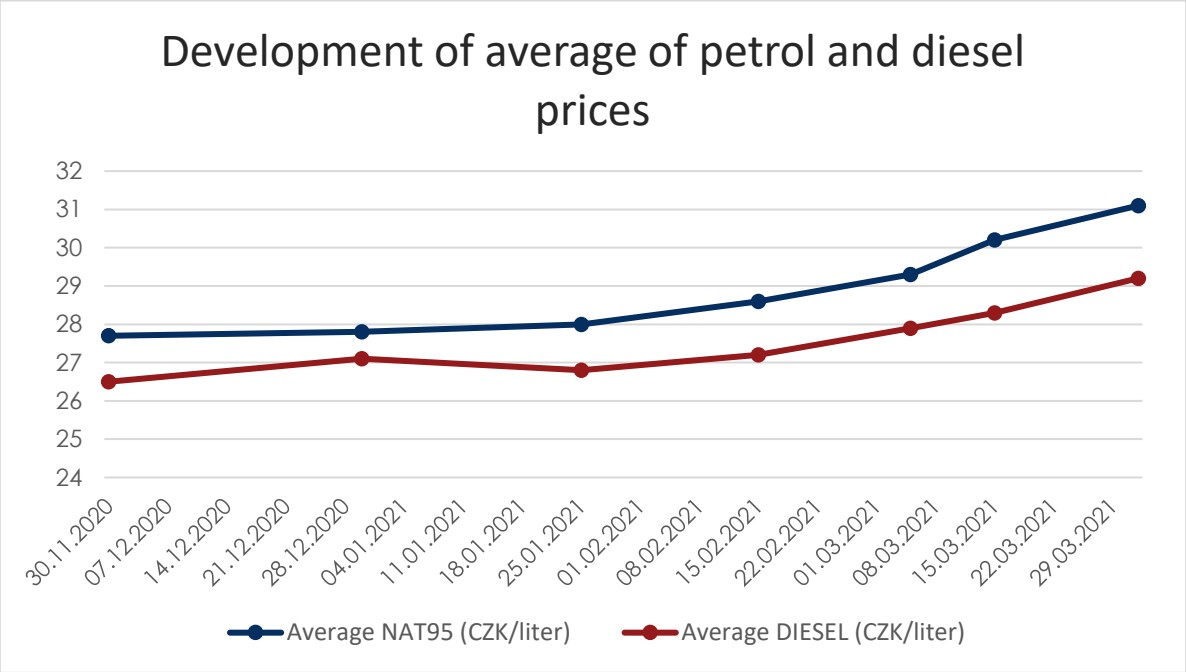
The current problem with the construction of the charging station the valid building law. The construction of one charging station, which is in itself a task for a few days, actually takes a year, sometimes two, before you have all the permissions. It is basically the same as building a house or office building. This issue should improve in connection with the planned recodification of construction law.

ECONOMICAL FACTORS

The economic situation of the Czech Republic and the countries in which companies from the automotive industry operate is crucial for their future development. It affects their position in the markets. Economic factors affecting companies are, for example, exchange rates, the level of interest rates, the level of gross domestic product, the unemployment rate, or the level of inflation. Finding out this data and their correct interpretation will help to identify opportunities or threats for companies.

Development of fuel prices

The price of petrol was 25.4 CZK per liter as of 2.5.2020 and 25.6 CZK diesel. Such a low price was last on the market in 2009 due to the global financial crisis. However, oil prices have been rising sharply since then, with the price of OPEC (Organization of the Petroleum Exporting Countries) rising last year by 178.7% and by 45.8% for the last six months (data from 9.4.2021). This increase can be seen in the total number of possible liters purchased for a gross monthly wage in the Czech Republic.



Purchase power/strength of customer spending

According to a survey conducted by the consulting company EY from October 2020, Czechs decide when buying a car primarily according to its price. And if the key role in decision-making plays the price, 500 000 CZK (approx. 19 300 EUR) is the psychological limit. However, the number of new cars that do not exceed this limit is declining.

