ABSTRACT

OF THE PHD THESIS
"STRATEGIC APPROACHES TO CUSTOMER VALUE CREATION PROCESS IN THE AUTOMOTIVE INDUSTRY"

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The PhD Thesis *"STRATEGIC APPROACHES TO CUSTOMER VALUE CREATION PROCESS IN THE AUTOMOTIVE INDUSTRY"* aims to study the process in which the client value is created in the automotive industry. This scientific process aims to identify the best value creative strategies so that the automotive manufacturers are able to obtain a long term competitive advantage. The work is structured on five research paths and they correspond to a number of five chapters. The design of each research direction was carried out so that it enforces the achievement of the main research objective of the hereby work.

The first chapter, entitled *The theoretical fundament of value creation process,* aimed to ensure our research foundation in what regards the client value creation. The importance of the overtime value creation was underline herein. Therefore, Adam Smith Considers that the work is the only real measure of the value exchange in all things, whilst David Ricardo considers that the work is the main source of value creation. The physiocrats were the first who defined the concept of value through utility and rarity. Yet a closer approach to reality was that of the marginalists who considered that the value is created both by the manufacturer and the consumer.

The concept of value creation was defined, therefore, as being the customer creation during use, and the notion of co-creation was defined as being a function of the interaction between the consumer and company. Likewise, the actions of each involved part was classified in three areas: the manufacturer area, the common interaction area and the customer area.

In the hereby work, the concept of value creation was analysed from the perspective of Services Dominant Logic (SDL). This represents a new optics for the value creation process, totally different from the Products Dominated Logic (PDL).

In the Products Dominated Logic (PDL), the consumers are exogenous company factors. The value is produced within the company (through the developed activities) and outside the markets. Michael Porter underlined by the concept of „the value chain", the unilateral role played by the company in the creation process of the respective value. Thus, the companies fulfilled the manufacturer role for the value, while their customers fulfilled the role of value consumers. The market was regarded as a simple exchange place, without

any influence over the value creation process.

The value creation process was shown as a process through which the well-being of consumer maximisation is aimed at, so that it can better manage within the products use process. Kowalkowski and Nordin underline the fact that within the value creation process, the customer doesn't take into account just the economic and functional benefits afferent to the product (service), but it also considers a series of emotional, ethical and social aspects as well. Holbrook defines the value as being an interactive experience based upon personal preferences. Echeverri and Skalen state that the value is based upon a function of an interaction between the subject (consumer) and the object (product). This interaction is personal and depends on the context, attitude, affections or the satisfaction feeling and it is found in the product or services consumer experience.

Still in this chapter, the greater power of decision is shown in what regards the everyday consumer benefits. He has the possibility to communicate with other consumers, may collect information about companies and products, and this offers him a new perspective over the consumption. The consumers aren't any more dependent on the communication from the companies. This decision power offers the consumers a possibility to choose with hat companies to collaborate within the value creation process.

Likewise, within our research, it has been shown that the client itself is the value creator. Practically the consumer doesn't assess the value, it creates it after a consumption process. The client creates the value and assesses it within an experimental use environment. The value creation is therefore controlled by the customer, being able to invite the company to participate in a value co-creation process.

It was shown that the value creation place is the place where the activities, mental and physical experiences are intersected as well as the client attitudes in diverse social and personal contexts. Grönroos and Ravald considers that the value is achieved by possession, use and also by mental states. The customer experiences the use of the product, fact which enables the improvement or downing the situation within the value accumulation process. Under the circumstance in which the value is achieved by experiences, the manufacturer, may improve the value creation by the client, through the achievement and delivery of products having a potential client expected value.

It has been proved how important is the interaction between the company and consumer in what regards to the value co-creation. Grönroos and Ravald considers that the value creation process by the client represents a closed loop for the company, yet the interaction could lead to a unified and coordinated process by which the company may access the customer sphere (area). The common sphere (ground), is the only place where the company may influence the client experiences during the products or services use.

