Name:Dorina Muresan

Student Number:1815752

Module title:LCBB4005

Assignment Title:Electric cars

LCBB4005: THE GLOBAL BUSINESS ENVIRONMENT

Table of Contents

Question no: 1 3

Major forces to shape business environment 3

Change in industries 4

A critical assessment of changes 5

Reasons of implementing electric cars 6

Advantage of electric cars 6

Question 2 7

Identification of emerging business opportunities 7

Critical analysis of automobile industry 10

References 12

Question no: 1

Major forces to shape business environment

Some several forces and factors influenced business environment can monitor by PESTEL and Porter's five forces analysis process. However, managers faced several challenges in the UK due to external environment in business industries. The external environmental challenges can analyse using PESTEL analyses. There are six factors according to this method such as Political, economical. Political factors are one of the main factors that increase threats to business organisation in recent time. Due to unstable political environment because of Brexit issues and conflicts among political parties, business manager unable to invest in manufacturing industries. On the other hand, tax rate is very high compared to other manufacturing organisation such as Germany. However, economic stability of the UK attracts business organisation to invest in automobile manufacturing industry. GDP growth rate is and foreign direct investment lowest in last few years, which affected in business industries. Total value of automobile industry is about £18.6 billion that attracted business leaders.

On the other hand, social-culture has significant role in automobile industry due to presence of highly life culture in challenging business market. High population and lower mortality rate of community influence growth rate of automobile industry. Technological growth rate has significant role in automobile industry, as growth rate of technology is 56% in UK. In new start-up business market, £5 billion has been invested in business industry (He, 2015). Moreover, environmental factors have significant role competitive business market as manager of Volvo has to follow ***Radioactive Substances Act 1993, the Environmental Protection (Duty of Care) Regulations 1991,*** and ***Environmental Protection Act 1990***. Besides, business manager should focus on ***Climate Change Act of 2007*** during production of different batteries to reduce impacts on climate change. Legal factors is other parts of market analysis in the UK (Legislation.gov.uk, 2019). Here, ***Equality Act of 2010, Health and Safety at Work etc Act 1974, Consumer Rights Act 2015, Data Protection Act 2018,*** and ***Company Law 2016*** has significant role in automobile business environment to manage electric vehicle production sector (Hse.gov.uk, 2019). Therefore, Volvo has to supply details information about source of materials such as lithium, cadmium, nickel.

It has seen that automobile industry has been changed at a higher rate towards electrification system to attract large number of customers. Hence, business managers should access ideas about manufacturing technologies and manufacturing threats management. Porter's five forces can use in forces analysis process. ***Market rivalry*** is a major force for automobile industry in electric car manufacturing system. Volvo faced challenges in electric car business in UK due to presence of Deloitte, OEM, Audi. ***Barrier of entry*** is another part of Porter's five-forces (Chiang, 2016). Since Volvo is new entrants in electric car manufacturing business, thus management faced challenges to access adequate resources from international market such as ***Republic of Congo*** for lithium, cadmium, cobalt, and nickel. ***Threats of substitute*** have significant role in automobile industry as every organisation try to manufacture efficient electrify car with high strength. Thus, managers should focus on effective production system to control threats. ***Suppliers have significant*** role in battery based electric car manufacturing process. Since capacity of battery to store electricity and energy depends on quality of materials like those that cobalt, lithium, and nickel used in batteries. Thus, management should develop strong supply channel with materials suppliers of Republic of Congo (Theguardian.com, 2019). They can built relations with large number of suppliers. Moreover, ***customers are valuable*** part of automobile industry. As per UK rules about resources, managers and employed has to provide details information about resources collected from international business market. Thus, they should collect suppliers' information to delivering proper information to users. Moreover, developing high capacity and efficient batteries for new car to attract customers for profitable revenue generation.

Change in industries

In last two years, major automobile organisation in the international business market focuses in electric vehicle production process to reduced environmental challenges. Moreover, demands of electric vehicle in international automobile industry increase at a rapid rate. There are several business organisations such as OEMs of China, Deloitte, Volvo wants to replace IC engine by electric motor. Due to reduction of petroleum resources, total number of electric vehicles risen to 2 million in the world. It has assumed that total number of electric car will be 21 million by 2030 as costs of batteries reduce significantly in last few years (Telegraph.co.uk, 2019). Management of Volvo produces electric car from 2019 onwards, which can be charged by Plug-in electric and

all-electric vehicle system. Carbon footprint and financial investment have to analyse to maintain government restriction and policy management (Techcrunch.com, 2019).