In addition, the survey was newly supplemented with the opinions of drivers in Hungary, Romania, Turkey, and Russia. All countries under comparison place greater emphasis on the diversity of brands on offer at the car show. In all countries, interest in diesel engines is relatively low, but in Turkey, cars with this unit are very popular. In Russia, up to 65% of drivers prefer petrol units. For domestic drivers, the biggest obstacle when buying an electric car is the high purchase price.

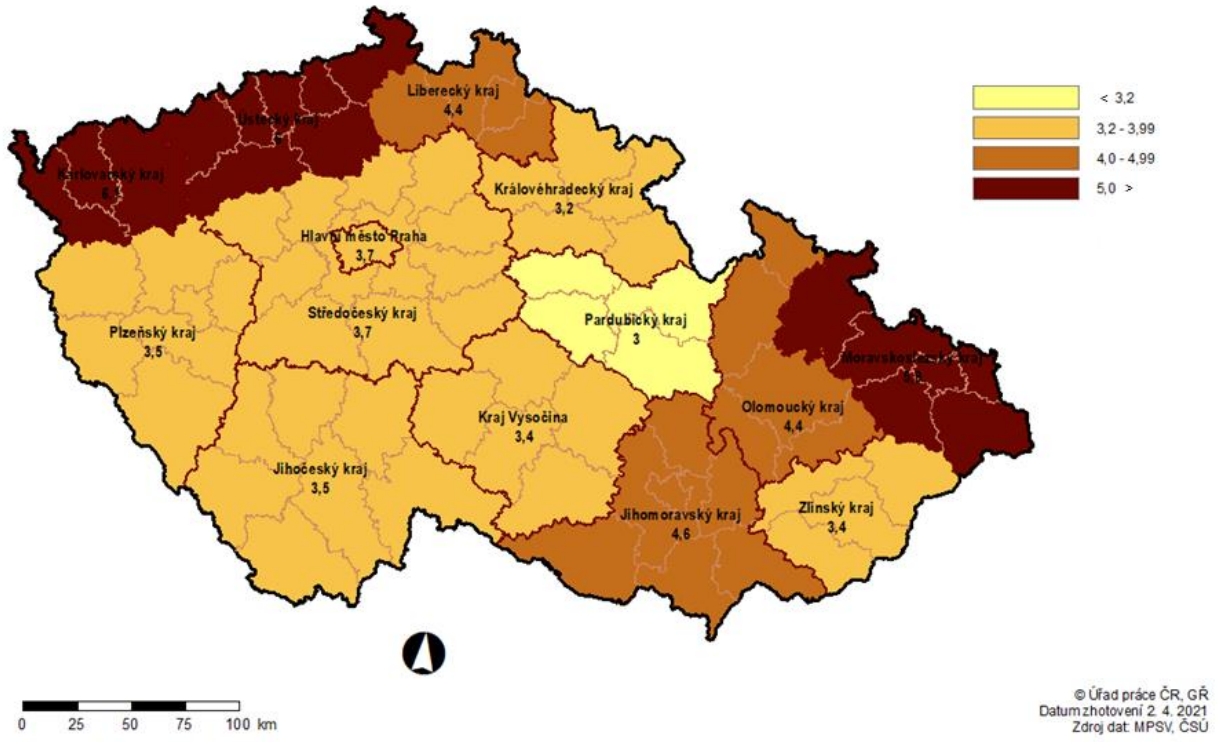
The global Covid-19 pandemic did not have much effect on the plans of Czech drivers last year. In the first half of last year, the Czech Republic was relatively little affected by the coronavirus pandemic, especially with regard to the purchase of a new car. In the Czech Republic, only 5% of respondents intend to buy a new car, but a lower class, or a cheaper car of another brand. 86% of drivers carry out the entire purchasing process in the dealership. The remaining 14% would partially implement the purchasing process online (influenced by the Covid-19 situation).

However, this year's data is expected to be significantly more affected by the pandemic. The development of the purchase of company cars, which dominate the market of new cars, will be crucial for the overall market in the Czech Republic.

