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DIGITAL SALES CHANGING THE ROLES OF ONLINE CAR CONFIGURATORS

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Abstract: *Customers requiring more digital interactions with OEMs change the role of dealers. Wheras in the past, dealers were pivotal in the sales process they are expected to be reduced to test-drive and hand-over retail outlets, with the customers doing essentially the purchase process in self-administration online. As a result, the question arises if the mass customization of OEMs, which creates complexity and a wide variety of choices, is still valid or over-complexifies the process of purchasing a new car. The literature reviewed on mass customization indicates that if the role of the dealer accompanying the customer is taken away, there might be a need to reduce complexity. The reviewed available data set only shows anecdotal evidence, given that Tesla is the only OEM that runs a direct sales model and Mercedes-Benz the only agency. Changing the configuration process is also impossible overnight, as the development cycle and the linked production are multi-year efforts. With OEMs currently being in a shift of sales channels, there is likely a change required going forward, where the introduction of new models can be perceived as the opportunity window.*
Keywords: *Car Configurator, Personalization, OEMs, New Car, Purchase*

INTRODUCTION

Historically, customers had no choice in configuring vehicles; manufacturers like Henry Ford made the trade-off in cost and individualization. As such, Ford introduced 1914 black as the only color option, given it was the cheapest paint: "Any color the customer wants, as long as it's black." This policy remained until 1926 when customers could choose from further options (Sullivan 2023). As of today, customers can generally choose between two sales process options: choosing a vehicle that is readily available at the retail outlet, already configured to a particular spec, or configuring their vehicle towards their specific needs, which then gets produced afterward and shipped within an average of 55 days in Europe for volume OEMs (Holweg and Jones 2001, p. 364), under average market conditions, not considering supply crisis. In such situations, dealers assist the customer in configuring the car and ordering the vehicle from the OEM. Customers can pre-inform themselves via the OEM car configurators offered on the OEM website (Herrmann et al. 2007, p. 391). This leads to a situation in which customers select from one of multiple hundred vehicle configurations (MeinAuto 2013). With a shift in sales models, where dealers are traded for agents who act on behalf of the OEM, and the introduction of more online sales, the sales process becomes more customer-driven (pull) and less pushed by dealers (push). This paper shall, therefore, assess to what extent the requirements for vehicle configuration change and if there is a need to reduce the complexity of car configurators. Reviewing the literature on mass customization and its role in increasing sales, as well as new car sales processes, requirements for a configuration complexity shall be deviated, which then will be applied to an enriched data set of vehicle configuration options for 13 sold vehicles in Germany.

RESEARCH METHODOLOGY

The research of this publication is based on a literature review and a systematic review of the car configurators offered for the ten most sold vehicles, where a specific focus is set on understanding the role of the sales model of these OEMs within Germany, allowing to conclude when a higher complexity is beneficial a when less is more. The literature review includes published books, journals, research papers, online articles, and websites, which are used to consider more recent evolvements. In the first step, the benefits of a wide variety are explored, such as why a complex car configurator can increase OEM sales and how variety in car configuration can decrease. Secondly, literature linked to the sales process of OEMs is reviewed, allowing us to ultimately conclude which circumstances customers prefer a complex or a simple car configurator. For the systematic review of the car configurators, this paper draws on a dataset conducted to examine a different research topic. The data set, as a result of this, systematically screens the OEM configurators of ten of the eleven most sold vehicles in Germany in 2023 and allows to conclude on the number of options offered in the process, as well as allows to differentiate between battery electric vehicles and traditional internal combustions engines, resulting in a total data set for 13 vehicles. This paper will enrich the dataset with relevant categories based on the literature review, allowing us to ultimately test if the conclusions from the literature apply to the German OEM industry and its sales processes.

MASS CUSTOMIZATION IN SALES PROCESSES

To avoid losing customers to a competitor, manufacturers have adapted mass customization, allowing them to target various customers. Literature has shown that this allows for an increase in sales, as an increase in variety enables customers to create the variation they value the most, increasing the sales probability (Kahn 1998, p. 45). With customers who are more explorative and likely to change products use by use, the variety can increase brand loyalty, as it enables the customers to switch within the same product and explore a different variation time by time (Kahn 1995, p. 141). The criticality is to maintain complexity, which customers no longer value. Examples include the advertisement for a sofa shop that markets 500 styles, 3000 fabrics, and 350 leather combinations (Huffman and Kahn 1998, p. 492). In such cases, the increase of customization might lead to a sales process abortion, and the customer might shop with a different provider, which offers a more selective set of options. Research has shown that customers do not value the variations if they are similar attractive, hence the customers cannot prioritize one variation over another. (Dhar 1997, p. 215). With customers needing to evaluate the different options, the level of mass customization becomes a question of sales process structuring (Chernev 2006, p. 171). As a result, the customers must be sufficiently capable of managing the variety in a sales process. Retailers play a critical role as sales consultants, which help customers evaluate the different options (Huffman and Kahn 1998, p. 492). In particular, the relevance of having navigable complexity in mass customization becomes critical in online sales, where complexity and usability are vital drivers when converting traffic into sales. It should be reduced (Meurs 2013, p. 25). As a result, there is no specific value for mass customization. However, it is rather driven by the sales process and the relative customers' capabilities and motivation to purchase a unique variation, which is likely to be driven by the individual relevance of the decision and, hence, the linked effort the customers are willing to make in evaluating different customization options.

