# Incumbents' Strategic Responses to Disruption: A Study of German Luxury Car Manufacturers' Reaction to Electric Mobility

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**ABSTRACT**

**Title:** Incumbents' Strategic Responses to Disruption: A Study of German Luxury Car Manufacturers' Reaction to Electric Mobility

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The present master thesis investigates the strategic responses of incumbents from the luxury segment to disruption. In this context, a focus is laid on the micro foundations of the dynamic capabilities sensing, seizing, and reconfiguring and how they are influenced by the resource base. This research design connects the resource-based view with the dynamic capability perspective to obtain new insights into their links.

A multiple case study research design in the German car manufacturing industry was chosen to answer the research question. Data was collected using expert interviews and analyzed with deductive categories that stemmed from the foundational paper on micro foundations of dynamic capabilities by Teece (2007).

The first results of this master thesis are operationalized micro foundations of sensing, seizing, and reconfiguring for luxury segments. Additionally, findings indicate that producers of luxury goods need to manage tangible and intangible resources equally well, to maintain competitive advantage. While intangible resources such as brand reputation open a broad field of opportunities, they depend on tangible resources like production justifying this status. The results of this research extend literature with a new perspective on micro foundations of dynamic capabilities and by managerial implications for leveraging resources in disrupted environments.

**Key Words**: Dynamic Capabilities, Resource-based view, Disruption, Micro Foundations, Luxury, Brand Reputation, Automotive

**SUMÁRIO**

**Título:** Respostas Estratégicas dos Incumbentes à Disrupção: Um estudo sobre a reação dos fabricantes alemães de automóveis de luxo à mobilidade eléctrica

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A presente tese de mestrado investiga as respostas estratégicas dos operadores históricos do segmento de luxo à disrupção. Neste contexto, o foco é colocado nos microfundamentos das capacidades dinâmicas de deteção, apreensão e reconfiguração e na forma como são influenciadas pela base de recursos. Este projeto de investigação associa a perspetiva baseada nos recursos à perspetiva das capacidades dinâmicas para obter novos conhecimentos sobre as suas ligações.

Para responder à questão de investigação, foi escolhido um estudo de caso múltiplo na indústria automóvel alemã. Os dados foram recolhidos através de entrevistas a peritos e analisados com categorias dedutivas que resultaram do documento fundamental sobre os microfundamentos das capacidades dinâmicas de Teece (2007).

Os primeiros resultados desta tese de mestrado são os microfundamentos operacionalizados de sensing, seizing e reconfiguring para segmentos de luxo. Além disso, os resultados indicam que os produtores de bens de luxo precisam de gerir igualmente bem os recursos tangíveis e intangíveis para manter a vantagem competitiva. Embora os recursos intangíveis, como a reputação da marca, abram um vasto campo de oportunidades, dependem de recursos tangíveis, como a produção, que justifiquem esse estatuto. Os resultados desta investigação alargam a literatura com uma nova perspetiva sobre os microfundamentos das capacidades dinâmicas e com implicações de gestão para o aproveitamento de recursos em ambientes perturbados.

**Palavras chave**: Capacidades Dinâmicas, Visão Baseada em Recursos, Disrupção, Microfundamentos, Luxo, Reputação da Marca, Sector Automóvel

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# List of Abbreviations

| | |
|---|---|
| e.g. | exempli gratia |
| cf | confer |
| BMW | Bavarian Motor Works |
| RBV | Resource Based View |
| DCV | Dynamic Capability View |
| DC | Dynamic Capabilities |
| BEV | Battery Electric Vehicle/s |
| CEV | Combustion Engine Vehicles |

# 1 Introduction

## 1.1 Motivation and Problematization

In today's rapidly evolving business landscape, disruption has become a defining force, reshaping industries and challenging traditional business models. It is driven by several factors that strongly influence the business environment that firms operate in, the most influential ones among them being shifts in consumer preferences, globalization as well as technological advancements (Bughin & Woetzel, 2019). While these changes in the business environment provide firms with opportunities for growth through e.g. innovation on the one hand-side, they can also pose challenges to those firms that are not prepared for change.

> "The reason why it is so difficult for existing firms to capitalize on disruptive innovations is that their processes and their business model that make them good at the existing business actually make them bad at competing for the disruption" (Christensen, 1997)

Particularly incumbents that have been operating in a certain business for a long time can struggle to adapt to change as they are too focused on their current business and neglect potentially disruptive market drivers. This process of falling victim to the firm's own success and lack of focus on disruption is strikingly described in the quote by Christensen. Thus, in setting up a business for long-term success, flexibility is needed to avoid inertia in times of change and to be prepared for changing environments (cf. Tushmann & O'Reilly, 1996). How incumbent firms can manage this tension, prepare for, and react to disruption in their industry will be answered in the present master thesis.

This topic is particularly relevant for the strategic management research field as no company can free itself from considering disruption in its strategy. On the contrary, disruption is intensifying and changing business practices across countries, industries, and sectors around the globe (Bughin & Woetzel, 2019). Companies like Blockbuster and Kodak who were market leaders in the movie renting and filmography industry respectively are examples of what can happen to even the most successful companies if they are unable to find the right reactions to disruptive technologies (Downes & Nunes, 2013; Anthony, 2016). In 2010, the disruptive business model of Netflix forced Blockbuster into bankruptcy (CNN, 2010) while the same happened to Kodak through the emergence of digital cameras that made the development of photos unnecessary for consumers in 2012 (McCarthy & Jinks, 2012). The consequences of

not taking disruptive changes seriously are not necessarily closing down business but can also have far-reaching consequences for stakeholders and shareholders. Therefore, finding ways to deal with disruption is crucial for long-term business success.

In research, there are several approaches proposed for dealing with disruption. Wenzel et al. (2020) take a high-level perspective and describe the four different responses *retrenchment*, *preserving*, *innovating*, and *exit*. Looking at it from a lower level of a firm's resources and capabilities, however, yields more actionable insights. Building upon prior research by Wernerfeldt (1984) and Barney (1991) who significantly formed the understanding of the resource-based view (RBV) as one of the most influential streams in strategy research, Teece et al. (1997) extended it with the definition of the dynamic capability view (DCV). This framework aims to explain "wealth creation and capture by private enterprise firms operating in environments of rapid technological change" (Teece et al., 1997, p. 509).

While the RBV and DCV are distinct concepts yet closely linked, they can both be used to understand how incumbents can prepare and react to change. According to the RBV, VRIN resources lead to competitive advantage, yet, in times of change, firms need to change their resource and capability base to react to disruption and maintain competitive advantage. This is where dynamic capabilities come into play as they are responsible for changing the resource base in a way that VRINness and thus competitive advantage is maintained. According to Zott, "dynamic capabilities are more than a simple addition to resource-based view since they manipulate the resources and capabilities that directly engender rents". (Zott, 2003, p. 120). This interplay and thus the combination of both views is crucial for strategic decision making, as an incumbent's resources provide the base for all strategic actions that are taken.
A particularly interesting research topic in this context are the micro foundations of the dynamic capabilities *sensing*, *seizing* and *reconfiguring*. Teece extensively discussed them in his paper "Explicating Dynamic Capabilities the Nature and Micro Foundations of (sustainable) Enterprise Performance" (2007), which will play a crucial role in this thesis. Based on this, the research question of this thesis will be raised. Determining specific micro foundations of dynamic capabilities is a task that can be done with regard to different industries and segments, as done by several researchers (Dixon et al., 2014; Khan et al., 2020; Feori-Payne & McKinney, 2022). However, there currently is no study that determines them specifically for the luxury segment while considering their interplay with the resource base. To be more specific, research on dynamic capabilities and their micro foundations currently is

limited to traditional companies (Warner & Wäger, 2019), start-ups (Khan et al., 2020) or the energy sector (Dixon et al., 2013) to name a few examples without connecting them to firm resources. The question "**How does the resource base influence the micro foundations of dynamic capabilities in companies from the luxury segment for dealing with disruption?"** remains unanswered. The answer to it, however, is relevant from a conceptual perspective in two aspects.

Firms operating in the luxury segment of the market possess intangible resources such as brand reputation or special know-how that those in traditional industries do not possess. These resources are an important driver of sales and create a special value for consumers (Wiedmann et al., 2007). Additionally, as intangible resources cannot be directly obtained in factor markets (Barney, 1991) and time compression diseconomies, as well as path dependencies, apply to them (Dierickx & Cool, 1989), they yield a high potential for competitive advantage. Thus, as the resource base that firms from the luxury segment possess is unique and enables different capabilities for value creation (Teece et al., 1997), novel insights will be generated by analyzing how firms leverage them when facing disruption. It is assumed that the micro foundations of their dynamic capabilities are different from those in traditional segments due to this. Therefore, an operationalization of micro foundation processes of dynamic capabilities for the luxury segment will yield a more differentiated perspective on them.
Additionally, most research on dynamic capabilities is focused on their influence on the resource base and the ability to reconfigure it (Teece et al., 1997; Sune & Gibb, 2015). However, based on the assumption that the brand reputation can be leveraged for dealing with change specifically, an analysis of the relationship between resource base and dynamic capabilities is necessary. A particular focus will lie on assessing whether their relationship is unidirectional or reciprocal, where the dynamic capabilities and their micro foundations are also influenced by the resource base.

The two aforementioned reasons point to a need for analyzing the micro foundations of dynamic capabilities of luxury companies in more depth. How they interplay with the resource base and are used for dealing with disruption will close the research gap that has so far received little attention.

## 1.2 Expected outcome of the thesis

The outcome of this thesis is an operationalization of micro foundations of dynamic capabilities for the luxury segment. Additionally, the interplay of resources and micro foundations is analyzed, and managerial implications for dealing with disruption are defined.
To do this, within the context of a multiple case study research design, qualitative interviews are conducted in the German luxury automotive segment. This segment has faced technological disruption in the form of battery electric vehicles (BEV) in the past decade. Profiting from the knowledge of experts in this segment, the insights obtained are generalizable to other luxury segments. This is possible as the main purchase drivers for luxury products, namely social, individual, and functional value (Wiedmann et al., 2007) are equal across industries. While drawing on prominent research and looking at the interlink between the RBV, DCV, and disruption, the following research question will be answered:

**How does the resource base influence the micro foundations of dynamic capabilities in companies from the luxury segment for dealing with disruption?**

Firstly, in the theoretical foundations, the concepts RBV and DCV are defined. Following on this, current research on their connection to disruption is presented, upon which the research gap in literature is pointed out. In the following methodology, the German car industry is introduced as a research setting while the empirical approach is laid out. Next, the results of this thesis are presented and discussed with the current state of research. Lastly, managerial implications for incumbents from the luxury segment are defined and the research question is answered.

# 2 Theoretical Foundations

## 2.1 Classification of RBV in strategic management literature

The field of strategic management literature fundamentally deals with the study of how organizations formulate and implement strategies to achieve their goals and how strategies affect their performance. In this research field, researchers agree that a strategy's purpose is defining a long-term goal or vision and deciding on measures in order to reach them (Chandler, 1962; Brown & Eisenhardt, 1998; Ireland et al., 2007). The long-term goal is usually found in sustained competitive advantage that creates value for stakeholders as well as shareholders. Porter defines competitive advantage as follows:

> "Competitive advantage grows out of value a firm is able to create for its buyers that exceed the firm's cost of creating it." (Porter, 1985, p. 3)

In strategic management research, there are several schools of thought explaining how this is done, and which factors play into reaching this goal. An example of this is the industrial organization (I/O) perspective, which was one of the most influential theories in strategic management research up until the 1990s. According to it, the industry a company is operating in is the main influence factor on firm performance (Bain, 1968). If the industry is not prosperous and does not provide the firm with opportunities in the first place, there is no way for sustainable value creation. A perspective that takes the opposite perspective is the RBV. According to it, it is the internal factors such as resources and capabilities and their VRINness that determine competitive advantage (Barney, 1991). In this view, firms can obtain a competitive advantage when they are able to leverage resources to implement a value creating strategy in the market that is simultaneously not being implemented by a competitor (Barney, 1991). A school of thought building up on this is the activity-based view. Though it is acknowledged that activities can only create value based on the resources a firm possesses (Porter, 2004; Ray et al., 2004), the reason for differences in performance is seen in the different usage of activity drivers. Depending on their management, they yield cost advantages or differentiation for the customer, ultimately leading to a competitive advantage (Porter, 2004).
While these are only examples of the variety of theories existing in strategic management research, the RBV is particularly suited for analyzing the topic of the present master thesis. Unlike theoretical approaches that focus primarily on industry structure, RBV allows for a more nuanced understanding of how a company's unique resources, both tangible and

intangible, can be leveraged and adapted in response to changing market dynamics. As they form the basis of all activities, they are directly responsible for a firm's levers and sustained performance in the market. Additionally, the theoretical approach points to the ability of management to influence the performance of the firm by manipulating or leveraging the resource base. Therefore, by focusing on these internal factors, RBV provides a strategic framework for companies to navigate and succeed in the face of change if resources are managed well.

## 2.2 Resource Based View

The RBV was first postulated by Birger Wernerfeldt in 1984 and aimed to explain differences in firm performance as the result of internal factors of the firm. In his work, Wernerfeldt stated that "It is the firm's resources and not the products that are the primary source of the firm's competitive advantage" (Wernerfelt, 1984, p. 172), which was a groundbreaking new rationale. Since its first definition in 1984, the concept has been developed significantly. One of the most significant contributions to the RBV came from Jay B. Barney in 1991 in his work "Firm Resources and Sustained Competitive Advantage". According to Barney, sustainable competitive advantage is derived from resources that are valuable, rare, inimitable, and non-substitutable (VRIN) (Barney, 1991). The degree of a company's success is dependent on how easily its resource base can be copied. Peteraf (1993) extends the ideas proposed by Barney by concluding that resource immobility as well as barriers to imitation also play a crucial role in determining differences in firm performance. Another key aspect of the theory is the capabilities. However, these are not as clearly defined in research as resources. Capabilities are seen as an extension to resources, enabling the previously described implementation of a value creating strategy or *how* resources are used to create value (Grant, 1991). To understand how changing both resources and capabilities can be an important lever for incumbents facing disruption, both factors will be defined and described in more detail in the following paragraphs.

### 2.2.1 Resources

Resources according to the paper by Barney are "all assets, capabilities, organizational process, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness" (Barney, 1991, p.101). In this citation resources are seen as the basis of the company, correspondingly

enabling all value creating activities. It needs to be noted that in Barney's definition resources include capabilities. This perception is not shared by Teece et al. (1997) who in their paper "Dynamic Capabilities and Strategic Management" tell them apart. A differentiation is necessary, according to the authors since the sole accumulation of valuable assets does not yield guaranteed success if the required capabilities are not present. Another refinement of the RBV that manifested over time came from the distinction between tangible and intangible resources (Wernerfeldt, 1984; Grant, 1991; Barney, 1991; Kristandl & Bontis, 2007; Silva & Oliveira, 2020).

#### *2.2.1.1 Tangible resources*

In research, there is no disagreement on what constitutes tangible resources. Tangible resources refer to physical assets that can be included in the firm's balance sheet (Grant, 1991; Galbreath, 2005). Examples of physical assets are facilities, raw materials, or equipment (Carmeli, 2004). Due to their characteristic of being substitutable and imitable, resulting in high mobility, they are less likely to be the source of competitive advantage (Barney, 1991). This perception by Barney is still widely shared in research (Peteraf, 1993; Galbreath, 2005; Kamasak, 2017). Yet, Teece (1997) and Schriber & Löwstedt (2015) argue that just by acquiring a tangible resource, knowledge about their use in the organization is not transferred. Schriber & Löwstedt (2015) point to a higher value of them for firm competitiveness than previously assumed, especially when considering them in the context of organizational capability building. This finding unveils the need for further research on them in the context of changing environments and dynamic capabilities.

