



# Research on the marketing of technological innovations for car safety.

**Case company: Mercedes-Benz**

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## **Abstract**

Cars are becoming more advanced, faster, more efficient, and also becoming the best equipped in the modern world. Increased demands for service from new consumers motivate brands to build better communication with customers. In a big competition for customer loyalty, car manufacturers are introducing a variety of innovative technologies into their vehicles. The most relevant and necessary technological innovations in machines for humans are innovations in safety.

Mercedes-Benz's safety innovation is one of the best in the automotive world. The new Mercedes-Benz car will be an absolutely safe car, because all security systems will work automatically in it. Understanding all the available promotion techniques and creating an effective marketing plan are crucial for promoting advancements in Mercedes-Benz vehicle safety as well as, perhaps more crucially, for promoting and achieving the image of the safest vehicle.

The relevance of the topic of this study is determined by the search for new and improvement of existing marketing methods for automakers, due to their active introduction of innovative safety technologies in cars.

To get the most accurate results by the end of this study, the authors identified several questions that formed the basis of the entire work. Moreover, in order to achieve their goals and get detailed answers, the authors used interview and secondary data analysis as research methods. The director of car sales of the ABTODOM auto dealership in Pulkovo took part in the interview.

Based on the correctly chosen methods of collecting and analyzing information, the authors were able to determine the main direction of the introduction of technological innovations in the opinion of consumers and also identify the most suitable tools for promoting these innovations.

## **Keywords/tags (subjects)**

technological innovations, car safety, Mercedes-Benz

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# 1 Introduction

In the escalating struggle for a buyer, automobile manufacturers are beginning to actively introduce a variety of innovative technologies into their cars. As the number of cars on the roads increases and the death rate in road accidents increases, the most relevant and necessary technological innovations in cars are innovations in the field of safety. As Jean Todt, the Special Envoy of the UN Secretary-General for Road Safety, said: "Unfortunately, the number of victims of traffic accidents is not decreasing. The most important thing is to ensure safety and avoid human casualties" (2020). Naoki Yamamoto, assistant Director-General for the cluster of Universal Health Coverage and Health Systems, also mentioned: "We must take advantage of new technologies and innovations in order to make driving safe for everyone" (2020).

Automakers compete with each other to have the status of the safest car, developing more and more new technologies for this. Mercedes-Benz cars need to promote technological advancements in the area of safety, as well as popularize, create, and maintain the image of the safest car, so it's important to develop a high-quality marketing strategy that incorporates all available marketing measures and effectively uses marketing communications.

## 1.1 Thesis structure

This chapter provides detailed information on each step-by-step component of the entire process. The structure of the scientific work consists of an introduction, five main sections, a conclusion and a list of references.

In the first part, the authors explain their reasons for the chosen topic and motivation for writing this work, as well as in this part, the main questions are formulated and getting answers to them is the main purpose of this work.

The second part consists of a literature review. To achieve the set goals, the authors have compiled a step-by-step plan to collect all the necessary information. To begin with, it is necessary to evaluate the automotive industry market and innovations related to this area. Based on this, it becomes possible to understand what makes Mercedes-Benz special. Then, according to the plan, consideration of the strategy of the selected company and what marketing tools can be used.

The third part of this research work consists of a methodology, it includes a description of various methods of collecting and analyzing information and describes in detail the methods chosen by the authors. The choice of these methods was made by analyzing and identifying the most appropriate ways to obtain more accurate results.

The fourth part consists of the results obtained during the study.

The fifth part includes the final answers to the previously established research questions and how the acquired knowledge can be applied.

The information base of the research was formed on the basis of books and textbooks, scientific publications of scientists, analytical data published in scientific literature and other publications, as well as on Internet resources and research conducted by the authors.

## **1.2 Background information and study goals**

Now, when the rapid merging of the automotive industry and the sphere of information and communication technologies (ICT) continues, people are witnessing how the range of opportunities for creating more efficient and safe transport systems is expanding just as quickly.

The history of Mercedes-Benz passive safety is a success story. As a result, numerous innovative proposals in the passive safety section, in the development of which the Mercedes-Benz Group has been a pioneer over the past eight decades, are included in the concept of a holistic approach to safety. Many of these engineering solutions have raised the bar for safety worldwide. Further research is ongoing as Mercedes-Benz is not satisfied with today's high enough standards for this essential vehicle feature and is raising it in numerous future projects, turning its eyes to new, future safety horizons. Along the way, developers never lose sight of the concept of passive safety (Smirnov, 2019).

This research work's primary goal is to investigate how marketing strategies might be used to promote technological advancements that will increase Mercedes-Benz vehicles' level of safety. The object of the study is the Mercedes-Benz automobile concern, which actively develops

technological innovations in the field of ensuring the safety of its consumers and uses marketing tools to promote its innovations.

Key motivation of the authors is a personal interest in the marketing area and Mercedes-Benz company. The subject of research in the scientific work is the economic relations that arise in the process of developing marketing tools for promoting technological innovations in the field of car safety of the Mercedes-Benz automobile concern.

### **1.3 Research questions**

As already mentioned by the authors earlier, the topic of technological innovations will always be relevant, especially when it comes to the safety of not only consumers of this brand but also the people around them. Thus, the importance and relevance and insufficient scientific elaboration of the issues of marketing of technological innovations of safety in cars determined the choice of the topic, the purpose and objectives of scientific research. Based on this, the authors identified three main research questions:

RQ1: What are the fundamentals of technological innovations in the automotive industry?

RQ2: What are the requests and needs of consumers for technological innovations Mercedes-Benz safety?

RQ3: What marketing tools can be used in the development of technological safety innovations in Mercedes-Benz cars?

## **2 Literature review**

This chapter presents many authors' perspectives on the study's subject. This collection of data also aids in giving the authors' study a theoretical foundation. It also allows them to assess how well the issue has been developed and, as a result, to support their choice of research focus. This chapter analyzes the literature that was analyzed, describes the key concepts and patterns, and uses evidence to support the study's theoretical underpinnings.



## 2.1 Introduction to automotive industry

“Most people overestimate what they can do in one year and underestimate what they can do in ten years”— (Gates, 2003).

A modern car should be based on fundamentally new developments that meet all the requirements of technical progress. The continuous development of technologies in all spheres of life and the computerization of many processes are orienting manufacturers towards the creation of highly intelligent machines, says the author of the article Innovations in the World (2019)

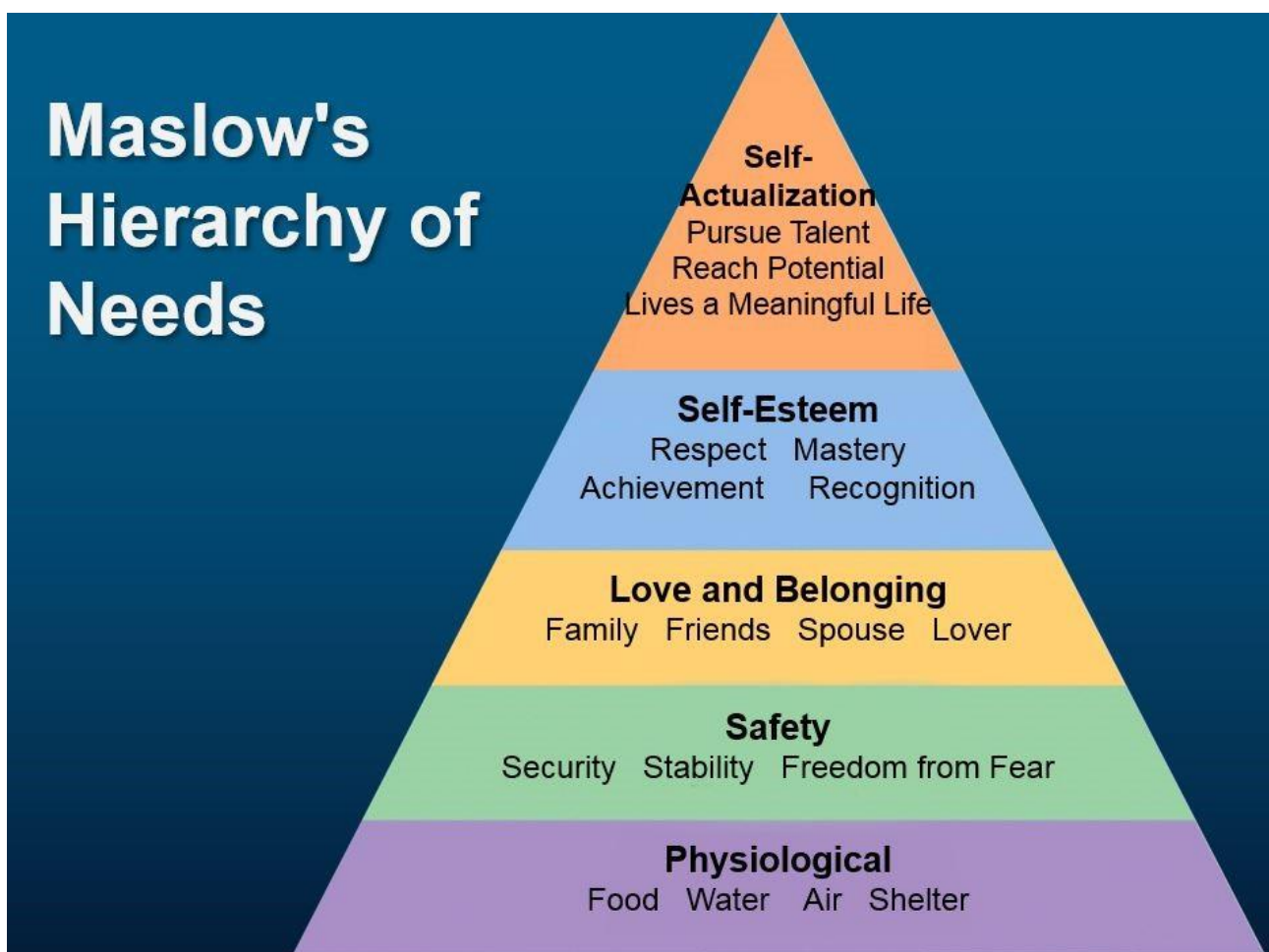


Figure 1. Maslow's Hierarchy of Needs (Maslow 1954)

As it shown above at Figure 1, ensuring security is one of the main needs of a human being according to the theory of A. Maslow (1954). Consequently, this task belongs to the priority areas of human innovation. Scientific and technological progress opens up new possibilities for its solution.

Systems for the prevention of natural disasters are being developed, new ways of warning a person about dangers are being introduced. But at the same time, scientific evolution creates new man-made threats, one of the sources of which is road transport. Introduced in the 19th century, the car in just a few years became an object of risk to human health. In May 1896, the first incident was recorded - a car hit a pedestrian, and already in August 1896 a similar incident ended in death (Autostat, 2015).

Modern vehicles are becoming more and more technologically advanced. According to the analysis of the agency "AUTOSTAT" (2015), the number of cars on the roads increases by 5-6% every year, the density of traffic flows, their speed and intensity increase. This leads to an increase in the likelihood of road traffic accidents and the possible severity of the consequences of accidents. The existing need for the advancement, improvement, and implementation of innovative technologies. ensuring the safety of driving a vehicle, causes a constant increase in the supply of such innovations in the world market.