Unemployment rate

ŠKODA AUTO realizes production in Kvasiny, Mladá Boleslav and Vrchlabí. Kvasiny is located in the Hradec Králové Region, whereas the unemployment rate was 3.2% (31.3.2021). Mladá Boleslav is in the Central Bohemian Region with an unemployment rate of 3.7%. The plant in Vrchlabí is also in the Hradec Králové region. TPCA realizes its production in Kolín, which is part of the Central Bohemian Region. The last Hyundai is in Nošovice, which is in the Moravian-Silesian Region with an unemployment rate of 5.9%. (MPSV.cz) The map shows that the Moravian-Silesian Region offers the largest source of labor. Then the Ústí nad Labem, Karlovarský region and South Moravian regions. With the continuous expansion of production, assembly workers can be recruited to new production facilities through employment agencies. This step should be supported by the offer of housing and facilities for the family. This strategy is already implemented in ŠKODA AUTO not only for assembly workers but also for university graduates.

Share of unemployed persons in the population (in%)



In 2020, the coronavirus pandemic weakened the Czech economy. Gradually, the restriction of free movement and closure of companies in all countries of the world included the automotive industry. Employees were forced to stay at home and receive only a percentage of their wages. In the Czech Republic, up to 45,000 employees in the automotive industry could actually lose their jobs.

Even in this difficult period, the companies of the Czech automotive industry managed to keep production at a stable level, despite outages in the supply of parts, restrictions in the transport of goods, or the tense situation on the labor market. A total of 206,695 passenger cars (-13.6%) were produced in the Czech Republic in the first two months of this year. The year-on-year decline in domestic production is thus still significantly lower than the overall decline in the markets in the European Union (-21.7%).

"*New registrations in the European Union decreased by a fifth in the first two months of the year. From this point of view, the decline in domestic car production by less than 14% is good news, but the situation remains difficult. Manufacturers are forced to regroup production due to outages of chips and other parts, in addition to lack of inputs, there is also a dramatic increase in prices of many materials, complications in goods transport due to changes at borders, and last but not least the labor market situation is very tense,*" comments Zdeněk Petzl, Executive Director of the Association of the Automotive Industry.

SOCIAL FACTORS

Social and cultural factors are formed, for example, by population age, population growth rate, life trends, cultural trends, or career preferences. Like every trend, the trend in consumption changes over time. Shopping preferences are differentiated by generations and it is important to monitor them. Consumer behavior is a key field in corporate and industry analysis.

Population development and its demographic composition

The population of our planet is constantly increasing. Today, the world's population has reached almost six billion people. And every year the number increases by about 80 million inhabitants. According to the Czech Statistical Office, as of 31 December 2020, the Czech Republic has 10,701,777 citizens. According to the latest demographic survey in the Czech Republic from 2019, almost half of the population in the Czech Republic is at the productive age with the greatest pruchasing power for the automotive industry, i.e 19-55 years old (47.6%). One-fifth (20.3%) are potential future customers under the age of 19 years.

The change in the population and composition of the population brings with it different demands that companies in the automotive industry have to deal with and respond to appropriately and on time.

Customer Trends

The year 2020 was marked by the continuous growth of consumer interest in electromobility across Europe. The consumer is aware of the environmental impact of internal combustion engines and the possibility of alternative vehicle drives is attractive to him. Interest in autonomous technologies is stagnating across most markets. More than half of consumers have confirmed that media reports of accidents involving these vehicles are shocking and discourage them from buying a vehicle with autonomous technology. Consumers have miscellaneous feelings about the growing connectivity of cars, as there is no clear benefit.

Globally, young people do not need to own a car. Young people, in particular, are showing an inclination to public transport. Which is, among other things, the most effective method to combat traffic jams. The increase in the popularity of public transport is due to the absence of funds to buy a car from young people. Of course, there is also a growing willingness among the younger generation to modify the standard of living to help the environment. Here, manufacturers can respond with available electric and hybrid cars in the Mini segment. Availability, safety, and sustainability seem to play a leading role in the coming years.

Education level of potential employees

During the years 2010 - 2017, a total of 434,000 Czech citizens reach university degrees, 62% are women and 38% are men. The trend in the number of people with a university degree is growing, but as a result, the number of people with an apprenticeship certificate is declining. Between 2010 and 2017, the number of men trained without a high school diploma decreased by 139,000. There is a corresponding risk for manufacturing companies that will not have workers qualified in the field. (Deník.cz) Most educated people live in Prague, where over 38% of the population holds a university degree. The lowest number of university graduates is in the Czech Republic the Karlovy Vary and Ústí nad Labem regions.