#### *2.2.1.2 Intangible resources*

As opposed to tangible resources, intangible resources cannot be acquired or replicated in factor markets, which is why they can be a source of competitive advantage (Barney, 1991; Kor & Mesko, 2013; Molloy & Barney, 2015). Instead of acquiring them directly, they need to be accumulated over time without a way for accelerating their accumulation process (time compression diseconomies) (Dierickx & Cool, 1989). Examples of intangible resources are intellectual property rights, the know-how of employees, the culture of the organization, or the reputation of products or the company (Hall, 1993). The latter is particularly important for

companies operating in the luxury segment, as they usually use savoir-faire[1]or heritage to justify extraordinary prices for their products (Berghaus et al., 2015). The positive link of intangible resources to competitive advantage is very well validated (Hall, 1993; Galbreath & Galvin, 2006; Kamasak, 2017), even though when compared to tangible ones, their effect is dependent on competition (Fjeldstad & Haanes, 2000) and on the industry, the firm operates in (Lähtinen et al., 2008).

When looking at their relevance for building organizational capabilities, research has stressed the importance of knowledge resources, networks, and organizational cultures as antecedents (Schriber & Löwstedt, 2015). Intangible resources are attributed with the highest relevance for strategy (Teece, 1997), a high relevance for competitive advantage (Barney, 1991) and firm performance (Kamasak, 2017) as well as capability building (Schriber & Löwstedt, 2015). Therefore, analyzing their interplay with micro foundations of dynamic capabilities will be a novel extension to literature.

### 2.2.2 Capabilities

After describing the different types of resources in the RBV, the following paragraph will deal with capabilities in more detail. Though the concept of capabilities is not consistently defined in research (Liebermann & Dhawan, 2005), definitions fall into three categories according to Collins (1994). Either capabilities enable firms to perform basic activities (Amit & Shoemaker, 1993), or they share the common theme of dynamic improvement (Teece et al., 1994; Hayes & Pisano, 1994) or lastly, they are closely related to dynamic improvements of the firm and "enable an organization to conceive, choose and implement strategies" (Barney, 1992, p.4). Helfat & Peteraf (2003, p. 999) connect capabilities to resources by stating that "an organizational capability refers to the ability of an organization to perform a coordinated set of tasks, utilizing organizational resources, for the purpose of achieving a particular end result". Capabilities are the ability to exploit resources towards a value creating result, which is why in some research they are considered a superior resource (Kamasak, 2017). Helfat and Peteraf (2003, p. 999) point out that "in order for an activity to constitute a capability, the capability must have reached some threshold level of practices or routine activity. At a minimum, in order for something to qualify as a capability, it must work in a reliable manner". What the definitions of capabilities also entail, is a firm's ability to perform an activity more efficiently than other

[1] (…) savoir-faire applies wherever the most skillful and knowledgeable craftspeople practice at the top of their field. It denotes proprietary, traditional, highly specialized methods executed using the finest materials and producing results indicative of true mastery of craft (Koket, 2024)

firms (Collins, 1994). Thus, capabilities are activities that have become routine and constitute common business practice by enabling a company to efficiently operate its base and maintain its status quo (Schriber & Löwstedt, 2015; Warner & Wäger, 2019). These routines can be "purposeful and ongoing collective, conscious, or unconscious processes and ways of working" (Schriber & Löwstedt, 2015, p. 55). They are the mechanism that leverages resources, that are seen as static to be used in the organization (Kamasak, 2017). Due to their manifestation through learning, continuous repetition, and anchoring in tacit knowledge (Winter, 2003), changing routines and thus capabilities can be challenging. Firms that are particularly well able to change their resource base and capabilities in times of change are attributed with dynamic capabilities.

### 2.3 Dynamic Capabilities and their micro foundations

Dynamic capabilities are closely connected to the previously described capabilities, however, work fundamentally differently. As their name indicates, they are not static like ordinary capabilities (Kamasak, 2017) but dynamic in the sense that they enable "to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece, 1997, p. 516). They are seen as a superior capability that extends, modifies, and creates ordinary capabilities (Winter, 2003). The term *dynamic* does not refer to the capability itself but to the changing environment that is adapted to (Ambrosini & Bowman, 2009). According to Teece et al. (1997, p. 515) the term *capability* "emphasizes the key role of strategic management in appropriately adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competences to match the requirements of a changing environment", leading to the achievement of competitive advantage. Thus, their key role is to transform the firm's resource base "in such a way that a new bundle or configuration of resources is created so that the firm can sustain or enhance its competitive advantage" (Ambrosini & Bowman, 2009, p. 35). Dynamic capabilities do not only mediate the effect of VRIN resources and performance (Lin & Wu, 2014), just as intangible resources, dynamic capabilities must be built (Teece & Leih, 2016; Felin & Powell, 2016). As dynamic capabilities renew and reconfigure organizational resources, there are many different types of examples for them in research, carried together by Ambrosini and Bowman (2009). She illustrates how mergers and acquisitions, Research and Development (R&D), product innovation, absorptive capacity as well as organizational structure reconfiguration can be seen as examples of dynamic capabilities.

Dynamic capabilities as described by Teece (2007) consist of the parts *sensing*, *seizing*, and *reconfiguring*. In research, there have been other interpretations of dynamic capabilities describing the parts *reconfiguration*, *leveraging*, *learning*, and *creative integration* (Ambrosini & Bowman, 2009) or *adaptive*, *absorptive*, and *innovative capability* (Wang & Ahmed, 2007), however, in this thesis the definition by Teece (2007) is followed. This is done as firstly, Teece has defined the concept of dynamic capabilities and is the most influential researcher in this field. Secondly, Teece's definition is the one that most recent research on their micro foundations follows (Warner & Wäger, 2019; Khan et al., 2020; Altintas et al., 2022). The illustration shows the logic of dynamic capabilities which constitutes that upon change in the environment, *sensing*, *seizing*, and *reconfiguring* successively are used to sustain competitive advantage.

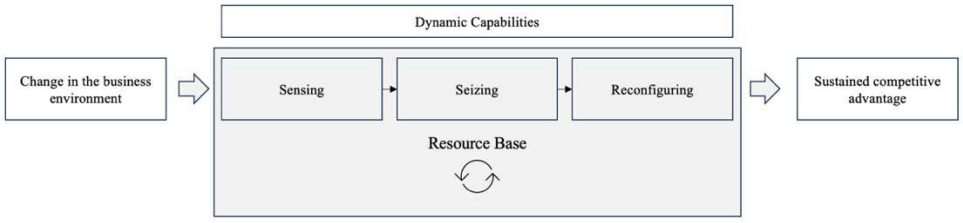


*Illustration 1: Function logic of Dynamic Capabilities*
*Source: Own illustration based on Teece (2007)*

*Sensing* refers to a company's scanning, learning, and interpreting activities regarding the identification of opportunities and threats in the external environment (Teece, 2007; Birkinshaw et al., 2016; Warner & Wäger, 2019, Khan, 2020). According to Teece (2007, p. 1322), organizations need to "constantly scan, search, and explore across technologies and markets, both 'local' and 'distant'" to identify opportunities. The main driving factors for their identification are entrepreneurial managers as well as the emergence of new knowledge and information (Teece, 2007) that lead to the perception that the organization needs to be adapted. *Seizing* refers to capitalizing on sensed opportunities through the development of new products, processes or services and investing in their development (Teece, 2007). In this context Teece (2007) points out four factors that are specifically important, namely, investment decisions, creating new business models that enable capitalization on the investments made, improvement of technological competences as well as the maintenance of assets (Khan, 2020). As anticipating future market revenue streams and costs in a changing environment is a nearly impossible task, seizing is seen as very difficult for companies (Teece, 2007).
Lastly, *reconfiguring* activities refer to a firm's "ability (…) to recombine and reconfigure its resource base" (Khan, 2020, p. 1480) in order to react to an opportunity or threat in the

environment and eventually maintain competitive advantage. The reconfiguration of resources and organizational structures is a necessary step that follows up on *sensing* and *seizing* investments in opportunities to sustain profitable growth (Teece, 2007).
What Teece (2007) and other authors (Helfat & Peteraf, 2015; Fallon-Byrne & Harney, 2017; Ellström et al., 2022) stress in connection to dynamic capabilities is the role of managers who strongly influence the implementation of the components *sensing*, *seizing*, *reconfiguring* with their cognitive abilities.

Going down one level in the capability hierarchy and to the core of this thesis, each of the three parts consists of separate micro foundations. These are responsible for reconfiguring as well as adding or subtracting to the resource base and operational capabilities (Teece, 2018). By establishing micro foundations in the dynamic capability framework, Teece (2007) pursues to provide a comprehensive ecosystem approach that includes processes, strategic considerations and, decision making.

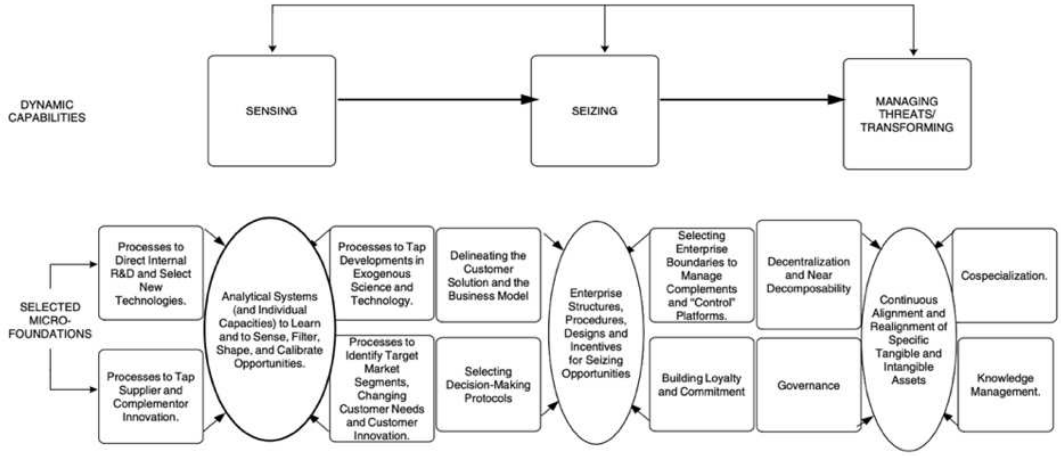


*Illustration 2: Overview of Micro Foundations for business performance*
*Source: Teece, 2007, p. 1342*

According to Teece (2007), this framework can explain the nature and amount of intangible assets a firm will create and the profits it will earn through the deployment of dynamic capabilities. To understand what each of the micro foundations of the dynamic capabilities entails, they will be presented shortly in the following chapters.

### 2.3.1 Sensing micro foundations

The goal of the *sensing* capability is to "learn and to sense, filter, shape and calibrate opportunities" (Teece, 2007, p. 1326) to be pursued in order to maintain competitive advantage.

In his paper, Teece postulates four categories of *sensing* micro foundation processes that work on reaching this goal.

Firstly, "Processes to Direct Internal R&D and Select New Technologies" emphasize the importance of internal research and development focusing on incremental innovations. This micro foundation involves mechanisms for selecting which technologies to pursue based on their potential to create competitive advantage and alignment with the organization's strategic goals. While external monitoring is important, the "R&D activity can itself be thought of as a form of 'search' for new products and processes" (Teece, 2007, p. 1324) and thus, is equally important. This approach is especially important in firms that aim to stay at the forefront of technological advancements and lead new technological trends.

The second type of sensing processes pointed out by Teece (2007) are "Processes to Tap Supplier and Competitor Innovation". Sensing capabilities also entail understanding, integrating, and leveraging insights and innovations from suppliers and complementors. This approach includes maintaining open communication channels in the value chain to profit from novel insights and is closely connected to open innovation (Herzog, 2008). By combining diverse knowledge bases of different companies, open innovation can go beyond the abilities of the individual organization and can thus have a high impact on the competitive advantage of collaborating firms (Herzog, 2008).

The third type of processes pointed out by Teece (2007) are "Processes to Tap Developments in Exogenous Science and Technology". This means that next to taking the internal and open innovation approach, organizations also need to extend beyond their boundaries by using external research and science to stay on top of the latest developments. This can involve collaborations with academic institutions, participating in industry events, and using market research firms.

Lastly, using "Processes to Identify Target Segments, Changing Customer Needs, and Customer Innovation" are also strongly externally oriented. By having a close focus on changing consumer needs through continuous engagement with potential customers, firms can ensure that they can also react to small sentiment changes. In these processes, having close connections to suppliers can also facilitate identifying changes in customer needs or target segments according to Teece (2007).

In his paper, Teece moves away from only using the environmental context for analytical purposes but towards using the ecosystem in which firms operate to sense and react to change (Teece, 2007).

### 2.3.2 Seizing micro foundations

For the *seizing* capability, he also includes four components working on the "enterprise structures, procedures, designs and incentive for seizing opportunities" (Teece, 2007, p. 1332). These are "delineating the customer solution and business model", "Selecting enterprise boundaries to manage complements and 'control' platforms", "selecting decision-making protocols" as well as "building loyalty and commitment" (Teece, 2007). Upon sensing of change, the difficulty lies in deciding between competing investment decisions that might have a different impact on the future. Due to their superior positioning in a market, however, incumbents do not need to be first movers but can let new entrants explore opportunities and then follow up with investments once the risk has been reduced (Mitchell, 1991).

"Delineating the customer solution and business model" can become necessary when the disruption that was sensed fundamentally changes the way that a business delivers value to its customers. According to Teece (2007, p.1329), the "business model is a plan for the organizational and financial 'architecture' of a business" and needs to be aligned with the customer needs. This alignment stems from technology's and features' embeddedness in the product, the revenue and cost structure, and the target segments they aim to satisfy. An example of the need for a changing business model can be drawn from the automotive industry, where the business model based on the production of combustion engine vehicles (CEV) needs to be changed for the production of BEV. In this case, companies need to e.g. invest in new technologies and work on their cost structures to be able to provide a competitive product to the market.

The second factor Teece (2007) points out is "Selecting enterprise boundaries to manage complements and 'control' platforms". This means that strategic decisions need to be made regarding what activities or operations a company should keep in-house and what should be outsourced or collaboratively developed. Managing complements involves ensuring that complementary products, services, or technologies enhance the company's offerings. In controlling platforms, firms must decide how open or closed their platforms should be to foster open innovation (cf. Herzog, 2008) while maintaining control over core competencies and strategic assets. These decisions impact the company's ability to innovate, respond to market changes, and dependencies on other suppliers. The latter should be kept as low as possible[2].

[2] Further information can be found in research on resource dependency theory e.g. by Pfeffer and Salancik (1978) or Cascario and Piskorski (2005).

When deciding on whether to change the business model or to vertically integrate, "selecting decision-making protocols" is critical to ensure objective and unbiased decisions. Especially in fast-changing environments, false investment decisions, excessive optimism, or loss aversion can be damaging due to little opportunity to recover from mistakes (Teece, 2007). What Teece (2007) and other authors (Helfat & Peteraf, 2015; Fallon-Byrne & Harney, 2017; Ellström et al., 2022) stress in connection to decision making processes in dynamic capabilities is the role of managers who strongly influence the direction of the organization with their cognitive abilities. Therefore, while they need to be enabled to decide rapidly and flexibly, mechanisms need to be in place that guarantee that decisions are based on thorough analysis and aligned with the strategic objectives. Additionally, decision-making protocols should facilitate the integration of insights from across the organization, ensuring that diverse perspectives and expertise inform strategic moves.

The final component "building loyalty and commitment" involves fostering an organizational culture that supports long-term strategic objectives and ensures loyalty as well as commitment among employees, stakeholders, and customers. Teece (2007) suggests that dynamic capabilities also strongly depend on the commitment and motivation of those who execute the strategy. Building loyalty involves creating a work environment that values and rewards innovation and collaboration. It is strongly driven by the management's ability to communicate goals, values, and expectations (Teece, 2007).

### 2.3.3 Reconfiguring micro foundations

Finally, Teece (2007) also presents micro foundations for "managing threats and transformation", which refers to *reconfiguring* dynamic capabilities. These are "decentralization and near composability", "cospecialization", "governance" as well as "knowledge management".