Therefore, the three important action areas were shown in what regards to the value creation process. Thus, within the manufacturer *sphere*, the company registers goods or provides services destined to consumer use. By its resources, the company eases the value

creation process at consumer level. Due to the fact that the company offers a potential use value, it may be considered as a *value facilitator*. In *the common ground,* the customer fulfils a double role: on one side he is a co-manufacturer of resources and processes achieved together with the company and on the other side, a creator of value together with the company. In this common ground, the company has the opportunity through direct interaction to implicate the value creation process at customer level and to assume the role of value co-creator. In the *client/customer area,* there are no direct interactions, and therefore the value co-creation cannot take place. This area is closed for the company and the value is created only by the client as use value.

Likewise, the direct interaction has reported as being referred to the process by which the company resources (staff, services and system) and the customer resources, interact within a coordinated, active, constant and dialogue orientated process. The direct interaction is referred to the situation in which the consumer uses diverse resources which are results achieved in the company processes. Like the interaction between the consumer and company, it is of indirect kind.

Within the second chapter, named *Automotive market from Romania within the actual context and the perspective of national economic development,* the actual situation of Romanian automotive market and the following years development perspectives, were herein shown.

In the first part of the chapter, the importance of automotive industry for the national economy of Romania was shown. According to The Ministry of Economy in 2015, the contribution of automotive industry to the Romanian exports was of 19 billion euro, respectively 46% from the total of exports. According to The National Bank of Romania, the automotive industry succeeded to receive in 2014, direct foreign investments worth 3.2 billion euro, respectively 5.4% from the total of direct foreign investments. Also, the automotive production plays an important role in what regards the number of employed persons. Therefore, in 2013, there were 137,512 hired persons in the automotive industry, this consisting in 1.5% from the active population of the country. Thus, the Romanian automotive industry ranked five on the level of The European Union in what regards the percentage of employees within the automotive production in total employees nationally. Likewise, the automotive industry from Romania ranks seven at The European Union level in what regards the direct number of employed persons.

In the second part of this chapter, the evolution and structure of the Romanian car park has been analysed. Within the period of 2007-2015, the car park evolution was an ascendant one. If in 2007, the car park had a number of 3,541,718 cars, and in 2015 the car park had 5,153,182 units, with 45.5% more cars than the level in 2007. This showed what was the trend of the car market request in the mentioned period.

In what regards to the yearly evolution, it has been found that the greatest increase from a year to another was that in 2008, when the park lot grew with 13% towards the level

in 2007. This coincided with the economic boom year as well. The economic crisis effects from 2008 made their presence felt in 2010 when the national car lot grew with 1.8% towards the level from 2009. The smallest annual increase was in 2011, when the number of cars nationally grew with just 0.36% towards the recorded number in 2010. By this analysis the annual evolution showed that the car lot is influenced by the economic situation. The economic growth periods influence positively the evolution of the car lot. Whilst the economic crisis affects the car lot increase.

According to the seniority level in 2015, the structure of the car lot was therefore shown. The cars with an age within 6 and 10 years had a percentage of 29.60%, in the park lot of Romania at the level of 2015. Second place was held by cars of which age is within 11 and 15 years, and their percentage being 27.60%. This showed that the cars from the national parking lot are pretty old, especially if we consider the category of cars having an age over 16 years. Their percentage increased in 2015 to 30% from the total number of cars.

The annual evolution has been therewith analysed for the cars on seniority categories. Thus, the cars with the seniority between 0 and 2 years had the highest percentage in 2007 and 2008, when their percentage was over 20% in the national car lot. In 2015 and 2014, these had a percentage of 4% in the car lot, whilst in 2012 and 2013, their percentage was of 3.3%, respectively 2.7%. This information proved the fact that the request for new cars is greater in the economic growth periods.

Also, the structure of the national car lot in accordance to the fuel is wanted to be known. In 2015 and 2014, petrol based cars had a percentage of 63% in the national car lot whilst 37% were diesel based cars. Based upon the annual evolution of diesel based cars percentage from 2007-2015, a prediction was achieved enabling the fact that in 2021 the two type of powertrains will have similar percentage. Another prediction performed, was that according to which in 2030 one of five cars will be electric powered.