ŠKODA AUTO solves the decline of trainees in the field with the help of its own educational facility. Other carmakers in the sector have to reckon primarily with the labor market. It is essential to have experienced mechanics in operation, but as already mentioned, the automotive industry employs a considerable amount of educated people in research and development as trends in the industry are changing rapidly.

Car sharing

Carsharing is a trend that stays out even in the Czech Republic. In recent years, several such services have been established in our country, enabling car sharing. These services continue to operate primarily in the capital city of Prague, where, in short, the potential clientele is the widest, but in the past, carsharing platforms were also established in České Budějovice or Pilsen. It is in the capital that the offer of carsharing is so varied that there are specially oriented services. For example, Re.volt offers exclusively electric cars, while Uniqway targets students and university staff.

TECHNOLOGICAL FACTORS

Technological factors mean technical, production, storage, and many other aspects of companies in the automotive industry. They may include also the development of new products, innovation in production processes, integration of industry 4.0, and new know-how. Companies, especially in specific sectors such as the automotive industry in the Czech Republic, must implement still evolving new technologies to maintain a competitive advantage.

Technological competitiveness

Technical and technological factors can be considered as one of the dominant components of the automotive industry. Companies often have to spend big amounts of money on research and development, so then really effective research can be carried out mainly at large, national, or multinational companies. Unfortunately, this creates barriers for smaller and/or financially weaker companies to enter a new market.

In the automotive industry, established technologies are developing rapidly. This is not only reflected in the characteristics of cars but is also reflected in the increased demands on technical equipment. The companies try to keep up with all technological advances, so they constantly educate their employees and the company invests in more modern machines for the production of automotive components.

Digitalization, Industry 4.0

Industry 4.0 brings opportunities that will help shape the future for manufacturers in the automotive industry. The use of 3D printing, robots, or overall IT will help manufacturers improve car design and displace inefficient processes in the production and supply chain. By 2025, it is planned to use 20% of the 3D printing

market in the automotive industry. This will bring significant cost benefits to those who use and develop the technology.

Cloud computing helps improve processes and increase productivity while reducing operating costs. The key is the speed of the system. The cloud can help eliminate inefficient places in the supply chain that can be caused by inefficient communication. Prototyping combined with real-time supply chain information is a source of significant savings. Another advantage is the shortening of the purchase time, which can be reduced by up to 20%. Instant communication in the supply chain helps shorten the development cycle. If the internal system does not allow it, it is advisable to switch to cloud service outsourcing.

Big Data data analytics leads to a reduction in inventory costs and potentially a reduction in the cost of capital. The data is processed in real-time and helps to detect problems before they occur. The opportunities arising from Big Data Analysis are inventory management, efficient use of assets, and reduction of production fluctuations. Supply chain analytics helps to effectively plan and monitor the production system. The highest possible level of this methodology is predictive analysis, which reveals possible operational failures before they occur. Of course, this leads to reduced costs, increased production efficiency, and even programming of the machines, which can then follow their surroundings.

Alternative vehicle drives

Competitors within the automotive industry face the challenge of electromobility, which brings many growth opportunities. If the European Union's strategy can be adhered to, then there should be an increase in cars for alternative propulsion by up to 35% by 2030. Currently available data show that consumers still prefer a traditional internal combustion engine. However, with the increase in electromobility and other alternative vehicle drives, there will be considerable scope for growth in market shares. It could be said that there is an ongoing about who will first come up with a convenient solution for the new mobility. This fact may not be so obvious today, but according to EU plans it will come soon and hard. It, therefore, depends on the producers in the automotive industry of the Czech Republic how they cope with this fact and whether they succeed in a globally competitive environment.