With "decentralization and near decomposability" Teece (2007) describes means to enhance responsiveness and foster innovation within the organization. Decentralization allows lower levels of the organization to make decisions and respond quickly to local conditions without the need for continual higher-level approval. Teece refers to the studies by Armour and Teece, (1978) and himself (1980, 1981) where "decentralization along product or market lines with independent profit centers led to performance improvements in many industries" (Teece, 2007, p. 1336). However, decentralization within an organization can sometimes conflict with the

need for integration, particularly when integration enhances product value or when significant economies of scale exist.

Near decomposability refers to structuring the organization in such a way that different units or divisions can operate semi-independently but still contribute to the overall strategy of the company. This can be beneficial in environments where integration does not provide significant customer value or operational efficiencies. The balance between decentralization and integration can be managed through a collaborative, non-hierarchical management style, again pointing to the relevance of strong management (Teece, 2007).

"Cospecialization" which is also closely related to the *seizing* dynamic capability involves the strategic integration of assets or capabilities that deliver more value together than separately. Teece (2007) discusses how firms can manage cospecialization by aligning their asset base internally in a manner that maximizes interdependencies to create unique and hard-to-replicate capabilities. This not only enhances efficiency but also builds barriers to competition. He again points to the relevance of the management which needs to identify cospecialization opportunities internally by e.g. merging knowledge bases and making investment decisions to lock-in and obtain co-specialized assets.

Effective "governance" is crucial for managing the dynamic capabilities of an organization. Governance in this context refers to the systems, processes, and structures that guide the organization's activities and ensure the alignment of everyone in it with strategic goals. Governance mechanisms also externally ensure that in collaboration with other companies, "'leakage,' mis- appropriation, and misuse of know-how, trade secrets, and other intellectual property" (Teece, 2007, p. 1339) are avoided. Good governance supports dynamic capabilities by ensuring that there is clarity in decision-making, accountability, and strategic alignment across the organization. While decentralized structures are supportive in reconfiguring the resource base of the organization, strong governance mechanisms and incentives are especially needed in decentralized structures to ensure alignment with the overall strategy. Through strong governance, desirable behaviors are encouraged, and the organization is safeguarded against risks.

The last micro foundation Teece (2007) discusses is "knowledge management". It is foundational to the ability of an organization to learn from its experiences and to leverage learning for strategic renewal and innovation. Teece emphasizes the importance of systems and processes that enable the capture, sharing, and utilization of knowledge within the boundaries of the organization but also beyond it. Effective knowledge management involves not just managing explicit knowledge through databases and documents but also tapping into tacit

knowledge through practices like mentorship and communities. According to Teece (2007), strong governance in place for knowledge management and combining knowledge assets also is a precondition for reconfiguration.

# 3 Connecting the RBV, DCV and Disruption

## 3.1 Disruption

As the value of dynamic capabilities and their respective micro foundations stems from a disruption in the business environment, this term will be defined and its impact on business environments pointed out.

When talking about change in business environments, the words ‘disruption’ or ‘disruptive innovation’ are frequently used. They describe how a disruptor suddenly appears e.g. in the form of a technology or company and quickly changes common business practices. These disruptors can be multifaceted and appear in the form of new governmental regulations, pandemics as seen with the COVID-19 pandemic, or in the form of geopolitical tensions as seen with the example of the war in Ukraine. Due to their ‘sudden’ appearance, they can pose a challenge to incumbent firms as they can struggle to match the new expectations of the environment.
That disruption in the business context does not always refer to discontinuous change is pointed out by Christensen et al. (2015), one of the most influential researchers in this field. He states that the interpretation of disruption is used carelessly as it does usually not suddenly appear but can be seen as “a process whereby a smaller company with fewer resources is able to successfully challenge incumbent businesses” (Christensen et al., 2015, p. 4). The notion of disruption being a process plays a crucial role in its definition, as most disruptive companies target a customer segment that has been overlooked by incumbent firms. Only as mass adaption arises through customers moving away from incumbents towards the “disruptor”, disruption has arrived in the market (Christensen, 2015). Due to Christensen being one of the most influential researcher on disruption in literature, his definition of the term will be followed in this thesis. As pointed out, change in market dynamics can pose a great threat to incumbent firms, however, can be dealt with successfully if disruption is sensed and taken seriously early enough.

A first measure to do so is to avoid being too focused on exploiting the existing value proposition. If this is done, incumbents are rarely at the forefront of commercializing new technologies and exploring new opportunities (Bower & Christensen, 1995; March & Levinthal, 1991). Therefore, despite incumbents not needing to be first movers (Teece, 2007) their exploration capability can be strengthened and combined with flexible resource allocation

processes to react to changes more quickly. Within this resource allocation process, it is crucial that companies strike a balance between investing in exploitation capabilities and simultaneously also explore opportunities, if disruption emerges (Cooper & Schendel, 1976). Bower and Christensen (1995) recommend that companies implement small teams that can explore and exploit disruptive technologies separate from the main organization. With this approach, interference with the main business and value proposition is avoided. A quicker way to acquire capabilities than internally building them can be the acquisition of capabilities and technologies in the market when possible (Cooper & Schendel, 1976).

On a more general side, in a recent paper, Wenzel et al. (2020) point to four different options incumbents have for dealing with disruption. These are *retrenchment*, *preserving*, *innovating*, and *exit* and each has different benefits and downsides. Though arguably, the context in which Wenzel et al. (2020) analyzed these reactions was the COVID-19 pandemic, an event occurring rapidly, the possible reactions to it also apply when gradual change has been sensed.

*Retrenchment* refers to "reductions in costs, assets, products, product lines, and overhead" (Pearce & Robbins, 1993, p. 614). It can be seen as a valuable measure that can pertain to performance in the short run, as it decreases complexity and increases transparency. However, as crises last for a longer time synergies between activities can get which may lead to an erosion of firm resources, capabilities, and culture (Wenzel et al., 2020). *Preservation*, on the contrary, refers to maintaining the status quo of operations. Promoters of this perspective claim that adopting changes in the environment too early while it still changes can mitigate the benefits of early adoption. Upon reacting too quicky, firms are left worse off than those that have stuck with their core competence all along (Wenzel et al., 2020). *Innovating* refers to engaging in strategic renewal by exploring new alternatives, expanding activities, and reflecting on business practices (Wenzel et al., 2020). Disruption is seen as an opportunity to free thinking and decide openly on what the future of a company can look like (Wenzel et al., 2020). Lastly, *exit* refers to the discontinuation of business activities (Wenzel et al., 2020). Of these four reactions, *retrenchment* and *innovating* manifest the need for changing the organization and starting an organizational transformation.

Transformation, particularly in the context of business, involves comprehensive and fundamental changes in how an organization operates e.g. because it has performed poorly in the past (McKinsey, 2017). As Teece (2007) articulates, transformation is about rethinking and reengineering the entirety of an organization's operations, from its business model to its internal processes and culture, to adapt to new market realities. Thus, transformation is an internal, organization-wide process that requires a strategic approach and strong leadership to

navigate (McKinsey, 2021). It is therefore also closely related to changing the resource base of an organization. To exemplify, digital transformation which was arguably the most influential form of transformation in the past decade (Ellström et al., 2022) can be considered. It describes how firms strategically explore new ways of value creation by leveraging new technologies and reorganizing their structures (Verhoef et al., 2021). This process of internal development to enhance customer experience and create new business models (Liu et al., 2011) is strategically important as it enables building new capabilities for satisfying a need in the market.

After elaborating on disruption and possible reactions to it, in the following chapter, the relevance of dynamic capabilities within disrupted environments is pointed out.

### 3.2 Dynamic Capabilities in disrupted environments

As described in the chapter on the RBV, the VRIN resource base of a company enables it to develop a competitive advantage over its competitors (Barney, 1991). According to Barney (1991), the sustainability of this advantage does not refer to a timeframe in a calendar during which it is maintained, but to whether the competitive advantage is duplicatable by other actors. However, in an environment such as the 21st century, where business practices are disrupted frequently and continuously, this non-duplicability is quickly becoming obsolete (Barreto, 2010; Hyken, 2023). Examples like Kodak or Blockbuster show that companies must constantly monitor the market and weigh up which resources promise a competitive advantage in the future, and which may lose value. To maintain a sustainable competitive advantage, incumbents need to expand and optimize existing resources (exploitation, cf. March & Levinthal, 1991) on the one hand and invest in new ones (exploration, cf. March & Levinthal, 1991) on the other. There are several examples of how resources can be managed to maintain competitive advantage. With strategic foresight (cf. Berghaus et al., 2015), tangible ones such as facilities in relevant locations need to be built, investments in the development of technology need to be made and outdated products need to be discontinued. When looking at intangible ones, brand reputation needs to be managed in accordance with customer needs, and knowledge processes in firms need to be managed in alignment with trends and future market drivers. Only if firms are able to change their resource base quickly as change arrives in the market, they will be able to maintain the VRINness of resources and thus their competitive advantage (Teece et al., 1997). This need to prepare for dynamism in the market environment is not fully represented in the RBV, as the perception of the market and competition is seen as static

(Sanchez, 2008). To extend it and explore in greater detail how incumbent firms can change their resource base and maintain competitive advantage, the DCV was introduced by Teece et al., (1997). Due to dynamic capabilities' high relevance for the Strategic Management research field, many studies examine them and their three components *sensing*, *seizing,* and *reconfiguring* in depth with regard to disruption.

In a study from 2015 by Karimi and Walter, the authors analyzed the effect of digital disruption on the newspaper industry and showed how first-order dynamic capabilities can help build new capabilities that are relevant to the disrupted environment. Building these capabilities over time significantly improved the company's reaction to disruption. The need for building and adapting capabilities over time and thus their value in gradually changing environments is supported by a study by Schilke (2014). He pointed out that in abruptly changing environments, dynamic capabilities lose their value due to the short time frame provided for changing. Instead, their value is highest in environments that change gradually. As disruption influences the company from the outside and does not necessarily occur suddenly (Christensen, 2015) the focus of analysis in this thesis will be on gradual disruptive change, where the impact of dynamic capabilities is highest. The underlying assumption is that even though disruption *seems* to appear suddenly, the possibility to sense it is usually given before it becomes a serious threat (Christensen, 2015). An example of this can be taken from the automotive industry, where the importance of sustainable practices could have been anticipated as early as 1987 in the Brundtland Report (1987) and manifested itself with the founding of Tesla in 2003. Despite this, large parts of the automotive industry have not started to explore more sustainable practices and technologies seriously. As a result, traditional CEV producers are struggling to match the standards of the competition in the BEV market (FAZ, 2023). According to Christensen et al. (2015), this is often the case with incumbents facing disruption as they are more occupied with satisfying more profitable consumer segments and exploiting old revenue streams. As the research question of this thesis is answered by conducting case studies in the luxury segment of the automotive industry in Germany, this example is extended in the chapter "Disruption in the automotive industry" in more detail.

Another paper that particularly analyzed the components of dynamic capabilities in the context of disruption was published by Leemann et al. (2021). In this paper, the authors present a case study of the company Axel Springer and its transformation from being a print publisher to becoming an internet company. The authors point out that the processes of *sensing*, *seizing*, and *reconfiguring* are not discrete and linear, but rather iterative, with overlaps and

interconnections. Additionally, it is pointed out how assets were changed and extended during the transformation to meet the needs of the future business environment. Through this, the authors also stress the need for dynamic capabilities when reacting to disruption.

When looking specifically at the micro foundations of dynamic capabilities, a large part of existing research papers focuses on analyzing them in the context of digital transformation (Warner & Wäger, 2019; Ellström et al., 2022; Kowalski et al., 2024). As digital transformation is not the core lens of analysis in this thesis, only the paper by Warner & Wager (2019) will be presented in more detail as the research question is similar to the one raised in this thesis. The similarity lies in the attempt to understand *how* dynamic capabilities function in more detail. In their paper, Warner and Wäger (2019) analyzed the building of dynamic capabilities and their micro foundations in the context of digital transformation and claim that specific ones need to be built for digital transformation. They categorize micro foundations such as "digital scouting", "rapid prototyping" and "navigating innovation ecosystems" as parts of *digital sensing*, *digital seizing,* and *digital transforming* respectively. Adding to this are Ellström et al. (2022) who define similar routines of dynamic capabilities as crucial drivers for dealing with digital transformation. Both papers suggest that a firm's resource base needs to be continually adapted and reconfigured through dynamic capabilities to maintain competitiveness and leverage digital transformation opportunities. Even though these insights point to the connection between RBV, DCV, and digital transformation triggered by market trends, their insights are limited due to the strong focus on digital technologies.

Looking at micro foundations in changed environments from a more general perspective Dixon et al. (2013) differentiate between dynamic capabilities for adaption and innovation and thus also between their respective micro foundations. They link adaptive ones to exploitation as well as deployment capabilities. Exploitation refers mainly to knowledge processes inside the company and deployment specifically to the change of resources and thus *reconfiguration* (Teece, 2007). Capabilities for innovation are exploration and path creation. Exploration can be linked to *sensing* and *seizing* through micro foundations such as search and experimentation respectively. Path creation relates to *seizing*, as it mainly refers to setting up and deciding on the implementation of projects. If both types of dynamic capabilities are built, according to the authors, both short and long-term competitive advantage can be sustained as existing resources are exploited while simultaneously exploring new opportunities.

## 3.3 Need for further research

While the previous chapter pointed out the relevance of dynamic capabilities and their micro foundations for reacting to disruption in traditional, these implications do not fully apply to the luxury segment. The reason for this lies in the drivers of disruption in it that are fundamentally different.

### 3.3.1 Drivers of disruption in the luxury segment

According to Yeoman and McMahon-Beattie (2018), there are eleven drivers that influence it and work on shaping the luxury market of the future. The first one of *demanding consumers* is closely linked to the previous argument. Due to digitalization and the ability for consumers to compare products across different dimensions, they feel entitled to be more selective and can put pressure on luxury manufacturers due to easy access to alternatives. Adding to this, the *democratization of luxury* has made luxury more accessible to the rising middle classes, moving beyond exclusivity to broader societal reach. This democratization goes along with an even higher relevance of luxury brand reputation, however, moves away from the need for low-volume production or manufacturing to achieve it. As long as brand reputation is built successfully e.g. in marketing, the production practices, and traditional drivers for luxury consumption like craftsmanship and heritage lose relevance. This trend is especially noticeable in the fashion industry. The previous driver is also connected to *the rising middle classes of affluence* which means that as the middle classes get wealthier, the target market for luxury producers increases. However, expectations of this new target market go beyond rising quality at affordable prices but also expect ethical and environmentally friendly production practices and products from luxury producers.

Two further drivers that are related to each other are *experience economy* and *happiness*. A shift towards an experience economy prioritizes experiences over material goods, where activities are used to obtain a sense of improvement and refreshment. This aligns closely with the driver *happiness* that can easier be derived from experiences rather than from purchasing physical goods, pointing to the need for luxury producers to provide experience value to their customers. Some luxury brands do this with a luxurious flagship experience at their stores to convince customers of the glory of their brand (McKinsey, 2024)

Another driver of the luxury segment are *lifestyles of the seriously wealthy* which significantly influence market trends, as these individuals often own cultural objects and create a dialogue with societal aspirations. The seventh driver of the luxury market of the future is the

*feminization of luxury*, and reflects a shift towards experiences and indulgence, driven by women's growing buying power and changing gender roles in society. *Technological personalization* is another pivotal driver, using advancements in science and technology to tailor luxury experiences, prices, and marketing measures to the individual. This changes the way companies can engage with consumers fundamentally and yields a lot of potential if implemented in the sales strategies of companies correctly. Another driver playing a crucial role in the future is the *social status* that luxury goods represent. It is achieved by putting luxury goods up on display for others to see and by that distinguishing oneself from them. Additionally, *changing perceptions of what constitutes luxury*, focusing on experiences, authenticity, and personal transformation, along with *premium pricing* strategies, highlight the evolving nature of the luxury market. These drivers collectively depict a market that is increasingly inclusive, experience-focused, and influenced by societal changes.