A critical assessment of changes

Volvo implements some changes in their automobile industry to satisfy their customers. Electric motors are one of them. Volvo missions to introduce electric vehicles every year through 2025. Company's first-ever electric vehicle XC40 ***Recharge slashes 40% carbon footprint of life cycle. These changes are made in order to make Volvo an eco-friendly company in 2040***. According to president of Volvo, company adds up some significant changes in their supply chains and project management rules to achieve this target (Bennett, Kottasz and Shaw, 2016). Reasons to add such technologies to service are to ensure low-cost vehicles to customers that will help ***Volvo to represent 50% of global sales. In recent times, company aims to reduce 40% of carbon footprint by 2018 to 2025***. Air pollution is one significant causes in recent times. However, changes will focus in order to minimize environmental impacts and promote cost and energy-efficient vehicles. In near future, Volvo targets to cover up nearly all their vehicles into electric motors.

Study reveals that ***Driver pays $5 to $25 in*** according to maintain a fuel engine. However, in case of electric motors, drivers invest almost half of these amounts. Volvo wants to reduce carbon emission, and that is the primary reason for implementing electronic technologies in automobile industries. However, weight of electric cars creates difficulty in design. Battery and electric propulsion techniques are ***40% of the weight of the car and 25%*** of internal combustion driven car (Egbue, Long, and Samaranayake, 2017). Food and rural express a high presence of particulate in air. Electric cars simplify this issue and reduce this pollution.

However, this new technology travels only 100 miles on a single charge. This may create disturbance in travelling along distance and lacks popularity. Volvo should find ways to solve engine efficiency in order to improve its performance. Lack of power is another major issue with using electric engines. Company should think of techniques to solve this problem.

In some cases, it is shown that electric motors are expensive. Just these have less maintenance cost. Volvo should work on this portion to minimize buying cost of their electric motors. These may help company to attract more customers.

Reasons of implementing electric cars

Electric cars are introduced in market in order to minimize cost of fuel consumption, environmental issues and make cars energy independent. Use of electric cars in place of petrol and diesel cars reduces air pollution. As electric cars do not require fuel, thus this creates less almost zero pollution. This new automobile technology ensures companies (such as Volvo) to introduce energy-efficient and energy-independent cars in automobile market. Energy-efficient cars are designed by pairing a solar PV system with electric cars (Gómez *et al.* 2019). Instead of using fuel, electric cars provide gas pump facilities. According to the case study, from 2019, Volvo will introduce electric motors to help their customers experience reduced cost of fuel and promote an eco-friendly service of vehicles. NO2 is one of the significant threads of air pollution. Electric cars are made to minimize this problem. Nearly 2000 locations in England, Wales, and Northern Ireland suffer from a high range of air pollution. Pollution reaches at such a severe level that this starts to affect lungs and difficulty in breathing (Pérez-Arriaga, Jenkins, and Battle, 2017).

As electric cars are 100% eco-friendly and provide no emission, popularity of this kind of a car increases rapidly among customers. Automobile companies are bound to provide electric cars in order to respond to their customers' needs cars (Gómez *et al.* 2019). This new technology reduces air and noise pollution. This also provides low maintenance of cars, and these are all cost-effective vehicles.

Advantage of electric cars

Electric cars do not require fuel needs. Daily fuel consumption seems costly to customers. By choice of an electric vehicle, drivers do not need to use fuels and thus easily avoid high cost due to fuel consumption (Heinicke and Wagenhaus, 2015).

Use of electric cars in place of petrol and diesel cars reduces air pollution. As electric cars do not require fuel, thus this creates less almost zero pollution. As an example, customers go through high investment due to fuel cost. Study says that is the primary reason customers want to have electric vehicles. ***According to Volvo, chief*** customers are interested in having electric cars in order to reduce pollution. Electric vehicles sometimes fueled with electricity from renewable sources. This helps environment to minimize environmental pollution. Some electric power engines use a gasoline-powered engine to travel long distances.

This promotes energy independent cars. This new automobile technology ensures Volvo to introduce energy-efficient and energy-independent cars in automobile market (Heinicke and Wagenhaus, 2015). Energy-efficient cars are designed by pairing a solar PV system with electric cars. Instead of using fuel, electric cars provide gas pump facilities. In most cases, customers implant solar plate at the top of electric cars and make it energy independent that provides them low cost efficiency.

Question 2

Identification of emerging business opportunities

Electric cars provide automobile industries to grow faster. This is one innovative way of reducing air pollutants and providing independent energy cars. Several business opportunities are there to implement electric technologies for automobile business.