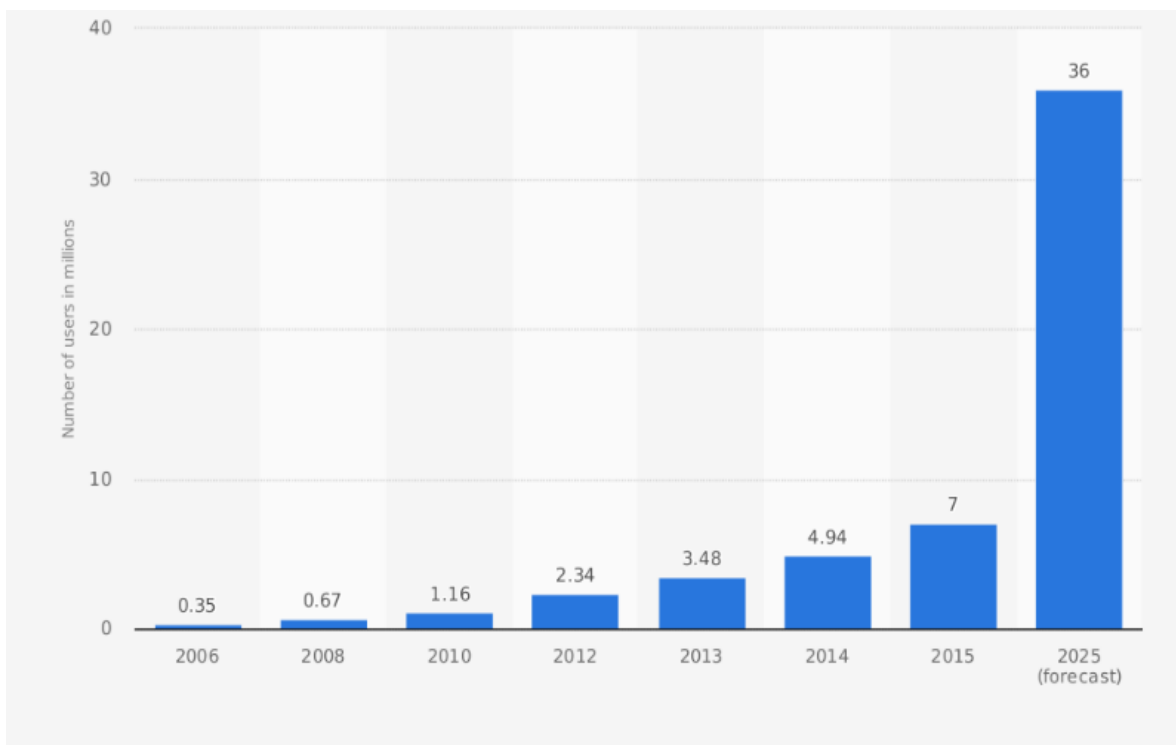


Figure 2. Worldwide number of car-sharing users from 2006 to 2025 (in millions). (Frost & Sullivan, 2018)

The authors would like to mention innovations in the automotive industry. Every second person has personal transport, everyone has used public transport at least once, and now it is hard to imagine life without it. However, one-fourth of the population knows little about the automotive industry.

In the late 80-90s of the XIX century, the automotive industry appeared as an industry in France and Germany, the leading countries received further distribution of the automotive industry: England, USA, Belgium, Hungary, Italy, Canada, Switzerland, Sweden. In the 20s of the twentieth century, the automotive industry gained importance.

Nowadays, the production of motor vehicles is only increasing its scale of production. The data for 2021 is collected in Figure 2, where the country leaders may be shown.

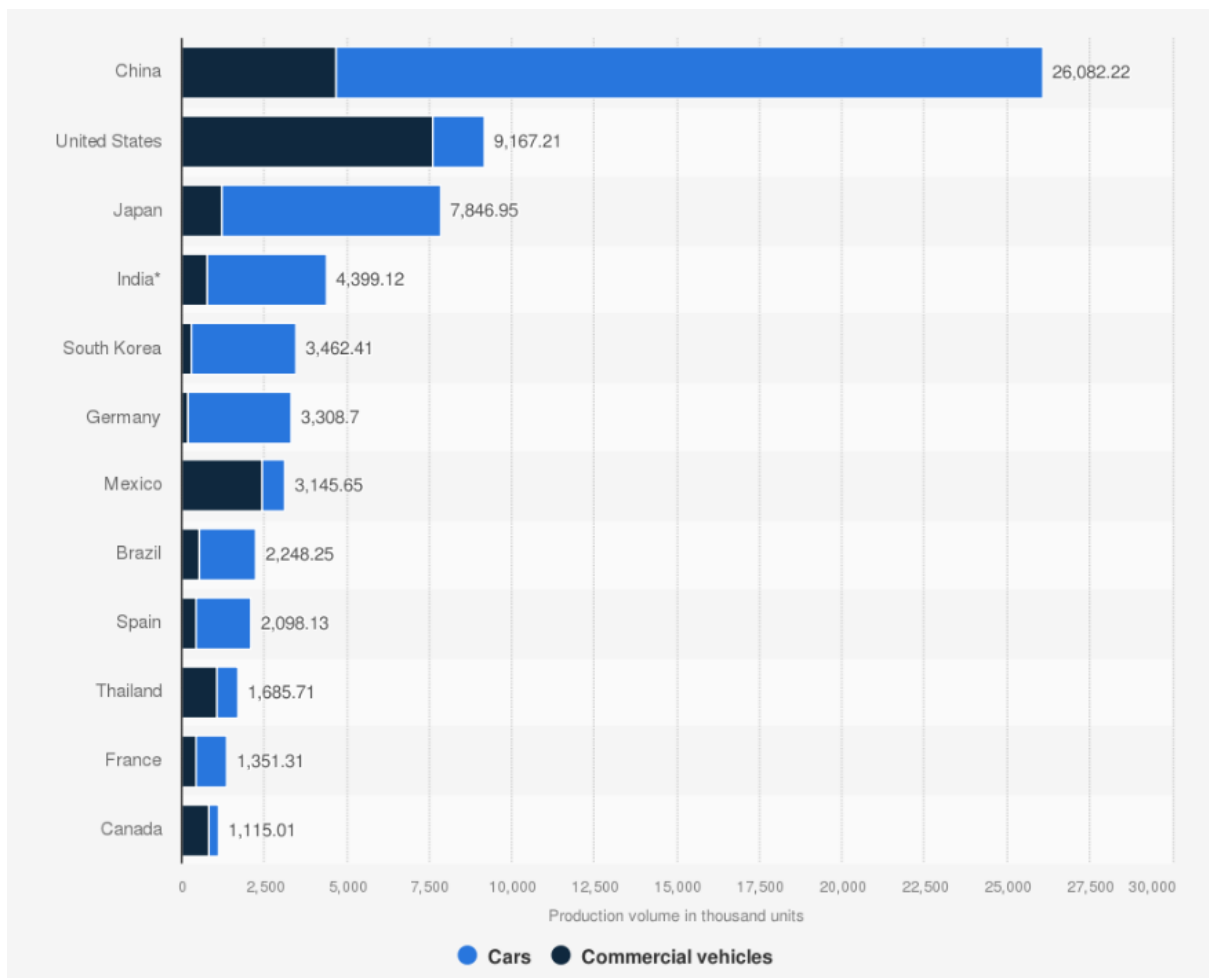


Figure 3. Motor vehicle production volume worldwide in 2021, by country in 1000 units (Frost & Sullivan, 2021)

Competitiveness and innovation activities typically have a direct correlation at both the national and corporate levels. A nation's standing on the international scene will undoubtedly rise if it has an effective innovation policy. As a result, these countries commonly have excellent investment ratings, a comparatively stable trade and economic environment, and a high level of living. However, innovations help to attain high growth rates for nations that have not yet achieved this stage of development, making nations competitive.

The automotive industry is an industry that is an indicator that shows the consistency of social and economic development in all industrialized countries, in most countries with developing economies. According to sources, 25-30% of the economic growth of the leading countries, in certain periods of history, accounted for the automotive industry (Korolev, 2014).

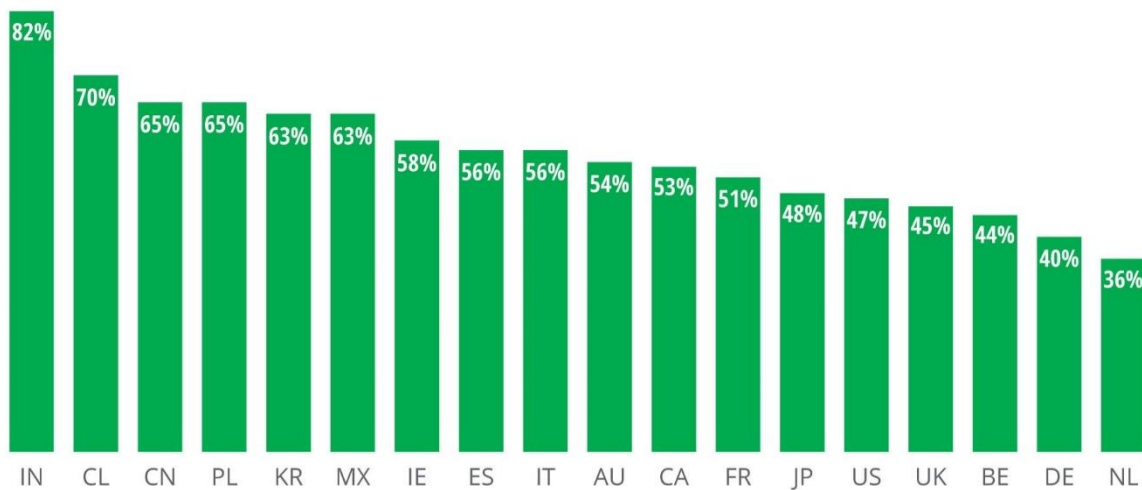
The progress in the global automotive industry demonstrates significant growth in multiplicative sectors of the economy, as well as a constant increase in employment. According to the essay by Korolev (2014), a 1% growth in the automotive sector will result in a 1.5% increase in the GDP of the nation. Varied industrialized nations have different percentages of the automobile sector in their GDPs, ranging from 5% for the United States and France to up to 10% for Japan and Germany.

Another significant issue is that the automotive sector contributes a lot to employment in the nations where automobiles are manufactured, maintained, and sold, while the nations that make cars also contribute to employment in the nations with which they have bilateral cooperation agreements. In particular, this percentage of employment among the physically fit population is increasing as a result of people's attraction to associated businesses that supply the automotive industry (Kondratyev, 2014). For example, in the United States in the automotive industry, as well as in related industries, about 12.5 million people are employed, which means that every sixth is employed in this industry. In Russia, despite a slight decline, this industry employs about 1.7 million people out of 70 million of the able-bodied population.

By the way, based on statistics by Igor Vladimirsky author of Autoreview (2021) vehicle sales figures in several global markets were encouraging. The authors' research shows that almost half of consumers in the United States (47%) plan to use their car significantly longer than they planned when buying. Other rather significant car markets throughout the world, such as China (65%), South Korea (63%) and Japan (48%), exhibit a similar level of emotion. This also poses a big obstacle for automakers looking to launch new vehicles and clouds predictions for how the demand curve will look in the future.

## Global consumers intending to push out their next vehicle purchase

Percentage of consumers planning to keep their current vehicle longer than expected



Note: Percentage of respondents who "Agree" or "Strongly agree" have been added together.

Figure 4. Percentage of consumers planning to keep their current vehicle longer than expected. (Deloitte state of the Consumer tracker, 2020)

## 2.2 Innovations

In general terms, according to the dynamic approach, innovation is the process of introducing something new. Thus, scientists J. Cook and P. Mayes (2009) understand innovation as a complete process from the idea of appearance to the creation of a finished product which is sold on the market or in other words, they consider innovation to be the successful implementation of new

ideas. According to B. Twiss (2008), innovation is the process by which an idea or invention gains economic content. According to M. Dudgeon (2009), innovations serve a variety of purposes, such as fostering scientific, technological, organizational, and financial activities within a company or organization that ultimately result in the commercial introduction of a new (or already improved) good, a new (or already improved) production method, or new (or already improved) machinery. Considering innovation as a process, the Russian scientist A.I. Prigogine (2009) interprets innovation as the development of technology, technology, management at the stages of their origin, development, diffusion at other objects (Burnysheva, 1999).

In the case of a static approach, innovation is seen as the result of a creative process. Thus, the modern Dutch scientist Paul Bejo defines innovation as new products, processes, services carried out in production, distribution and consumption (Burnysheva, 1999).

Joseph Alois Schumpeter (2006), a renowned economist, sociologist, and historian, asserts that innovation is crucial to both competitiveness and the dynamics of the economy (Artsybyshev, 2010). Additionally, he held that inventions trigger both economic changes and a "creative destruction" storm, a word Schumpeter used in "Capitalism, Socialism, and Democracy" (2012). Innovation is "a process of industrial mutation that continuously revolutionizes the economic structure, always destroying the old and constantly building a new one," according to Schumpeter. Scientists D.S. Evstafiev, N.N. Molchanov, O.V. Motovilov in his book "Management of technological innovations" proposed to consider technological innovations from the point of view of entire "technological systems, which include manufactured products, technological processes, equipment and materials used in this process. Outstanding economist and management theorist Peter Drucker gave an excellent presentation on the purpose and function of marketing, including the selling of technological advancements. "Marketing's objective is to reduce sales efforts. An ideal consumer should be produced by marketing". He considers marketing to be a fundamental aspect of company. Moreover, the work of marketers in the company should be not only in tactical actions, but also in strategic ones (2013).