Adding to the paper by Yeoman and McMahon-Beattie (2018), another driver of disruption in the luxury segment that was not considered specifically is the growing strength and purchasing power of Asian economies which is pointed out in a report by Bain (D'Arpizio et al., 2023). According to the report, the Chinese luxury market is poised to become the world's largest one. It is significantly contributing to global luxury spending and is driven by the region's increasing purchasing power. This surge is reshaping the luxury landscape and altering consumer habits and preferences, especially in Asia.

The presented drivers of disruption all point to status, prestige, and satisfying materialistic needs being core drivers of sales in the luxury segment (Wiedmann, et al., 2007). By that, they differ from traditional segment's ones. Luxury companies need to build a reputation (intangible resource) over time (time diseconomies) by continuously identifying consumer demands and setting trends to match them. Berghaus et al. (2015) point out that especially in the luxury segment there is a strong need for self-reliance, meaning that companies should stick with what they are good at as they lose brand credibility if they move to other products or only match trends in the market. The authors explicitly connect it to the RBV and stress that business opportunities need to be found within the company by leveraging the unique resource base instead of copying from the external market.

After laying out the specific disruptive drivers for the luxury segment, in the next chapter insights on dynamic capabilities in the luxury segment are presented. That this segment has gotten little attention in previous research, however, becomes evident by the limited amount of literature on it.

### 3.3.2 Dynamic Capabilities in the luxury segment

Berghaus et al. (2015) specifically emphasize the managerial capability of *sensing* change in the luxury industry. The authors point out that as consumer sentiment and values can change quickly, anticipation of market trends and reaction to them is crucial. Due to this, the managerial ability of anticipating future scenarios can prepare luxury companies for change and ensure competitiveness (Berghaus et al., 2015). With this insight, the authors are in line with previous research on dynamic capabilities that stress managers as the main actors in dynamic capability processes (Teece, 2007; Ambrosini & Bowman, 2009).

Focusing more on *seizing* and *reconfiguring*, is the paper by Caniato et al. (2013). In their paper the authors analyzed dynamic capabilities in the context of fashion-luxury supply chain innovation and argue that dynamic capabilities moderate the effect of market drivers, business domains as well as innovation. This indicates that innovation in fashion-luxury companies results from a complex interplay of internal and external factors, with dynamic capabilities playing a pivotal role in driving innovation processes and outcomes. Despite their focus on the supply chain, Caniato et al.'s (2013) insights are connected to the research topic of this thesis as innovating is seen as a reaction to changes in the environment (Wenzel et al., 2020). Further, it is fundamentally supported by the dynamic capabilities *seizing* (e.g. through investing in R&D) and *reconfiguring* (e.g. through changing company resources and capabilities for innovation).

#### *3.3.2.1 Micro foundations of dynamic capabilities in the luxury segment*

While there is consensus on the need for building dynamic capabilities to be able to react to change, less is known about them and their micro foundations in the luxury segment. However, the relevance of understanding micro foundations is particularly important in the luxury segments due to several of reasons.

Firstly, in the luxury industry, *sensing* must be finely attuned to the sector's unique and changing consumer preferences and trends (Berghaus et al., 2015; Yeoman & McMahon-Beattie, 2018). In this context, *sensing* micro foundations play into finding ways to manage and preserve the high-value brand image externally and from the inside out (Berghaus et al., 2015). This intangible resource makes luxury brands unique and is needed to distance them from emerging mass-luxury producers. Additionally, *sensing* activities always need to discover

and evaluate new technologies that can be leveraged to personalize experiences for the consumer and increase their attraction to the brand.

*Seizing* activities in the luxury segment differ from traditional industries as they focus on maintaining exclusivity and heritage when implementing changes to products or business models. Only those decisions should be made that strengthen luxury perception in the market and address the segment's specific market drivers (cf. Yeoman & McMahon-Beattie, 2018). Consequently, the micro foundations of dynamic capabilities in luxury incumbents involve not just adapting to market changes but also strategically aligning reactions with the brand's core values when adaption is needed. This ensures that any organizational change enhances the luxury essence rather than diluting it.

Lastly, *reconfiguring* micro foundations also differ from those in traditional industries due to the high value placed on brand heritage and customer perception. Reconfiguration activities involve not only adapting resource setups to current market trends but also ensuring that changes reinforce the brand's exclusive image.

Even though the previous parts very strongly focus on intangible resources, *sensing*, *seizing*, and *reconfiguring* with regard to tangible ones can also be crucial. For example, investments in more sustainable production machines can have an impact on the public perception of the company and thus also directly influence the brand perception. The same applies to hand-making luxury products which strongly impacts the savoir-faire perception of these products. Through this, micro foundations with regards to tangible resources can also address drivers of the luxury market like increased demand for sustainable and individualized practices (Yeoman & McMahon-Beattie, 2018).

It has become evident, that the micro foundations of dynamic capabilities in the luxury segment are different from those in traditional industries, as e.g. explicitly analyzed by Warner and Wäger (2019). Therefore, operationalizing them for this specific segment is an extension of existing literature.

#### *3.3.2.2 Influence of resource base on dynamic capabilities*

Building upon the previous chapter, what is missing next to the operationalization of micro foundations of dynamic capabilities in the luxury segment is a paper that connects both theoretical approaches of RBV and DCV with a focus on micro foundations. While most papers analyze the effect of dynamic capabilities on the resource base, taking a different conceptual

approach and analyzing how dynamic capabilities are influenced by the resource base is a gap in research to be filled. The luxury segment is particularly suitable for analyzing this relationship as the resource base can serve a dual role in the face of disruption.

On the one hand, a strong brand reputation allows luxury companies to innovate and delineate their customer solution in their niche or even expand beyond it. For this, access to tangible resources such as premium raw materials can be used to develop unique products, while intangibles can also be used to reinforce the premium image of new products for the customer. Additionally, due to the premium reputation, incumbents in this segment can also choose from a greater variety of partners e.g. celebrities or employees, as the association with a strong brand is also beneficial to them. Furthermore, due to the higher margins justified by the brand image, luxury incumbents do not necessarily need to drive the market but can be a fast-follower investing only, as a trend seems to manifest (Teece, 2007).

On the other hand, a strong reliance on a luxury brand reputation also means that the ability to e.g. increase production efficiency is limited, as craftsmanship and savoir-faire are the main purchase drivers for clients (Berghaus et al., 2015). This can ultimately also constrain a company's ability to *seize* and *reconfigure* quickly, as all decisions must be made considering this. Building up on this, luxury incumbents are dependent on the procurement of high-quality materials to produce their products, which can turn into a bottleneck in times of global disruptions and fragile supply chains.

From both perspectives laid out in this chapter, it can be hypothesized that *sensing*, *seizing*, and *reconfiguring* micro foundations are also influenced by the resource base. As in research, there is no paper that looks at this connection specifically, this master thesis will provide an insightful extension to the literature on RBV and DCV.

With these gaps in literature in mind, the research question of this master thesis can be answered comprehensively with the following framework (Illustration 3):

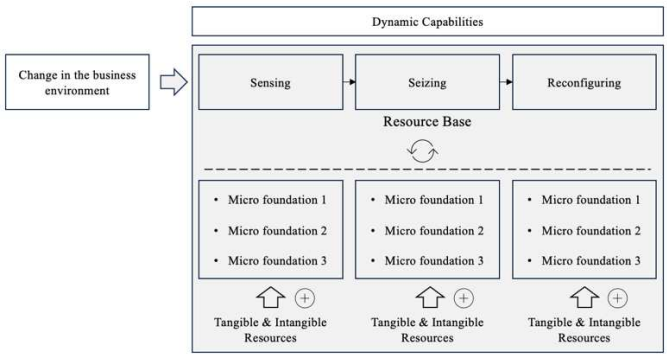


*Illustration 3: Research approach of this master thesis*
*Source: Own Illustration*

Notably, this framework is not limited to luxury companies but can be applied to other industries as well. The model depicts the influence of change in the external environment on dynamic capabilities and the resource base of the organization. A consensus in research exists on the ability of the dynamic capabilities to change the resource base (Teece et al., 1997; Ambrosini & Bowman, 2009). However, these changes in the resource base are made possible through the micro foundations of dynamic capabilities that are themselves influenced by the resource base. In this master thesis, the micro foundations that will be operationalized in the first step of the empirical approach will serve as the dependent variable (DV). Within the change process, the resource base consisting of tangible and intangible resources serves as the independent variable (IV), that influences the micro foundations. How this influence manifests will be discussed when answering the research question.

## 3.4 Intermediate conclusion

In the preceding chapters, the theoretical foundations and need for further research have been described. While dynamic capabilities are a prominent and well researched field in strategic management literature, research on their micro foundations is limited. There is a particular lack of empirical studies investigating their application in the luxury segment during disruptions, which is relevant due to the unique drivers of disruption present in it. Furthermore, while research on the connection between DCV and RBV exists, no study puts an emphasis on how the micro foundations of dynamic capabilities are influenced by the resource base in times of disruption. This insight, however, can help managers navigate change in the environment by leveraging resources and maintaining competitive advantage.

Due to the little amount of research on this topic, an explorative research design is necessary to obtain new insights on it. In the following chapter, the methodology for closing the identified research gaps and answering the research question is presented.

# 4 Methodology

## 4.1 Research Setting

When selecting a research setting, a generalization of the insights generated in it needs to be ensured. The research setting chosen for the present thesis is the luxury segment of the German automotive industry. This is done for several reasons.

Firstly, the industry provides incumbent firms that have perfected their resource base, activities, and routines towards the production of CEV. This perfection has been achieved over decades, yet due to the emerging relevance of BEV, needs to be altered across all business areas. Changing manufacturing requirements in the assembly line and allocating higher relevance to the development of software for BEV, changing the supplier base for the procurement of batteries instead of engine parts, or changing the design requirements for BEV are only three examples of these changes. This need for adapting processes that have been built over decades in response to market shifts can also be found in incumbents from other industries such as manufacturing, pharmaceuticals, or fashion.

Secondly, the German automotive industry provides several companies with similar characteristics in terms of size, brand reputation, and internationalization. While Blockbuster and Kodak were the market leaders in the movie renting and filmography segment respectively, Germany provides four companies that are at the forefront of producing luxury cars globally. For them, their most important assets are their brand reputation for producing high-quality cars, engineering know-how, and a diversified production network. While their reputation is distinct in the automotive industry, luxury segments in other industries also exist and are composed of companies with similar positioning. An example can be drawn from the luxury watch segment, where Rolex, Omega, and Cartier also have similar characteristics and serve the same market. To *sense*, *seize*, and *reconfigure* their resource base, the processes the two exemplified industries leverage are similar. In both, the German luxury automotive and luxury watch segments, the ability to sense market trends, seize opportunities, and reconfigure internal processes is crucial to maintaining competitiveness in the face of disruption. As pointed out in the chapter on “Drivers of disruption in the luxury segment” particularly *sensing* changes in consumer preferences and adapting to them by *seizing* and *reconfiguring* under consideration of brand reputation is crucial for long term success in both industries. Though arguably, the Swiss watch industry provides an interesting research setting, the German luxury automotive industry is chosen due to the fundamental disruption it currently faces, the complexities

regarding technological advancements, and regulations and the impact the industry has on a global level.

### 4.1.1 The luxury segment

The luxury segment is a domain characterized by high-quality products and services, that appeal to consumers who seek exclusivity and unique experiences. Though there is no clear definition of luxury according to Kapferer (2016), the concept is rooted in its ability to offer not just a product but an experience that conveys prestige, exclusivity, and a high level of craftsmanship (Kapferer & Bastien, 2009). Kapferer (2016) determines seven factors that particularly drive the luxury segment, namely *elitism*, *creativity*, *uniqueness*, *distinction*, *refinement*, *quality,* and *power*. Adding to this are Wiedmann et al. (2007) who claim that luxury is a three-dimensional construct, consisting of social, individual, and functional value. Next to the product serving a certain functional value like a car that drives, buyers of luxury products also significantly value the social recognition gained by showing others what kind of product they can afford, and the individual value gained through satisfying their need for materialism (Wiedmann, 2007). The latter argument supports the perception of Vigneron and Johnson (1999) who claim that the luxury segment is driven by the need of consumers to self-express and distinguish themselves from others through their consumption. These drivers of luxury consumption are also the reason why the branding strategies of luxury brands are different from conventional brands. Chevalier and Mazzalovo (2008) argue that differentiation can be achieved through highlighting heritage (cf. also Berghaus et al., 2015), aesthetics, and quality, which set them apart from normal purchases and yield to them being perceived as investments in certain lifestyles.

As the brand plays a crucial role in luxury consumption and can be seen as the main purchase driver for it, two of its components that are relevant to this master thesis are defined in the following chapters.

#### *4.1.1.1 Brand identity*

In his foundational book, David Aaker (1991) defines a brand as “a distinguishing name and/or symbol (such as a logo, trademark, or package design) intended to identify the goods or services of either one seller or a group of sellers, and to differentiate those goods or services from those of competitors” (p. 7). Other definitions by Kotler (2000) or Kapferer (1993) point to similar

characteristics of the brand as an identifier of the products and services of a company and its influence on the perceived value of them.

The root of the perception of a brand lies in how the brand identifies itself. This is called brand identity. Brand identity can be directly influenced through internal measures according to research on identity-based brand management (Meffert, 2015). This is the case, as all measures that are taken internally to create a brand, like e.g. corporate color codes or internal messaging, reflect upon how the brand is perceived externally (Meffert, 2015). Ultimately, this creates a set of brand associations that represent what the brand stands for to the customer (Aaker, 1996). Though Wheeler (2017, p. 4) states that brand identity is tangible as "you can see it, touch it, hold it, hear it, watch it move", due to it being a perception of the value a brand creates which is not tangible, it will be considered intangible in this thesis. Based on the brand identity that is communicated externally, companies can build a brand reputation.

#### *4.1.1.2 Brand reputation*

Due to incumbents' ability to influence how they are perceived through internal brand identity, the asset "brand reputation" and its management can have a strong impact on change processes. Essentially, the brand reputation reflects all associations that external stakeholders connect to a company (Meffert, 2015). As luxury products aim at satisfying the social and individual needs of customers (Wiedmann et al., 2007), the brand needs to be recognizable by others and its value well known. Therefore, the internal brand identity needs to be communicated to the market and all measures taken need to consider the brand reputation that is supposed to be created. If brand reputation management is done right, the brand reputation reflects upon the perceived value of a product and can serve as a significant purchase driver. It needs to be built over time, which is why time compression diseconomies apply to it, making it relevant a source of competitive advantage (Dierickx & Cool, 1989; Barney, 1991).

After understanding the key characteristics of the luxury segment, in the following, the automotive industry will be characterized.

### 4.1.2 The automotive industry

In general, the automotive industry is an industry that is dedicated to the mass production of automobiles. In doing so, it has several connections to other upstream industries such as the steel, chemical, and textile industries as well as downstream industries like repair, and mobility (European Commission, 2024). Thus, this industry is highly significant globally, where it

accounts for nearly 10% of trade (Fabbe-Costes & Lechaptois, 2022). In Europe, it directly and indirectly employs nearly 14 million workers, which represents 6.1% of EU employment (European Commission, 2024). In this thesis, while acknowledging that there are upstream and downstream industries that are closely linked to the automotive industry, only actual automobile producers will be considered to narrow down the research setting. Within this industry, the car market can be separated into nine different segments according to EU regulation 4064/89:

- A: Mini cars
- B: Small cars
- C: Medium cars
- D: Large cars
- E: Executive Cars
- F: Luxury cars
- S: Sport coupes
- M: Multi-purpose cars
- J: Sport utility cars (including off-road vehicles)

Some of these segments can be merged due to similarity in the customer needs they are serving. Thus, when analyzing market data, segments A and B usually are merged to “small cars” and segments E and F are merged to “luxury vehicles”, the segment that is explored in this master thesis. In 2023, the segment with the highest sales was the Sports Utility Vehicle segment with 24.61% of total sales, followed by the medium cars with 12.71% and the small cars with 11.18% (Statista, 2023). Globally, sales in the automotive motor vehicle industry have reached a peak in 2017 with 85.32 million vehicles sold. Upon this peak, its five-year low was reached with 56.56 million units sold in 2020 as a result of the COVID-19 Pandemic. The overall automotive market is expected to grow at a CAGR of 0.22% from 2024 until 2028 according to Statista (2023) and by 3% according to Business Research Insights (2024). Despite this deviation it can be concluded that the market is not growing rapidly.