Electric motor service provides electric car service garage, EV charging station and station management, electric workshops, electric garage rental services, spare parts manufacturing of electric motors and engines (Pérez-Arriaga, Jenkins, and Batlle, 2017). Electric car services are entirely different from standard fuel used engines. In this regard, vehicles need individual servicing centres, offering maximum growth to battery service. For instance, emerging business opportunity for local battery service providers such as ***Country battery services and battery store.***

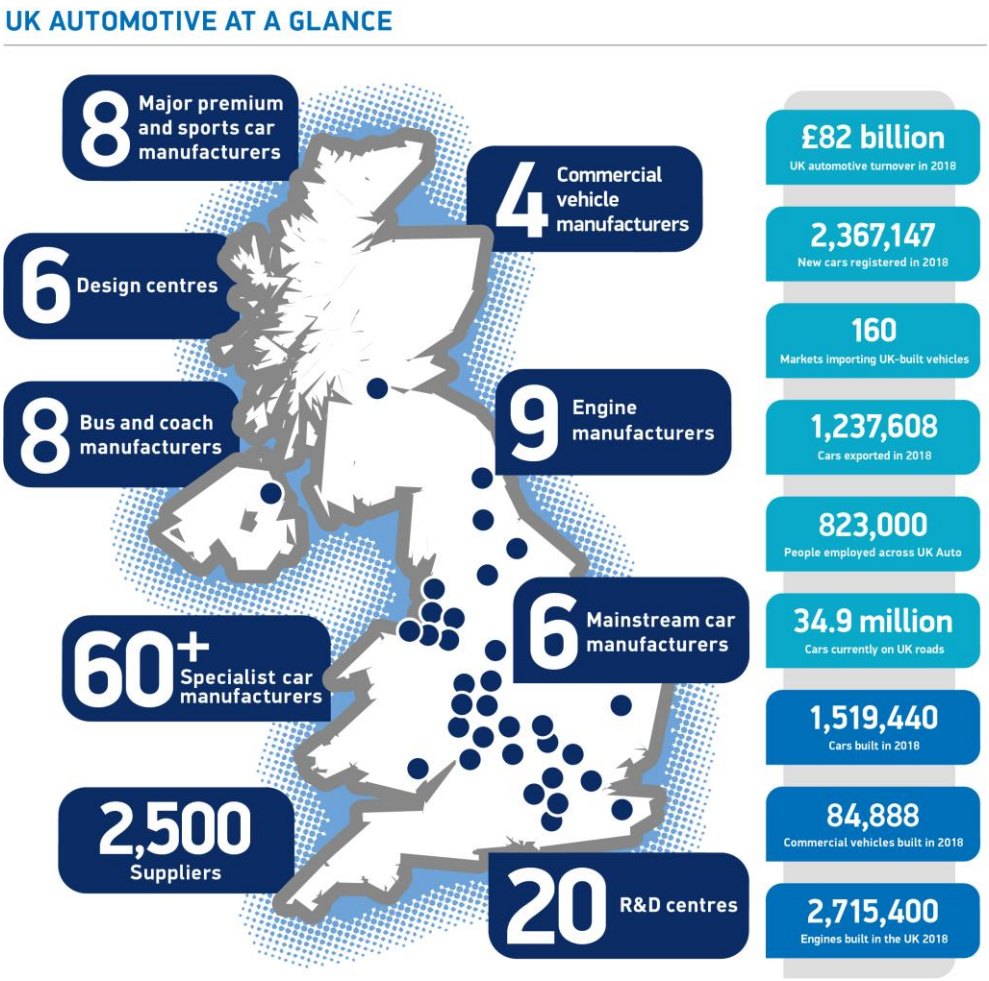

Figure 1: Automobile Industry

(Source: Theguardian.com, 2019)

Electric motors need EV charging stations to charge the battery at least once a day. This thing needs to have proper charging stations (Pettigrew, 2017). Charging station management is management of using charging facilities in electric cars. Making better usage of this strategy, various shopkeepers, and retailers can provide battery and charging stations to customers owning electric motors. For instance, ***Southern Eastern charging services, Tesla supercharger and respective charging stations of Volvo are likely to maximum advantages.***

Electric car spaying is another business opportunity that relates to electric vehicles. These workshops highlight electric vehicles to extend every type of electric vehicles. Here arises need of electric car spaying canters. This can be a good start of business (Thomas, 2015).

Electric workshops provide repairing of electric motors and circuits. This provides one of the major business opportunities in promoting electric cars in the market. People can do electric workshops in their property and thus may start a new business from this. In Many cases, it is seen that garage owners start to provide workshop facilities to electric car owners in order to maximize their profit and business.