The distribution of the car lot on counties and development regions has been analysed. Bucharest Municipality is the area with the most registered cars in 2015, respectively 18.5% from the total number of cars registered nationally. Second place is held by Timiș County with a percentage of 3.99% whilst the third place was Cluj County of which percentage was 3.93% from the national car lot. The fewest recorded cars in 2015 were in Giurgiu and Ialomița, of which percentages were 0.89%, while Călărași County was in the last place with a percentage of 0.82% from the national car lot.

At regions level, in 2015, the most recorded cars were in Bucharest-Ilfov region with over 1,000,000 units. The last place was held by South-West of Oltenia with 458,130 units. In what regards to the evolution of the recorded cars, in 2011-2015 there were no major fluctuation from a region to another and nor from a year to another. The evolution was on an ascendant trend, with the number of cars growing the same for each region.

In what regards to the powertrain, respectively the number of cars to 1000 inhabitants, on the first place is Bucharest Municipality with 516 units to one thousand inhabitants,

followed by Timiș, Brașov and Cluj counties with 295, 290, respectively 288 cars to one thousand inhabitants. Last place is occupied by Călărași County with a powertrain degree of 141 cars to one thousand inhabitants. Just five counties were over the national average of 274 cars to one thousand inhabitants. This offered a series of information about the car lot growth potential in the following years but also a series of data about the weakly developed areas.

The information obtained after the national car lot analysis was corroborated with the economic and financial information. Based upon these correlations, the number of cars as well as their age directly influenced by the degree of economic development of the regions/counties, level of salaries from the respective areas and also the unemployment level, have been shown.

In the third part of the second chapter, the car registrations from Romania was analysed. In 2007 the new car registrations have been found to represent 71.62% from the total number of registered cars, whilst the second-hand cars had a percentage of 28.38%. In 2015, the situation changed, the second-hand cars had a percentage of 76% from the total registered cars.

After Romania's adherence to The European Union, the second hand cars registrations exceeded the new car registrations. In 2008, the second hand cars registrations had a percentage of 51.3% from the total of registrations. Likewise, together with the economic crisis explosion from 2008, the number of new cars registered dropped dramatically, recording levels under 100,000 units in 2010-2015. The historical minimum of the analysed period was in 2013, when just 57,710 new cars were registered. In 2009-2015, the second hand car registrations situated over 212,000 units, the sole exceptions being in 2011 and 2012, when just 94,488 units have been recorded, respectively 174,950 units. Based upon this information, the conclusion was drawn that the adherence to The European Union lead to an increase in second hand cars registrations. Likewise, the car market was affected inclusively by the economic crisis occurrence from 2008, which contributed to the general reduction of the number of registered cars.

In this chapter, the market share of car brands has been analysed. In 2015, Dacia was a market leader, with a share of 33.1%. Second place was held by Skoda brand with a market share of 9.3%. The following places were held by Volkswagen, Ford and Renault, of which shares were 8.9%, 7.1% and respectively 6%. On the imported second hand cars market, the market leader was Volkswagen with a share of 28.6%. The second place was occupied by Opel with a share of 17.3%, followed by Ford, BMW and Audi, of which market shares were of 11.6%, 7.2%, and respectively 7.1%.

In 2007-2015, the market leader was Dacia in what regards to new car registration whilst on the second hand imported cars market, the leader was Volkswagen.

Therewith, the analysis of the purchase power of the consumers from the automotive market within the European Union was performed. In this way, the minimal and average

salaries have been compared from some European states, as in Romania, France, Germany, Portugal, Spain and UK. Therefore, it has been found that a Romanian needs 32 minimum salaries or 15 average salaries to purchase a Dacia Logan car, whilst an employee from Germany or France, needs only 5 minimum salaries or 3 medium salaries to purchase that car.