## **2.3 Digitalization**

Speaking of the automotive industry's rapid technological advancement, digitalization should enable to implement something completely new throughout the entire supply chain for vehicles.

First, by increasing the supply chain's transparency, interconnected supply chains enhance end-to-end production control and cut costs and lead times. In addition, the value chain's efficiency can be improved by integrating partner systems, cutting-edge data, and analytics, as well as by improving it from design to production to distribution. Through preventive maintenance, digitalization is further altering the automobile value chain. Drivers can receive an immediate warning of a problem thanks to automotive diagnostic systems, intelligent parts, and ubiquitous connectivity. Continuous data analysis has made preventive maintenance possible, which lowers the frequency and severity of recalls, lowers the number of significant vehicle problems, and enhances driver safety. Manufacturers, suppliers, and telematics service providers of equipment can earn an additional \$60 billion via remote diagnostics. Dealers and independent service facilities, however, might lose \$44 billion. Digital technologies are changing how original equipment manufacturers, consumers, and vehicle dealers interact, and the auto industry is no exception. Along with the interactive information that consumers can access on the Internet, car dealerships are now evolving into virtual reality shops. Internet-based retailing increases the manufacturer's capacity to communicate with customers directly when selling cars or replacement components. The introduction of AV systems and collaborative mobility solutions may eventually cause even more profound changes in the business model of the automotive industry, which is already undergoing fast transition.

The digitalization of the automotive value chain is creating new economic opportunities, particularly for firms that spend in R&D and keep innovating as well as for tech firms that might provide novel goods and services. The demand for highly skilled science, technology, engineering, and mathematics (STEM) professionals who are trained in information and communication technology (ICT) and can respond to new opportunities and instabilities arising from technological disruptions will rise as a result of these new technologies and the industry-shaping effects of the ever-growing volume of data (Randstad, 2019).

Since cars are no longer just made to carry people, but also to give their owners a distinctive experience and a sense of mobility, they have evolved into more than just a mode of transportation. This is the goal that automakers pursue as they consistently introduce new technology.

Technology has advanced quickly over the past ten years, taking over not just our daily lives (at home or at work), but also our automobiles. The graph below demonstrates how our automobiles' overall percentage of technology has increased from 1950.

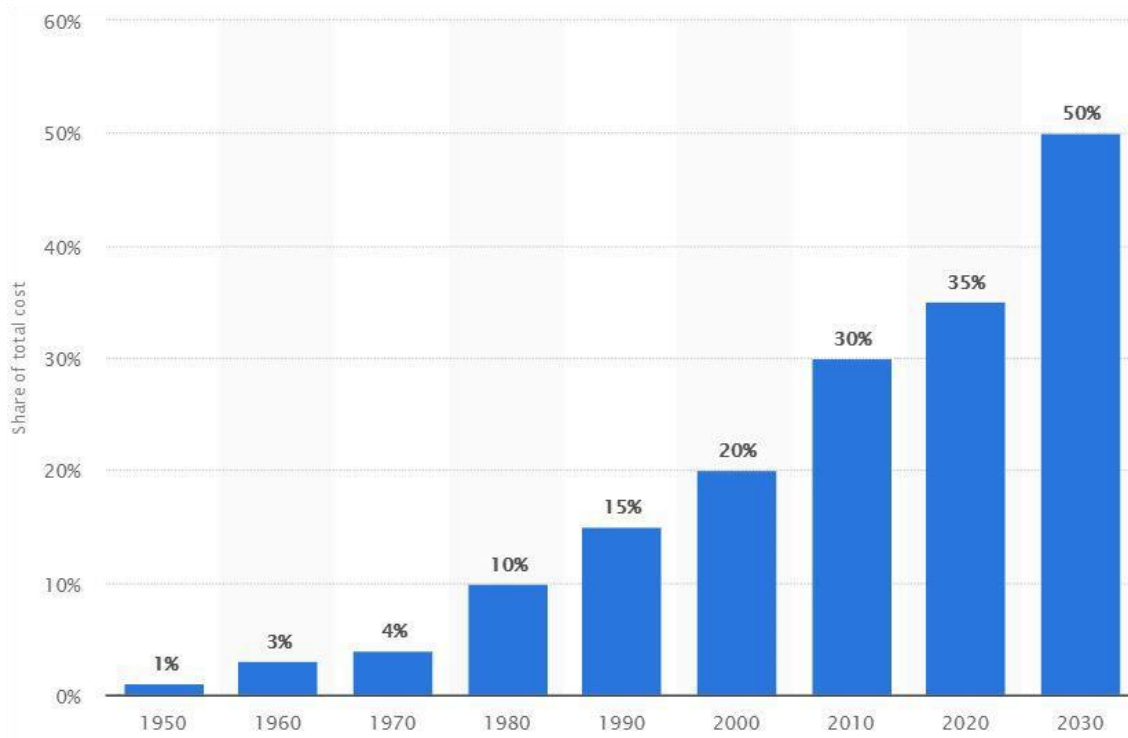


Figure 5. Automotive electronics cost as a percentage of total car cost worldwide from 1950 to 2030 (Statistica, n.d.)

## 2.4 The expansion of the world's automotive industry

In the 21st century, one of the main features of the development of the global automotive industry is the rapid decline in the number of manufacturers, as part of their joining together. The main indicators of the survival of companies in modern conditions are: First, the possibility of simultaneous efficient operation in several markets. Moreover, competitiveness and financial sustainability. What's more, a neoclassical scheme for organizing car production.

What about the main trends in the globalization of the modern automotive industry: Firstly, there is a significant increase in the optimal volume of production of automotive products. Secondly, this is investment by large car manufacturers in the development of production facilities located in the territory of the countries. What's more, the growth in sales of cars running on alternative fuels.



And also, the standardization and unification of the entire model range and the emergence of "flexible production" in the automotive industry (Shuvalova, 2016).

On the other hand, the shifting consumer market tastes brought to a considerable change in international commerce in the automotive sector. Large international car manufacturers began to actively form. The transnationality index of TNCs, leaders in the automotive industry, has grown significantly. Sales of Asian car brands continue to grow strongly in the EU and US markets. The creation of a "budget" car — the appearance and active development of a new path in the automotive industry (Mazilkina, 2009).

## **2.5 Fundamentals of a company's marketing strategy**

In the modern economy, the concept of "strategy" is interpreted, first of all, as a system of managerial decisions that determine the promising directions for the development of the organization, areas, forms, and methods of its activity, as well as the procedure for allocating resources to achieve the goals (Azoev & Chelenkov, 2004)

A component of a company's business strategy, marketing strategy is to create, produce, and deliver to the customer products and services that best meet his demands. According to Vaisman A., a marketing strategy is a set of "basic, medium-term, or long-term decisions that offer direction and direct individual marketing actions to meet the goals" (Ushakova, 2002). Three logical and chronological steps are included in the justification of the marketing strategy: 1. The examination of the current and future status of the business and the environment is the first step in the process (situation analysis); 2. From there, objectives and plans of action are created to attain them; 3. To sum up, a combination of instruments that makes it possible to implement the selected methods most successfully in terms of achieving goals is identified (Babaev, 2005).

According to Edwin J. Dolan, marketing strategy is the definition of "... how to use the marketing structure to draw in and satisfy target consumers and accomplish organizational goals" (Dolan, 2019).

For example, according to the author of the article "Behind the Wheel" (2005), the Swedish enterprise Volvo was profitable in the 1930s when people were worried about the reliability of

manufactured automobiles because it foresaw a growing gap in this market segment, focused its efforts on producing a safe car, and created an efficient marketing strategy. The safest automobile is still thought to be the Volvo.

The most capacious definition of a marketing strategy is given by E.P. Golubkov (2000). He defines marketing strategy as "the main direction of marketing activity, following which the strategic business units of an organization strive to achieve their marketing goals".

The target market for advertising is extremely specific, so in order to avoid passively wasting the budget, Mercedes-Benz carefully examines the market and client preferences before turning to advertising to promote the launch of a new model or a new service. The principle of advertising distinction, according to which the promotion of one car is unrelated to the marketing of other classes, separates "Mercedes-Benz" from its primary rivals. The company creates its own advertising for each class of cars, and even for a specific car; each new model gets its own slogan, for example: "Die S-Klasse. Weiter denken" (S-class. Think bigger), "Die Ruhe selbst. Die E-Klasse" (Calm itself. E-class), "C-Class: outside we change, but the soul is the same" (C-class; outside we change - inside we remain unchanged).

Marketing distinguishes between high and low engagement products. Engagement is an individual internal state of excitation or activation of people (having different intensity and duration), aimed at certain objects or events. The low involvement of the buyer can be said when he or she, without wasting time on reflection, quickly makes a purchase decision, sometimes just out of habit (as a rule, everyday goods are meant). Products with high buyer involvement are those products about which the buyer collects information for a long time and carefully, analyzes, compares alternatives, even consults either with specialists or with acquaintances who previously had experience in consuming this product or service. An example of a consumer product with a high degree of involvement is a car.

J. Rossiter and L. Percy (2000) have developed a set of criteria that increase the effectiveness of advertising products with high engagement. First, emotional authenticity, adequacy and consistency with the relevant target group are important; Recipients must identify themselves with the product in the advertisement, although it is not necessary that the advertisement be liked; It is

necessary to have meaningful information about the product, and some of its elements may be exaggerated; Repetition is useful, as it helps to decide and strengthen the conviction of its fidelity.

## **2.6 New Mercedes-Benz business strategy**

Mercedes-Benz is reaffirming its unwavering commitment to electrifying all its products across all segments, introducing purpose-built EV architectures, and announcing new battery-powered electric vehicles. Stuttgart - Mercedes-Benz has unveiled a new strategy intended to achieve profitable growth in the premium market as well as leadership in the areas of automotive software and electrical solutions. The proper steps have been taken over the years in product development and design to revitalize the Mercedes-Benz brand and boost sales. As a result, it has once more elevated Mercedes-Benz to the top. We are still far from utilizing our full potential when it comes to connecting profitable sales with successful sales, though. We are discussing refocusing and implementing our new strategy because of this. The world's most coveted automobiles are what we aim to produce. Utilizing our advantages as a strong brand to improve economic value, solidify the position of our manufacturing portfolio, and enhance our product line is crucial. We intend to fully realize the potential of our distinctive sub-brands, including EQ, AMG, Maybach, and G-Class. Our goal is to concentrate on the tasks that are essential to our success, such as creating electric vehicles on our own platforms and creating vehicle-specific proprietary software. At an online conference for investors and analysts titled "Updating the Mercedes-Benz Strategy," Ola Kallenius, Chairman of the Management Board of Daimler AG and Mercedes-Benz AG, stated on October 6, 2020, "We are going to deal with structural costs and will strive for high and sustainable profitability." In line with the objective outlined in our Ambition2039 plan, O. Kallenius continued, "With our new strategy, we confirm our ambition to electrify our whole production portfolio and make our activities fully carbon-neutral. The new Mercedes-Benz strategy is a thorough plan designed to advance the business financially and technologically. It is supported by six columns.

### **2.6.1 Conduct yourself as a luxury brand**

Luxury has always played a significant role in the Mercedes-Benz brand's philosophy. It was decided to emphasize the concept of luxury even more moving forward. All products, elements of customer engagement, and digital technology will incorporate this. In order to give true luxury,

whether it be through electric mobility, software, or environmental friendliness, Mercedes-Benz is refocusing its production portfolio, brand marketing, and dealer network.

### **2.6.2 Prioritize profitable growth**

Mercedes-Benz will make changes to and improve upon its marketing plan. To ensure greater profitability of the present and future production portfolio, a focus on the ideal balance between sales volumes, pricing strategy, and distribution channels has been placed. In order to attain structurally greater profitability, development and financial resources should be focused on the most lucrative market sectors.

### **2.6.3 Creating new sub-brands to increase the customer base**

Mercedes-Benz is the most valuable luxury car brand globally, according to Interbrand. This brand will continue to serve as a compass. Mercedes-Benz also boasts a variety of odd sub-brands, including AMG, Maybach, G-Class, and EQ. They should advance and reach a new level with the new strategy with the clear objective of realizing considerable EBIT growth and completely realizing their potential.