These days, air pollution is increasing day by day. ***NO2 is one major pollutant of environment***. Apart from that, standard fuel engines emit incredible rate of carbon emission that harms the environment. Noise and air pollution are two significant threats from the perspective of nature. Here comes the electric engine to raise its need and popularity (Thomas, 2015).

Apart from that, high price of gasoline is a significant problem nowadays. Customers suffer a lot from this, and that is why they want some alternative measures. This helps electric cars to spread their business globally. Although electric cars seek high buying costs, these provide a comparatively low maintenance cost. This provides electric carmakers with a great opportunity of business.

In order to minimize carbon emission, electric car services get more popular day by day. Electric cars achieve better fuel economy and help to maintain overall GDP rate by reducing ***usage of petroleum, hence lower import charges.*** UK government earns almost 3.4 million with a combined wage of £56 billion at a GD rate of 11%. However, in electric cars, customers need to contribute very less. This technology ensures a shallow sound or nearly no sound in vehicles which promotes interests in consumers. This new technology reduces air and noise pollution, and this attracts both government and citizens to use this facility more and more.

Europe is fundamental to recent and future success of automobile industries (theguardian.com, 2019). Survey says automotive industry provides ***4% GDP that indicates £60.5 billion and employment to 700,000 citizens in UK.*** In the year of 2013, UK exported 77% from all over vehicle production. Average value of vehicles imported that year was nearly **£**13,000 where values of vehicles exported were £20,600. This indicates that the UK‘s net balance is ***£70 million*** from automobile industry. According to research, 2350 companies are involved in automobile sectors where majorities are SMEs in the supply chain.

Critical analysis of automobile industry

Automotive industry in the UK is related strongly with other main business industry similar to that of metallurgical industry, aluminium industry, and petroleum industry. In such cases, metallurgical industries, namely aluminium industry is likely to gain advantage from emergence of electric vehicles, contributing to about 10% to 15% of annual returns. Furthermore, metallurgical industry such as nickel, cobalt, copper is expected to gain more popularity because of excessive demand of battery for automobile operations. As per estimates, ***20% to 22% more demand are possible to be attributed, within the next few years of launch, hence profitable.*** Electric Cars provide energy independent and energy-efficient motors (Wagner, Baccarella and Voigt, 2017). Drivers use solar system above their cars, and this enhances the use of solar technologies as well. This is also a significant business opportunity of making solar technologies popular. In order to retain energy security rate, hybrid electric vehicles are getting popularity these days.

Energy infrastructure, trade balance, interest of consumers is fundamental implementation theories to promote this unique idea of automobile industry that provides world extensive business opportunities in introducing electric cars (theguardian.com, 2019). Through this, solar energy sector can be able to gain maximum profits. However, industries including petrochemical, petroleum and others are expected to experience losses on account to less use of these fuels in commercial cars. Although oil industry will not suffer much due to these as there are several industries throughout the world that uses petroleum significantly, so this it will be fair to conclude that electric cars will take a bite out of oil industry (Pettigrew, 2017).

Oil investors will suffer in a considerable proportion, as per research oil industry earns profit nearly 43% from automobile industry. Although electric will take time to cover up the completely automobile industry, however, from 2019 Volvo pledges to introduce electric cars in market in order to minimize environmental pollution (Seebauer, Kulmer, and Fruhmann, 2019). From implementation of electricity in automobile industries will reduce travel cost, which will accelerate tourism industry as well. Travelers will visit tourist spots if easy access of travelling is provided to them. Electrical and electronics industries, along with instrumentation sector, will be beneficial from this new aspect of technology (Seebauer, Kulmer, and Fruhmann, 2019). Environmental exerts supports this innovation and experimentally proved that this would ensure

a better and healthy environment. Hence, electric motors are one of famous and recent inventions of automobile technologies. Electric cars provide better travelling and manufacturing experience to manufacturers as well. Dynamic sectors will gain a tremendous amount of profit from this new technology of electric motors. This improves the relationship between electric and automobile industries. These two technologies proceed parallel to each other and helps to grow economy simultaneously (Wagner, Baccarella and Voigt, 2017). This will provide energy-efficient and energy-independent motors that provide users to experience a low-cost user experience and attracts to invest in vehicles at a cheap rate. Metallurgical industries, namely aluminium industry is likely to gain advantage from emergence of electric vehicles as these cars are expected to be made with aluminium. In short, several industries will beneficiated from the use of electric cars, where on the other hand, industries such as oil, petroleum, and petrochemical will face a significant loss.