Fuel efficiency

Like any machine, the internal combustion engine has a certain efficiency, which indicates how much of the chemical energy of the fuel is converted into mechanical work. For electric motors, we can be around 95%, but the internal combustion engine can not handle even half. By logic, efficiency can never be 100%. Some losses will simply always occur, for example by friction, bearing resistance, etc. There are dozens of these losses in the entire engine. None of them is essential, but together they reduce the overall efficiency to some 30-40% in the case of modern power units. Japanese carmakers, in particular, have recently been trying to develop a significantly more efficient internal combustion engine, but it is a long-distance run and as a result, it will be quite different engines from those we currently use.

New automotive technologies

The offer of new cars has been dominated by a list of technological conveniences, assistants, programs, functions, and systems for a quite long time. Concentrated control of the direction or smoothness of driving recedes into the background behind the automatic systems of accelerating, braking, shifting, and almost even turning the steering wheel. Smart technologies play a key role, whether for larger displays, smarter cruise control, or panoramic cameras.

People behind the wheel are potentially the weakest link in the cars of the future. Engineers are trying to eliminate human factors and it is not yet possible to exclude a person from driving, so systems are being developed that focus on his behavior - observation systems. Self-driving technology is rather a solution for the future.

Technical norms (ČSN, ISO)

Among the technical standards governing the production and subsequent sales, we include ČSN and ISO standards. As part of European unification, the Czech ČSN standards are being replaced by a European Union standard called ISO. ISO 14001 and 9001 certificates are one of the most important standards for mechanical engineering.

The ISO 14001 standard sets out the requirements for an environmental management system. The company's management sets its goals and plans for emissions from its production. This standard is an information tool for environmental impact and is also a good tool for meeting legal emission limits, reducing the risk of unexpected accidents, and is successfully applied to various sectors of human activity. Its benefits also include the creation of a good reputation of the company in the field of environmental protection, improvement of the company's profile, competitive advantage, and motivation of employees.

Iso 14001 should be combined with other standards, especially ISO 9001. The ISO 9001 standard is based on the principle where the company's management sets goals in the area of the quality of its production, which are then implemented by using set processes. This ISO standard deals with the management of documentation, human resources, communication with customers, supplier evaluation, and measuring process performance.

ENVIRONMENTAL FACTORS

The laws related to environmental friendliness and carbon emissions are growing stiffer around the globe. Given that all the major players in the automotive industry had to focus upon low emission vehicles. The vehicles which are low on emissions and fuel consumption receive tax subsidies and are favored by the government and law. Environment friendliness has become an important test for carmakers in the 21st century as governments have started focusing heavily on pollution control.

Decreasing carbon emissions and pollution

The new European Commission's ambitious plan, called the Green Agreement for Europe, will also have a major impact on the automotive industry. The main goal is to achieve climate (carbon) neutrality in Europe by 2050. An ambitious plan will require significant investment and extensive transformation of the industry (including the automotive) and other areas. As it stands, carmakers must reduce average CO2 emissions from all new cars by 37.5 percent by 2030, compared to 2021. This means more than 60 percent compared to 2005.

The requirement to reduce emissions quickly, therefore, forces carmakers to invest even more in electromobility and alternative vehicle drives. However, the infrastructure for the further development of electromobility is not yet sufficient and the EU will have to invest a considerable amount of funds in it. Investment in innovation to make the automotive industry "greener" will be partly covered by the transformation mechanism. The European Union supports greening also through regulation on so-called taxonomy. This is a catalog of criteria against which it will be possible to determine whether investments are

truly “green”. The aim is to reduce the “greenwashing”, the investments that only look like “green”, and to ensure that financing and development are sustainable.

This is a clear signal from the EU in terms of the overall automotive supply chain. Until 2025, only investments in car production whose emissions from the operation will reach a maximum of 50 g CO2 per kilometer can be marked as “green”. After 2025, the criterion drops to 0 g CO2 per kilometer, which means the production of battery-powered or hydrogen-powered cars.

Reduction of waste materials, recycling

Whereas previously the issue of recyclability was addressed only in terms of individual parts and ex-post, now it is approached systematically during construction. Every car design already has a built-in recycling economy. The designer must find such a solution that not to combine materials that are not recyclable together and choose among suitable materials. The most advantageous in this respect are steel, rubber, and glass. Magnesium or aluminum alloys are the worst recycled, so they are used significantly less.

