

VOLKSWAGEN GROUP SUPPLY CHAIN ANALYSIS IN EUROPE

Cosmin Gaultier, University of Berlin

Kristian Marcello, University of Berlin

ABSTRACT

Volkswagen (VW) is a major and respected brand in the manufacture and sale of auto motives. The brand works to produce vehicles for all its customers while being sustainable in its productions processes. VW's biggest challenge is finding a way to serve the rapidly growing customer base and develop strategies to become more mobile in an environmentally acceptable way. However, this provides the company with an opportunity to be the first to be more innovative and act in an ecologically responsible manner for future generations and provide auto motives of high quality that are accessible to many people through offering an attractive price policy. Customers within this industry require reliability, intrinsic value, and the technological leadership provided by German engineering. Volkswagen does not focus on Luxury cars or affordable cars; it is about producing cars that meet the growing requirements of both the established and new market. VW has the ambition, technology, and ability to meet all standards and remain competitive. VW faces major competition from other global brands, including Ford, Toyota, Hyundai, General Motors, and Suzuki. The company, therefore, works to ensure all its vehicles meet the highest standards. The company also offers a wide portfolio that serves its range of customers from premium buyers to middle-class consumers. Through its purchasing, manufacturing, and distribution, as well as its focus on innovation, the company meets all its customers' demands. VW values its customers and works relentlessly to ensure all its customers are satisfied. It works to produce quality vehicles and markets their products to appeal to their target market. Customer satisfaction is a high priority as this builds loyalty with the brand leading to higher sales and revenue as customers recommend their vehicles and other services. This paper presents an in-depth supply chain analysis for Volkswagen Group in Europe.

Keywords: *Supply chain, Volkswagen Group*

Introduction

Volkswagen (VW) has developed a product portfolio unlike any other automotive company around the globe. The company has used technology to make innovations to create efficient engine technologies like 3-liter cars, a dynamic diesel concept, a direct shift gearbox, and Turbocharged Direct Injection (TDI) Engine. From its beginning, Volkswagen has demonstrated a future-focussed approach to production and marketing, which has allowed the company to become the market leader in the European automotive industry, which has been saturated for decades. The strategies that Volkswagen employees also have great prospects in the new dynamic market. Volkswagen's approach has led to opportunities to enter emerging markets such as Russia, India, and China. The company is highly dynamic, very optimistic, and has great potential for growth (Sharma & Sharma, 2020). The company works to outdo its rivals by striving to produce quality products for all its customers and creating strategies to effectively deliver its objectives.

Competition

Although VW has a strong market position, it faces considerable competition from several automotive industries, including Ford, Toyota, Hyundai, General Motors, and Suzuki.

Ford Motors

Ford is one of the most well-known automotive brands around the globe. Ford Motors is a worldwide brand that designs, produces, markets, and services a wide range of auto motives from cars to SUVs, Lincoln Luxury vehicles, trucks, and electric vehicles. The brand also finances through the Ford Motor Credit Company LLC (Bai, 2021). The organization consistently works to improve its leadership position in the automotive industry.

Toyota Motors

Toyota is a large vehicle brand that provides major competition for Volkswagen, Ford, and Hyundai. The brand is famous for manufacturing SUVs, cars, and electric vehicles. It is currently focusing on consistent growth and being ecologically sustainable by manufacturing electric vehicles that have a decreased environmental impact. The company invested in electric vehicle

production and better versions of the Prius. Toyota also manufactures luxury models such as Camry (Bai, 2021).

Hyundai Motors

Hyundai is another global car brand that is very popular in Asian markets. Not only does Hyundai manufacture SUVs and passenger cars, but it also produces luxury cars and is the owner of the Kia brand. The company also attributes its popularity to brand image and technology. It has bought a variety of popular cars with the small automotive market in Asia (Lee et al., 2021).

General Motors

General Motors is an automotive segment business that is split into two segments; GM international and GM North America. The GM North America segment is comprised of Chevrolet, Buick, Cadillac, and GMC brands that serve North American customers. The GM International segments operate through GMC, Cadillac, Buick, Chevrolet, and Holden Brands. GM also has equity ownership of several brands in China, including Jiefang, Baojun, Cadillac, Buick, Chevrolet, and Wuling brands.