The factors influencing the automotive industry globally were inclusively analysed. The most important ones are referred to national and international regulation regarding the harmful emissions reduction, occurrence of new global manufacturers and also the unprecedented development of emergent markets.

In the third chapter, *Models, techniques, tools used in the strategic analysis of value creation process at S.C. Automobile Dacia S.A.*, we conducted a methodological research of the process of value creation at Dacia company. We showed that the main objective of Dacia company was to create a car whose selling price was 5,000 euro. In order to analyze this objective, we used more models, techniques and tools to see how Dacia managed to create value by Logan automobile.

The first model used was *Analysis of value chain* developed by Michael Porter. According to this model, the value that companies create is linked to the activities through which the resources are transformed in goods and services, and also to the activities by which these goods reach the final consumer. In the model Analysis of the value chain, value is the key element that forms the basis of the competitive strategy. Michael Porter considers that value, from clients' perspective, represents the sum of the expenses that they are willing to incur to benefit of the products offered by the company. From the companies perspective, the created value forms the basis of the price that they obtain by selling the products.

The value chain shows the total value that a company creates over the succession of activities needed for the product creation and selling. Suppliers and distributors have an important role within the value chain because the activities that they carry out have a value margin that influences that final cost incurred by the clients.

Within this model, we presented the technique `design to cost`. In traditional design, the technical solutions take into consideration the obtaining of functional performance regardless of the cost. In the case of `design to cost`, the cost is the element around which is designed the product, with equal importance as other performance criteria required by the automotive industry.

The objective of the model Dacia Logan was *value to client.* The elements by which Dacia company aims to achieve this objective were the selling price, the product reliability and the quality of the life on board. The technique `design to cost` was not planned to reduce costs, but started from the idea that the automobile has to be designed as to minimize those elements that do not directly participate in achieving those three objectives.

Another tool used by Dacia company in order to obtain the cost advantage was the `carryover` process. The carryover process involves reusing some components used in

common with other cars. This represents for consumers a guarantee of the automobile reliability. For auto manufacturer, this means cost reductions or savings in terms of investment needed in the design process. Another method to reduce costs consisted in using mainly the human factor in the process of car production.

We also showed the main role of the suppliers in the value chain. In order to reduce costs with suppliers, the company has opted for the involvement of the local suppliers in the value chain. This has generated major savings, as 80% of the Logan costs were costs with the suppliers. Also, another factor that contributed to reach the objective to produce an automobile of 5,000 €, was the local integration of the production and assembly processes. In order to reduce the logistics costs, most components of the car were made on the spot, starting with the most voluminous.

Another model used in analyzing the process of value creation at Dacia company was Blue Ocean Strategy. This model, developed by Chan Kim and Renee Mauborgne, starts from the idea that the enterprise market is characterized by two types of `oceans`: a red ocean, specific to company that compete with each other in order to conquer a market share and a blue ocean, specific to areas that are not yet explored or contested by companies.

We showed how Dacia company managed to create a blue ocean, avoiding the battle with competitors. By creating a blue ocean, the company does not base its strategy on competition. It has a different strategic approach, known as *value innovation*. Value innovation helps the company to avoid fighting with the competitors and to make a leap in the value offered to clients. The value innovation is based both on value creation and innovation development. Value without innovation does not lead to the improvement in the utility felt by consumers, while the innovation without value may affect the process from which the consumers take the value.

The process of creating the blue ocean implies, on one hand, reducing the company's costs and, on the other hand, increasing the value for buyers. Through this process, it is obtained a value surplus both for the consumers and for the company.

Dacia company has managed to differentiate itself from competition, not by the product itself, but by how it created value for its customers. While competition focused on offering more and more sophisticated cars, concentrating on design, features, diversity and inspirational brand image, Dacia company wanted to offer a car that is simple, affordable, reliable, spacious, easy to maintain and use. Dacia has managed to create an innovation value, by eliminating the very expenses elements on which the competitors were focusing. Basically, Dacia reduced the investments on the exterior design, interior amenities and range of products, and removed the idea of offering its clients prestige and value through brand. Dacia created and offered to clients value based mainly on the idea of utility and functionality.