Looking at the German automotive industry specifically, this industry has been an essential part of the German economy for years. It employed on average nearly 800.000 people throughout the past 4 years generating 458 billion € revenue in 2023 (BMKW, 2024). This makes it the most relevant industry for Germany based on revenue. Historically, this industry has been at the forefront of engineering and building combustion engine cars since the end of the 19$^{th}$ century where Carl Benz built the first combustion engine car in Germany. Building up on the competitive advantage that German car producers had mainly from engineering know-how, the German automotive has globally brought forward some of best-known brands

in this industry like Audi, VW, BMW, Mercedes, or Porsche. However, as the automobile market has changed strongly in the past decade, the sustainability of their competitive advantage is in danger.

### 4.1.3 Disruption in the automotive industry

The environment of the automotive industry has been influenced by several factors such as troubled supply chains as a result of the COVID-19 pandemic, technological advancements, and geopolitical tensions (Wagner & Erasmus, 2023). Yet, the most significant influence on the industry came from a gradual shift in consumer preferences as well as governmental regulations due to environmental concerns. With the demand for BEV and hybrid vehicles continuously growing in the past decade, the shift in customer preferences has manifested itself and intensified. Between 2024 and 2028, the global BEV market is anticipated to grow at a CAGR of 9.82% (Statista, 2024). The demand for BEV is also manifested in the sales numbers for battery-electric or plug-in-hybrid vehicles which accounted for 13% of global car sales in 2022, a rise by five percentage points from the previous year (GFK, 2023). On European level, a study by McKinsey indicates that while incumbents lose market share, new entrants producing mainly BEV are taking it over, increasing competition in this market (McKinsey, 2023). Looking at Germany specifically, the latest statistics show that 2022 was a record year with regards to new electric vehicle registrations, which indicates that this trend is also present in Germany (Statistia, 2024). Mainly driving this mass adoption of BEV is their availability in many different models, with longer ranges and at lower costs (Colato & Ice, 2023).
Based on these developments, it becomes evident that the business environment for automobile incumbents from Germany is changing. For this reason, immediate action and transformation are necessary to maintain competitive advantage. As in this thesis a focus is laid on the luxury segments, the luxury segment of the automotive industry is presented in detail in the next chapter.

### 4.1.4 The luxury segment in the automotive industry

The luxury segment represents the smallest number of sales globally with 0.9% (Statista, 2023). Despite the small share of the luxury segment in sales of the overall automotive industry, the market potential for cars in the luxury segment was valued at $1.17 trillion in 2023 and is projected to grow with a CAGR of 10.1% until 2032 leading to a market value of $2.79 trillion in 2030 (Fortune Business Insights, 2024). Cars in this segment set themselves apart from cars in other segments, especially through customer expectation. While for high-volume producers,

customers are satisfied through measures like reliable complaints management or service guarantees, for luxury manufacturers an affective relationship needs to be built (Burmann et al., 2016). This can be achieved through a variety of factors.

The first factor is the higher quality materials that are used for the production of these vehicles. This higher quality becomes evident through sporty rims and sophisticated finishes on the outside, yet the interior is especially important. Here, luxury car manufacturers can differentiate from lower-end car producers through the use of high-quality materials. Porsche for example uses leather from an exclusive manufacturer to ensure that their quality standards are met, and customers are satisfied (Porsche, no year). BMW aims at creating a feeling of coming home for the customer by using special, and spacious designs that allow the driver to *feel* that he is sitting in a special car (BMW, 2022). Mercedes uses a campaign "Sensual Purity" which aims at informing about their aspirations in setting new impulses in luxury and satisfying the need for the extraordinary in terms of design (Mercedes, no date). Also coming into play is technology in the interior, which is usually more advanced in terms of user experience as well as features. BMW for example uses fully digital displays as well as smart controls (BMW, 2022) while Porsche offers a wide range of individualization options with regard to Entertainment (Porsche, no year). Another key differentiation factor of luxury vehicles usually is the higher engine power and more comfortable driving performance. These are still the core value proposition of the German automotive industry.

These exemplary characteristics lead to a luxurious feeling for the customers. Based on them and other criteria, companies were selected for the cases in this paper.

### 4.1.5 Selected companies for this thesis

Though an anonymization of the specific companies presented in this thesis is necessary for data protection reasons, the main decision factors for selecting these companies can be pointed out. When selecting companies for this thesis from the German luxury segment consisting of AUDI, Mercedes, BMW and Porsche, the first decision factor was them targeting the same customer segments globally. As all of these companies target the same customer base characterized by higher-than-average spending power across geographies, their ambition in providing status value to the customer is the same. The fact that each of them has an international footprint is essential to assess aspects such as decentralized decision making, considering local customer needs as well as their overall branding strategies across different markets.

The second decision factor is the global brand recognition of the selected companies. According to Meffert (2015), a recognizable brand identity strongly influences customer perception and loyalty, as consumers form emotional attachments to brands that resonate with their self-image. This identity also aids in differentiation from competitors, allowing the selected companies to stand out in competitive markets by conveying unique values. While all companies provide status value to their customers, they were selected based on other unique aspects stressed as part of their brand identity such as sport, innovation, or performance.
With the third decision factor, it was ensured that the selected companies follow diverse strategic approaches to BEV, at least to some degree. This diversity is crucial for analyzing how each company adapts to the changing environment within the luxury automotive market. The conclusions drawn from this can incorporate a more nuanced perspective on the role resources play in connection with micro foundation processes. To maintain a higher level of anonymization, the author decided to include only three of the four aforementioned companies in this thesis.

The first manufacturer (Company A) is renowned for its engineering and dedication to technological advancements. It has a strong focus on technological innovation which becomes evident in its strategic shift towards sustainable mobility and its BEV line. With a diverse product range in this line the company aims to meet growing environmental concerns and market demand for cleaner mobility solutions. It aims to launch its last combustion engine in the mid 2020s and be carbon neutral by 2050.
The second manufacturer (Company B), renowned for its luxury sports cars, is taking a dual approach to the BEV market. Alongside developing electric models, this manufacturer is also venturing into the area of synthetic fuels which are considered a potential lower-impact alternative to traditional fuels. This strategy indicates a commitment to sustainable mobility solutions that do not compromise on the performance attributes central to the brand's identity.
The third manufacturer (Company C) is rapidly expanding its BEV lineup, aiming to introduce a fully electric model in almost every key segment. This strategy is part of a move towards sustainability which includes the launch of a new vehicle class dedicated to BEV. The company’s goal is to have half of its global deliveries be fully electric by 2030. This showcases a commitment to integrating BEV across their product range while maintaining a flexible production to adapt to evolving market needs.

## 4.2 Empirical Approach

This study follows a multiple case study approach using three of the most prominent German luxury car manufacturers as research subjects. This is done as in research, there are three methods to study questions that deal with explaining the "how" and "why" of occurring phenomena (Yin, 2015). These include history, case studies, and experimental research. The historic method is mainly used when there is no control or access to first-hand observations of the events studied and when "no relevant person is alive to report" (Yin, 2015, p.12). Experimental research is chosen when the researcher is able to manipulate behavior precisely, e.g. in a laboratory setting (Yin, 2015). Lastly, the case study approach is usually chosen for analyzing contemporary events and when relevant behaviors cannot be manipulated. Advantageous about this approach is that two more sources of information, namely direct observations, and interviews, can be used compared to the history approach (Yin, 2015). Due to the availability of direct observations, access to involved interview partners, and no ability to change the research setting, the case study methodology is best applicable for this master thesis.

It could be argued that a single case of the German luxury industry, spanning across its incumbents could have been used to gain insights into how they deal with disruptive change in their business environment. However, to respect the different approaches to BEV and brand positionings described in chapter 4.1.4, this approach would have been broad and yielded several information processing biases. This is a common problem in single case studies according to Eisenhardt (1989). Instead, to capture similarities and differences in the influence of the resource base on the micro foundations of dynamic capabilities, three individual single cases of luxury incumbents are created and discussed in a cross-case analysis. The embedded approach which considers sub-aspects in the cases was chosen as it yields a more nuanced perspective and richer analysis of the research topic by allowing to contrast and compare findings (Meyer, 2001). Notably about this approach is that while other research approaches like surveys or experiments are reductionist in nature by moving away from the relevance of each respondent, in the case-based approach it is maintained (Yin, 2015). The goal here is to synthesize and compare within-case patterns across the cases exploratively (Yin, 2015). Case-comparability and generalization of findings from literal replication (Yin, 2015) are ensured through the similar characteristics of the incumbents analyzed, as described in chapter 4.1.4, despite differences in factors such as approach to BEV or branding. Furthermore, the data

gathered from interviews with experts working in consulting will serve as an important extension to the in-case data and will support the final cross-case synthesis.

To build the single-cases cases, an exploratory approach using expert interviews and analyzing them qualitatively is chosen. This is done, due to the research topic that requires an in-depth exploration of individual micro foundations and no previous data that could be analyzed quantitatively (Mayring & Brunner, 2009). Expert interviews are a prominent data collection method to do so as they uncover and reconstruct more or less implicit knowledge of the experts (Pfadenhauer, 2009). To be more specific, they enable to exploratively answer the research question of this thesis through firsthand data from industry experts. The collected data can be used to create interlinks between individual factors and merged into a theory (Mayring, 2015) on how micro foundations of dynamic capabilities are influenced by the resource base. While including external data like annual reports or newspaper articles could have provided insights in addition to the qualitative interview data, it was not included to ensure the anonymity of the researched companies.

When deciding for the conduction of expert interviews it is also necessary to address problematic factors of this collection method. It is, on the one hand, a time-consuming method of gathering data (Pfadenhauer, 2009) and can only produce a minimal degree of comparability when compared to quantitative surveys. This is due to the smaller sample size. Furthermore, it is important to consider the possibility that the interviewer may influence the discourse too much through subjective interpretations or strategic knowledge transfer which could yield biased results (Bogner et al., 2002). Additionally, for many interviewers it can be challenging to find a structured and comprehensive approach to leading the conversation as to some degree they also need to have in-depth knowledge of the topic they are interviewing on (Hopf, 2013). Lastly, good interviews also require a level of trust and comfort to ensure that topics are discussed in the required depth for answering the research questions. Building this trust can be supported by addressing more formal topics at the start of the interview and by showcasing knowledge of the researched topic as well (Bogner et al., 2002). Bearing this in mind, the previously described benefits of conducting expert interviews outweigh the downsides of this type of research. Through its explorative nature, using interviews as data collection method complements the multiple case study design.

### 4.2.1 Description of Interview partners

As stated before, in qualitative research expert interviews are often used to make specialized knowledge on social issues, which experts possess, accessible and usable for answering social questions (Pfadenhauer, 2009). To increase validity, multiple experts from different perspectives should be interviewed on a respective topic (Meyer, 2001).

In the present thesis, nine experts were selected top-down from the author's personal environment and based on a LinkedIn search. The interview partners were given expert status on the basis of three criteria. These criteria are based on the subject of research and are intended to ensure particular informative value (Döring et al., 2016). The first and probably most central criterion relates to company affiliation with one of the German car manufacturers from the luxury segment described in Chapter 4.1.4 or with a consultancy that specializes in the automotive industry. By interviewing experts with different perspectives, a heterogeneity of perceptions and thus also a more comprehensive analysis of the topic is achieved (Meyer, 2001). As a deep understanding of operational processes and changes in the automotive industry is a prerequisite for being able to answer the interview questions, only interview partners who have worked in or with this segment for at least three years are considered. Lastly, interview partners were selected from different departments like HR, Marketing, or Product to also ensure a heterogeneity in perspectives and further increase the validity of commonly stated factors (Meyer, 2001). The author appears to the interviewees as an expert of a different knowledge culture (Bogner et al., 2002) and not as a co-expert, as he does not fulfill the criteria described above. Rather, his status stems from the fact that he has dealt with the subject of the research theoretically but does not have any in-depth practical insights. The following experts were interviewed for this master thesis:

| **Company A** | | |
|---|---|---|
| **Position** | **Date** | **Duration** |
| Head of Design Strategy | 20.03.2024 | 59 Minutes |
| Head of Business Development | 25.03.2024 | 52 Minutes |

*Table 1: Interview Partners Company A*
*Source: Own Ilustration*

| **Company B** | | |
|---|---|---|
| **Position** | **Date** | **Duration** |
| Project Management Software Strategy | 18.2.2024 | 39 Minutes |
| Project- and Process Manager EV | 24.02.2024 | 39 Minutes |
| Marketing Specialist | 23.02.2024 | 50 Minutes |

*Table 2: Interview Partners Company B*
*Source: Own Ilustration*

| **Company C** | | |
|---|---|---|
| **Position** | **Date** | **Duration** |
| Business Process Consultant | 28.02.2024 | 62 Minutes |

| | | |
|---|---|---|
| Head of Product | 02.05.2024 | 36 Minutes |

*Table 3: Interview Partners Company C*
*Source: Own Ilustration*

| **Consultants** | | |
|---|---|---|
| **Position** | **Date** | **Duration** |
| Project Lead Automotive McKinsey | 01.03.20224 | 16 Minutes |
| Senior Manager Automotive Deloitte | 30.04.2024 | 24 Minutes |

*Table 4: Interview Partners Consultants*
*Source: Own Ilustration*

### 4.2.2 Development of interview guideline and course of the interview

A semi-structured questionnaire was developed to explore the research question in the context of an explorative, primary analysis (Appendix 1). This questionnaire provides a structure for the interview but allows adjustments to be made depending on the course of the interview. For example, questions can be brought forward, skipped, or deepened if it seems useful for the development of relevant information (Döring et al., 2016). After the first two interviews with company C, the questionnaire was altered slightly to improve the understandability of the questions. As the content of the questions remained the same after this change, the results generated before it can still be regarded as representative. The old questionnaire can be found in Appendix 2. The new questionnaire consists of 24 main questions aimed at understanding the research topic in depth. It is based on the deductive categories that will be presented in the next chapter.

The introduction to the interview starts with a presentation of the topic of the research work and a definition of the objectives of the interview. To create a common understanding of the most important terms, the definitions of RBV, dynamic capabilities as well as disruption are then discussed. Easy wording and examples are used to ensure that the experts understand the questions and concepts correctly. Additionally, the interviewees are asked for their verbal consent to the recording of the interview and to the further processing of the data collected.

The first part of the interview deals with disruptive drivers that the experts see in the luxury automotive segment and their company's reactions to them. Although disruptive drivers have been pointed out extensively in the paper by Yeoman and McMahon-Beattie (2018), the first question serves as an entry into the interview and creates a setting for the experts in which answers should be embedded. The responses to this question are not ultimately required to answer the research question.

The second question block deals with the RBV and its relevance. Particularly, questions on tangible and intangible resources are asked to determine whether the experts see a difference in their relevance when reacting to disruption. If they do, follow-up questions are prepared to allow exploring their initial answer further.
After generating insights on the RBV and respective resources, the following question block dives deeper into the dynamic capabilities. In accordance with the deductive categories, questions are formulated to cover the micro foundation processes defined by Teece (2007). At the end of every dynamic capability, a question on the influence of resources within respective micro foundations processes is asked. This is done to create a connection between the RBV and the DCV and eventually answer the research question. The last question block "Other" allows the experts to state relevant information that was not specifically addressed in the interview questions.