The trend towards the future suggests that a manufacturer should receive a license to produce cars from the state (including a certain price advantage) only if its product is fully recyclable. Manufacturers are thus forced to work with recyclers. They will not be forced to meet certain conditions by the state, but by this industry. Just as they now have their system of service stations or testing facilities, they will also have a system of accredited processors and recyclers.

LEGAL FACTORS

The automotive industry is controlled, controlled, and directed by various laws, legislative standards, or decrees. Therefore, individual companies must meet these regulations and obligations and take into account their development over time. Insufficient understanding or non-compliance with these obligations can be liquidating for the company.

Vehicle safety requirements

In 2019, the EU introduced a new regulation to increase safety requirements on carmakers in order to significantly reduce road deaths and injuries. The Regulation updates the existing vehicle safety rules contained in the General Safety Regulation (EC) No. 661/2009, the Pedestrian Safety Regulation (EC) No. 78/2009, and the Hydrogen Safety Regulation (EC) No. 79/2009. From 2022, new technologies and systems will become mandatory for new vehicles of various types. The new regulation will also provide an opportunity for EU carmakers to consolidate their leadership in innovative vehicle safety systems.

Protection of industrial property rights

A necessary precondition for the successful business of business entities is the protection of their own intangible assets. A clear and well-chosen strategy for the protection of intangible assets is essential as it reduces the likelihood that newly introduced products or services will be illegally imitated or copied while increasing the practical possibilities for commercial exploitation of new products. In particular, industrial property rights make it possible to obtain exclusivity for these objects, for example for their inventions, utility models, trade secrets, trademarks, and product designs. On the contrary, in the case of insufficient protection of the results of their activities, they may not only lose investment and research results, but it may cause long-term and irreversible damage to the market position of the business entity and thus cause irreparable

business and economic losses. Intangible assets are intellectual capital, the key to further development that needs to be protected.

Carmakers regularly have to navigate a maze of regulations that govern the manufacture of automobiles. With new safety regulations and legislation being passed, copyrights and patent laws changing shape as well as legal woes stemming from competition, the automobile industry finds some relief in the developing nations where enabling regulations and tax-cuts are helping automakers to deliver newer models to consumers.

CONCLUSION

From the results of the PESTEL analysis, it can be seen that the ratio of opportunity and threat is unbalanced according to selected factors. In terms of opportunities, the European Union's support for electromobility is most important, as it means possible reductions in emission regulations for manufacturers who include the production of electric vehicles in their portfolios. Furthermore, consumer trends in the purchase of cars, which, as can be seen, are already affected by the covid-19 pandemic. This creates opportunities for differentiation for manufacturers and possible competitive advantage. If according to studies, it is possible to prove a lower contribution of cars to emission pollution, which results from the current initial measurements, then it could provide an extension of the life cycle of diesel cars and internal combustion engines in general.

Industry 4.0 (digitalization and robotization) is an opportunity that can revolutionize overall production. The growth of educated people in society is an opportunity to expand in research and development. The current development of the covid-19 pandemic, which threatens every industry and shapes new views on the functioning of society, cannot be overlooked by the threats. The European Union's emission standards represent a potential threat in terms of non-compliance with the average value across the product portfolio. According to current statistics, the unemployment rate and the development of GDP may also have a negative impact on the sector.

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P POLITICAL	E ECONOMICAL	S SOCIAL	T TECHNOLOGICAL	E ENVIRONMENTAL	L LEGAL
European Union emission standards	Unemployment rate	Customer trends	Technological competitiveness	Decreasing carbon emissions and pollution	Vehicle safety requirements
EU Support for electromobility	Development of fuel prices	Education level of potential employees	Digitalization and Industry 4.0	Reduction of waste materials	Protection of industrial property rights
State support for electromobility in the Czech Republic	Purchase power/ strength of customer spending	Population development and its demographic composition	Alternative vehicle drives	Recycling	Moral and ethical issues
Infrastructure – charging stations	Exchange rate	Car sharing	New automotive technologies	Decreasing of noise	
	Global economic changes connected with COVID-19		Fuel efficiency		
			Technical norms (ČSN, ISO)		