In the last part of the third chapter, we showed that brand can be a tool to create value. Brand is a new social communication tool. People are seeking to transmit messages through

the things that they own. Many consumers turn to brands because they have the power to transmit different messages. Brand reflects not only the image of a product or of a company, but also a social image.

In automotive industry, brand is a differentiation tool. Some car brands create greater value for the consumers because of the messages they transmit. Thus, we can see how the buying process is influenced not only by the product, but also by the brand. Brand simplifies the buying process as it is a guarantee of quality.

We noticed that it was very important for a car manufacturer to build a strong brand that conquers through associations, meanings and promises. Brand has the capacity to generate added value thanks to the satisfaction that the consumer feels in relation to others. People feel the need to differentiate themselves, and social differentiation can be achieved by brand. Thus, Dacia must change its image of low-cost brand and create a system of messages, promises and associations by which to increase the value perceived by the customers.

In chapter four, entitled *The challenges of the future regarding the value creation for clients from the automotive industry*, we showed how the intelligent car would influence the process of value creation.

In the first part, we identified factors that would lead to the development of a new model of value creation in the automotive industry. Thus, we showed that government regulations would become more restrictive in terms of traffic safety on public roads. Car manufacturers would invest more and more money in developing safety systems for passengers and all road users. Also, the requirements for environment protection would force the car manufacturers to find solutions to reduce fuel consumption and therefore to reduce emissions.

Other factors that will influence the automotive industry come from IT field. Companies like Google, Apple, aim to create an autonomous car, capable to drive itself. The success of these projects forces the classic car manufacturers to keep up with technology and especially with technological innovations. Thus, in order not to lose the contact with reality, many manufacturers will be forced to allocate large amounts of money for research and development of technological innovations. Companies from IT industry will be genuine competitors because they benefit from the power of expertise in creating smart cybernetic systems.

I showed that the intelligent car would be a vehicle capable to drive itself without the need of a driver. The technology to allow this would be based on a cybernetic system, programmed to collect traffic information, to process them and to take the best decisions. Intelligent cars would be interconnected with each other and would transmit information to optimize traffic, to avoid traffic jams and, most importantly, to avoid accidents. Nowadays, over 90% of accidents are caused by human errors. Intelligent cars would reduce the number of accidents and would save millions of lives annually.

Also, we showed that the intelligent car would create more value for consumers because they would be driven by themselves. Time spent driving a classic car could be used for other activities. Instead of paying attention to the road, the driver would be able to read, browse the internet, sleep or do whatever he/she wants. The time gained and used in other purposes would be the added value generated by the intelligent car.

I showed that the intelligent car would be not just a simple product, but it would be a tool for providing services. The intelligent car would provide among mobility services, also connectivity, communication and multimedia services. Thus, the car would be a virtual meeting place, a communication place between consumers and service providers. Also, the intelligent car would be an online shop where the passengers could buy goods and services.

The intelligent car will also change the way in which value is created. Car digitization will produce major changes in the business model of classic car manufacturers. The main resources by which value will be created are going to be information. Exchange of information, from consumer to supplier and from supplier to consumer will form the basis for the co-creation process of value. Thus, car manufacturers will not focus on the technical performance of the cars, but on collecting, processing and transmitting information. In this regard, we showed that there would appear new competitors in the automotive market, especially from IT industry. This would lead to new partnerships so that all stakeholders involved in the creation of the intelligent car benefited from the synergistic advantages of the collaboration.

At the same time, we showed that car digitization would lead to the development of mobility services. People would no longer be interested in owning a personal car but would be tempted to recourse to suppliers of mobility services. We showed that these services would grow very much because removing the human factor from the equation would lead to increased profits for mobility suppliers, but it would also increase the consumers' trust in these services.

