

Sustainability Strategies in the Automotive Industry

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The automotive industry is a complex system of connections, direct and indirect products, and interactions for the purpose of creating economic value. As this industry has a significant impact on the environment, the economy, and people, it also plays a significant role in sustainable development. Regulatory agencies evaluate car and parts companies to ensure that these companies meet environmental standards and reduce the environmental impact of production processes and products themselves.

sustainable development strategies

sustainable development goals

automotive industry

brand sustainability

1. Theoretical Aspect of Sustainability and Sustainable Development Goals (SDG)

Rarely has a term developed world-class status so quickly or with such profound implications as the term “sustainability”. In a relatively short period of time, sustainability has become a metaphor for describing current globalist problems. On the other hand, it is quite a ponderous and general term, present in a wide range of topics and has become extremely popular, especially in relation to economic activities. In the field of ecologically oriented economy, it has significantly revived research and become the starting point for a new approach for research. There is even talk of a paradigm shift, where sustainability is seen as a driver of innovation, and the growing debate on global environmental issues has highlighted and further strengthened this trend.

The notion of sustainability has gained today's popularity through environmental policies, particularly through the work of the United Nations (UN) and its Environmental Conferences ^[1]. The last UN conference was held in 2015, and it adopted a document entitled ‘Transforming our world: the 2030 Agenda for Sustainable Development’, or shortly, the UN Agenda 2030, which defined and adopted the UN program for sustainable development by 2030. The main backbone of the UN Sustainable Development Program is constituted by 17 major Sustainable Development Goals, known as Sustainable Development Goals (SDGs), which seek to address today's global problems in the economic, social, environmental, and political security areas as shown in **Table 1** ^[2].

Table 1. Sustainable Development Goals.

Goal 1. End poverty in all its forms everywhere

Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Goal 3. Ensure healthy lives and promote well-being for all at all ages
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Goal 5. Achieve gender equality and empower all women and girls
Goal 6. Ensure availability and sustainable management of water and sanitation for all
Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all
Goal 8. Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation
Goal 10. Reduce inequality within and among countries
Goal 11. Make cities and human settlements inclusive, safe, resilient, and sustainable
Goal 12. Ensure sustainable consumption and production patterns
Goal 13. Take urgent action to combat climate change and its impacts *
Goal 14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development
Goal 15. Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

* Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.

It should also be emphasized that the concept of sustainability and the contiguous concept of sustainable development intertwine three different disciplines, for example, dimensions, specifically: economics, sociology, and ecology. The economy views sustainability as a limiting factor in achieving economic goals such as a focus on profitability, growth, and efficiency. Sociology views sustainability in terms of achieving the goals of equitable resource allocation and poverty reduction, while ecology is focused on achieving sustainability through natural resource management. Since the goals and requirements of these disciplines are different, sustainability and sustainable growth can only be achieved if their close cooperation is achieved in which the diversity of each discipline is appreciated ^[3].

As organizations' sustainability strategies mature, they begin to change the business model describing the organization's work fundamental logic. The business model helps define competitive strategy, affects the product design, and thus environmental and social impacts in the value chain on the value the product brings, including environmental or social value, and how the company perceives some of these values. At its core, the business model will present value proposals, value creation, and a value perception aspect ^[4].

One of the most important reasons why companies choose to implement sustainable strategies is because the demand in almost every industry for environmentally friendly products is increasing. The reason for this increase in demand is, among other things, that consumers want to feel better about everything they buy ^[5]. Brand managers face a major challenge in brand management because they need to ensure a sustainable and eco-minded image, which is quite difficult in industries that do not have such a good reputation for their environmental efforts ^[6].

Sustainable business strategies are based on evaluating the needs of all key stakeholders of a particular company, where the company is oriented towards achieving sustainable goals, namely the principles of sustainable development and environmental protection. By implementing sustainable strategies, the company undertakes to make plans and decisions in its business that will contribute to the well-being of society and the environment as a whole, respectively, not only economic but also social and environmental effects of the company are considered ^[7].

The Croatian Business Council for Sustainable Development in cooperation with the WBCSD (World Business Council for Sustainable Development) has issued recommendations to managers to help implement the circular economy in business in the form of five business models and three advanced technologies. Business models are:

- circular procurement,
- resource recovery,
- product life expansion,
- sharing platform,
- product as a service.

Three advanced technologies that facilitate the application of the circular economy are:

- digital technologies,
- physical technologies,
- biological technologies.

