

A Research in Car Design Concept – Citroën DS

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Abstract

The Citroën model “DS 19” did not have the model redesign itself, however it was created as a Brand. The Brand “DS” was inspired by the companies that were strictly concerned with modifying the machines coming directly from the factories by adding them aesthetic in terms of performance. This article is based on the research of Citroën cars, forgotten by many people, where the model “DS 19” will have appearance and proposal of more dynamic, innovative and modern design.

Keywords: Citroën, DS 19, design, innovation, modern design.

1. Introduction

This article derive from my PhD thesis which is the continuation of my passion, the result of my personal concerns in the direction of the car design, in terms of the exterior and interior appearance of the concept car. The way a car is presented is the result of an appropriate design process of a very complex study that includes aspects from very vast fields.

Here, I did not want to highlight some standards by which we must invent something new, something revolutionary, I just followed my heart and intended to do something I think is important and necessary to make a significant contribution. This PhD thesis characterizes me, first of all as a person, but especially as a designer. It reflects the direction that I want to pursue and deepen in the future, by the opportunity of a job in the field of product design, more exactly the field of car design.

The PhD thesis is the continuation of my bachelor and master's degree, my deep involvement in the field of auto design. I chose this theme because this is the direction I want to pursue in the future. I am impressed and inspired by the automotive industry. Many people say that with all today's talents it's very difficult to work in the field, to which I agree. Nobody said it would be easy, I know it's hard to get to work as a designer at a known car company, but not impossible, and that's enough for me, when you work hard and you really want something, you cannot fail.

It's not something that came unexpectedly, it's something that has formed with years, that love for the revolutionary invention that goes on four wheels and ensures the mobility that we have longed for, for so long. I have a strong reason and a great motivation to follow the path of a career in the car industry. It's not just a transport car, it's more than that, and it's a memory that made me discover myself. It's something you wanted when you were a kid, it's like a lifestyle in

which you invested a lot of effort and work to create something that helps people get from point A to point B and enjoy the ride and the shape, dynamics, elegance and comfort that is provided for them during the journey. To design something, not just cars, but other products means motivation and love for drawing. I like to design new things because it's about industry's demands, to be more creative and to invent new, beautiful and more functional things. This work is very important because it is the essence of everything I have learned in these years.

1.1 Sedan-type car

The car is a vehicle with two up to nine seats, including the driver's seat, designed and used for rapid transport of persons and luggage and/or the carriage of goods, or even to tow a trailer. Depending on the body shape, the cars can be: berlin, limousine, coupe and break, or with convertible roof, like the roadster and speeder. All body types are presented by three groups: tri-volume, bi-volume and mono-volume. The tri-volume body type is characterized by separate compartments: for passengers, luggage and the engine. This type refers to the less universal car body because of its transformation possibilities of the passenger compartment and the luggage compartment. This group includes sedan, coupe, cabriolet, roadster, limousine and pick-up.

The sedans that we are going to talk about the most are available in several sizes, ranging from small to medium size. The rear doors are coming in handy for access to the rear seats. The luggage compartment is the safest way to store luggage or cargo. The car's body tends to be lowered for better aerodynamics and relatively lightweight, which helps minimizing the fuel consumption. This body type is the most widespread among vehicles. At the sedan, the rear seat does not rise, it is fixed, rigid on the frame, although the backrest can be left down when transporting large objects. Sedan is the most common type of bodywork among cars. The word "Sedan" is an English word and it came from the fact that the first luxury car with these features was developed in the city of Sedan, France. It is noteworthy that, for the same car body style, the French are using the synonym "berlin", a word of German origin. Berlin is also considered the first European city where such a transport was developed.

2. Method – Methodology applied in research

The methodology applied in the research begins with the assessment of the bachelor's degree theme where, for the first time, I have started my professional car design research, more precisely the SUV type design. After completing the first three years of college, I have enrolled for two more years of Masters where I continued on the field of cars but this time with more experience. I tried to study other types of cars, and in the dissertation thesis I found the Minivan type cars. On that point I have already started to strictly research only the iconic cars or which impacted a given period. All the work was based on the research of old-timer cars and their influence on the market.