Beginning in 2021, AMG is already prepared to electrify its whole range and take it to a new level. The connections between the sub-brands and Formula 1 will be strengthened even more the next year to better reflect the sport's identity as the highly dynamic representation of the Mercedes car. Maybach plans to quadruple its sales while concentrating on international expansion potential and transitioning to an electric drivetrain. The iconic G-class is in already higher demand than it can be produced. However, it also plans to start along the route of electrification and increase sales volumes. The EQ brand draws in a new customer base because to its innovative high-tech solutions constructed on specially created electric platforms.

### **2.6.4 Increasing customer loyalty and regular income**

Mercedes-Benz works hard to uphold and cultivate enduring connections with its clients. The intention is for consumers to enjoy owning Mercedes-Benz vehicles and, after being happy, to wish to stick with the company for a very long period, ideally forever. In order to achieve significant growth in fixed income, Mercedes-Benz will thus work to build customer loyalty even further. This

will include sales of maintenance services and spare parts, an increase in the frequency of over-the-air updates (OTA), and other services. By 2025, there will be 20 million linked Mercedes-Benz passenger cars on the road, creating huge economic prospects.

### **2.6.5 Leading the way in the creation of automotive software and electrical solutions**

The development of electric drives and software for automobiles is another objective of Mercedes-Benz, which also aims to create new, high-quality goods and accelerate the adoption of new technology. Beginning in 2025, a number of additional models based on the second unique electric platform MMA (Modular architecture Mercedes-Benz = Modular architecture of Mercedes-Benz), intended for the compact and medium-sized car segment, will be added to the lineup of electric vehicles.

Mercedes-Benz will invest in new technologies and concepts to extend driving range and boost efficiency, as well as devote even more of its resources and product development expertise to electric transmissions. In-house research and development will result in the next generation of electric motors, which will feature high-voltage and advanced inverter technology. The business is making enormous strides in the creation of battery technologies; in addition to its own research and development, it also strategically collaborates with important partners including CATL, Farasis, and Sila Nano.

Mercedes-Benz relies on its own MB.OS operating system for the creation of vehicle software. It will be created internally and go on sale in 2024. Mercedes-Benz will be able to keep control over all aspects of the vehicle thanks to this technology, and as a result, control over the user interfaces that decide how customers engage with the vehicle. The development of the company's own software will allow it to be updated more often and on a more regular basis. The software is being developed for all scalable platforms, so it will be possible to control development costs in the future.

## **2.7 Description of Mercedes-Benz technological innovation marketing**

Given that Mercedes-Benz vehicles consistently hold the top spot among luxury vehicles, their marketing naturally stands out from that of other automakers. Creating the perception of Mercedes-Benz cars as exceptional, defined by high-quality design and, of course, cutting-edge safety

systems, is a crucial component of the firm management's marketing strategy. All of this guarantees widespread brand recognition on the market, and the exclusivity of the cars is implied by the name of the corporation, "Mercedes-Benz".

To put it another way, the business uses the concentrating strategy to focus its efforts on creating goods for a certain market. For instance, Mercedes-Benz has a strategy of narrow specialization, concentrating on customers who purchase pricy, "prestigious" automobiles (2004).

One of the key distinctions in Mercedes-Benz marketing is that the firm engages in active marketing campaigns for all aspects and features of its automobiles rather than focusing solely on one of its competitive advantages. In terms of the volume of automobiles sold, this helps the business perform better than businesses with just one well-known competitive advantage. Thanks to its technological advancements, Mercedes-Benz competes in all areas, including the potential to establish healthy competition with the leaders of the automobile industry in the field of safety.

The significance of Mercedes-Benz's usage of marketing strategies initially became apparent in 1993, when unexpected declines in auto sales occurred.

Mercedes-Benz performed a global marketing study to determine the causes of the failure, and the results revealed that the corporation was successful because to the catchphrase "Designed like no other car in the world" from the marque. Respondents assessed Mercedes as having great quality and cutting-edge technology, but consumers disliked the way Mercedes was perceived.

The company came to the correct conclusions, and two years later, in 1995, it unveiled its new image to the world, showcasing the other side of its cars' reputation as being reasonably priced, amusing, and energetic while maintaining a high standard of quality and safety.

Mercedes-Benz debuted a new marketing initiative in 2010 to coincide with the commencement of the active introduction of technological improvements in their vehicles. The theme of this campaign is luxury safety. A course was taken to learn how to install brand-new safety technology in automobiles. The new advertising effort will cost 2% of the business's yearly earnings. Television advertising receives 40% of the overall advertising expenditure, print advertising receives 45%, and Internet advertising receives 15%. Mercedes-Benz allocates huge budgets for the new campaign, as the company's financial results showed that the company's net profit increased by 26%, sales by almost 10%, and the company's quarterly profit amounted to 1.34 billion euros, which means that even 2% of the quarterly amount was allocated. for a marketing campaign, these are

colossal figures (2012). Since the financial crisis totally altered consumer values, people who boast about purchasing the most opulent car are now, in some ways, vilified.

Deng Chang Yong (2021) stated in the field of economics and management that the success of Mercedes Benz lies in its rejuvenation strategy and ten upgrades. Their mission is that in order for an enterprise to survive in the face of fierce competition in the market, they must conduct targeted market segmentation in accordance with the characteristics of their own products and determine the direction of product development through market segmentation and constantly use social resources to strengthen the influence of their brand, reliably attract the attention of consumers with the help of high-quality technology and paying attention to the interests of customers.

In mid-February 2022, Gartner analysts identified five major technology trends in the automotive sector. The study notes that as digital technology becomes the hallmark of the automobile, software will be the main driver of profit growth for automakers.

Pedro Pacheco, senior director of research at Gartner, noted that since 1922, automakers have concentrated on the mechanical side of car development and mostly left software to other companies, but in 2022, the goal for original equipment manufacturers (OEMs) will be to become technology or software companies (2022).

## **2.8 Results of the literature review**

Mercedes-Benz has a strong brand and excellent technical performance and meets the goal that it has a good relationship with the customer, which has a significant market share in the global market. Mercedes-Benz is constantly in development, generating new ideas and improving automation. And in response to the global community's demands for green technology, Mercedes-Benz has also taken on environmental responsibility through the use of environmentally friendly resources such as natural gas engines and petrol or diesel-electric hybrid models. In addition, Mercedes-Benz has a strong customer service and communication strategy that allows the company to directly receive customer needs and feedback in order to respond and adapt to changing customer demands and requests. Overall, Mercedes-Benz's marketing plan has been a full success. The corporation has examined, addressed, and adopted a new approach in response to the needs of the current generation. This approach could lead Mercedes-Benz to new perspectives and markets.

The purpose of marketing, both generally and inside the Mercedes organization, is to create a particular platform for the development and dissemination of cutting-edge goods and services. Marketing can answer questions that relate to the auto services market, what customers want from it and how to ensure effective functioning between them and the company itself.

The authors came to the conclusion that there is currently a dearth of pertinent research on this subject after gathering all the essential information by the time they finished writing the literary evaluation. Many data are simply missing and some are already outdated. Moreover, some authors do not agree on certain topics as mentioned above, for example, as it was with the understanding of the authors of the innovation process.

### **3 Methodology**

The element of scientific research known as research methodology discloses the theoretical underpinnings of the investigation. The major goal of this section of the study is to select the best research methodology and justify this decision. In other words, this chapter should guide the choice the decision while demonstrating that the chosen approaches and methodologies best support the aims and objectives of the investigation and will yield trustworthy outcomes (Jansen & Warren, 2020). Thus, the correct research methodology provides scientifically sound results and therefore improves the accuracy and quality of all work.

This chapter also covers data collection and analysis techniques.

#### **3.1 Research approach**

The research strategy can be thought of as a plan, which in turn consists of processes ranging from broad hypotheses to specific techniques for gathering, analyzing, and interpreting data. Consequently, it is dependent upon the research issue at hand. The two basic components of the research approach are data collecting and analysis. In turn, data collection can be quantitative or qualitative, and the analysis of this data is divided into deductive and inductive methods. (Chetty, 2016).



The choice of a research strategy, in fact, consists in choosing a search scheme for answers to the control questions of the study. A well-chosen strategy will help to achieve the goals formulated on the basis of control questions, identify the sources of the necessary data. It will also give a clear idea of the limitations associated with the implementation of the research plan (for example, restrictions on access to data, temporary, geographical, material, ethical, etc.).

There are several ways of data collection: qualitative, quantitative and mixed. These are different types of methodologies, differing in whether they focus on words, numbers, or both. The two primary ways for gathering and presenting data are quantitative research methods and qualitative research methods. Each of these research methodologies is appropriate for addressing particular kinds of topics, yet both have benefits and drawbacks. The primary distinction between quantitative and qualitative research is the use of statistical data and methodology in quantitative research as opposed to qualitative research's exclusion of such data (Ward, 2021).

In a broad sense, qualitative research evaluates all the symbols, meanings and processes of social life in which the human element is involved. Since one of the research questions asks for the opinions of consumers, the authors chose to use this method for their research. The main characteristics of qualitative research are given below.



Figure 6. Qualitative research method (Penmypaper, n.d.)

### 3.2 Data collection

Data collection is a time-consuming process and there are many options for how this can be done. For example, to write a literary review the authors used secondary data, since the Mercedes-Benz case company they chose is world-famous and over the many years of the existence of this company, many different analyses and reports have been made that are freely available.

Therefore, gathering existing data is known as secondary data collecting. The data was gathered previously, it has through all essential statistical analysis, and it is not the researcher's. Typically, this information was gathered from original sources and then made accessible to the general public. Existing data are usually collated and summarized to improve the overall effectiveness of the study (Harappa, 2022).

In this chapter, the authors consider the most prevalent types of data collection used in qualitative research: interviews and focus groups. Each approach is thoroughly explored in this section of the study, along with how they function in practice, when using them is suitable, and what benefits they can provide for the entire study. This chapter also describes the method chosen by the authors.

The most popular techniques for gathering data for qualitative research are interviews and focus groups. While focus groups use group dynamics to gather data, interviews can be used to study the opinions, experiences, beliefs, and motivations of individual participants (Treasure & Chadwick, 2008).

As mentioned earlier, in order to determine the method of collecting information suitable for this study, the authors studied each method separately in detail. Thus, a focus group is a type of empirical research in sociology, which is a discussion taking place in a group, during which the attitude of the group members to any product, type of activity is determined.

For the first time this method was used in 1941 by R. Merton and P. Lazarsfeld in order to determine the effectiveness of the impact of radio broadcasts on people. This method is extremely attractive, especially for marketing, because during the discussion, the group members become

extremely free in their responses, expressing the true attitude to the object under discussion (Bobrova, 2021). Figure 6 below shows how the focus group works.

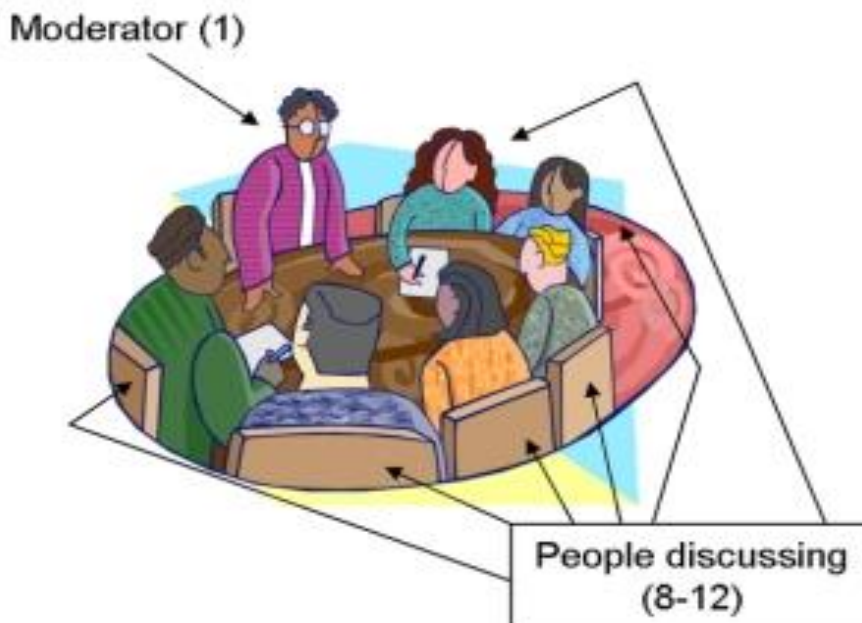


Figure 7. Focus group (Safefood, n.d.)