NEW CAR SALES PROCESS IN GERMANY – OEM RETAIL MODELS

OEMs retail vehicles via three key distinctive sales channels. The traditional dealer model enables authorized dealers to retail vehicles for their authorized brands. Dealers then order the configuration once they have agreed on a sales price and vehicle specifications with the end customers. OEMs sell the cars to the dealers and then re-sell them to the end customer. If OEMs have remaining production capacity, they encourage the dealers to go into risk and pre-configure vehicles, which will then be sold as stock vehicles to end customers. This is also in the interest of dealers, as they need to show vehicles to present the configuration options. In an agent model, dealers become agents, which changes the control by OEMs, as they become the contracting party with the end customers and can define the prices. Agents no longer have a trade margin but are remunerated by a commission. As a result, they carry less risk and handle the sales process on behalf of the OEM (Creutzig 2005, pp. 156–157). If OEMs want to take maximum control, they use a direct sales approach using proprietary channels. OEMs tend to steer the sales from the central organization, similar to the traditional fleet sales team or the digital online sales channel. To interact with customers via a retail environment, OEMs run their own stores, where they sell to end customers. As a result, the staff running the stores, often called "own retail", is typically employed by the OEM (Diez and Reindl 2005, pp. 100–101). From a customer's perspective, all three retail outlets are not necessarily distinguishable (optically), as they all fulfill the same corporate branding. In some instances, OEMs might have all three sales models; in such cases, the retail is managed the same way as dealers and agents to not discriminate against dealers from a competitive law perspective (Fritz and Graf 2006, p. 5). The chart below illustrates the different sales channels in Germany where customers can purchase a new car with an OEM (Bacher 2020, p. 19).