The intelligent car will have a social and economic impact on large scale. Besides avoiding accidents, the intelligent car will have benefic effects on life quality, but also on urbanization. Cities will be uncongested, the air will be less polluted, and the stress level will be lower. Also, there will not be so much need for parking spaces as it is now because the intelligent cars will find themselves parking places, regardless of the distance. Public roads will be safer as the intelligent cars will be able to respect the traffic signs. Also, we showed that the intelligent car would be a new model of value creation that would revolutionize the automotive industry.

At the end of the chapter, we showed how important was the transition from conventional to intelligent car. The emergence of the intelligence car is delayed by the lack of regulations to allow the circulation on public road of cars without drivers. Also, there is some reticence from consumers regarding the trust in these cars. To overcome these shortcomings, the transition could be made gradually by intelligent driving assistance

systems that would serve to improve the driving experience. Basically, the transition from conventional to intelligent car could be made through semi-intelligent car that would allow human intervention at any time during driving.

In chapter 5, *Research on the value perceived by Dacia customers*, we have undertaken a survey-based market study. The purpose of this study was to analyse the value perceived by customers for Dacia vehicles and for the semi-autonomous steering systems of vehicles. We have also tried to identify the main directions for strategic development by means of which Dacia could boost customer value.

The research methodology implied creating a representative sample for the analysed population. The study was performed on a sample of 604 persons in the Oltenia region during October 1, 2015 – October 29, 2015. The results of the research have an error margin of +/- 4%. The questionnaire we used included 26 questions, by means of which we investigated 129 variables.

The research issue was decomposed into several objectives. The first objective dealt with identifying elements creating value for customers. We used twenty elements that were grouped into four characteristics. Thus, we found out that, for Dacia owners, Comfort is the characteristic generating the highest value. Costs were ranked second, followed by Prestige. The least important characteristic in terms of customer value was the one related to the Vehicle's performance.

We also tried to see which factor influenced customers in the vehicle's purchasing process. Thus, we found out that price was the main reason why they chose Dacia as a brand.

The following issue was to assess the customers' satisfaction. To this purpose, we analysed five variables. The result was very good, which showed that, in general, Dacia customers are happy with the models they own. Another objective was to analyse how Dacia cars are appreciated. From this point of view, most consumers are not very satisfied. The worst results were obtained for comfort, exterior design and quality of inside materials.

At the same time, we tried to see what opinion the consumers had on the Dacia brand. Results showed that many think of Dacia as a low cost brand, that does not generate admiration from the people around. Another weakness is the fact that this brand is not focused on innovation and it does not provide high reliability. Most consumers think that Dacia is a brand dedicated to families.

In the following, we assessed the customers' expectations regarding certain value-creating proposals. Results showed that Dacia should provide versions with an automated driving system, electrical automation, as well as a highest quality of inside materials.

We also analysed the customers' view on the price and maintenance costs of the held vehicles. The owners of Dacia Logan were the happiest and they were willing to recommend it to other people as well. The owners of the Logan model were also those with the highest likelihood of purchasing a Dacia car again.

Another major goal of the study was a comparative analysis of Dacia and its main competitors. We analysed six variables, such as reliability, performance, safety, comfort, maintenance and quality-price ratio. Dacia occupied the last place, after competitors such as Opel, Ford, Skoda, Toyota and Renault. The only variables where Dacia surpassed its competitors were maintenance and quality-price ratio.

Within this chapter, we also analysed the value created by driver assistance systems. Most respondents considered that such systems could improve driving experience, they may help reduce driving errors caused by lack of attention and, in general, they provide high comfort and reliability. Most respondents considered that driver assistance systems could help increase the perceived value.

The last objective of our research topic was to identify the main strategic development directions by means of which Dacia could boost customer value. The solution chosen by most respondents was the development of technological innovations. The launch of much better equipped models occupied the second place and a better communication between consumers and the manufacturer was ranked third.

This study showed us the strengths and weaknesses of Dacia from the customers' perspective. Based on the results, we identified the main strategic development directions by means of which Dacia could improve its brand image, as well as its position on the car market, compared to its main competitors. We also mad some suggestions regarding value creation.