The decision was made to use interviews as a technique of data collecting since the primary goal of this study is to get the most complete, current, and accurate information available and the focus group approach did not satisfy the authors' expectations and secondary data are occasionally out-of-date.

The three primary types of interviews are as follows. At first, these are structured interviews; they frequently take the form of oral questionnaires that have been prepared in advance, eliminating the chance of arbitrary questions that call for more in-depth explanations. As a result, they are generally quick and simple to administer. However, by themselves they allow only a limited number of responses from participants and therefore are not particularly useful if an extensive response is required. Second, there are unstructured interviews, which are performed practically unorganizedly and do not represent any theories or concepts. Such an interview can simply start with an opening question, and subsequent inquiries can take any shape during the discussion and progress mostly in reaction to the first response. Unstructured interviews are typically lengthy, can last for several hours, and can be challenging to manage and engage in because there is no

direction on what to talk about in the absence of pre-set interview questions. Therefore, their utilization is typically only taken into consideration when precise responses are needed or when almost little information is known about the subject. Third, there are semi-structured interviews, which include a few important questions to help establish the study areas but also give the interviewer or interviewee freedom to stray to further develop an idea or response. Because it offers suggestions for what to say, this interview format is most frequently used. As a result, many people believe it to be more convenient and useful. This method's flexibility, especially when compared to structured mutual views, enables you to find or improve data that is significant to the participants but may not have previously been seen to be pertinent by the research team (Treasure & Chadwick, 2008).

In their work, the authors chose a semi-structured interview because its format was identified as the most appropriate. Having the main questions prepared in advance, as well as some topics for discussion, the next task was to find the right person for an interview. Out of several candidates, the director of car sales at the ABTODOM car dealership in Pulkovo agreed to take part in the study. This person for many years of work in this company has enough knowledge about the features of the brand and the tools that affect the sale of cars, as well as what potential customers pay attention to when choosing a car.

### **3.3 Data analysis**

Data analysis in the marketing industry refers to the complete range of information gathering, processing, and interpretation organization that will assist in developing a marketing strategy, highlighting weaknesses and amplifying strengths. Marketers cannot do without data analysis. It will help to build informed assumptions, and not rely on guesses. With its help, you can identify trends, establish patterns, and find valuable information. This, in turn, will help to optimize the workflow and advertising campaigns, increase the profitability of projects.

Analysts use various specialized services and analysis tools. All of them differ in levels of detail and methods of data interpretation. The number of such tools is quite large and each specialist chooses the one that corresponds to the tasks and with which it is more convenient to work (Otus Journal, 2021).

According to Otus Journal (2021), the analysis process consists of several stages:

- Correctly formulate the objectives of the analysis. To do this, you need to determine your own expectations and questions that need to be answered. It is necessary to understand exactly what data should be collected.
- Collect information from various sources by combining it, organizing and systematizing.
- Take care of the quality of the collected data by checking them for errors and omissions. If you skip this step, then the further interpretation will not be reliable.
- To work with the results: analyse and interpret them. It consists in drawing up dashboards, reports or diagrams, as well as comparing them with expectations and originally formulated questions.
- Perform actions based on the results obtained. The insights found should be used as a basis for further work. This will help make the marketing strategy more effective.
- Repeat the entire cycle of the analysis after some time to check what has changed after the amendments have been made. This will help to find out how effective they were and, if necessary, make new edits.

In the course of the study, researchers can assume about its results, but usually these conclusions are considered preliminary, and more reliable and thorough data can be obtained only as a result of careful analysis.

In social work, data analysis is putting all the gathered data together and presenting it in a way that is easy to understand. In order to gather data in a more useable format for qualitative analysis, information must be compressed. The primary techniques for compressing information include coding, which is the process of assessing qualitative information and involves moving semantic text or behavior parts, classifying (labeling), and reorganizing them.

To do this, keywords are identified and noted within the text itself, i.e., those words and expressions that directly allude to the substance of the text as a whole or a particular fragment and contain the major meaning. Similar-content fragments are designated in the same way. It is simple to recognize them and, if necessary, group them together because of this. The chosen components are then looked up under various names. By examining the text, you can contrast its many passages with one another to find parallels and contrasts.

The material is immediately made clearly visible and readable after being treated in this manner. The key ideas emerge, almost towering over the abundance of supporting details. Analysis of the relationships between them and identification of their general structure allow for the development of some explanatory theories (Studopedia, n.d.).

There is a wide variety of methods of qualitative data analysis and the most popular are shown below in Figure 7.

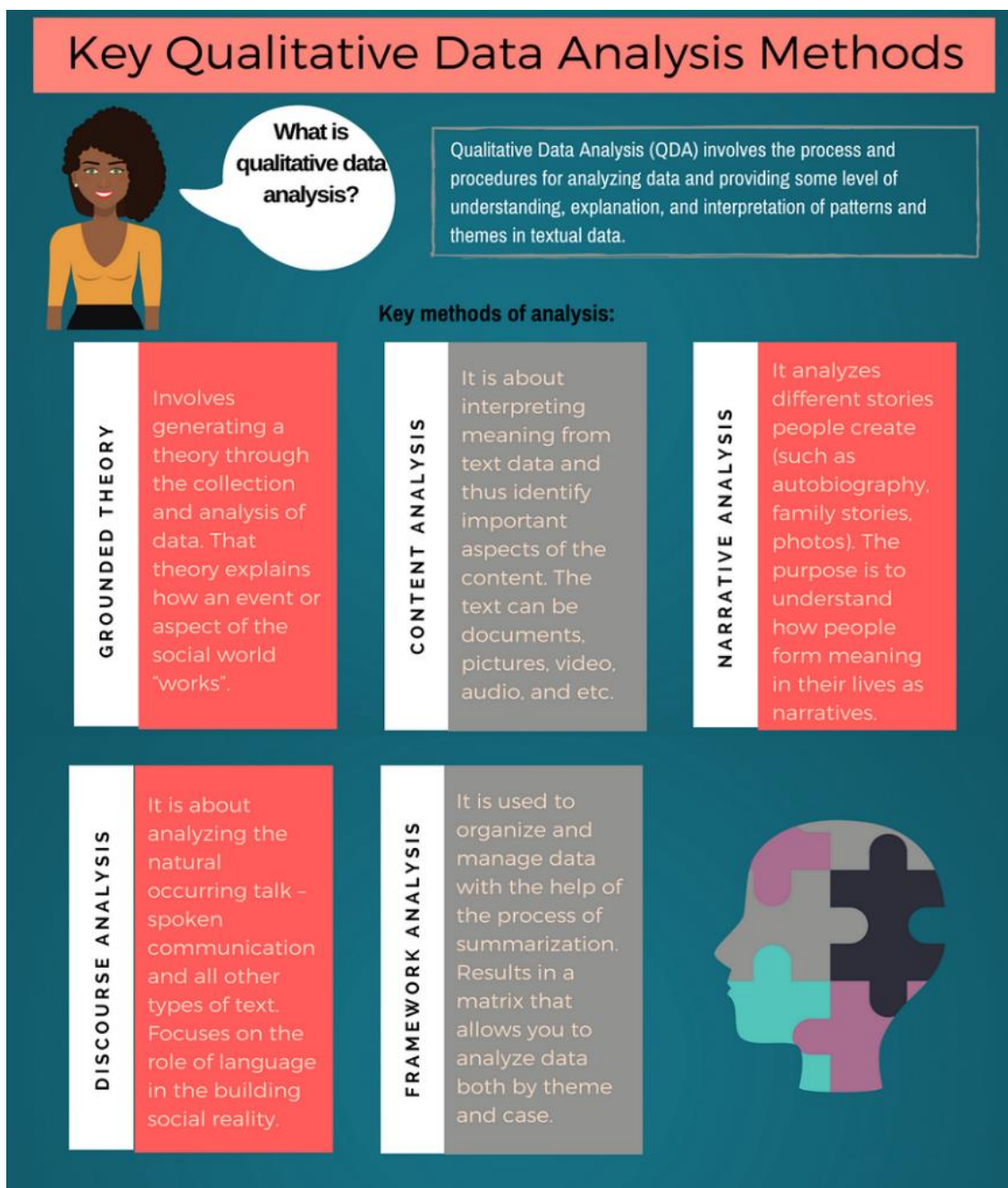


Figure 8. Key qualitative data analysis methods (Intellspot, n.d.)

Since the authors used interview to collect information, with a detailed study of data analysis methods, it was revealed that the method of grounded theory is the most convenient and appropriate.

Grounded Theory can be considered both as a strategy of qualitative research and as a method of analyzing qualitative data obtained in the course of sociological research. This theory was presented in the late 60s by Bernay Glazer and Anselm Straus, having been further developed with the assistance of Juliet Corbin (Infopedia, 2016). Their main steps of the approach within the framework of this theory are as follows:

- viewing interview texts and observation protocols;
- encoding text in a document and comparing encodings;
- search for indicators and nomination of categories in events and behaviors;
- constant comparisons and standardized questions to open new categories;
- category saturation is a process when no new topics contribute to filling categories with a new meaning;
- building a concept;
- verification of the received theory for internal and external acceptance criteria.

Using this theory will help with organizing data and consistently preparing it for structured, thoughtful and in-depth theories. Consistency, clearly defined and organized concepts and categories can be useful in the long run (Brennan, 2021).

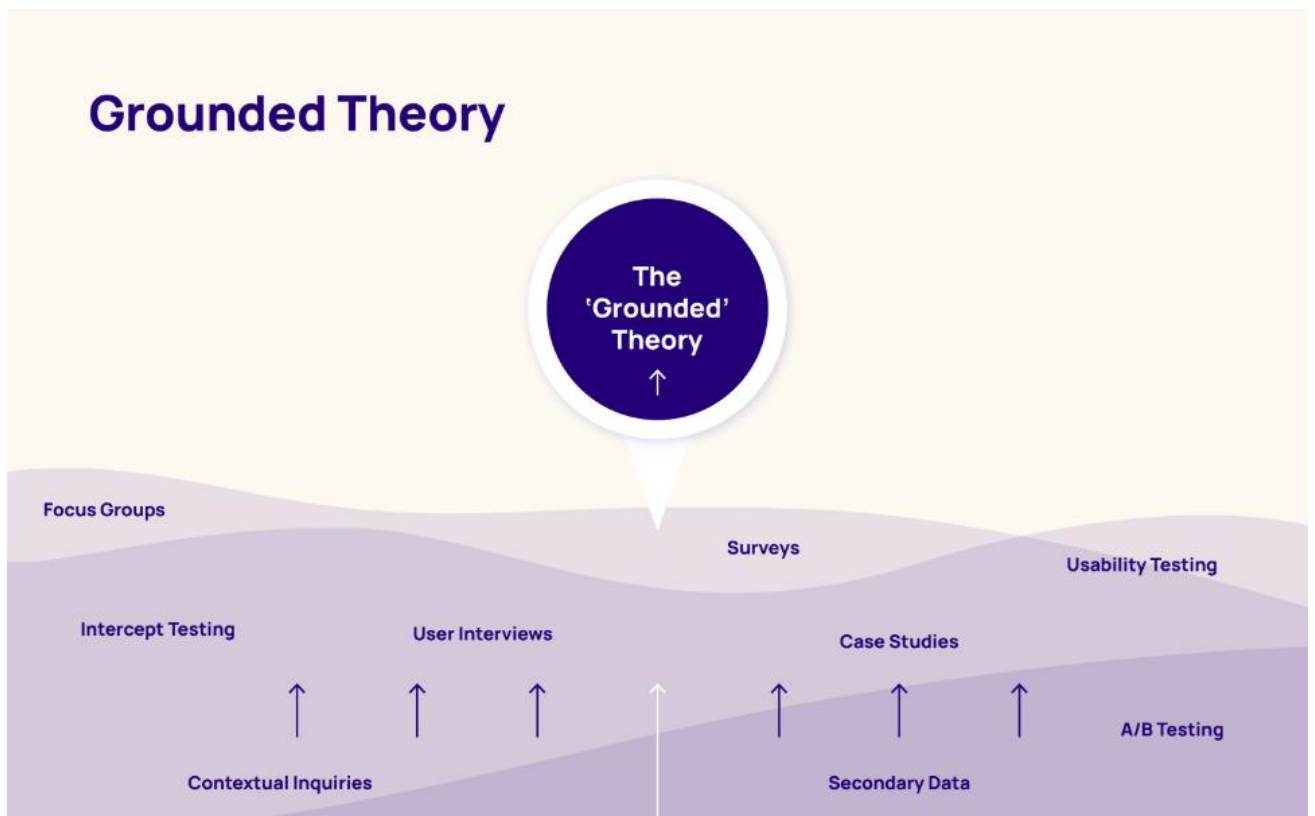


Figure 9. Grounded theory (Dovetail, 2021)

### 3.4 Ethics and research quality

The interview should be conducted impartially, the interviewee should not be afraid of criticism and disputes. In no case should the interviewer express his opinion, and his position should remain neutral. In addition to being open-minded, the researcher should not allow any hints about what the interviewee's answers should be. It should be remembered that the main purpose of the interview is to collect information, not to influence the respondent (Trofimov, 2020).