Maruti Suzuki

Suzuki is a well-known automobile and motorcycle brand. The brand also manufactures marine vehicles. Suzuki's main market is in Japan, but its biggest market is in India. The brand takes up most of the growing passenger and small car markets in China and India.

Customers

Volkswagen targets a variety of groups of consumers, including the middle class, upper-middle-class, and upper class. Each brand under VW attracts different types of consumers. The premium brands in the company are attractive to upper-class customers, while smaller vehicles appeal to middle-class individuals. For example, Audi, one of the brands under the VW group, appeal to higher-class urban consumers. VW's passenger cars target middle-class consumers that want safe, sturdy cars that are reasonably priced. Premium brands such as Porsche, Skoda, Bentley, Audi, and Bugatti all target upper class or middle-class markets that are searching for classy and stylish rides (Sharma & Sharma, 2020). The brand provides vehicles for both premium and price-sensitive

consumers. The company's comprehensive product mix allows it to serve a variety of customers, and its focus on quality builds customer loyalty and differentiates it from its competitors.

Competitive Strategy

Volkswagen has a strong market presence in every automobile market, including China and the United States of America. The company maintains its strong worldwide presence by establishing a large sales and distribution network. It also forms partnerships with other automotive brands to increase its market and strengthen its leadership position in vital markets. The company also has the largest product portfolio in the automotive industry. It has many popular premium motorcycle and motorcycle brands such as Skoda and Audi (Gorshkov, 2020). The company also focuses on innovation in order to meet the demands of its customer base. The company uses cost effective methods of production to decrease consumer costs and provide affordable vehicles.

Competitive Priorities

Although the automobile company can be highly challenging, VW has many competitive advantages that allow it to grow its market share and increase sales and revenue, including research and innovation, and quality.

Innovation

Research and innovation are essential in the competitive strategies of all automobile brands. Competition has been growing rapidly in the automotive industry, and many companies now use technological innovation to differentiate themselves and in order to expand their markets. Every major automobile company, including Volkswagen, makes major investments in research and development to grow their market share through the production of more technologically advanced, ecologically reliable, and more attractive products. The Volkswagen group has not been left behind in technological innovation, increasing its investments in research and innovation every year. The organization invested approximately €13.64 billion in technological research and development in 2018, an increase from €13.14 billion the previous year. VW's research and major innovation focus is on passenger safety, sustainability, autonomous driving, and virtual technology (Bogdanor et al., 2017).

Quality

Volkswagen maintains its strong brand image because it ensures all its products are of high quality to assure customer satisfaction. The company, therefore, ensures all its designs and products meet the demands of its customer base. The company has streamlined its manufacturing and strategies to ensure its customers are provided with the best quality products.

Sustainability

Consumers are continuously becoming more environmentally conscious. In order to fulfil consumer needs, VW focuses on innovations that decrease consumer's carbon footprint such as electric cars and hybrids. VW invests billions of US dollars every year to ensure it remains competitive in the automotive industry.

Purchasing Strategy

Volkswagen is very concerned with resource conservation and quality assurance. All raw materials that end up as components in a Volkswagen pass through approximately 15,000 stations as it goes through production, treatment, finishing, and transportation. The company has thousands of suppliers that all take great measures to make the complex purchasing process environmentally compatible. VW uses suppliers that provide them with reliable and durable products that conform to the specifications of the brand. One of Volkswagen's major objectives is the conservation of resources. The company, therefore, focuses on attaining and using sustainable resources. The company uses renewable raw materials whenever possible in order to decrease CO₂ emissions throughout the lifecycle of its vehicles. It also uses environmentally friendly materials such as cotton, hemp, flax, cellulose, and kenaf. Kenaf is a tropical plant whose fine fibers are used for the production of the door trim of the Golf (Gorshkov, 2020). Renewable raw materials are used in the manufacture of trunk linings, armrests, hood insulation, floor insulation, and panel trim.

VW also uses recyclates or secondary raw materials, which are materials made from waste material or residues from the production process. The company acquires recycled plastics to use in floor coverings, covers of spare wheel compartments, and wheel arch inserts (Bogdanor et al., 2017).