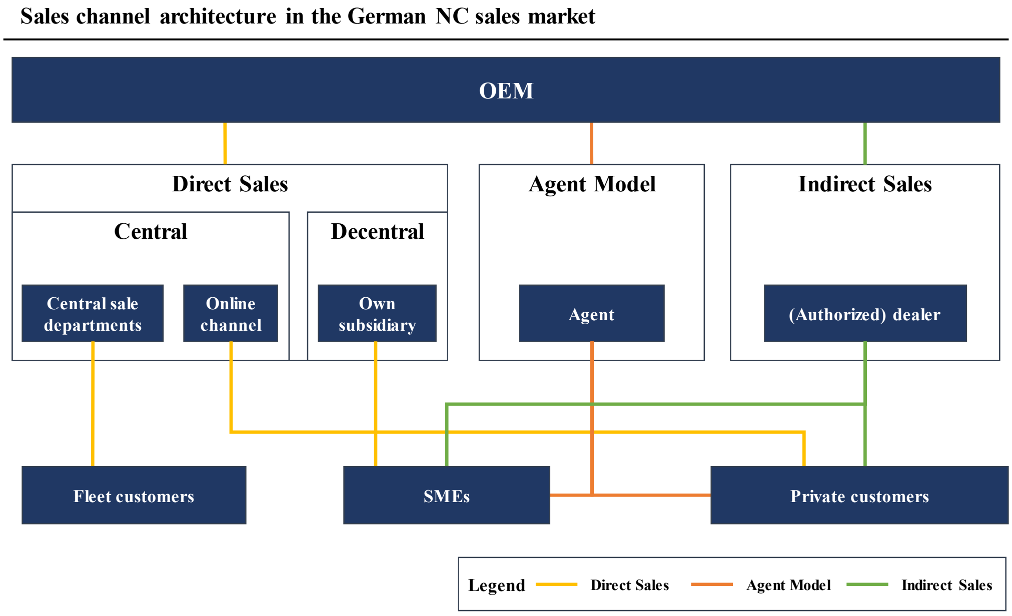

Fig. 1. Illustration of sales channel architecture

CAR CONFIGURATORS IN DIFFERENT RETAIL FORMATS

Car configurators play a crucial role in increasing OEM sales in the sales process. Via customization of vehicles, they allow customers to access a greater variety and increase brand loyalty. If the car configurator is well structured, with an adequate market adaption, it has shown that it can be a competitive advantage in the respective markets (Fettermann, Echeveste and ten Caten 2012, p. 2340). Retailers must assist customers in overcoming challenges arising from the complexity and variety. Research has shown that if dissatisfaction with the sales process arises, this is attributed to the retailer (Huffman and Kahn 1998, p. 492). To overcome the variety of sales, salespersons accompany the customer in the process of doing the car configuration by answering complex questions that might not have been obvious to the customer initially (Peraković, Behúnová and Knapčíková 2020, p. 196). Customers appreciate the help of dealers if they consider them a trusted source of information. Further social interactions allow to reduce the uncertainty in the configuration process. Customers expect to discuss their vehicle option choices during the process of configuring and once they are done, to increase confidence in their decision (Grosso, Forza and Trentin 2016 p. 34). With increased information technology systems' availability, car configurators have moved online, making them available for customers in self-administration. This step decreased the costs for dealers, as less time has been involved in configuring vehicles, with customers coming prepared to the dealerships (Peraković, Behúnová and Knapčíková 2020, p. 195). On the other hand, customers are now more left by themselves in the sales process, which increases the need for a car configurator that is easy to use. In addition to that, the general use of customers for the retail outlet is changing. In the past, customers also visited retail outlets at the beginning of the sales process to inform themselves about different options, but this step has mainly moved online. It is expected that in the future, retail outlets will remain critical for the test drive and vehicle hand-over once purchased. Customers prefer to purchase more in self-administration in digital channels. As a result, they become the initiator of the sales process and expect communication in real-time once they request it. This fundamentally changes the requirements of retail outlets: from dealers that have converted walk-in customers offline into a vehicle purchase to dealers that need to respond to customers online/offline, ideally in real-time (Bacher 2020, pp. 21–22). OEMs have reacted to that change, which allows them to take over more of the retail channels via agent or direct models, given that they can deploy customer service centers at scale more efficiently than multiple small dealers (Coase 1937) and manage the brand reputation, as well as determining prices and avoiding intra-brand competition. This shift is underway: Mercedes-Benz and VW (EVs only) have already shifted to Agent Models as of November 2023 (Backovic 2023; Hubik 2023). Further OEMs have announced their change (Meunzel 2022).

Review of top ten most sold vehicles in Germany and their sales model

The analysis is based on an available data set, assessing the extra options customers can choose when configuring a specific model on an OEM website. The data set has collected 13 car models, which are part of Germany's eleven most sold vehicles in 2023. The data set differentiates between electric and combustion engine vehicles and excludes one model, which created challenges in retrieving configuration data. The standardized categories of variants, engines, colors, and rim sizes are not considered as they are similar across OEMs, and the focus of this data set has been set on the extra options. The data set has been retrieved via a simulated configuration experience, in which, systematically, every active choice the customer needs to make has been recorded; if the option is free of charge or attached to a premium is not relevant, the active click is considered for the count. The data set has been enriched in this context with information on the OEM's current sales model, which is presented in Figure 2 below.