Sustainability also has a significant effect on brand value. Consumers are more likely to choose brands that protect the environment and contribute to social responsibility [8]. Companies started to implement sustainable reporting because they started to be aware of its importance for customers [9]. The implementation of sustainability strategies affects customer satisfaction and company profitability. In this way, they achieve their long-term goals, while promoting sustainability and increasing the value of their brand [10].

| 2. State and Trends in the Automotive Industry

At the beginning of the 21st century, the automotive industry certainly looked like a mature industry with a very stable structure and quite predictable, in the theories and economic practices present at the time whereby evolutionary innovation, consolidation, large corporations and so on were key arguments. For over a decade now, the industry has been experiencing significant turbulence due primarily to changes in markets, regulatory requirements, and technologies." [11] (p. 605).

Globalization is significantly affecting the automotive industry since it is becoming more and more extensive, evolving at different stages of car production. The legal regulations at the national and global level related to energy consumption, greenhouse gas emissions, and safety are placing increasing demands on car manufacturers. These demands are driven by a complex socio-political agenda that combines a growing desire for less oil dependence with growing concerns about climate change, air pollution, and other negative externalities of the automotive industry such as congestion in big cities. Technological advances in the field of electronics, communications and Internet technologies are constantly being introduced in the creation of new vehicles. A whole range of evolutionary and radical technological advances is on the horizon about various forms of drive for car engines, from fully electric vehicles through hydrogen fuel cells to biofuels [11].

Four key trends in the automotive industry that have remained stable since 2017 and have established themselves as key trends are: battery-powered cars, connectivity and digitization, hydrogen fuel cell cars, and hybrid vehicles. What also characterizes the automotive industry is the growth of market share in emerging markets, understanding the mobility ecosystem, mobility as a service, autonomous and self-driving vehicles, Big Data concept, platform strategies and module standardization, reducing internal combustion engines, and streamlining or digitalization of the production respectively [12].

The car of the future will be an electrically powered, autonomous, shared, connected, and annually updated vehicle. Electricity used to charge vehicles should come from renewable sources to ensure neutral mobility in terms of carbon dioxide emissions. The rapid progress that has been made in areas such as artificial intelligence, machine learning, and deep neural networks allows the development of autonomous vehicles, which was previously unthinkable. To extend the life cycle of each car model, which typically lasts five to eight years, car updates will be carried out annually to incorporate the latest innovations from car manufacturers in the field of hardware and software. That way, users will have a more advanced vehicle without having to buy a new generation of a particular type of car [13].

New entrants from the high-tech and similar industrial sectors are likely to become important players in the automotive industry. Current trends such as efficient, environmentally friendly, smart, and connected vehicles affecting the automotive industry will also have a major impact on the skills of the workforce employed in the industry at all levels. The way training is conducted in the industry will change and older functions and activities will disappear. New competencies and capabilities will need to be developed to follow evolutionary trends to ensure the technological survival of automotive market players [\[14\]](#).

The automotive industry is a complex system of connections, direct and indirect products, and interactions for the purpose of creating economic value. As this industry has a significant impact on the environment, the economy, and people, it also plays a significant role in sustainable development. Regulatory agencies evaluate car and parts companies to ensure that these companies meet environmental standards and reduce the environmental impact of production processes and products themselves. This pressure has led to the adoption of innovative business strategies and cutting-edge information and communication technologies to achieve environmental and economic goals. Implementing sustainable development helps companies reduce their impact on the environment, economy, and society [\[15\]](#).

Implementing the Sustainable Development Goals (SDGs) and increasing environmental problems is causing changes in consumer and stakeholder behavior. Stakeholders are trying to invest in green companies and projects, consumers prefer to buy organic products instead of traditional ones, and consumers and investors refuse to deal with environmentally unfair companies. Companies need to quickly adjust their strategy to suit the new trend of transformation from over-consumption to green consumption [\[16\]](#).

The car as a product is specific because it is not just about emissions from the exhaust pipes of the car while driving, but the process of pollution is much broader and more comprehensive. A car uses energy and generates emissions even before it becomes a vehicle. Therefore, in order to determine the total harmful impact of a car on the environment, it is necessary to look at its entire life cycle. This is called a Life Cycle Assessment (LCA). It all starts with creating the materials that make up a car. Raw ore is taken from the earth and used to make materials that require energy and generate emissions. Then the vehicle is produced, which leads to even more emissions. Only after an individual buys a vehicle and starts driving it the emissions from the exhaust pipe occur, which is also called the phase of use in its life cycle. Eventually, it takes energy to move the car to waste and recycle it back into materials to make new cars and then the life cycle starts all over again.