A requirement of the interviewer's conduct is that he or she must constantly, in all situations, maintain good manners, never lose patience, and refrain from using a stern tone.

However, it should be kept in mind that declining an interview is a natural right of the respondent, and it is the researcher's responsibility to take all reasonable precautions to avoid this. However, in no circumstances should the respondent be made responsible if he or she is still unprepared for the discussion and refuses to be questioned. Prior to the interview, the respondent was notified and gave his consent to the further publication of his answers in the authors' research work. The main ethical principles of the interviewer are presented below:



- Honesty;
- Privacy;
- Respect for the personal boundaries of the interlocutor;
- Respect for the interlocutor;
- Tact, courtesy.

During the interview, the authors followed the rules of etiquette and did not ask the respondent personal questions, such as questions about religion, politics, private life, as well as other questions that are not relevant to the purpose of the study.

Reliability, which traditionally characterizes the consistency and repeatability of results, is not applicable to qualitative research, where the measurement tools are mainly observations and interviews: measuring a second time, we always measure a new object. In the broad sense of the word, validity, i.e. validity of the method, means that the empirical data obtained with its help correspond to the main objectives of the study. Descriptive validity is related to whether the researcher correctly states in his work what he saw and heard during the study. This is the first and most important aspect of validity – an incorrect description of people's actions and words will negate further attempts to achieve an understanding of the phenomenon under study (Belanovskiy, 2010).

## **4 Results**

Today it is difficult to overestimate the role of marketing research in the development of the modern market. The success of doing business of any enterprise depends on whether its products meet the basic requirements of consumers. To find a strategic marketing solution, short-term and long-term planning, and get the best results, it is necessary to have up-to-date information not only on the market, but also on the perception of target visitors.

In order to study business strategies, obtain information about the latest technologies and developments of the company, as well as consumer opinions and requests for technological innovations of Mercedes-Benz safety, the authors conducted an interview. This part of the study describes the analysis and results of the interview.

At the beginning of the interview, the authors told the respondent more about their research, about its goals, and also discussed the part of the work already done.

Then an important part of the interview was the discussion of the company's technological innovations. In the modern world, different car companies have a large number of different technologies, many of them are similar in concept, but in practice there are always companies that succeed and go ahead of the rest.

One of the objectives of the interview was to find out which Mercedes-Benz technologies make the company one of the best among competitors.

Since the respondent is a sales director, it was important to find out what buyers pay attention to first of all.

At the end of the interview, the promotion of technological innovations and how to do it better were discussed.

Interview data	Codes
<p>“Tracking sensors are the most important tool for both active and passive security. They track other cars in dead zones or an obstacle in front of the car or for example, monitor compliance with markings. And they signal the driver about the threat. If a collision is inevitable, the system prepares the driver for an accident by tightening the seat belts. Therefore, the evolution of tracking sensors is very important for improving the system. The more sensitive the camera is, the earlier it will warn the driver about the danger. When an emergency situation develops, it is very important”.</p>	<p>Technological Innovations</p>
<p>“In order to give their product the greatest competitive advantages, automobile manufacturers must introduce technological innovations into their cars”</p>	<p>Competitive advantages</p>
<p>“Yes, indeed, the company has recently begun to significantly revise its strategy for further development. If we talk about the timing of its implementation, then we have two rather long time periods laid down for the fulfillment of these global tasks”.</p>	<p>Development strategy</p>

<p>“In the conducted marketing research of consumers' requests and needs for technological innovations of the company, it was revealed that the majority of respondents consider car safety to be the main direction of technological innovation”.</p>	<p>Customer's choice</p>
<p>“Marketing tools allow you to build an effective management system for the development and implementation of technological innovation. It is necessary to prepare the technological innovation for actual consumption, to give the consumer the opportunity of virtual consumption of the novelty, so that the product is recognized and recognized as well-known, before it enters the market”.</p>	<p>Marketing</p>

Table 1. Coding of the interview

#### 4.1 Customer's choice

According to the results of the interview, the authors learned that the car dealership conducted a survey in 2021 and one of the questionnaire questions was supposed to reveal what associations people had with the phrase "Innovative safety technologies in Mercedes-Benz cars". Most of the answers were that the safety of cars and also road traffic in general is the main thing in which automakers should constantly improve their technologies. This highlights the relevance and importance of technological security innovations. This is also evidenced by the fact that the largest number of respondents would choose a car with innovative safety technologies, but in the most ordinary design, and not vice versa. However, when participating in a test drive of different Mercedes-Benz cars, most would first of all get into a car that has the most attractive exterior and interior design. This suggests that when choosing a car for personal use, people choose the safest car, and it's more interesting for people to just take a test drive in a car with the most attractive design.

However, when asked how often it is worth introducing technological safety innovations into Mercedes-Benz cars, the majority replied that it is enough to do this once a year, and immediately after it comes the answer - once every few years. Thus, no one answered that these technologies do not need to be implemented at all.

Moreover, more than half of the respondents to this survey believe that Mercedes-Benz cars can be called the safest cars, despite the fact that people with other cars and people without a car took part in the survey. This means that the company's marketing communications work well in the direction of security.

## 4.2 Marketing

Currently, a certain and widespread approach to structuring the main components of the marketing complex, convenient for memorization, which has been called "4P", has already developed in world practice. In order to develop and justify a set of marketing measures in the direction of the development of technological safety innovations in Mercedes-Benz cars, it is necessary to consider all "4P".

To begin with, the authors reviewed the Product, which is the technological innovation of safety in Mercedes-Benz cars. According to the results of the study of secondary data, as well as the results of interviews, technological safety innovations should be as follows: improved seat belts and airbags, improved braking system, driver fatigue tracking systems and keeping the car in the lane. However, the company does not take into account the characteristics of individual countries in which the same cars will be presented on the market, with exactly the same technological innovations. According to respondent 1, Russia is characterized by its unpredictable situations on the roads, like in no other country. It is necessary to adapt the product to such situations, which may be: pedestrians, dogs and cats who suddenly appeared on the road, drunk drivers driving other cars whose behavior is also difficult to predict, as well as persons with little driving experience or without a driver's license at all. The results of the study conducted by the car dealership show that Russian consumers, due to such unpredictable situations, are not sure of the effectiveness of technological innovations in safety, they are rather on the contrary, convinced that automating the actions of a car in dangerous situations on Russian roads will cause unnecessary problems and inconveniences when driving. It is obvious that the test tests of technological safety innovations were carried out on high-quality roads in Germany, while in some countries there is an additional danger - these are pits and potholes on the roads. It is not known how the car will behave in such conditions. Thus, it is necessary to carefully consider the promotion of the product for each country individually, taking into account all the features and driving style of people in this country.

Next, it is necessary to consider the following component of the marketing measures package – Price, the price of Mercedes-Benz cars with technological safety innovations. Mercedes-Benz cars are mainly luxury cars that only wealthy people can afford, for whom it is often not important whether the car is equipped with innovative safety technologies, only the brand itself is important, emphasizing the status of the owner. As mentioned earlier, not all consumers are confident in the effectiveness of technological security innovations, and hence the question follows: is it necessary to pay money for technological security innovations that residents of some countries will hardly use? After adapting the technological innovations of safety to the peculiarities of the market of each country individually, there is a possibility of a drop in the price of a Mercedes-Benz car, since many security systems are simply not needed by all consumers. To prevent this from happening, it is necessary to give potential consumers the opportunity to experience the car, for example in specially designed simulators, and when buyers are convinced that the technology is adapted to their market, they are of course more likely to purchase such a car. Thus, with a similar price of cars with technological safety innovations, with conventional cars, consumers will choose the safest car. This will have a positive impact on the overall level of safety on the roads, as well as contribute to reducing deaths in road accidents.

The next "P" of the marketing complex directly indicates the need to modify the marketing strategy of the company. This Place is the place where the product is sold. "Of course, such a well-known company as Mercedes-Benz has already established itself in the markets of all countries, our country is no exception. But the peculiarities of our mentality dictate their own rules, which are not always applied by foreign companies entering our market. For a Russian person, marketing methods built according to the German structure seem too formal and rigid, which reduces the effectiveness of Mercedes-Benz's marketing activities in the Russian market. This also applies to the marketing of technological innovations in security, a Russian person will not always understand the need for all these technologies. The Russian buyer needs to show his personality when buying a car with innovative safety technologies, and only then point out the specific advantages of safety technologies" (Int.1). Also, for the successful sale of its Mercedes-Benz cars, it is necessary to conduct marketing research separately in the market of each country and identify the characteristic features of the consumer.

Finally, "4P" is a promotion. Mercedes-Benz needs to organize the promotion of cars equipped with innovative safety technologies to each market, so that these technologies are in demand. For the greatest immersion in the specifics of marketing in the market of a certain country, it is necessary to find a marketing specialist in this particular country who knows the specifics of its market well. Moreover, it is necessary to separate the functions of the company's marketer from the functions of sales. What will contribute to the greatest creativity in marketing, separating it from the rest of the company's problems.

It is vital to use marketing strategies like sales promotions that are more extensively disseminated to Mercedes-Benz vehicle dealers. Dealerships should be motivated to increase sales of their goods, and the Mercedes-Benz corporate office should reward them for doing so with a variety of bonuses. It will also be effective to prescribe to Mercedes-Benz dealerships a special program to popularize technological safety innovations, for example, to make it a prerequisite for their activities to conduct annual promotions, test drives or extreme driving lessons.

Also, many companies have a practice of providing an appropriate discount when exchanging an old car of the same brand for a new car. This practice can also be applied by Mercedes-Benz to promote innovative safety technologies, as well as to retain its consumers. It is necessary to prepare a technological innovation for actual consumption, to give the consumer the opportunity of virtual consumption of the novelty, so that the product is recognized and recognized as well-known, before it enters the market.

“Advertising for Mercedes-Benz vehicles is a somewhat uncommon occurrence in Russia. Perhaps the brand's marketers assume that it speaks for itself in our nation, and to some extent this is true, but the findings of the study demonstrated that not all information regarding technological advancements in security reaches Russian customers” (Int.1). Advertising on television is one of the brightest and most memorable ways to announce innovative technologies. Mercedes-Benz automobiles serve as its own kind of advertising, thus it is essential to provide the audience with eye-catching instructional ads that highlight the key benefits of emerging technologies. Since Mercedes-Benz cars already have their fans who, regardless of any factors, always choose this particular car, a person who is going to buy a Mercedes-Benz and has the money for this purchase is obviously already certain that he will buy it, regardless of its technological innovations in the field of

safety. However, someone who is unsure about which automobile to buy should be advised to go with a Mercedes-Benz, and to do this with the aid of bright and video, surely taking into consideration the behavioral quirks. The corporation can persuade the consumer to buy its products by using advertising promotion in the media, social networks, and on advertising stands. With so many options for cars, advertising should, to some extent, persuade people of the necessity for technical advancements in the area of safety. This will aid consumers in making the best decision for their needs.

## **5 Discussion and conclusions**

This part contains answers to the main questions posed at the beginning of the study, as well as information on how to apply the data obtained in the future. In addition, in this part, the authors will evaluate the quality and process of their research.

### **5.1 Answers to research questions**

At the very beginning of their study, the authors identified three main issues. This helped to narrow down the search for information and reveal a clearer understanding of the relevance of such research.

RQ1: What are the fundamentals of technological innovations in the automotive industry?