Aluminum is essential in the automotive industry for the production of a lightweight design; however its production is more energy-intensive than steel. Audi is trying to find a way of

addressing this problem by developing an innovative recycling project known as the Aluminum Closed Loop pilot. The project is meant to find a more efficient way to recycle aluminum by creating a closed-loop system between VW and its suppliers (Schiele, 2019). VW used to ship its aluminum cuttings to external contractors for melting and then shipped back to VW as sold metal and melted again at the VW plant. However, now, all the engines, body parts, and gearboxes are manufactured in the Volkswagen plant located in Kassel. Large amounts of aluminum are also produced at this plant as the plant's processes include the machining of metals, including milling, grinding, and drilling (Weckenborg et al., 2020).

The company's suppliers including Nematik S.S., Harting Automobile GmbH, Friedrich Boysen GmbH and SIEM Car Carriers AS all play a key role in the company's successful roll outs as they deliver orders in a speedy and timely manner consistently. These suppliers share the cost information of production and supply of automobile and automobile components as well as other associated costs.

Manufacturing Strategy

Reusing Old Materials

Volkswagen reuses remanufactured materials to produce high-quality vehicles, save its customers money and help the environment. VW recycles a wide array of components to remanufacture, including transmission parts, engines, and electronic systems. The recycled parts produced are called Volkswagen Genuine Remanufactured parts are then tested and reused in other cars (Bogdanor et al., 2017). These parts provide good as new quality at a lower price than the new products.

Developing and Implementing Order

It is important for the manufacturing process to have a material flow analysis. VW uses its material flow analysis to learn about its production processes around the world. International companies can have some overlooked parts that can result in increased costs and wasted resources. VW recognizes this and regularly performs inspections (Veile et al., 2020).

Production Process Analysis

The Volkswagen production process is analyzed by environmental experts to determine the efficiency of the production process and the materials and energy used. All material flow information is recorded and analyzed to identify any issues (Schiele, 2019). The information is then used to determine the improvements and resolve the identified issues.

Phasing Out Coal

The power used in Volkswagen's facilities has come from a power station that uses hard coal. VW is working to change this by working to replace its boilers that use hard coal with power plants that use steam turbines and gas. The company expects to have fully converted to natural gas by 2022 (Weckenborg et al., 2020).

Distribution Strategy

Volkswagen operates in 153 countries, meaning that its distribution strategy must consider the demographic, geographic, and psychographic segmentation needed to cater to customers' needs in different markets. The company uses differentiated targeting strategy to offer consumers from specified segments its products. VW has positioned itself to ensure its brand image is always in consumers' minds. The organization has an extensive network of dealerships that it is consistently expanding its brand availability in existing and developing markets (Schiele, 2019). VW works closely with its network of dealerships and optimizes its operational efficiency to increase productivity and revenue, which is beneficial for the dealers and company.

Nature of Buyer-Supplier Relationships

Organizations choose to form buyer-supplier relationships that work best for them. Some use a cooperative strategy, while others opt to choose, giving their suppliers freedom. The major issue that companies must focus on is finding the correct combination of services, price, and innovation. Volkswagen works with a wide array of suppliers and supply chains that are highly complex. The ever-growing need to make vehicles as affordable to as many customers as possible has caused VW to squeeze its margins (Veile et al., 2020). The company, therefore, turns to supplier

relationship management in order to derive a systemic approach to controlling the materials they need.

Volkswagen forms strategic partnerships with its suppliers in order to form collaborations with companies that are experts in crucial activities in VW such as distribution, research, and development, manufacturing, marketing, and sales. Strategic partnerships take time to form but are extremely beneficial to all parties once established. VW and its suppliers gain numerous advantages from partnering with other companies, including decreased costs of possession, acquisition, and distribution of goods and services. VW makes partnerships with various important suppliers who take some responsibility for ensuring the brand successfully offers quality products to its customers.

Strategic partnerships are the most popular forms of hybrid organizations as it increases collaboration between organizations and increases operational efficiency in the supply chain (Jain & Sachdeva, 2019). The partnerships provided VW and its partners with many opportunities to improve how they conduct their business through the diffusion of products without having to deal with costs of having a physical presence in the market, decreased costs of coordination and transactions, and sharing risks and rewards.

The Volkswagen Group uses global outsourcing to a high degree as well as a systemic internal component division. The VW group manages its buyer-supply relationships effectively to ensure all parties benefit from their businesses. Its established relationships end with a profitable bottom line. VW benefits from decreased costs as a result of its established buyer-supplier relationship. It can be significantly costly to deal with new suppliers; therefore, these relationships are important for eliminating additional costs. By building mutually beneficial relationships with vital suppliers, VW saves costs in the long term. Good working relationships also help in the reduction of delays, availability issues, and quality issues meaning that consumers receive the best service (Jääskeläinen, 2021). VW has established effective communication to ensure suppliers understand their business needs and can serve them adequately. Moreover, when issues in the process of placing orders come up, the healthy buyer-supplier relationship allows these issues to be resolved more easily.