After describing the flow of questions in the interview guideline, the following chapter deals with their conduction, processing, and analysis.

### 4.2.3 Data collection, processing, and analysis

From 18.02.2024 to 02.05.2024 nine interviews with an average duration of 42 minutes were conducted in the data collection process. Seven of these interviews were conducted on the phone, while one interview was conducted via MS Teams and one in person. All of them were recorded via the Apple "Recording" app.

The audio files of the interviews were first transcribed with an API connection of R.Studio and Chat GPT in order to be able to analyze the data qualitatively. As part of this process, a complete transcription according to Mayring (cf. 2015) was used. In this, dialect colorations were Germanized, and thought words were omitted as they should not distract from the content of the interview. While the content of the interviews was explicitly not changed, these steps were intended to facilitate reading and enable a transparent evaluation. To simplify the allocation of relevant text passages in the content analysis, line numbering was also added to the transcribed interviews. In this study, the interviews were transcribed in chronological order directly after they were conducted. Due to German being the mother tongue of the author, the interviews were analyzed in German. This allowed to also understand deeper meanings in the descriptions of the experts without losing insights in the translation to English. Therefore, the

interviews were not translated fully. Instead, only those passages relevant to the description of results and the discussion were translated. A specific focus was laid on maintaining the intended meaning of the interviewee. The line references in the results and discussion part refer to the German transcripts.

The data was analyzed with Mayring's qualitative content analysis (2015) which is used to systematically analyze data stemming from some form of communication. Mayring distinguishes between three approaches to it, namely summarizing content analysis, explicating content analysis, and structuring content analysis (Mayring, 2015). In this master thesis, the structuring approach which is also referred to as deductive category application is used. The other approaches are not appropriate for this type of research. Summarizing in qualitative content analysis steps away from individual aspects and looks at the big picture of the content by building high-level categories. Explication aims to clarify and contextualize unclear text passages by providing additional information (Mayring, 2015). Deductive application means that categories for analysis are derived based on the current state of research and are thus theoretically justified (Mayring, 2015). Using this approach is most applicable for this research as the foundational paper on micro foundations of dynamic capabilities by Teece (2007) can be used to build categories for content analysis. Additionally, it provides a framework for embedding content in and facilitates comparisons between studies due to categories that are based on theory.
Within the structured approach, Mayring distinguishes between four forms of it, namely formal, content-related, typifying, and scaling (Mayring, 2015). As the goal of this master thesis is to work out and summarize certain contents, topics, and aspects from the expert interviews, the content-related approach is chosen (Mayring, 2015). Formal structuring is not applicable as it focuses on analyzing formal text features like word frequency, which is not suitable for answering the research question. Typification, which includes creating typical profiles or patterns in the data is inappropriate for the same reason. Similarly, scaling is unsuitable because it involves quantifying qualitative data, whereas the focus in this master thesis lies on detailed explorative qualitative analysis.

To systematically analyze the data, certain coding guidelines must be considered (Mayring, 2015). Firstly, a clear definition of the categories in order to be able to assign text passages specifically needs to be conducted. Secondly, anchor examples like the specification of at least one exemplary text passage for each category need to be provided. Lastly, coding rules need to

be formulated to be able to deal with differentiation difficulties in the evaluation, and compliance with them needs to be ensured. For the evaluation of the categories created on the basis of the theory, a coding guide was created (Appendix 3), in which the aspects described above are presented. In order to increase the precision of the evaluation, the transcribed text was examined in various units of analysis. Coding units represent the smallest material component that may be analyzed. In the analysis, this term was used to summarize all text parts comprising several words. Context units are the largest text components that are summarized under a category and consist of one or more sentences in the present work. The evaluation units determine the order in which the text parts are evaluated (Mayring, 2015).

To operationalize the micro foundations of dynamic capabilities *sensing*, *seizing,* and *reconfiguring* in incumbents from the luxury segment and their interlinks to relevant resources, the deductive categories from Appendix 4 were used for analysis.

In order to ensure an objective, reliable, and valid analysis based on these categories, according to Mayring and Brunner (2009) certain principles for qualitative research and quality criteria need to be adhered to. These are procedural documentation, rule-guidance, triangulation, proximity to the object, communicative validation, and argumentative validation (Mayring, 2015). The following table illustrates how these quality measures have been considered in this thesis:

| Qualitative criteria | Measure to ensure alignment with criterion |
|---|---|
| Procedural documentation | • Clear definition of the research object as micro foundations of dynamic capabilities and the resource base<br>• Selection of an appropriate research approach<br>• Targeted selection of interview partners based on predefined criteria |
| Rule-guidance | • Clear rules for data analysis were defined based on Mayring (2015) |
| Triangulation | • Incorporation of different strategic perspectives from literature like RBV and DCV<br>• Use of empirical tools such as literature review and expert interviews<br>• Interview partners with different perspectives were chosen |
| Proximity to the object | • Conduction of interviews in expert's working environment<br>• Interviewing of experts that have access to firsthand internal information |
| Communicative validation | • The finished transcript was sent to the interview partners and approved by them for analysis |
| Argumentative validation | • Analysis of similarities and differences across interviews and cases<br>• Argumentation for similarities and differences |

*Table 5: Quality criteria based on Mayring (2015)*
*Source: Own Illustration*

After laying out the methodological approach, in the following chapter the results of the qualitative interviews are presented.

## 4.3 Results of empirical analysis

The description of results is presented in four different case studies, that represent the companies and experts respectively. After they have been laid out, the cross-case synthesis which summarizes the most important insights is conducted.

### 4.3.1 Company A

When looking at the theoretical concept of disruption, for company A there are several factors considerable factors driving the business environment. Since these disruptive factors are not directly needed to answer the research question, they can be found in Appendix 5.

***Tangible and intangible resources***

Within the reactions to disruption resources are seen as "extremely important" (I1, L.129). The most important tangible resources according to the experts are semiconductors which "direct life in the organization" (I2, L. 85) as well as the production which has a direct impact on costs depending on where it is located (I2, L. 87-90) and how well it is utilized (I2, L. 635-637). Furthermore, production is seen as important as it needs to create a product that caters the consumer's need with regards to quality (I1, L. 212-217).

Expert one connects the tangible resource of production with the intangible resource brand reputation (I1, L. 207-210) by stating that their glassy production site in the headquarters, which can be visited, can also have an impact on the perceived quality of products (I1, L. 233-236). Additionally, brand reputation is stressed as a crucial resource due to its impact on factors such as financial valuation, attractiveness of products as well as attractiveness as an employer (I2, L. 106 – 111).

Next to brand reputation which is seen as quite fragile by Interviewee 1 (L. 191-194), both experts agree on the relevance of the human resource. HR contributes to the organization's success with its knowledge (I1, L. 168-171) and its competence (I2, L. 121-124) which needs to be monitored and built in face of disruption. Notably about HR, according to Interviewee 1, is that while it can help in the face of change, it can also hinder it due to the mindset of older employees (I1, L. 173-175).

When looking closer at the results for the dynamic capabilities and the micro foundations of sensing, there are several tools used in these processes.

***Sensing***

Within processes for directing internal R&D and selecting new technologies, an internal innovation radar is described by both experts (I1, L. 270-271; I2, L. 18) that is based on internal foundational research (I1, L.270-271, I2, L. 193-196). To identify possible changes and thus direct research internally, scenario planning (I2, L. 55-58), benchmarking (I2, L. 2060-262), and an internal think tank (I1, L. 524-528) are used at company A (I2, L. 55-58). Additionally, expert 2 described processes for each department bottom-up sensing for different functions e.g. with regards to changing production processes, which is then reported back to the management (I2, L. 229-234).

When looking at processes to tap developments in exogenous science and technology, company A is closely connected to universities like MIT (I1, L. 273-274), participates in relevant congresses and fairs (I2, L. 268-272), and screens external innovation reports to capture factors that have the potential to become disruptive (I1, L. 188-193).

To also profit from supplier or complementor innovation, company A actively pursues and maintains communication with diverse suppliers on eye level (I1, L. 315-317) which is mainly kept department specific (I2, L. 221-223). Additionally, co-creation with complementors also besides the core business is pursued (I1, L. 2383-386).

To sense changing target markets, customer needs, and pursue customer innovation several measures are in place. Presence in local markets (I1, L. 278-282; I2, L. 295-298) with local sales presidents that are experts for their respective markets (I1, L. 409-411; I2, L. 286-289) are established. Additionally, market research (I2, L. 307-310) in the form of car clinics (I1, L. 361-362), focus groups (I1, L. 362-363), new buyer surveys (I1, L. 369-372) and interviews (I2, L. 186-188) is done.

Within these processes, a multidimensional approach is taken, and “measures are deducted for tangible resources and intangible ones respectively” (I2, L. 364-366). For example, when looking at the rising need for e-mobility, the need for semiconductors and their procurement and/or production is considered on the tangible side (I2, L. 357-361). On the intangible side, the rising need for digital service offerings inside the car is catered by concluding that competence for their development needs to be built (I2, L. 381-389).

***Seizing***

For seizing and processes for delineating the customer solutions there are two considerations according to the experts. First, “hard factors” such as requirements with regard to ergonomics or crash safety need to be maintained (I1, L. 403-407). Second, other factors that cater a direct

customer need are identified and decided upon discussions with the sales department (I2, L. 198-202), after evaluating market research, and after having been tested for usability within the developing departments (I1, L. 450-545). A tool that is used is a characteristic spider that describes the key characteristics and usability of a product or service for the car (I2, L. 440-446).

When selecting enterprise boundaries expert 1 acknowledges that insourcing is becoming especially important for key technologies (I1, L. 317-324) in order to build competence in this area and reduce dependence on other companies (I2, L. 121-124). Expert 2 (L. 487-492) concludes that brand and core competences are not outsourced.

When deciding for or against seizing measures, specific decision criteria are defined (I2, L. 515-519) that need to pass several decision gates before being implemented (I2, L. 202-203). Both experts agree that in decision making protocols the financial aspect plays a big role as projects need to be financed (I1, L. 444) and have a relevant return on investment (I2, L. 64-66) while also being feasible in the first place (I1, L. 444).

Company A aims at building loyalty and trust through change management backing (I2, L. 563-657).

Within these processes, tangible resources such as money (I1, L. 488-489) influence decisions for projects as much as the need for strategically building competence in certain areas (I2, L. 415-420).

***Reconfiguring***

With regard to reconfiguring and micro foundations of decentralization and near decomposability, both experts describe how the main strategy is centrally developed by the CEO and executed top-down (I1, L. 549-515; I2, L. 223-228). However, they also both describe that bottom-up developments and decentralized decision making have the power to influence the overall strategy (I1, L. 551-555; I2, L. 229-236) and enable more locally adapted products and production processes (I2, L. 325-328).

Cospecialization within the company is managed by combining experts from different areas within project teams and facilitating innovation through interdisciplinary work (I2, L. 165-171).

The last two micro foundations are closely linked, as in order to ensure that employees are incentivized in the change, their qualifications are improved with respective qualification programs (I2, L. 124-130). These knowledge development measures not only increase employee's incentivization to the change processes but also ensure that necessary competences

are built for the changed business environment. Other measures to ensure knowledge management are structured knowledge bases available for employees (I2, L. 144-148), a learning hub (I2, L. 546-549) as well as information calls called “knowledge relay” (I2, L. 139).

Within reconfiguring processes, on the tangible side, efficient resource planning is crucial to ensure smooth processes (I1, L. 506-509) and, on the intangible side, bundling of competences (locally) and connection of diverse knowledge bases are seen as important measures (I2, L. 585-593). Expert 1 sums up however, that tangible and intangible resources are closely linked, as “if you have to build up physical resources, as you say, production facilities, I also have to bring skills and capacities on board. That is quite clear” (I2, L. 608-610).

### 4.3.2 Company B

As for Company A, the disruptive factors identified from the interviews for Company B can also be found in the Appendix (6).

***Tangible and intangible resources***

The most important tangible resources according to the experts are the drivetrains of the cars (I3, L. 60-70; I5, L. 38). Furthermore, the production that is completely shifted towards BEV (I3, L. 25-27) while making use of scale effects due to the size of the company (I3, L. 44-45) and being fully maintained in Germany (I5, L. 57-60). The latter is done due to it serving the most important intangible resource brand reputation (I3, L. 39-40; I4, L. 6; I5, L. 14-15). This brand reputation can be used to justify higher margins (I4, L. 329-335), yields higher tolerance with regard to issues (I4, L. 134-136), reduces relevance with regards to technological features (I4, L. 228-230) and is the main purchase driver for cars from company B (I4, L. 79-85). However, it also needs to be maintained with tangible resources by producing a car that meets the customers’ high expectations (I4, L. 128-132; I5, L. 134-137).

Further important intangible resources as pointed out by experts 4 and 5 are the company culture (I5, L. 46-48), the customer community (I4, L. 173-176), the distribution network (I4, L. 144-145), and lastly the human resource which “comes up with amazing ideas” (I5, L. 39-40) and is therefore the number one resource for expert 5 (L. 39).

***Sensing***

For processes to direct internal R&D and select new technologies, company B mainly uses internal market research according to two of the experts (I4, L. 221; I5, L. 90-92). This includes trend analysis e.g. for technologies (I4, L. 246-253; I5, L. 94-97), competitor analysis (I3, L. 84-86; I5, L. 88), and scenario planning (I5, L. 105-107). Expert 3 points out that he does not see his company as an innovator but as a fast follower who analyzes the market and follows when something seems to work (I3, L. 86-90). When the decision for e.g. a new product has been made, concept studies are presented, and sensing is built upon them (I4, L. 198-200).

To tap into external science and developments especially conferences are used to obtain an overview of the most recent changes in the industry (I5, L. 99).

For company B, there are several tools used to tap into supplier and complementor innovation to sense change but also improve the brand image (I5, L. 126-129). Two of the experts point to partnerships with suppliers in order to develop products for the future (I5, L. 117-121; I4, L. 287-289), in some cases in the form of a joint venture (I4, L. 276-279). Furthermore, direct communication channels are maintained to stay up to date on the latest technological advancements (I3, L. 109-111).

To identify changing consumer needs and segments, all experts from company B agree that customer studies are conducted (I3, L. 120-125; I4, L. 308-310; I5, L. 153-156). Additionally, car clinics are established where direct comparisons with competitor cars as well as focus groups are conducted (I4, L. 306, 315-319). Feedback from the sales departments (I5, L. 183-185) as well as customer behavior studies (I5, L. 9-10) complement these insights.

Within sensing processes, anticipation of individualization needs directly impacts the building of tangible resources such as production facilities e.g. because of specific materials needed (I3, L. 141-144). Intangible resources such as HR are also pointed out as important as it connects the market and internal development (I5, L. 167-171) and therefore has a broad overview of the internals of the company.

***Seizing***

According to the experts, delineating the customer solution is an iterative process that is closely linked to strategy (I3, L. 170-174) and involves testing in potentially prosperous business areas (I5, L. 187-193). Examples mentioned are financial services or in-app development. Generally, pilot projects are always closely linked to specific customer's needs such as e.g. low charging times for BEV and are implemented in low volumes to get a feel of their success (I4, L. 257-259). Within new projects, insights from old ones are used while openness to technology like e.g. e-fuels is practiced (I4, L. 271-275).

Decisions for integration or outsourcing are made based on four criteria, namely, costs (I3, L. 190), availability of tangible resources (I3, L. 188-190), control over core competences (I4, L. 145-149; I5, L. 205-207) as well as dependencies that are to be avoided (I3, L. 228-229). As insourcing also means a higher risk, in some cases outsourcing is preferred (I3, L. 198-202). This is the case if the outsourced competence is not a core characteristic of the car like the drivetrain (I5, L. 206), or has a direct interface to the customer (I4, L. 145-146). In this context, company B has reintegrated its whole phone service to meet the high expectations of its customers (I4, L. 145-149).