Speaking of technological innovations, it is impossible not to mention the devices that turn cars into "smart" partners on the road, because they have become one of the signs of the solidity of the driver and passengers: people who care about their own safety are trustworthy. Today, thanks to systems such as adaptive head light control Adaptive Highbeam Assist, which recognizes moving passing or oncoming cars with their headlights on and adjusts the head light, Night vision system Night View Assist based on an infrared camera that can recognize pedestrians, thanks to the Lane Keeping Assist marking warning system, etc. the car can "see", "feel", "intuitively" react to detected hazards and act "on its own initiative" in order to avoid emergency situations or to reduce the severity of the accident. Unlike traditional analogues with similar functions, the Mercedes-Benz system, among other things, takes into account the driver's factor and can accurately determine whether the intersection of the markings is accidental or intentional. Therefore, the alarm


does not turn on, for example, when accelerating before overtaking or entering a motorway, braking sharply or entering a turn.

In addition, the capabilities of the control and display system themselves are of great interest to buyers. Mercedes-Benz has a COMAND, in which an SD memory card slot, a modified Bluetooth interface and a USB interface are added. Today it is already difficult to imagine a car without navigation, because if a person has used it for at least a few hours, then its absence already causes some discomfort. This is not only a quick and accurate calculation of the route, but also a new sense of topographical confidence.


Also, it is important to mention about tracking sensors — this is the most necessary tool for both active and passive security. They track other cars in dead zones or an obstacle in front of the car, or, for example, monitor compliance with markings. And they signal the driver about the threat. If a collision is unavoidable, the system prepares the driver for an accident by tightening the seat belts.

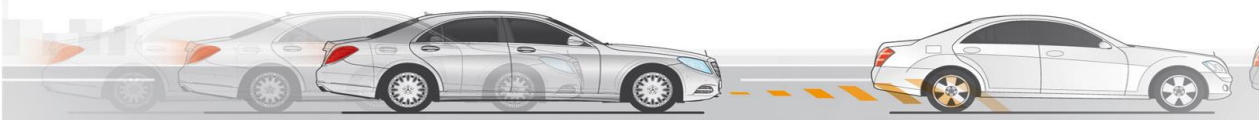
## ▲ Collision Prevention Assist Safeguarding against rear-end collisions

Visual and acoustic warnings of an imminent rear-end collision.



Adaptive brake boosting effect and activation of PRE-SAFE\*\* before an imminent accident, when the driver applies the brake.





▲ **Collision Prevention Assist.** As long as there is no threat of danger from the immediate driving situation, the system goes unnoticed. **Bumper to bumper.** In town, on country lanes or on the motorway: at speeds of 30–250 km/h, Collision Prevention Assist can safeguard against rear-end collisions in typical traffic situations. **Inattention.** If the driver becomes inattentive or is distracted, Collision Prevention Assist can recognise the imminent rear-end collision in good time. **Warning.** If Collision Prevention Assist identifies the threat of a rear-

end collision, the system gives visual and acoustic warnings, so that the driver still has the chance to take immediate action to avoid the accident. **Braking.** As soon as the driver applies the brake, the Adaptive Brake Assist system within Collision Prevention Assist can boost the brake pressure to prevent the collision. **Safety.** The ability to adapt the braking pressure means that the available braking distance can be used to maximum effect and helps to avoid follow-on accidents. [\* PRE-SAFE® available as an option]

Figure 10. Collision prevention assist (Caricos, 2014)



Therefore, the evolution of tracking sensors is very important for improving the system. The more sensitive the camera is, the earlier it will warn the driver about the danger. When an emergency situation develops, it is very important.

## ▲ Tail lights with multi-level functionality

### Showing consideration to other road users

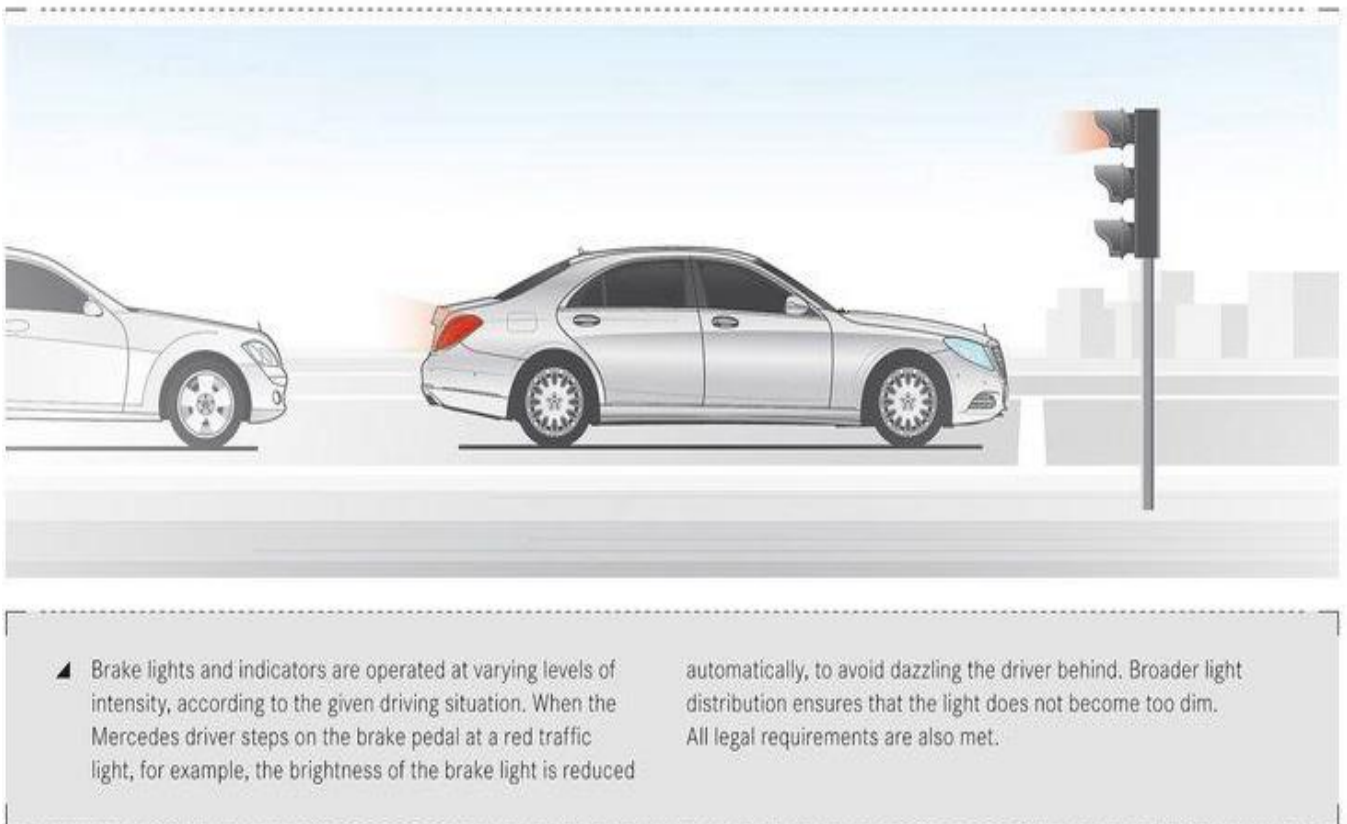


Figure 11. Tail lights with multi-level functionality (Incarshow, n.d)

The first airbags in Mercedes appeared back in 1981 - one such airbag was an optional equipment for the second generation of the S-class in the W126 body. After almost 40 years, the S-Class remains the trendsetter of this segment and provides a range of innovative safety systems, including rear passenger airbags. In combination with inflatable belts, as well as an additional cushion under the rear seat, they make the S-Class the segment leader in rear passenger protection.

Mercedes has learned to jump sharply by eight centimeters if its radars anticipate a side collision – in order to take a hit on the reinforced threshold. At the same time, the external side support roller will push the passenger away from the door, freeing up additional centimeters for opening the side curtain cushion.

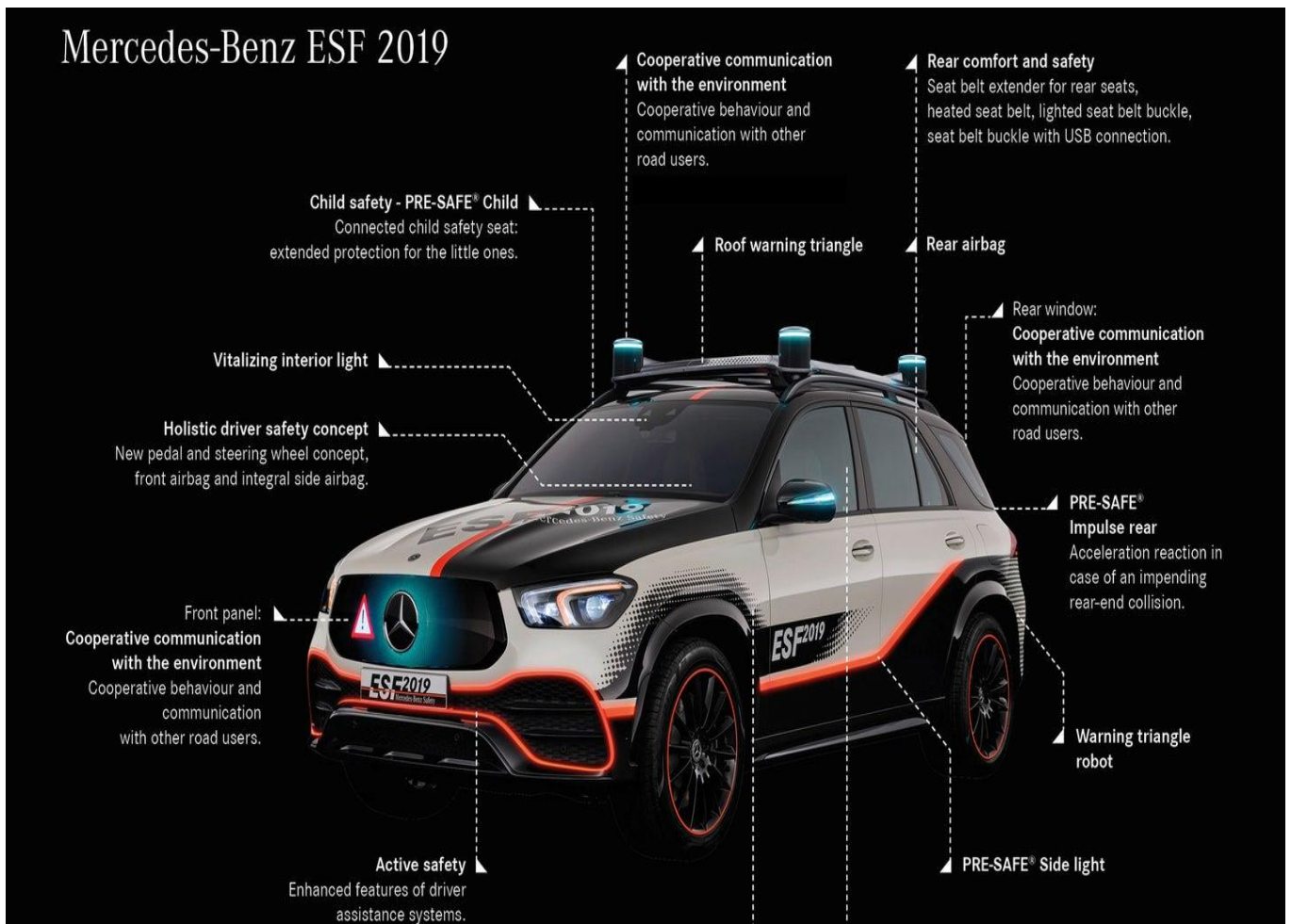


Figure 12. Mercedes-Benz ESF 2019 (Klein, 2019)

RQ2: What are the requests and needs of consumers for technological innovations Mercedes-Benz safety?

Today it is difficult to overestimate the role of marketing research in the development of the modern market. The success of doing business of any enterprise depends on whether its products

meet the basic requirements of consumers. To find a strategic marketing solution, short-term and long-term planning, and get the best results, it is necessary to have up-to-date information not only on the market, but also on the perception of target visitors.

According to the respondent's response, the company conducted a survey among customers and just interested people. The objective of this marketing research was to find out consumers' awareness of technological safety innovations in Mercedes-Benz cars, as well as to determine the need for these technologies according to the respondents of different categories of people, to determine which innovative safety technologies are needed and to identify the overall level of safety of cars of this brand. In the conducted research of consumers' requests and needs for technological innovations of the company, it was revealed that the majority of respondents consider ensuring the safety of cars to be the main direction of the introduction of technological innovations. The majority of respondents consider Mercedes-Benz cars to be the safest, and this is despite the fact that the study was conducted not only among owners of Mercedes-Benz cars, but also among owners of other cars, and even among people who currently do not have a car. As a result, many people believe that road safety is the main thing in which car manufacturers should improve their technologies.