As an applied method, I used books that were in the field of car design such as: H-point, Design Sketching, Presentation Techniques, and Sketching Drawing Techniques. I spoke with Oliver from Car Design Archives who helped me a lot with information about the meaning of Citroën in France and information from specialized websites, such as: www.cardesign.ru, www.carbodydesign.com, and www.cardesignnews.com. On these sites I was able to find information that came from the heads of the design departments, where they explained their approach to the whole process of creating the ideal cars for consumers. This has helped me a lot on the documenting side when we were starting out on the creation plan to which point we are asking ourselves a lot of questions. The first phase starts with planning the products and then the process begins with research and gathering information about markets, competitors and customers. For all these questions we need to find an answer and a solution, therefore the basic

principles and key elements of the design process remain the same, developing the process with a purpose, with a logical process. All of these together with the study of technology allows the strategy of product development.

2.1 DS created as a brand

Officially created on June 1, 2014, the “DS” has become a self-brand and has stated its ambition to be incorporated into the luxury French car industry. The French brand is built on an exceptional heritage, this legendary car transmits the values of innovation, excellence and avant-garde. “Today we are able to create a DS brand simply because of the inspiration from the incredible legacy of the classic DS model. The legendary car is a symbol of values such as innovation, superior quality and avant-garde, which are our work”¹, said DS brand leader. “We look forward to continuing the stories and ensuring that these rumors continue to integrate French expertise into luxury cars many years ahead of us”².

As a principle of changing the components in stock, DS was and is based on both aesthetic and functional changes. As an example in comparison, we can use the C4 and DS4 models.



Picture 1. The Citroën model C4 and DS4.

<https://www.carwow.co.uk/blog/citroen-ds3-vs-ds4-0387>.

From Top Gear the world’s greatest car website, who are behind all car reviews tells us how the story has changed when Citroën has confirmed that the DS brand will be separated, which means that the future DS models on the European market will not have any Citroën badge. According to the company, Citroën will be a more affordable and practical car, while DS cars will have a special style, sophisticated equipment and a luxuriously designed interior. So every model in the DS range shares some mechanical components with other Citroën models, each version being unique.

Citroën’s people stated for the Telegraph that for the future, the cars of both brands will be sold by the same dealers, but they did not rule out the idea that the DS models will be sold in separate showrooms. If sales go well, the company may consider an additional internal reorganization to support the new brand. In order to move further upmarket, DS have currently some models include the DS3. This model it’s a stylish supermini, competing against the Mini and Fiat 500, the DS4 that can be considered the closest rival for Audi A3 and last, the DS5 which is a

¹ Car Design Archives. The DS brand leader. Retrieved 10 October 2018. www.vrelegume.rs.

² *Ibid.*

quirky take on the compact executive class. How safe or rather how reliable are DS cars? Well from The Telegraph were pretty scathing when they were making review on the DS4 model in 2016, calling it the “worst car on sale”, however, one of its few shots of redemption was its reliability, with The Telegraph scoring it 7/7 on this front. However, no significant issues have been widely reported with any DS models. All we need it to do is step inside in some DS model especially the latest DS5 to see that the materials it’s of a high quality and everything feels solid and built to last. The fundamental question is whether the tech underneath holds out.

“Consumer surveys are meant to be a pretty accurate way of determining how reliable a car is. They ask those that are driving the models to rank their car for reliability. This means you get quite a good view of what the people who drive the car every day think of its dependability – in theory, at least”³.

In 2015, the brand celebrated 60 year of the original DS model at the famous Geneva Motor Show, revealed its signature “DS AUTOMOBILES, SPIRIT OF AVANT-GARDE”. The DS cars of today will be combine of remarkable style and technology for exterior design, noble materials and sophistication will complete interior with comfort and energy, as the last decision for the separation was the premiere of the Divine DS concept, which does not contain any Citroën badges and was the first indication that European market models could lose the Citroën brand they currently own. The Divine DS made its public debut at the Paris Motor Show.



Picture 2. The Citroën model Divine DS.