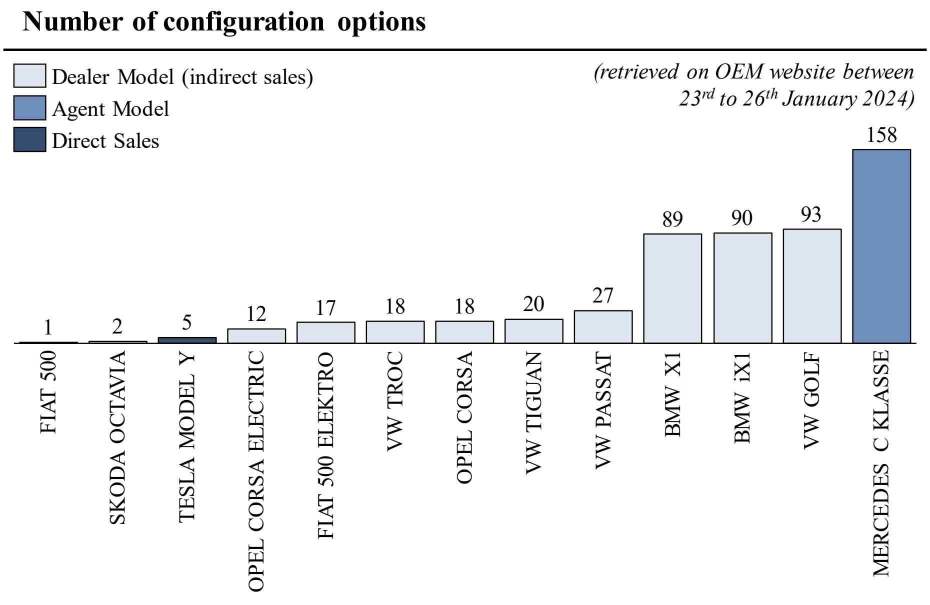

Fig. 2. Sales models of OEMs and the number of configuration options

Of the sample, only Mercedes runs an agent model, Tesla direct sales and Stellantis (Opel, Fiat), VW Group (VW, Skoda), and BMW run a traditional dealer model. Notable Tesla is the only OEM that has emerged towards its size in recent years. In contrast, the others can be considered as traditional established OEMs, which becomes critical when assessing their configuration choices, as they haven't started designing this from scratch for a more digital retail model. In the data set, it becomes visible that Tesla has a limited set of options, which might be linked to their capabilities in designing customer journeys specifically for their direct sales model. Based on the theoretical research, the number of configuration options for the Mercedes-Benz C series is on the higher end of the sample, which could be linked to the historical evolution from a dealer model in 2022 and the development cycle of a new car is longer, resulting in a theoretical mismatch of complexity and sales channel. In summary, the data sample and the movement of the sales model in the market make it difficult to determine the complexity of each model required. In addition to that, customers might differ across segments, which could explain why BMW and Mercedes, as premium OEMs, offer more configuration options than volume brands like FIAT or OPEL. Still, OEMs are required to provide a simple customer journey, illustrated by the simplicity of TESLA, which does not necessarily have to be via the number of options but also other journey elements, like real-time customer support, simple explanations and high useability of the configurator.

CONCLUSION

The paper reflects on the automotive industry's mass customization via car configurators. Car configurators have emerged historically in a competitive environment for sales volumes for OEMS by offering a larger variety of the same product and increasing customer loyalty as customers can vary within the same product over time. In the past, dealers had a decisive sales process role, in which most configuration was done offline at the dealer site. Customers value the knowledge and expertise of dealers in supporting them through the large set of configuration possibilities. With information technology, the car configurator has moved online onto the OEM websites, where customers can configure vehicles in a self-administered manner. While dealers remained the main transaction point, this made the transaction faster and more cost-efficient, as customers came pre-informed and discussed the options with the dealers before placing an order. With the increase in digital sales, customers reassessed the value of a dealership: industry forecasts see the role of retail outlets in the future, mainly in the process of test drives and vehicle handovers. As a result, customers now need to self-navigate through the configuration process, which requires a simple customer journey with an appropriate user interface and experience, not exclusively but also driven by less variety in vehicle configurations, as customers only value the variety to the extent where options are differentiable. To overcome the heterogeneous landscape of individual dealers today, OEMs are shifting towards more direct sales models, such as the agency, where they control the sales process and agents acting on behalf of the OEM. This allows them to unify the digital complexity and provide a single trusted customer journey. In reality, OEMs still need to adapt to the new requirements fully. The data set analyzed shows that TESLA is the only OEM running a direct sales model with a low variety of configuration possibilities. Only Mercedes Benz has so far transitioned to the agency model, but it still offers the same complexity as vehicle development cycles are long, and the variety cannot be reduced overnight. Managing complexity in the car configurator will be a key challenge going forward, which likely needs to find its new equilibrium; also, considering the positioning of each OEM (premium vs. volume), customers might have different requirements towards the brand. While premium customers might prefer the customization, volume customers could be rather price-sensitive.

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ДИГИТАЛНИТЕ ПРОДАЖБИ ПРОМЕНЯТ РОЛЯТА НА ОНЛАЙН КОНФИГУРАТОРИТЕ НА АВТОМОБИЛИ

Резюме: *Клиентите, които изискват повече дигитални взаимоотношения с производителите на оригинално оборудване, променят ролята на търговците. Докато в миналото търговците бяха ключови в процеса на продажба, сега се очаква те да бъдат сведени до търговски пунктове за тестово шофиране и предаване, а клиентите да извършват основно процеса на покупка чрез самостоятелно администриране онлайн. В резултат на това възниква въпросът дали масовата персонализация на производителите на оригинално оборудване, която създава сложност и голямо разнообразие от възможности за избор, все още е актуална или прекомерно усложнява процеса на закупуване на нов автомобил. Разгледаната литература за серийното персонализиране показва, че ако се отнеме ролята на търговеца, съпровождащ клиента, може да се появи необходимост от намаляване на степента на сложност. Разгледаният наличен набор от данни показва само непотвърдени данни, като се има предвид, че Tesla е единственият производител на оригинално оборудване, който прилага модел на директни продажби, а Mercedes-Benz – единствената агенция. Промяната на процеса на конфигуриране също така е невъзможна да се постигне изведнъж, тъй като цикълът на разработване и свързаното с него производство са дългогодишни начинания. Тъй като понастоящем производителите на оригинално оборудване са в процес на смяна на начините на продажба, в бъдеще по всяка вероятност ще е необходима промяна, при която въвеждането на нови модели да се разглежда като благоприятна перспектива.*

Ключови думи: *автомобилен конфигуратор, персонализация, производители на оригинално оборудване, нов автомобил, покупка*

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