RQ3: What marketing tools can be used in the development of technological safety innovations in Mercedes-Benz cars?

It is vital to use marketing strategies like sales promotions, which will target Mercedes-Benz auto dealers more broadly. Dealerships should be motivated to increase product sales, and the Mercedes-Benz corporate office should reward them for doing so with a variety of incentives. It will also be effective to prescribe to Mercedes-Benz dealerships a special program to popularize technological innovations in safety, for example, to make it a prerequisite for their activities to conduct annual promotions, test drives or extreme driving lessons.

Also, many companies have a practice of providing an appropriate discount when exchanging an old car, of the same brand, for a new car. This practice can also be applied by Mercedes-Benz to promote innovative safety technologies, as well as to retain its consumers. To popularize and create the image of the safest car on the market, Mercedes-Benz needs to use event marketing and

other non-traditional methods of marketing communications, which, like nothing else, will help the consumer to experience all levels of car safety. It is necessary to prepare a technological innovation for actual consumption, to give the consumer the opportunity of virtual consumption of the novelty, so that the product is recognized and recognized as well-known, before it enters the market. In addition, as mentioned earlier, it is necessary to take into account all four aspects of "4P".

## **5.2 Theoretical and practical implications**

The answers to questions RQ1 and RQ2 are an example of theoretical implications while the answer to question RQ3 can be applied in practice.

When planning and making management decisions for the implementation of technological innovations, it is necessary to choose the appropriate marketing strategy. It should include a set of marketing measures, as well as the most effective marketing communications.

In order to give their product the greatest competitive advantages, automobile manufacturers must introduce technological innovations into their cars. Due to the large number of cars on the roads and the annual increase in dangerous situations on the roads, often leading to death, the most important area of application of technological innovations is to ensure the safety of cars.

Through the development of distinctive marketing plans and tactics that take into account the characteristics of various geographical areas, psychological traits, and consumer preferences, businesses can increase their effectiveness in ensuring the safety of manufactured cars.

## **5.3 Assessment of the process and the research quality**

Since the authors had an accurate plan and an idea of their research topic, the process of writing this work passed almost without complications. What is more, a favorable factor was the personal interest of the authors in the chosen case company, it helped in way that all the information was carefully checked and its search in general took place with great enthusiasm.

One of the few difficulties that authors had to face is that a lot of information about the selected company that is freely available is already outdated. Fortunately, the person who was chosen to

conduct the interview had many years of experience in the promotion department and now holds a position related to sales. Thus, he was able to answer all the additional questions, which greatly simplified the further course of work.

#### **5.4 Limitations**

This study is not a business plan or a recommendation for the implementation of marketing tools. The research was aimed at collecting and analyzing existing developments and improving them. Despite the fact that all the information was collected from official sources and many things were confirmed during the interview, the process of writing this work took quite a long time, accordingly, some information could be outdated, and functions and developments have already been applied.

#### **5.5 Future research**

All global automotive brands are trying to improve their innovations in the field of safety. Thus, this study can be applied to other brands. Subsequent studies may be based on the work carried out by the authors, and there is also a possibility of applying the collected information in practice. Therefore, developing distinctive marketing plans and strategies that take into account the uniqueness of various geographical areas, psychological traits, and consumer preferences would help businesses increase their efficiency in ensuring the safety of manufactured autos.

## References

Analytical agency AUTOSTAT (n.d.). Retrieved October 24, 2022, from <http://www.autostat.ru/>

Analytical agency AUTOSTAT. (n.d.). AUTOSTAT. Retrieved October 24, 2022, from <http://www.autostat.ru/>

Artamonov B. (2006). Marketing complex "7r" as a development of the concept of "Marketing-mix". Scientific Bulletin of the Moscow State Technical University of Civil Aviation, 104.

<https://cyberleninka.ru/article/n/kompleks-marketinga-7r-kak-razvitie-kontseptsii-marketing-mix.pdf>

Artsybyshev S. (2010). Marketing strategies and market concepts for managing automotive companies. Russian Foreign Economic Bulletin, (12), 61–66. <https://cyberleninka.ru/article/n/marketingovyie-strategii-i-rynochnye-kontseptsii-upravleniya-avtomobilnymi-kompaniyami>

Auto statistics. (2012). Car sales in Russia in 2012. greenway.icnet.ru. [http://greenway.icnet.ru/CarSale\\_2012\\_1.html](http://greenway.icnet.ru/CarSale_2012_1.html)

Azoev, G., Chelenkov, A. Competitive advantages of the firm (M., 2000) - CONTENTS OF THE BOOK. (n.d.). Retrieved October 1, 2022, from <http://www.prometeus.nsc.ru/contents/books/azoev.ssi>

Babaev A. (2005). Marketing at trade enterprises. - M.: Economics, - 293 p.

<https://cyberleninka.ru/article/n/strategiya-razvitiya-marketinga-torgovogo-predpriyatiya-1/>

Behind the Wheel. (n.d.). Website Behind the wheel [www.zr.ru](http://www.zr.ru) - Articles, news, tests, reviews, forum discussions, photos, videos. Retrieved October 2, 2022, from <http://www.zr.ru/>

Belanovskiy S. (2010) Validity of qualitative methods, [https://www.psyoffice.ru/8/psichologiy/book\\_o502\\_page\\_9.html](https://www.psyoffice.ru/8/psichologiy/book_o502_page_9.html)

Bobrova K. (2021, November) Focus group as a research method [https://spravochnick.ru/sociologiya/sociologicheskie\\_issledovaniya/fokus-gruppa\\_kak\\_metod\\_issledovaniya/](https://spravochnick.ru/sociologiya/sociologicheskie_issledovaniya/fokus-gruppa_kak_metod_issledovaniya/)

Brennan M. (2021, December) What is grounded theory? <https://dovetailapp.com/blog/what-is-grounded-theory-qualitative-research/>

Burnysheva T. (1999). Management of innovations and modernization of the post-Soviet industry. - Novokuznetsk. Retrieved October 5, 2022, from <https://pandia.ru/815839/>

Bykov A. & Filosofova G. Competition. Innovation. Competitiveness: a study guide. – M.: Unity-Dana, 2008. – 295 p.

Chetty P. (2016, October) Importance of research approach in a research <https://www.project-guru.in/selecting-research-approach-business-studies/>

Daimler's profit grew by 26%, Mercedes sales reached a record. (2012, April 27). Gazeta.Ru. [https://www.gazeta.ru/business/news/2012/04/27/n\\_2316277.shtml](https://www.gazeta.ru/business/news/2012/04/27/n_2316277.shtml)

Deborah, G., & Bresman, H. (2007). X-Teams: How To Build Teams That Lead, Innovate, And Succeed. <https://books.google.ru/books?id=Na6MdWJPayoc&printsec=frontcover&hl=ru#v=onepage&q&f=false>

Dolan, Edwin, J. & Campbell, Colin, D. Money. (1988). Banking and monetary policy. Retrieved October 15, 2022, from [https://dl.booksee.org/gensis/235000/d73a4a3eb552690e41e860cad79db5ef/as/\[YEdvin Dzh. Dolan, Kolin D. Kyempbell\] Dengi, ban\(BookSee.org\).pdf](https://dl.booksee.org/gensis/235000/d73a4a3eb552690e41e860cad79db5ef/as/[YEdvin Dzh. Dolan, Kolin D. Kyempbell] Dengi, ban(BookSee.org).pdf)

Filosofova, G., Bykov, A. (2008). Innovation. Competition And Competitiveness: textbook. <https://referatodrom.ru/book/filosofova-t-g-konkurencziya-i-konkurentosposobnost-t-g-filosofova-v-a-bykov-m-yuniti-dana-2009/>

Frost & Sullivan. (2018, October 3). 20 Car Sharing Industry Statistics, Trends & Analysis. <https://brandongaille.com/20-car-sharing-industry-statistics-trends-analysis/>

Gazeta.Ru (2012) Article of the information portal. *Daimler's profit grew by 26%, Mercedes sales reached a record*. Retrieved October 12, 2022, from [https://www.gazeta.ru/business/news/2012/04/27/n\\_2316277.shtml](https://www.gazeta.ru/business/news/2012/04/27/n_2316277.shtml)

Golubkov, P. (2000). *Marketing research*. Retrieved October 15, 2022, from [http://htbiblio.yo-lasite.com/resources/Golubkov\\_Issledovaniya.pdf](http://htbiblio.yo-lasite.com/resources/Golubkov_Issledovaniya.pdf)

Golubkov, P. (2004) Journal Marketing in Russia and abroad/Marketing planning. Retrieved October 20, 2022, from <http://www.ipnou.ru/article.php?idarticle=000512>

Green site (2013) Auto statistics [http://greenway.icnet.ru/CarSale\\_2012\\_1.html](http://greenway.icnet.ru/CarSale_2012_1.html)

Harrapa (2022, January) Secondary data collection methods <https://harappa.education/harappa-diaries/secondary-data-collection-methods/>

Infopedia (n.d.) The main approaches to data analysis in qualitative research <https://infopedia.su/8xc419.html>

Jansen D. & Warren K. (2020, June) What exactly is research methodology? <https://grad-coach.com/what-is-research-methodology/>

Klyuchkovsky B. (n.d.). Economics and marketing: similarities and differences/Scientific publication. Retrieved September 22, 2022, from <http://www.repiev.ru/articles/Economics-Marketing.htm>

Maslow A. (1954). Motivation and Personality. p.63. Retrieved October 5, 2022, from <https://archive.org/details/motivationperson0000masl/page/n439/mode/2up>

Otus (n.d.) Necessary tools for data analysis <https://otus.ru/journal/neobhodimye-instrumenty-dlya-analiza-dannyh/>

Pedro, P. (2022) Top Five Automotive Technology Trends for 2022. Retrieved October 12, 2022, from <https://www.gartner.com/en/newsroom/press-releases/2022-02-17-gartner-identifies-top-five-automotive-technology-trends-for-2022>

Rossiter, J. & Percy, L. (2000). Advertising and promotion of goods. Retrieved October 20, 2022, from <https://cyberleninka.ru/article/n/factory-privlekatelnosti-tvorcheskih-idey-televizionnoy-reklamy>

Smirnov S. (2019). The history of the development of passive safety of Mercedes-Benz cars [https://mercedesrussia.ru/page/view/history/1183istoriya\\_razvitiya\\_passivnoy\\_bezopasnosti\\_avtomobiley\\_mercedesbenz](https://mercedesrussia.ru/page/view/history/1183istoriya_razvitiya_passivnoy_bezopasnosti_avtomobiley_mercedesbenz)



Treasure E. & Chadwick B. (2008, March) Methods of data collection in qualitative research: interviews and focus groups <https://www.nature.com/articles/bdj.2008.192>

Trofimov R. (2020) Ethics of the interviewer's behavior during the conversation [https://spravoch-nick.ru/zhurnalistika/etika\\_povedeniya\\_intervyuera\\_vo\\_vremya\\_besedy\\_s\\_geroem/](https://spravoch-nick.ru/zhurnalistika/etika_povedeniya_intervyuera_vo_vremya_besedy_s_geroem/)

Ushakova, I. & Belfi, B. (2002). Socio-economic efficiency of trade: criteria and indicators. Kyiv: Higher. School. Retrieved October 20, 2022, from <https://search.rsl.ru/ru/record/01001098519>

Ward L. (2021, February) Difference between quantitative and qualitative research <https://ru.strephonsays.com/difference-between-quantitative-and-qualitative-research>

## Appendices

### Appendix 1. Interview questions

1. Mercedes positions itself as the safest car brand. Do you really think that your cars are safer than the cars of competitors?
2. What technical innovations should increase the attractiveness of products?
3. In recent years, the Mercedes model range has not just expanded, but literally divided into several directions, including fully electric models. How will the brand change in the future and what does the new development strategy suggest?
4. Today, all companies of premium car brands make cars of approximately the same level of safety with a very similar set of auxiliary systems. For example, a blind spot monitoring system, emergency braking in front of an obstacle, auxiliary lane motion systems. What developments of Mercedes should reverse the situation?
5. Is the brand going to offer customers completely new security systems for their cars?
6. What marketing tools can be used in the development of technological innovations in the field of safety of Mercedes-Benz cars?