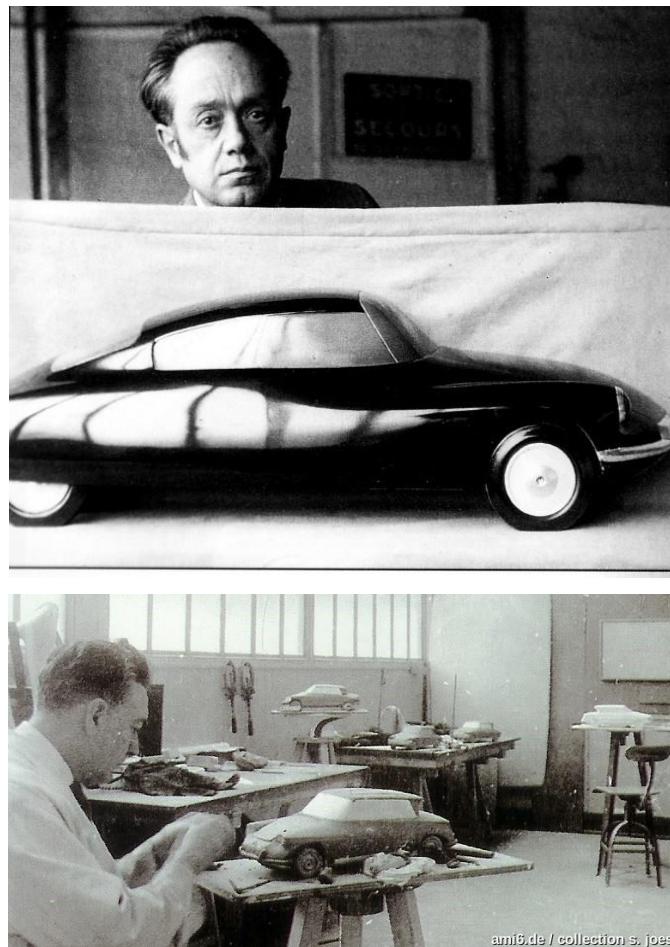
<https://www.topgear.com/car-news/paris-motor-show/citroens-bonkers-new-divine-ds>

³ OSV supplies all makes and models of cars and vans, using every funding method imaginable, which means that we don’t just sell vehicles, we fulfil every customer’s needs. Retrieved 17 October 2018. www.osv.ltd.uk.

3. Results

The DS was a breakthrough model, technically and stylistically. Its acceptance was initially hard by the French public in 1955 because it was too much disruptive. In his book, Raymond Loewy talks about the MAYA concept: Most Advanced Yet Acceptable. So the DS was beyond this line. Keep in mind this model was not designed but sculpted. That means many things. I read public find the front and the rear too much different and it took years to the public to accept this model.

The designer of this car is Flaminio Bertoni, Italian sculptor and designer, who greatly contributes to the creation of the “Shark”. Bertoni was one of the most innovative designers in the automotive industry, he was a car designer, a career that resembled sculpture. Therefore, it cannot be a surprise that Flaminio was an art lover who admired the work of Michelangelo and Leonardo da Vinci. Because this was a sculpture, it became a symbol of post-modernism. Flaminio Bertoni was one of the most innovative designers of the automotive industry, he was born in the city of Varese, Italy, better known and appreciated in France. He designed some of the most beautiful and iconic Citroën models. In fact, many of the Citroën models that he has designed have become classical cults. In 1932, Citroën hired him because of his invention, namely a hydro-pneumatic suspension system front-wheel drive such as “Traction Avant”.