Different areas of the buyer's and supplier's business work together, which ensures that all involved parties properly understand the others' internal processes. In VW's case, their suppliers

adapt some of the company's working operations to accommodate VW's needs and increase operational efficiencies and advantages (Veile et al., 2020). The company's supply chain consolidation allows buyers to decrease the suppliers they work with in order to create a streamlined purchasing process and make budgeting easier.

VW's successful buyer-supplier relationship has created a trusting partnership between VW and its suppliers. This results in many critical activities being transferred to VW suppliers permanently. This requires the company to build trust with its suppliers in terms of inventory management and other manufacturing processes. VW's strategic partnerships allowed the brand to resume production rapidly after one of its partners closed down production due to the COVID-19 pandemic. Jiangsu Pacific Precision Forging took over production and maintained VW's supply chain, and ensured the brand resumed production rapidly. The company's major suppliers are all an essential part of VW's global production as they are innovative brands that deliver products at high speed.

Volkswagen has a wide portfolio that it is continuously adding to in order to compete with its rivals. The company values innovation and partners with suppliers who have the same values. It partners with suppliers that value research and innovation to ensure it produces sustainable vehicles. The company works to decrease its carbon emission and works with suppliers that help achieve this goal. Harting and Nemak played an essential role in VW's e-mobility vehicles by producing charging cables and battery containers.

Conclusion

Volkswagen is a major automotive brand because it is concerned with building its brand image by producing vehicles that its customers want and need. The company serves different types of consumers, from high-class to working-class customers who require different types of vehicles to suit their different needs. The company takes its customers into account, starting from the design of their vehicles to their manufacture and sale. VW works to be a sustainable brand by reducing material and energy costs wherever possible to provide their environmentally conscious customers zero-emission electric cars. Moreover, the company forms important buyer-supplier relationships to ensure the customers are provided quality and cost-effective vehicles.

References

- Bai, Y. (2021). Analysis of Overseas Management Strategy of the Volkswagen Group. In 6th International Conference on Financial Innovation and Economic Development (ICFIED 2021) (pp. 229-234). *Atlantis Press*.
- Bogdanor, M. J., Lainka, H., Laduch, T., Sharp, N., Pipes, R. B., & Rademacher, M. (2017). Reduction of CO₂ Emissions through Lightweight Body Panels—Design and Optimization of a SMC Liftgate for the Volkswagen Atlas. In *Proceedings of the American Society for Composites—Thirty-second Technical Conference*.
- Gorshkov, G. G. (2020). Volkswagen: “Think Small”. C25 Связи с общественностью как средство повышения узнаваемости марки= *Public Relations as a Brand Awareness*, 51.
- Jääskeläinen, A. (2021). The relational outcomes of performance management in buyer-supplier relationships. *International Journal of Production Economics*, 232, 107933.
- Jain, R. K., & Sachdeva, G. (2019). India-EU strategic partnership: a new roadmap. *Asia Europe Journal*, 17(3), 309-325.
- Lee, J., Kim, J., Kim, J., & Choi, S. (2021). Why Localization Is Necessary as a Business Strategy in Emerging Markets: The Case Comparison of Hyundai and Volkswagen. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(3), 190.
- Schiele, H. (2019). Purchasing and supply management. In *Operations, logistics and supply chain management* (pp. 45-73). *Springer, Cham*.
- Sharma, M. K., & Sharma, S. (2020). Strategic Orientation Towards Internal Customers: The Success Mantra of Volkswagen. *IUP Journal of Business Strategy*, 17(4).
- Veile, J. W., Schmidt, M. C., Müller, J. M., & Voigt, K. I. (2020). Relationship follows technology! How Industry 4.0 reshapes future buyer-supplier relationships. *Journal of Manufacturing Technology Management*.
- Weckenborg, C., Kieckhäfer, K., Spengler, T. S., & Bernstein, P. (2020). The Volkswagen Pre-Production Center Applies Operations Research to Optimize Capacity Scheduling. *INFORMS Journal on Applied Analytics*, 50(2), 119-136.