While the initial reaction of two experts was that there is no clear entity that ensures objective decisions (I3, L. 230-231; I5, L. 222-223), upon rethinking two experts concluded that there are committees consisting of "the smartest people in the company" (I4, L. 387-388; I5, L. 314-316) and finally the management board that ensure unbiased decisions (I4, L. 462-468). Furthermore, expert 5 stated that probabilities for scenarios are calculated to ensure objective decision making (L. 107-110). According to him, in some cases, decisions need to also consider trustful collaboration (L. 231-233) and the ability to influence cooperations (L. 225-229).

To ensure that employees are committed to the change, structured change programs and informational events (I3, L. 242-246) go hand in hand with material incentivization in the form of employee leasing contracts (I5, L. 244; I4, L. 491-493) and high pay (I4, L. 579). Furthermore, rooms for action for the employees are created (I5, L. 241-244), the feedback culture is changed top-down (I5, L. 245-249) and the board is acting as a role model in this change (I5, L. 252-255).

Within seizing micro foundations, tangible components and projects need to be implemented that support the customer's perception of a luxury product and the brand (I3, L. 263-264; I5, L. 282-285) while leveraging available resources systematically (I3, L. 188-190). "The brand must live on and needs to be pushed further" (I5, L. 281-282) as it is the core purchase reason for the customer. Thus, projects need to be seized that enforce this image. A huge incentive for this also comes from the company being publicly traded (I4, L. 329-331) and a strong brand enabling higher margins.

***Reconfiguring***

With regards to decentralization and decomposability, expert 3 states that the centralized structure is harmful in reacting to changes quickly (L. 276-278) which is supported by expert 5 who claims that flexibility is low due to the production in Germany. It is needed, however, as it works onto the brand reputation (L. 322-326). Also, expert 4 claims that decision making

is practiced centralized in the company with decisions made mainly by the board (L. 476-480, 527), leaving little room for decentralized decisions (I5, L. 310-312). It is pointed out, however, that the stiffness is losing up and speed projects with higher independence are becoming possible (I4, L. 528-529).

Cospecialization is practiced at company B mainly top-down "by merging certain departments" (I3, L. 299-301), which leads to experts from combustion engine drivetrain development working together with EV experts (I5, L. 343-346). Furthermore, through the company setup as a matrix organization, there is inevitably a lot of communication between different departments (I4, L. 557-559). However, this is not only seen positively due to its costs and rigidity in some situations. While there is a direct communication line between sales and internal development to meet the needs of the customers (I5, L. 377-380), another measure is the bi-yearly reorganization of all resorts to meet the requirements of the market (I5, L. 339-342). In terms of Governance, female quotas (I5, L. 360-361) as well as incentives for innovation (I3, L. 313-315) are mentioned.

Lastly, looking at knowledge management processes, two experts claim that "per se, you (as an employee) are not developed" (I4, L. 577-578; I3, L. 322-325). Only trainings are conducted. Within them, knowledge from old production processes is leveraged and applied to new ones for BEV (I3, L. 20-23). Additionally, general trainings are also conducted once a year (I4, L. 577-578). Furthermore, employees with key qualifications are poached from suppliers (I3, L. 338-341) or "integrated in the company from abroad to also grow there" (I5, L. 361-364), and internal job rotations are promoted (I3, L. 341). On top of that, HR centrally manages knowledge in knowledge bases, provides material for educational purposes (I3, L. 324-328; I4, L. 589) and promotes knowledge communities where keynotes are held internally, and general exchange is possible (I4, L. 589-590).

On the tangible side, production facilities need to be altered for the production of BEV and the special needs of customers (I3, L. 25-27, 141-144). On the intangible one, expert 3 points out that the brand reputation of the company helps hiring new employees (L. 344-347) and also allows it to be a follower in technological advancements as the latest technology is historically not needed in luxury cars (L. 360-362). The expert points out that due to the strong brand, the resale value is also higher for the vehicles of his company (I3, L. 375-378) and due to the fact that the margins are higher because of the luxury status, invests in R&D are also "easier to digest" (I3, L. 358). Overall, however, expert 5 states that the tangibles always need to support the luxury image to maintain this brand reputation (I5, L. 302-305).

### 4.3.3 Company C

The disruptive factors for company C are attached in Appendix 7.

***Tangible and intangible resources***

According to expert 7, the relevance of the resource base is high, yet physical ones and intangibles cannot be separated clearly as both need to be integrated to be resilient in the long run (I7, L. 45-45, 350-354). Nevertheless, the most important tangible resource to both experts are the production facilities that need to be running smoothly no matter what (I6, L. 114-117) and diverse locally (I7, L. 357-358). Expert 6 adds that in his view the physical assets, especially for battery production, also play a crucial role in reacting to the change (I6, L. 108-111).

On the intangible side, brand reputation for heritage and history in producing cars (I7, L. 61-64) can be used to get the company's way with regards to price (I6, L. 80-82) and also regulations (I7, L. 61-64). According to expert 6, the brand causes a higher tolerance for waiting for a product (L. 141-143) and design mistakes (L.176-177) while being a key purchase driver due to the "neighbor factor" (L. 60). However, the experts agree that the human resource is the most important one (I6, L. 41; I7, L. 46-49). Especially owning their competence in writing software exclusively is seen as crucial for the future (I6, L. 167-171).

***Sensing***

When sensing change to direct internal R&D and selecting new technologies, development is always close to the market (I6, L. 286-290) and catering the local needs through satellite outposts (I7, L. 23-25). Additionally, internal interdisciplinary discussions regarding future features of the cars are conducted (I7, L. 104-111). In these discussions, especially the individual character of the car is considered (I6, L. 290) and innovation is sought (I6, L. 460-463).

On the external side, trend radars are evaluated (I7, L. 95-98). Furthermore, company C is closely connected to local universities and research networks to stay on top of the latest developments (I7, L. 130-131).

To tap into supplier and complementor innovation, there is close collaboration with different actors along the value chain like suppliers (I7, L. 118-119) as well as distributors (I6, L. 269-274). Collaboration is facilitated through direct communication channels (I7, L. 123). Expert 6 points to the use of the mechanical engineering sector as "a one-to-two-year economic

parameter" (I6, L. 368) that can be used to sense change. To sense changing customer needs next to market research, according to expert 7 tools like surveys (L. 141-143) and customer usage studies are used (L. 147-148, L. 226-228).

The most important intangible resources influencing these processes are the network (I7, L. 119-121) that is used to sense change as well as the brand, which has its own evaluation mechanisms (I7, L. 160-163).

***Seizing***

When delineating the customer solution, the collected data from market research is evaluated (I7, L. 173-174) and compared with the available capabilities (I7, L. 232-236) and potential niches or new segments to be served in the market (I6, L. 681-688). Upon this, prototypes are developed and tested while maintaining flexibility to be able to react to changes in the market (I7, L. 182-186) based on new data (I7, L. 197-200).

When deciding on enterprise boundaries, both experts agree that the cost factor strongly plays into these decisions (I6, L. 515; I7, L. 248-250). However, core competences for creating the best customer experience (I7, L. 247) are maintained inside the company (I7, L. 253-256) while potential synergies also influence these decisions (I7, L. 248-249).

To ensure objective decision making, several decision committees validate decisions before they are made (I6, L. 331; I7, L. 266-269). A further decision factor is the budget set for each car that is not to be exceeded (I6, L. 264-268).

For building loyalty for the change processes, company C enables employees to internally apply for new projects (I6, L. 561-562), gives projects exciting names like "the rockstar" (I6, L. 584-586), and qualifies employees slowly and steadily towards the new reality over the course of several years (I7, L. 284-288).

A notable tangible resource that influences the seizing processes is the production, which is to be maintained as flexible as possible with regard to the simultaneous production of BEV and CEV (I7, L. 187-190). On the intangible side, within seizing processes it needs to be ensured that the right employees are allocated to important projects (I6, L. 566-571) and that the right know-how is maintained within the company (L. 523-525), according to expert 6. He also states that brand reputation plays only a subordinate role in these processes as large competitors have the same reputation for producing luxurious cars (L. 655-659).

***Reconfiguring***

With regard to decentralized structures, expert 7 states that while stronger decentralized structures are necessary to consider regional success factors, a sweet spot has to be found with leveraging synergies in production (L. 30-33). Expert 6 adds that while there are benefits to outsourcing for innovation, in some cases it can be difficult to reintegrate entities and employees back into the main organization (L. 625-629).
Cospecialization is orchestrated centrally by merging engineers from BEV together with combustion engine drivetrain engineers (I7, L. 288-290). After that, they are asked to openly brainstorm, which methods will work best in the future (I7, L. 317-320). Expert 6 points to difficulties in merging different types of engineers together (L. 796-780) due to incompatible communication in some cases.
With regard to governance, the brand creates a family feeling on top of the compensation package (I6, L. 807-808) and guards the transformation.
Knowledge is managed within an internal knowledge management tool that is available to all employees (I7, L. 336-340) and through internal knowledge hubs (I6, L. 841-843) and innovation fairs inside the company (I7, L. 334-336).

To connect intangible and tangible resources in these processes, expert 7 states that different types of engineers combine their knowledge in reconfiguring processes to create a car that might be different in terms of drivetrain, but similar in all other characteristics (L. 322-326). Both cars are produced in the same production site to stay flexible locally, which increases adaptability to change C (I7, L. 350-353).

### 4.3.4 Market Experts

The disruptive drivers as seen by the market experts can be found in Appendix 8.

***Sensing***

When looking at sensing, the experts point to trend and tech scouts to direct internal R&D (I8, L. 105-108) and to internal studies that indicate how well certain products and features sell (I9, L. 105-109).
Additionally, incumbents from the automotive sector use cooperation with universities (I8, L. 114-117) in order to identify changes in the market as well as external consultants and market research agencies to avoid organizational blindness (I8, L. 131-133). Furthermore, Start-Ups

from the digital space are worked with to generate new revenues and to learn from their experience (I8, L. 110-112).
Looking at tangible resources specifically, consultants are hired to optimize production processes (I8, L. 127-130) while on the intangible side, surveys are conducted to evaluate brand features (I9, L. 113-114).

***Seizing***

For seizing, expert 8 states that it can be very timely to change a customer solution due to constraints in middle-management (I8, L. 186-189). With regards to selecting enterprise boundaries, it is stated that onshoring is becoming more important e.g. with regards to production of semiconductors to reduce dependencies (I8, L. 63-66). Expert 8 explicitly states that in his opinion, the brand does not play a fundamental role in supporting change processes (I8, L. 186-189).

***Reconfiguring***

The reason for this is that despite a strong brand reputation, no car manufacturer has managed to address the fears of customers with regard to BEV. The main one is getting stuck due to a run out battery and poses a real constraint for BEV that ultimately results from a lack of sufficient resources for exploration (I8, L. 234-237).

An interesting addition to this research comes from expert nine, who lays out the BEV buyer typologies. These are status-symbol seekers, the tech-forward buyers, and the quality seekers (I9, 56-62). The status-symbol seekers prioritize expensive and prestigious products regardless of whether they are BEV or not, and Tech-Forward individuals, typically younger professionals in digital technology sectors prefer BEV for their technological advancements. Lastly, the quality seekers value quality and tradition over BEV interest.

## 4.4 Cross Case data analysis and interpretation

In the following cross-case analysis, the results from the case studies are synthesized. To do this, results that were literally replicable are pointed out, and differences between the cases are discussed.

As the discussion of disruptive drivers is not ultimately relevant to answering the research question, a detailed overview of the most relevant ones across the cases was excluded from the main text and can be found in Appendix 9.

### 4.4.1 Tangible and Intangible resources

On the non-physical side, human resources are perceived as the most critical resources by all experts. This is closely linked to the disruptive factor of the global "war for talent," which currently poses a significant challenge for companies beyond just the automotive industry. The human resource is highlighted for its ability to generate innovative ideas (I5, L. 39-40) and its competence to e.g. write software which is seen as crucial to the future business environment (I6, L. 167-171).

The brand reputation is also highly valued, as it enables companies to demand higher margins, create a sense of community, attract top talent, and ensure resilient demand. Despite the positive aspects, human resources can also pose challenges in change processes, e.g. due to the mindset of middle managers who may not be incentivized enough to alter common business practices but focus on their retirement instead (I8, L. 171-174).

The most important tangible resources are production facilities and further down the production line drivetrains and control systems of cars. These are essential in maintaining high-quality production that meets consumer expectations (I3, L. 60-70; I5, L. 38; I1, L. 212-217). Additionally, the very presence of these tangible resources enables the enhancement of the intangible resource brand reputation, which is seen in the open-to-visit production facility (I1, L. 233-238) of company A, and in the fully German-based production of company B.

### 4.4.2 Sensing

*Directing internal R&D and selecting new technologies*

For directing internal R&D and development processes, companies predominantly rely on internal research, which typically builds on foundational research or sales analysis (I1, L. 270-271; I2, L. 18; I9, L. 105-109). They also engage in interdisciplinary discussions (I7, L. 104-111) and utilize think tanks (I1, L. 524-528) to conceptualize the future of automobiles based on market observations (I6, L. 286-290). Additionally, most companies employ market-focused internal research methodologies (I6, L. 699-702) such as scenario planning (I2, L. 55-58; I5, L. 105-107) and competitor analysis (I3, L. 84-86; I5, L. 88), as well as benchmarking

(I2, L. 260-262), to prepare for future technologies and potentially adjust production processes accordingly.

It's noteworthy that Company C aims to be a market driver through innovation which is a contrast to Company B, which benefits from being a fast follower and saves on R&D expenditures. This strategic difference is attributed to Company B's brand identity being rooted in sporty vehicles, while Company C strives to distinguish itself from competitors through a strong focus on innovation in its brand identity.

*Processes to tap developments in exogenous science and technology*

According to all experts, companies actively collaborate with universities such as MIT and the Technical University of Munich to stay abreast of the latest changes and innovations in their fields (I1, L. 273-274; I7, L. 130-131; I8, L. 114-117). Additionally, a majority of companies also participate in specialized fairs and congresses (I2, L. 268-272; I5, L. 99) and analyze external knowledge sources (I1, L. 188-193; I7, L. 95-98). All company representatives as well as external consultants agree on the importance of these practices for monitoring the market and maintaining competitive advantage.

*Processes to tap into supplier and complementor innovation*

For companies, close collaboration, characterized by direct communication channels with suppliers and distributors in the value chain, plays a significant role in staying updated on the latest changes (I3, L. 109-111; I1, L. 315-317; I5, L. 117-121; I4, L. 287-289; I7, L. 118-119; I1, L. 315-317). Furthermore, a majority of the surveyed companies in the luxury segment maintain joint ventures (I4, L. 276-279), engage in interorganizational product development with relevant complementors (I1, L. 2383-386), or collaborate with startups (I8, L. 110-112) to quickly respond to relevant changes. These strategic partnerships enhance agility when adapting to market changes and are seen as important by all experts.

*Processes to identify changing consumer needs and segments*

Experts view proximity to customers as essential for quickly responding to changes. Therefore, all companies have locations in local markets and utilize feedback from their sales organizations to stay connected and responsive (I5, L. 183-185; I1, L. 278-282; I2, L. 295-298). Additionally, the majority of companies employ various methods to explore customer needs through "car clinics", a specific term mentioned in two of the three case studies (I4, L. 306, 315-319; I1, L. 361-362). These clinics include conducting surveys (I1, L. 369-372; 141-

143), focus groups (I4, L. 306, 315-319; I1, L. 362-363), and behavioral studies (I5, L. 9-10; I7, L. 147-148), as well as interviews (I2, L. 186-188) to assess changing consumer needs. This multifaceted approach helps companies to understand evolving customer demands and enables them to react quickly.