Picture 3. From Flaminio Bertone's atelier

<http://www.designindex.org/designers/design/flaminio-bertoni.html>

3.1 Results – What kind of influence has the Citroen DS left for the automotive industry?

On the first day of the 1955 Paris Motor Show, 12,000 models were ordered. Due to orders that exceed the capabilities of Citroen's factories, in the coming months many customers waited a while before the DS arrived in their garage. In many revolutionary models, people have not seen that model as the possible car of the future, with the coming of “DS”, the future was a reality and was ahead of them. Prior to the Second World War, Citroen was Europe's largest automaker, it was a golden age of the French brand, which at that time had a tendency of originality and innovation in relation to the competition. The DS model was something France needed in the renewal of the country after the end of the Second World War. The “Shark” has become a symbol of the French genius, which has been sold in several markets around the world. The French structuralist Roland Barthes wrote about DS and he said that it was “fallen from the sky”, however they couldn't call it avant-garde because nobody, not even from Citroën, followed in the DS's conceptual path. Citroën built and sold about 1.5 million cars, the DS remains a kind of that one-and-done, design-wise. In a 2009 poll of top automotive designers, *Classic & Sports Car* magazine declared the DS “The Most Beautiful Car of All Time.”



Picture 4. The first day of the 1955 Paris Motor Show

<https://www.wsj.com/articles/the-citroen-ds-19-why-its-the-ultimate-classic-car>

In addition, Citroën dealers were reluctant to accept - they did not receive training to repair them. Below is a picture of the factory where people work on the DS model that initially had three times the number of orders than what they were able to produce.



Picture 5. The factory where people work on the DS model
<http://www.magazinauto.com/jubileji-60-godina-citroena-ds/>

The DS remained popular and competitive throughout the years of production run. Its peak production was in 1970, when certain design elements like the somewhat narrow cabin, column-mounted gearstick and separate fenders began to seem a little old-fashioned in the 1970s. Some time we are using study of vision-of-concept design for bright elements, the likeness of the car with the human body or various elements such: the senses, the face, the eyes, the backs. In versions such as the model “Palas” and “Prestige”, the exclusivity was an inner pair of lights that followed a steering wheel, which helped the headlights better illuminate the curves of road. However, the DS model was not the first car that had headlights that followed the curve, before it was the Czech model “Tatra 77A”.

3.2 How it may have influenced politically?

Well, that's a good question. Like the Cruiser “France”, the Concorde, the DS was a showcase for the French Industries and the Foreign Minister. Of course, the myth was reinforced thanks to the General De Gaulle but not only. In my opinion, popular movies like *Phantoms* helped to build the legend in the collective imaginary. The French Intelligentsia also applause thanks to the Roland Barthes's book “*Mythologies*” where he compares the DS to a modern cathedral. The cult of a consumer product. That's exactly what wanted catch Citroën when they transform the legend into a brand.

To replay precisely on this question we need to think about what would happen: imagine the attack of the Petit-Clamard in 1962 if De Gaulle didn't ran a DS and died? The political consequences would be huge (the NATO, the ECC...).

As the years passed, a Cabriolet model was also presented, but it was designed especially for movies, presidents, queens and kings. A more special model, which thanks to Citroën's hydro-pneumatic suspension, in 1962 came under machine-gun fire, despite punctures, the clever suspension kept the car steady, allowing a full-speed escape with two tires shot after the French general's attempt to assassinate De Gaulle, managed to keep them safe. A total of 150

bullets were fired at the car, twenty bullets had hit, several had hit the wheels and others had crossed the car where some at the height the heads of General de Gaulle and his wife Yvonne who had miraculously survived this attack. Also in 1962, the “Shark” received its first recollection. Headlights remain round as in the first series but the front of the car is optimized more aerodynamically. “The ingenious hydro-pneumatic suspension system endowed it with wonderful ride quality, and other advanced features such as headlights that turned in unison with the steering still inspires automotive safety technology to this day. Above all else, it looked stunning too”⁴.



Picture 6. Cabriolet model was also presented with General De Gaulle.

