Porter diamond theory case study: german car industry

The luxury cars industry is one of the most prestigious mass-production industries in Germany. The country is recognised by many as the native land of the automobile; in fact in 1901 900 vehicles a year were already produced. Throughout the century the sector turned out to be the pillar of the national economy. Germany's famous premier brands such as Porsche, Audi, Volkswagen, Mercedes-Benz and BMW are enviable all around the world (ACEA, European Automobile Manufacturers Association 2008). We are now going to tackle the question of why Germany is the home base for so many successful international competitors in the automotive cars industry.

Porter's Diamond Model will be used in analysing the key factors that led these firms to be both nationally and globally competitive, and the nation to become one of the three leading automobile-producer together with the USA and Japan. Michael Porter focused for four years in ten important trading nations and then discovered four interlinked advanced factors for competitive advantage for countries or region which are: factor conditions, demand conditions, related and supporting industries, firm strategy, structure and rivalry To these four key elements the author added the role of government and the role of chance (Porter, M. 990). German car manufacturers and suppliers are world leaders in innovation with more than 3, 500 registered patents every year. With 47 OEM[1] components and assembly plants, 32 industry-related innovative clusters and Europe’s most experienced workforce, Germany is the primary location for technology-driven companies active in all stages of the value chain. Applying the factors of the Porter’s model, the competitive advantage of the German car industry has shown the following results:

The first determinants of global advantage we are going to look at are factors of production which can be grouped in several categories, arguing that a more advanced factor conditions in the home market will positively impact a firm's global competitiveness. In the case of human and knowledge resources, Germany highly-qualified, available and motivated labour force has been determinant in the success for the car industry, helped by the educational system which provides on-the-job training.

Moreover around the area of Berlin-Brandenburg we can find 7 universities and 21 other higher-education institutions with almost 200, 000 students that make the capital region one of the densest research network in Europe and help to ensure a steady flow of engineering to assure continuity in the business. German companies bet on research and development projects annually spending a considerable amount of money on it. As a result of the highest research facilities, the country turns out to be a leader in innovation.

As a matter of fact BMW opened a forum on its website to invite users to submit new ideas about design or additional features (BMWgroup Virtual Innovation Agency 2009). In addiction we can find above-average productivity of labour and working flexible hours. Transportation is another key factor for the German automotive industry. Germany is the geographic and economic centre of Europe: any part of the continent can be reached in one day by truck or three hours by plane. The transportation system is well structured and railways are connected with a network of ports and delivery points all over Europe.

Besides having excellent transport the country is in the forefront in telecommunications infrastructure. Germany not for nothing took first place

for infrastructure in the World Economic Forum‘ s (WEF) Global Competitiveness Report 2008. Spatial concentrations of the automobile firms and their suppliers can be found in Lower Saxony (Wolfsburg, Hannover and Emden), North Rhine-Westphalia (Cologne, Bochum), Baden-Wurttemberg (Stuttgart, Sindelfingen), Hesse (Baunatal, Russelsheim) and Bavaria (Ingolstadt, Regensburg). The automotive industry in Germany – Driving performance through technology Industry overview 2008) The second element of the model is known as demand condition which arises from buyer needs. The demand for cars is subject to strong fluctuations. During the year, sales tend to increase in spring and droop in winter. Most importantly, the market follows the general business cycle. With growing car ownership in industrialized countries the proportion of replacement purchases in the car market is increasing, cyclical fluctuations are likely to become more accentuated in the future.

The existence of economies of scale is another strength point in favour of the home market. Sophisticated costumers push car companies to innovate and create new features to satisfy the buyers need. For instance in 2007 BMW presented a retrofitted IPod connection which put them at the leading edge compared to other manufacturers. Consumers in Germany and Europe and in the USA and Japan as well have become more demanding about fuel efficient cars.

Germany automobile producers were not the first to introduce hybrid cars but Mercedes, Daimler AG, Chrisler and BMW recently joined General Motors GM in The Global Hybrid Cooperation in order to build next-generation, hybrid powertrain technology (AMR research) which was an important step in

addressing the steadily increasing demand. Strong and dynamic related supported industry have a strong impact on competitiveness. Moreover suppliers play an important role in the car industry. Today, components are more complex and advanced in order to cope with the diversified demand and the need for heterogeneity in car industry.

Some suppliers are large and produce various goods for other industries as well. Most suppliers are, however, small and medium-sized firms. There are two types of suppliers. The first type of firms works in close cooperation with the final producers. This makes both sides dependent on each other. The second type of suppliers produces large volumes of standardized low-value parts. These firms are not competitive in international terms and rely on car producers'decisions and strategies. Regarding the relationship between car producers and suppliers we can notice two different kind of relationship.

Some buy from several suppliers, often worldwide, but do not stay with any one firm on a permanent basis. Others buy specialized, compound components from one or two suppliers, with whom collaboration must be good and close in spatial terms. Germany is in an advantageous position in terms of related and supporting industries. It is the home land of Thyssenkrupp, one of the biggest steel producers in the world and steel turns out to be very important in the car manufacturing process. Tires are another decisive part of the industry and Goodyear Dunlop, one of the major firms in the sector, is located in Berlin.