One of the measures that shows how much a given product has emitted greenhouse gases is carbon footprint, which measures the amount of CO² emissions caused by a certain product [\[17\]](#) (p. 16). It is interesting to note that environmental indicators are increasingly turning to customers, to actively involve them in the application of the concept of sustainability. For example, WorldAutoSteel has developed a system of indicators to monitor the emissions of certain car models, called the Vehicle Emissions Impact Indicator. It is an interactive tool that helps consumers to make decisions about buying a car, with the information on the engine the car will be powered with

and the material a car will be made from and see how that will affect its overall environmental performance in terms of its total life cycle emissions and fuel consumption [\[18\]](#).

References

1. Jenkins, I.; Schröder, R. Sustainability in Tourism: A Multidisciplinary Approach, 2nd ed.; Springer: Iserlohn, Germany, 2012; pp. 10–30.
2. Transforming Our World: The 2030 Agenda for Sustainable Development. Available online: <https://sdgs.un.org/2030agenda> (accessed on 8 February 2022).
3. Biuk, M. The Importance of Sustainable Marketing with Regard to Changes in the Environment. Bachelor's Thesis, Juraj Dobrila University of Pula, Pula, Croatia, 2012.
4. Long, T.B. Sustainable Business Strategy, Encyclopedia of the UN Sustainable Development Goals: Decent Work and Economic Growth; Springer: London, UK, 2019; pp. 1–11.
5. Iberg, A.E. Creating Competitive Advantage in the Premium Market Segment through a Sustainability Strategy. Chancellor's Honors Program Projects. 2015. Available online: https://trace.tennessee.edu/utk_chanhonoproj/1898 (accessed on 18 December 2021).
6. Harker, L. 10 Global Companies and Their Brand Sustainability. 2022. Available online: <https://latana.com/post/top-global-brands-environment/> (accessed on 8 February 2022).
7. Phuah, J.S.Y.; Fernando, Y. Green supply chain integration in automotive industry. In Encyclopedia of Information Science and Technology, 3rd ed.; Derry Township, USA; IGI Global: Hershey, PA, USA, 2012; pp. 5056–5064.
8. Sing, K. Sustainability: Profitable tool of branding. *Int. J. Res. Manag. Soc. Sci.* 2017, 5, 67–73.
9. Osmanagić-Bedenik, N. Business between Profitability and Sustainability. In Proceedings of the 25th IBIMA Conference, Innovation Vision 2020: From Regional Development Sustainability to Global Economic Growth, Amsterdam, The Netherlands, 7–8 May 2015; ISBN 978-0-9860419.
10. De Mendoca, T.R.; Zhou, Y. Environmental Performance, Customer Satisfaction, and Profitability: A Study among Large U.S. Companies. *Sustainability* 2019, 11, 5418.
11. Schulze, A.; MacDuffie, J.P.; Täube, F.A. Introduction: Knowledge generation and innovation diffusion in the global automotive industry-change and stability during turbulent times. *Ind. Corp. Chang.* 2015, 24, 603–611.
12. KPMG Automotive Institute. KPMG's Global Automotive Executive Survey 2020. Available online: https://automotive-institute.kpmg.de/GAES2020/downloads/global_automotive_executive_survey_2020.pdf (accessed on 18 December 2021).

13. Koster, A.; Kuhnert, F.; Stürmer, C. Five trends transforming the Automotive Industry, PwC 2018, 1. Available online: https://www.pwc.at/de/publikationen/branchen-und-wirtschaftsstudien/eascy-five-trends-transforming-the-automotive-industry_2018.pdf (accessed on 14 December 2021).
14. Albulescu, S.; Dascalu, O.; Niculescu, A. Trends in the Automotive Industry. *Faima Bus. Manag. J.* 2015, 3, 30–50.
15. Cioca, L.I.; Ivascu, L.; Turi, A.; Artene, A.; Gaman, G.A. Sustainable development model for the automotive industry. *Sustainability* 2019, 11, 6447.
16. Pimonenko, T.; Bilan, Y.; Horák, J.; Starchenko, L.; Gajda, W. Green brand of companies and greenwashing under sustainable development goals. *Sustainability* 2020, 12, 1679.
17. Lukin, E. Sustainable Strategies in Leading Automotive Companies. Master's Thesis, Department of Economics, University of Zadar, Zadar, Croatia, 2021.
18. Vehicle Emissions Impact Indicator, WorldAutoSteel Official Web Site. Available online: <https://www.worldautosteel.org/life-cycle-thinking/vehicle-emissions-impact-indicator/> (accessed on 8 February 2022).

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