<http://www.magazinauto.com/jubileji-60-godina-citroena-ds/>

4. Discussion – Personal project

My PhD thesis theme will be: Evolution and Aesthetic Perspectives of the Car, Fundamental Concepts in Interior and Exterior Design. By researching the cars forgotten by many people, remembering today's world that all started with the post-war period when this type of car appeared. Here we come with a new line that gives it a more dynamic, attractive and sporty appearance from the outside. The interior that brings an innovative design proposal, the warmth of interior design and the most important comfort that gives people pleasure. A challenge for me where my vision comes to expression. The challenge will be and will have the role of artistic creation, the clear, interdisciplinary context where the originality of the theme matters, the key terms that made us think and made us chose that direction. In the research that I propose, I enumerate the following issues: Car History, The Evolution (key moments), The Appearance, Automotive Types, The Aesthetic Segments, Case Studies (special Cars), Designers of the Most Renowned Cars, Current Situation (Contemporary Paradigms in Auto Design), Powerful Engine Perspectives, Combination Trends (Land + Air, Flying Cars), Design Creation: Automotive

⁴ Top Gear car website, who are behind all car reviews. Retrieved 5 October 2018. www.topgear.com.

Classes, Market Segments, The Aesthetics, The Ergonomics, The Technologies and The Personal Project.

All of these in the vast majority will be respected following the research process. The finality of the current PhD thesis will be presented through a project that will illustrate the personal creation of a sedan type car's body plus interior design, the beginning of the concept of creation and his approach to the final product, which includes sketches, Photoshop rendering, 3d design, product layout with scale of 1:100 and in the end the final presentation of the project through drawings and mock-up.

Why I choose the Citroën DS model better known as the “Shark”. The DS pronounced Déesse, a pun on the French word for “goddess”. All the meaning of this project is based on the “revival of the goddess”. The old model will have a redesign, I have to study very carefully the small details that I will implement on the new model. Critics say that today's cars lack the DS elegance. Here we have a car that has marked a period of the automotive industry, and yet no one's talking anymore about this model. The Ds has become a brand which one day might write history, but where is now the original DS 19 model from 1955? The DS is still a young brand that has not much experience featured in any legit customer pleasure and satisfaction surveys yet, in time they will eventually evolve in good company that is able to pass through hard and as a manufacturer that solves the unreliability issue. For now there are not enough DS owners participating, but I'm sure that this will not stop them to prove themselves on the market.

Because of this, every car should be a special story, not just something that came overnight. This gives me the motive and confidence to continue the DS story and create something completely different, something that justifies the name and meaning of DS. In a nutshell, if you want an innovative product, you need to prepare the public to force their acceptance. That's exactly the job of the concept cars designers are.



Picture 7. The Citroën 19 model from 1955.

<http://www.magazinauto.com/jubileji-60-godina-citroena-ds/>

4.1 Studies of creative design process

Creating a concept from the beginning on a white sheet of paper can be very difficult for many designers. However, even if each project will vary, the basic principles and the key elements of the design process remain the same. The first phase by which we start with the product planning, the process begins with research and informs about markets, competitors and customers, where we start with the study of other people's opinions which leads to a possible user. Also it begins with the study of technology that allows product development strategy. The functionality of the product together with the innovation fight against the already existing products on the market. Once we have reached the final shape, we are going through product engineering, building the prototype to be tested. At the beginning of the design process, it is necessary to determine in which segment the concept to be designed is addressed. The market segment of a vehicle type is often determined before the project is started, helping the design to focus in a certain direction.

On the Creative and Design Plan the strong point is innovation. From the visual design concept of a design product, to 3D design, presenting and selling means a long way which has to be respected with patience and professionalism. The innovative product offering full production services must be able to respond quickly to customer needs through new technologies, aesthetics and ergonomics. Advertising works separately from design, and it has sales specialists that must always work to draw the customer's attention to innovative ideas, creativity and to the most important "details". Starting from generic ideas, the team of designers or the individual develops to meet the needs of customers, but first of all, customers need to be listened to, in order for the execution of design projects to meet the satisfaction level. To be successful, the designer needs a lot of experience in production and especially in serial production.