Local conditions affect firms' strategy. As Porter reports, in Germany the engineering and technical background of many senior executives produces a strong inclination toward methodical product and process improvement,

avoiding focus strategies. This kind of feature mostly affects sectors with a high technical or engineering content such as the automotive one. Banks play a key role in the sector we are analyzing. Indeed in the German cooperative economy there is a close relationship among banks and car industry which gives strength to the structure.

In order to be more secure about the future, long term loans are guaranteed. Germany has got a comprehensive centralised and encompassing group structure; companies are hierarchical in organization and management practices. This is typical for countries that have suffered an institutional breakdown in its past. As a matter of fact the state has for centuries been deeply involved in many aspects of social life and its early and continuing involvement in industrial relations conformed to a general pattern.

It is very hard to join the German automotive industry since there are high fixed cost to entry and discouraging start up cost. Furthermore a robust supply chain is required and it is very difficult to break in to the enduring already existing chain of suppliers, manufacturers and customers. Competition is very cruel mainly in this particular time of economic crisis. The most vital strategy to survive in this market is innovation (Streeck, W. 1984). The industry is supported by an active innovation policy and significant public investments.

The German Federal Government provided 15 billion euros for R&D projects in innovative technologies. Applicable research fields in the automotive industry include: alternative fuels, fuel cell technology, alternative powertrain and energy storage systems, active safety, vehicle-to-X communication and traffic management systems (The automotive industry in

Germany – Driving performance through technology Industry overview 2008). In history chance events also played a major role and this is the case for Germany.

Giving an example the origins of Volkswagen go back to the period of the fourth Reich. In fact the organization which owned Volkswagen was called kraft durch freude (strength through joy) and was part of the Nazi apparatus. Its principle purpose was to guarantee government-controlled mass tourism on a large scale and to arrange other recreational activities such as summer camps or sport events. The second important function of Volkswagen was to ensure motor transportation for the German army, and this was the aim that led the company from 1939 till the end of the war.

From the beginning highly advanced methods were used, as much of furniture and technical know-how were imported from Ford in Detroit. The VW plant was established in 1938 in a rural community in Lower Saxony, together with the construction of a whole town (Wolfsburg). Mercedes-Benz, Opel (since 1927 part of General Motors) and BMW were the principal firms. At the end of the Second World War, the car industry was badly damaged. New assembly and components plants (for example Opel in in Bochum) were built by surviving companies and new firms like Audi were set.

The establishment of new plants took place around major agglomerations or in adjacent rural areas with close ties to resource industries and suppliers. With the growth of the car firms, numerous suppliers opened up or shifted plants into their vicinity. Along with that, employment steadily increased. The postwar expansion of Volkswagen began in 1948, closely after production restarted. During the 1950s and especially the 1960s, the

company set up new plants in Germany and abroad (Streeck, W. 1984; p. 40).

The final variable is the role of government, the degree of access and the support provided by the state. Germany's government grants unlimited access to foreign firms and discriminatory intervention in favour of domestic producers. Furthermore the government offers investment incentives up to 50 percent of capital expenditure and additionally axtensive support granted for employment and R&D purposes (The automotive industry in Germany – Driving performance through technology Industry overview 2008). Political support to invest in Germany is assured.

The cash incentives package consists of loan programs offering reduced interest rates and public guarantees at state and national level (investment grants are offered in several incentive regions). The government offers several incentives programs targeted at reducing the operating costs of R&D projects. Moreover the Federal Employment Agency and all German states offer a range of different labor-related incentives programs. To see how the German government takes part in the economy we can easily look at the recents facts concerning Opel.

GM was about to close down its European Opel branch because of bankrupcy. The disappointment was high because of the 25, 000 Opel workers in Germany plus all the suppliers that work for it and the German state banks provided GM with some €1. 5bn ($2. 2bn) in bridging loans. GM cancelled the deal after Fiat, the Italian carmaker; Magna, the Canadian auto parts and contract carmaker; and RHJ International, the Brussels-listed

investment firm entered bids for GM Europe because it wanted the maney the government would pay to save Opel (Financial Times, 2009).

All these factors contributed to extend the nation’s reputation for quality manufacturing with brands internationally recognized for high standards. Despite this, German industry car is suffering because of the credit crunch. The German Finance Ministry, Peer Steinbrueck, said that the domestic economy is increasingly suffering from a decline in foreign demand and the global financial crisis shows no sign of ending soon (German government to further assist car industry 2009) and this is an issue since it is estimated that every seventh job in the country depends directly or indirectly on the automotive sector.

The crisis has accelerated the merger between Volkswagen (VW) and Porsche, while the future of Opel, one of industry's major players, remains undecided despite the emergence of its parent General Motors Company (GM) from bankruptcy. The current crisis will probably accelerate structural changes taking place in the car industry across Western Europe. In the coming years, German car makers are likely to move more production out of the country and closer to their customers in Russia, the U. S. and Asia. Assuming, that is, that they still have a growing customer base in those places.