References

Journal

Bennett, R., Kottasz, R. and Shaw, S., 2016. Factors potentially affecting the successful promotion of electric vehicles. Journal of Social Marketing, 6(1), pp. 62-82.

Chiang, C.H., (2016). *Securing Healthcare's Quantified-Self Data: A Comparative Analysis Versus Personal Financial Account Aggregators Based on Porter's Five Forces Framework for Competitive Force*. Naval Postgraduate School Monterey United States.

Egbue, O., Long, S. and Samaranayake, V.A., 2017. Mass deployment of sustainable transportation: evaluation of factors that influence electric vehicle adoption. Clean Technologies and Environmental Policy, 19(7), pp. 1927-1939.

Gómez Vilchez, J., J., Julea, A., Peduzzi, E., Pisoni, E., Krause, J., Siskos, P. And Thiel, C., 2019. Modelling the impacts of EU countries' electric car deployment plans on atmospheric emissions and concentrations. European Transport Research Review, 11(1), pp. 1-17.

He, Z., (2015), August. External Environment Analysis of Commercial-use drones. In *2015-1st International Symposium on Social Science*. Atlantis Press.

Heinicke, M. and Wagenhaus, G., 2015. Sustainability in the car-based mobility: the case of the electric vehicle Editha. International Journal of Energy Sector Management, 9(1), pp. 105-119.

Pérez-Arriaga, I.,J., Jenkins, J.D. And Batlle, C., 2017. A regulatory framework for an evolving electricity sector: Highlights of the MIT utility of the future study. Economics of Energy & Environmental Policy, 6(1),

Pettigrew, S., 2017. Why public health should embrace the autonomous car. Australian and New Zealand Journal of Public Health, 41(1), pp. 5-7.

Requia, W.J., Arain, A., Koutrakis, P. and Dalumpines, R., 2018. Assessing particulate matter emissions from future electric mobility and potential risk for human health in Canadian metropolitan area. Air Quality, Atmosphere, & Health, 11(9), pp. 1009-1019.

Seebauer, S., Kulmer, V. and Fruhmann, C., 2019. Promoting adoption while avoiding rebound: integrating disciplinary perspectives on market diffusion and carbon impacts of electric cars and building renovations in Austria. Energy, Sustainability and Society, 9(1), pp. 1-11.

Thomas, M.T., 2015. Role of strategy in value capture from foresight exercises: firms' responsiveness to long term trends in the passenger car industry. Foresight: the Journal of Futures Studies, Strategic Thinking and Policy, 17(6), pp. 574-587.

Wagner, T.F., Baccarella, C.V. and Voigt, K., 2017. Communicating technological innovations. European Journal of Innovation Management, 20(3), pp. 392-405.

Websites

Hse.gov.uk (2019), *Health and Safety at Work Act*, viewed on 25 October 2019, <http://www.hse.gov.uk/legislation/hswa.htm>

Legislation.gov.uk (2019), *Consumer Rights Act*, viewed on 25 October 2019, <http://www.legislation.gov.uk/ukpga/2015/15/contents/enacted>

Legislation.gov.uk (2019*), Data Protection Act*, viewed on 25 October 2019, <http://www.legislation.gov.uk/ukpga/2018/12/contents/enacted>

Legislation.gov.uk (2019*), Environmental Protection Act*, viewed on 25 October 2019, <http://www.legislation.gov.uk/ukpga/1990/43/contents>

Legislation.gov.uk (2019), *Radioactive Substances Act*, viewed on 25 October 2019, <http://www.legislation.gov.uk/ukpga/1993/12/contents>

Techcrunch.com (2019), *volvo-to-roll-out-a-new-electric-vehicle-every-year-through*, viewed on 25 October 2019, <https://techcrunch.com/2019/10/16/volvo-to-roll-out-a-new-electric-vehicle-every-year-through-2025/>

Telegraph.co.uk (2019), electric-vehicles-drive-to-brighter-future, viewed on 25 October 2019, <https://www.telegraph.co.uk/business/sme-library/fleet-management/electric-vehicles-drive-to-brighter-future/>

Theguardian.com (2019), volvo-cars-electric-hybrid, viewed on 25 October 2019, <https://www.theguardian.com/business/2017/jul/05/volvo-cars-electric-hybrid-2019>

Theguardian.com, (2019), *Pollution map reveals unsafe air quality at almost 2,000 UK sites* viewed on 25th November 2019, <https://www.theguardian.com/environment/2019/feb/27/pollution-map-reveals-unsafe-air-quality-at-almost-2000-uk-sites>