In a journal publication I read: Optimization of assembly technologies in the automotive industry, written by Negrus Andrei Mihai, the fact about how it's very important the automotive industry for humanity. And proof that is one of the top five most important industries in the world, affecting not only the economy but also the world's culture. It provides jobs for millions of people, generating the basis for a multitude of services. Automobiles revolutionized the 20th and 21st centuries, changing forever the way people live. The car has allowed the transport of materials further, faster and has opened up a large market for business and commerce. The car industry has reduced the total cost of transport using methods such as large series production, mass sale and globalization of production. Automobile manufacturers are the world's largest companies. These corporations are often multifunctional, having branches and factories in different countries. These companies distribute parts, use components produced in other countries, or assemble cars in other foreign countries. The three major automotive companies in the United States: General Motors Corporation, Ford Motor Company and Chrysler assure most jobs, but the entry of foreign companies (Toyota Motor Corporation and Nissan Motor Corporation) has also contributed to the emergence many opportunities for development and innovation. This text was helped and inspired me a lot and give me that motive why to continue my research on the automotive industry.

5. Conclusions

When introducing an innovative concept, consumers first try to classify the product. In other words, an innovation can only be rejected because consumers bind it, in some way, to an existing category that has a negative connotation (meaning). If consumers cannot classify the product, then they use a trial based on certain evaluation criteria. Based on the data collected in a research study, some cognitive processes have been reached, which then influence the evaluation process when the evaluation criteria has to be formed.

Consumers may encounter difficulties when faced with an extremely innovative concept in forming their own assessment criteria. This is an analysis based more on the process of individual thinking and classification, to which I also agree. The manufacturer, when confronted with an innovative concept, does not rely on market preferences but on educating the consumer through the principle of evolution, innovation. This is a very good thinking to develop the relationship between producer and consumer.

In the research of “Creativity in uncovering customer expertise for affective design” was analyzed customer expertise in purchasing a car that satisfies customer needs for affective design. The approach was based on a hierarchical patterns analysis starting with simple marketing requirements. “We assume that there is a rationale for customer’s evaluation of cars, and that evaluations are connected to design details. The purpose of using a hierarchical pattern was to model how car buyers evaluate car appearance. In addition, a hierarchical pattern is helpful to establish a dialog between car buyers and designers and create a frame work, where customer requirements can be satisfied”⁵. The study had five main roles of product appearance like the: Aesthetics, Symbolic Meaning, Functionality, Ergonomics and Categorization. The functional and ergonomics role are described more than just semantic roles as they address user’s evaluation of the apparent utility and perceived quality of a design.

There are many sites on the web pages that give us all kinds of answers and information, this does not mean that they are not accurate and that they are just fictions for good marketing but it’s certainly better when you talk directly to a person from the area you are researching. I managed to talk to someone who was familiar with the current situation with French car brands, someone who can give me the right information. They say about the DS brand where they are quite sure it will become a study case in marketing schools as counter-examples, their strategy was pathetic. DS brand was inspired by the companies that were strictly mindful of modifying the machines coming directly from the factories adding an aesthetic plus in terms of performances. Simple examples would be: Abarth for Fiat and Alfa Romeo, Hamann for BMW (makes parts for BMW only), Ghia for Ford. When John Z DeLorean built his own marque DMC, he knew the first model should be a sports car to build quickly a strong image and reputation for his brand. Initially, DMC should have been a generalist car maker, exactly the same recipe was used by Tesla.

After the discussions we had with Oliver from France he gave me a few good and bad ideas, why should I get more to rely on Citroën because, after all, DS was created by them. He said: “Instead of this, the first DS model was badged Citroën (DS was considered at that time as a new division) and was the small model DS3. For the audience, it was really confusing and the model was not enough powerful to install its legitimacy. In addition, the name DS is very heavy and the public have for sure some expectations related to the DNA of the original DS model. Not a marketing scam. Lastly, I think the name DS was a wrong choice. It’s very dangerous to transform a model to a marque. The name Pallas (which was used on the premium models of DS, GS and CX) was more widely preferable. The link with the past was intact and avoid to “ransack” a legacy”. As a conclusion DS is not a bad story, but it takes time to develop and people to accept it as a company that independently produces good and quality cars.

Acknowledgements

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⁵ Bagnara, S., Tartaglia, R., Albolino, S., Alexander, T., & Fujita, Y. (2018). *Book series. Creativity in uncovering customer expertise for affective design*. Springer Verlag Switzerland AG.

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