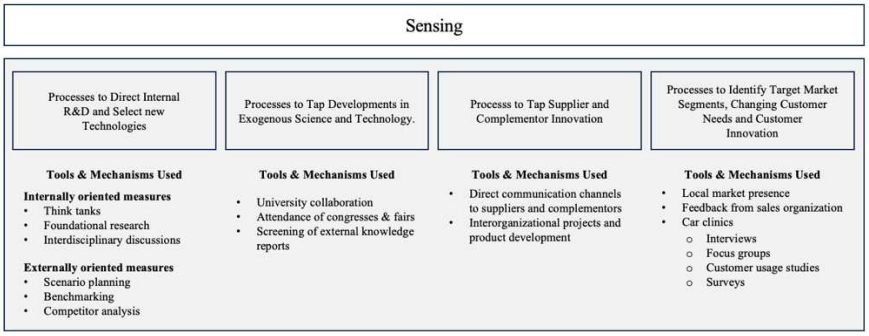


*Illustration 4: Operationalized Sensing Micro Foundations*
*Source: Own Illustration*

### 4.4.3 Seizing

*Delineating the Customer Solution and the Business Model*

In the development of customer solutions, testing and piloting of prototypes are crucial measures that are mentioned by experts from all companies (I1, L. 450-545; I5, L. 187-193; I7, L. 182-186). As these prototypes must consider specific customer needs (I4, L. 257-259; I2, L. 198-202) this process is inherently iterative, leveraging existing capabilities while also building on previous experiences and collected data to refine and adapt the solutions offered (I4, L. 271-275; I7, L. 197-200). The experts emphasize the importance of including indispensable safety features in prototypes while maintaining openness to other technological innovations (I1, L. 403-407; I5, L. 187-193). By practicing technological flexibility and small-scale testing, responsiveness to market changes is enhanced (I7, L. 232-236). Furthermore, when modifications to consumer solutions are necessary, decisions are informed by market research, often derived from initial sensing activities, which then feed into the testing processes (I8, L. 186-189). This approach ensures that the solutions effectively mirror the evolving expectations of customers.

*Selecting Enterprise Boundaries to Manage Complements and "Control" Platforms*

All experts, including consultants, agree that core competencies, key technologies, or customer interfaces should be retained within the company. Examples of them are semiconductor production, in-house telephone services, or brand management, (I1, L. 317-324; I4, L. 145-149; I7, L. 253-256) to reduce dependency on other companies (I2, L. 121-124; I3, L. 228-

229). Furthermore, when considering outsourcing competencies, cost factors play a significant role for the experts (I3, L. 190; I6, L. 515; I7, L. 248-250), as it can be more economical to outsource certain competencies and mitigate risks by not handling them internally (I3, L. 198-202).

*Selecting Decision-Making Protocols*

The main factor that all experts agree on to ensure objective decision-making is that decisions must go through multiple committees and ultimately be decided by the management board (I2, L. 202-203; I4, L. 387-388; I5, L. 314-316; I6, L. 331; I7, L. 266-269). Additionally, financial aspects also play a significant role as projects need to be financed and a financial budget (I1, L. 444; I6, L. 264-268) must not be exceeded. Though there was no consensus among the experts, another notable factor includes calculating probabilities for scenarios (I5, L. 107-110). The fact that experts from company B initially state that there is no such thing as objective decision making in their company (I3, L. 230-231; I5, L. 222-223) points to little transparency on how decisions are made in contrast to the other companies.

*Building Loyalty and Commitment*

Within this micro foundation, no consistency is found across the cases, moreover, notable individual factors are described. These are change management which is seen as crucial in the transformation process to ensure employee loyalty and commitment by company A (I2, L. 563-657). Furthermore, the structured development of employee skills (I7, L. 284-288) and the opportunity for employees to apply internally for projects (I6, L. 561-562) are seen as crucial by company C. Additionally, material incentives like high pay (I4, L. 579) or employee leasing contracts (I5, L. 244; I4, L. 491-493) are vital for motivating and retaining employees during periods of organizational change in company B. These measures point to the different brand identities in the different companies. While in company A and C employee development is stressed, in company B mainly material incentives are used. However, expert 6 states that the leadership style in company B is slowly changing, which he sees as a positive development (L. 245-249).

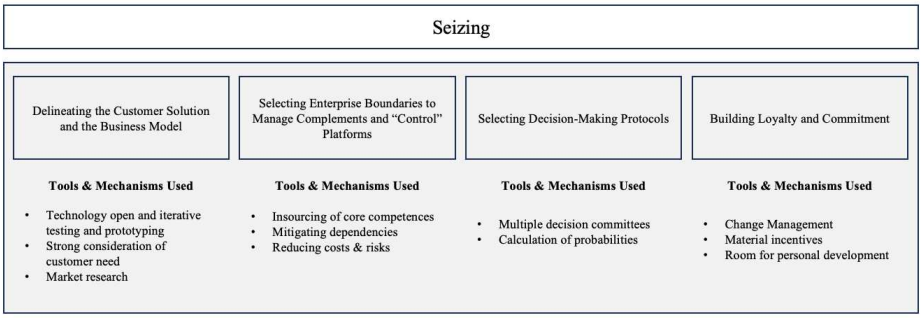


*Illustration 5: Operationalized Seizing Micro Foundations*
*Source: Own Illustration*

### 4.4.4 Reconfiguring

*Decentralization and Near Decomposability*

Even if centralized decision-making processes are generally predominant and seen as useful (I1, L. 549-515; I2, L. 223-228; I4, L. 476-480, 527), the experts agree that decentralized processes are important to remain flexible in the face of change (I3, L. 276-278; I4, L. 528-529). Particularly concerning the factor of regional differences, the experts see independent decisions as essential to implement projects more quickly (I4, L. 476-480, 527), customize the products and production processes (I2, L. 325-328) and also influence the strategy bottom-up (I1, L. 551-555; I2, L. 229-236). While experts from company B agree on the need for local flexibility, due to the need for maintaining a brand reputation for high quality, their production is kept completely in Germany. This is a strong contrast to the other companies and harmful for reacting to change according to the expert (I5, L. 57-60)

*Cospecialization*

In the cases reviewed, there is consensus that co-specialization is primarily initiated top-down by merging departments (I2, L. 165-171; I3, L. 299-301; I5, L. 343-347; I7, L. 288-290). Additionally, communication between different departments is encouraged through direct communication lines to exchange know-how in the face of the changing environment (I4, L. 557-559; I5, L. 377-380). However, it is also highlighted that the merging of different departments does not always proceed smoothly and also requires change management (I5, L. 347-348; I6, L. 796-780).

*Governance*

With regard to governance, there is also no consensus in the cases. Individual factors that are mentioned are quotas for women (I5, L. 360-361) which are becoming more important, and incentives for innovations (I3, L. 313-315).

*Knowledge Management*

Structured knowledge hubs, a knowledge management tool managed by HR (I2, L. 144-148; I3, L. 324-328; I6, L. 841-843; I7, L. 336-340), and a central learning platform (I2, L. 546-549; I4, L. 589;) are named across all cases for knowledge management. In addition, information calls (I2, L. 139; and knowledge communities (I4, L. 589-590) are maintained. To ensure knowledge resilience within the company, job rotations (I3, L. 341) are promoted and employees with relevant knowledge are poached from suppliers (I3, L. 338-341).

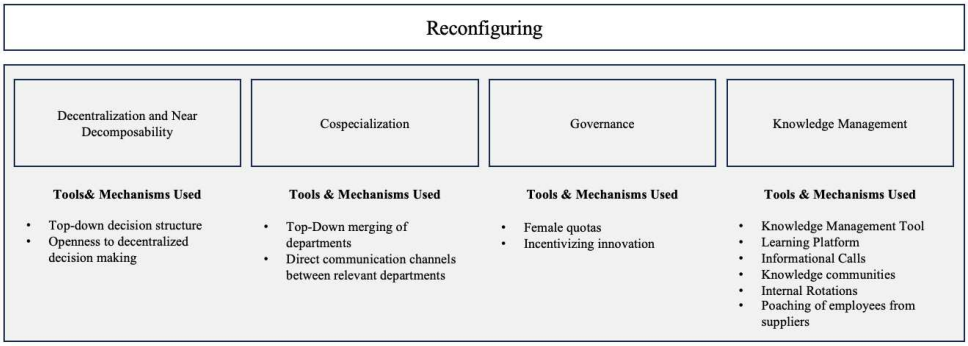


*Illustration 6: Operationalized Reconfiguring Micro Foundations*
*Source: Own Illustration*

### 4.4.5 Integration of resources

*Sensing*

In sensing micro foundations, the perception that tangible and intangible resources influence them is literally replicable in all conducted cases (I2, L. 357-361; I5, L. 211-214; I7, L. 45-46). If, for example, innovation is researched internally, this requires both the necessary expertise (I1, L. 270-271) and the physical means to develop new solutions. Furthermore, to gain new inspiration for the future beyond the company's expertise, close collaboration with universities is sought (I1, L. 273-277; I5, L. 130-131), as they can support change and innovation processes through know-how. The knowledge of suppliers is also accessed through direct communication channels (I3, L. 101-104) in order to perceive change and new technological trends more quickly. Simultaneously, joint research projects are carried out on the physical side, for example by building factories together for the exploration of new technologies (I4, L. 276-279).

Finally, resources also play a role in the car clinics for the perception of customer needs in all cases. On the one hand, the brand perception and values attached to it is specifically assessed (I9, L. 113-114) and, on the other hand, the haptics of products (I4, L. 311-313) which allow conclusions on the production processes and materials used are evaluated.

All in all, sensing is about identifying and researching new solutions in their entirety and adapting production processes and expertise, depending on the solution that appears relevant in the future.

*Seizing*

In response to market trends, experts across the cases emphasize the critical importance of maintaining the identity of the brand while delivering what customers envision (I5, L. 281-282). The key purchasing factor for customers is the brand itself. Thus, in the seizing phase, it is crucial that decisions regarding projects or investments consistently aim to strengthen the brand and the image customers have of it (I3, L. 263-264; I5, I6, L. 282-285). The production process and the physical resources involved must be capable of creating products that meet customer expectations, including the use of high-quality materials. If the products fail to meet these expectations, a strong brand may initially buffer customer tolerance for flaws (I5, L. 134-136). However, this tolerance is limited; if product quality consistently falls short over time, customer demand will decrease, and brand reputation erode. Additionally, the brand enables luxury companies to demand a higher price and achieve better margins while trends can be followed and do not need to be driven (I3, L. 360-362). The latter allows to take on less risk in R&D, partly outsource innovation processes, and to focus more on extending their core competencies (I6, L. 205-207). Despite this advantage, some companies in the luxury segment still aim to be at the forefront of innovation due to their brand identity and the brand reputation they want to create for being the most innovative.

Another benefit that the brand can cause, is that employees do not leave the company due to the “we” feeling, which leads to knowledge remaining in the company (I9, L. 200-203). Even though human resources play a major role in the successful transformation of companies, it is also emphasized that these resources’ benefits can be inhibited by the attitude of older employees who do not want to change the status quo before they retire (I1, L. 173-175; I8, L. 176-178)

*Reconfiguring*

In the context of reconfiguring micro foundations, a differentiated perspective needs to be taken for tangible and intangible resources.

On the tangible side, finding a balance between leveraging synergies in production facilities and allowing local decision-making power is crucial (I7, L. 30-33). This local autonomy enables production sites to be tailored according to specific market requirements (I2, L. 325-

328). By additionally allowing bottom-up changes, the overall organization becomes more flexible and fast in reacting to local change (I2, L. 229-236). In one of the case studies, a lack of flexibility due to the need for improving quality perception is discussed. As production of company B takes place exclusively in Germany to promote products as “made in Germany”, fast response to change is difficult (I5, L. 60-64, 69-71). In this single factor, the brand takes precedence over the economically more reasonable decision to produce abroad in order to maintain the luxury status (I5, L. 302-305).

On the intangible side, the reconfiguration of knowledge plays a decisive role. Experts indicate that the loss of knowledge represents a significant challenge (I2, L. 131-135), making structured knowledge management in large transformations essential. Additionally, companies can only adjust to market dynamics if they have access to employees with relevant know-how. With regards to this, a strong brand can facilitate the acquisition of new know-how as it attracts new employees effectively (I6, L. 523-525) and, as stated before, helps maintain them.

# 5 Discussion of results

## 5.1 Discussion of results with current state of research

***Disruption & Resources***

With regard to disruptive drivers in the automotive industry, it can be noted that there is a great deal of consistency across the case studies and the existing literature. In both, the switch to e-mobility is highlighted as the key challenge for the industry (Colato & Ice, 2023; GFK, 2023; I4, L. 5-6; I5, L. 2). Many of the experts also stated that the change to e-mobility happened very slowly which is in line with the phenomenon described by Christensen (2015). Although the change in the automotive industry was recognized early, it was neglected for a long time in order to continue serving more profitable segments. Incumbents, despite effort for it have not positioned themselves flexibly enough and are now facing major competition (I1, L. 29-31), brain drain (I2, L.131-135), and high regulatory challenges (I4, L. 535-536; I6, L. 148-149). According to experts, flexibility is further slowed down in part by human resources and their low willingness to change (I8, L. 174-175) which is also seen as a major difficulty in the paper by Fallon-Byrne and Harney (2017) who claim that a fundamental challenge for organizational change lies in changing the collective behavior of employees.

With a focus on luxury specific disruption, an alignment with the factors of *rising consumer demands* and the *feminization of luxury products*, identified in the paper by Yeoman and McMahon-Beattie (2018), was found. The prior indicates that luxury automobile manufacturers need to put a high emphasis on maintaining their brand reputation through respective seizing measures, as consumers otherwise turn to competition. *Feminization of luxury* is pointed out specifically in one case where the expert stated that a new car was presented in a color that was supposed to specifically appeal to potential female buyers (I4, L. 104-108). This project shows a direct influence of the brand reputation on seizing measures, as the reputation is tried to be changed to appeal to a new customer segment. The initial impulse for this project most likely stemmed from a car clinic (sensing), as described by the experts, where the brand was analyzed to be more appealing to men. This example shows how dynamic capabilities build up on each other and how they are connected to the brand reputation that is supposed to be created.

Another factor luxury companies facing disruption should focus on is self-reliance as pointed out by Berghaus et al. (2015). This suggests that luxury incumbents should primarily focus on their core competencies. The findings of this thesis align with Berghaus et al.'s viewpoint, as it was highlighted in the cases studied that retaining core competencies within the company is

crucial for strengthening them (I7, L. 253-256) and maintaining competitive advantage. While core competencies like brand perception, (including client facing activities like phone service), drivetrain, and tacit know-how should be nurtured internally, it was also noted that less critical competencies like infotainment (I5, L. 204-205) could be outsourced.

***Microfoundations***

With regard to the micro foundations of dynamic capabilities, there are some similarities between the results of this master thesis and the existing papers on the subject. The results of this master thesis complement existing papers, especially by providing a perspective on luxury companies.

The papers by Warner and Wäger (2019) and Ellström et al. (2022) explicitly refer to digital transformation. However, if their findings are abstracted to luxury companies, there is agreement that new trends should be researched primarily across industries and by using the company network (Ellström et al., 2022; I7, L. 119-121). While in other papers it is pointed out that the core area for sensing is technology, this aspect is also important for luxury companies, but another critical area is the brand. As the demand for luxury goods is very sensitive, factors such as those highlighted by Yeoman & McMahon-Beattie (2018), need to be recognized early on. Not driving new trends can mean missing out on new opportunities and losing customer affection. While the tool scenario planning can be used for this purpose (Warner & Wäger, 2019; I2, L. 55-58), at the same time there is agreement in literature and cases that the human mindset is also indispensable for developing new ideas and creating opportunities (Khan, 2020). Looking at brand reputation specifically, brand-specific surveys and analyses are particularly important for luxury companies which is reflected particularly in the tools used in the micro foundations of “Processes to Identify Target Market Segments, Changing Customer Needs, and Customer Innovation”.

Collaboration with universities and suppliers are factors that are also mentioned in literature. However, Khan et al. (2020) include this factor in seizing, while Teece (2007) explicitly assigns it to sensing. Adding to existing literature further is the insight that organizations establish direct communication channels and conduct projects together to profit from each other’s know-how and lift interorganizational synergies in the context of micro foundations of dynamic capabilities. Next to direct collaboration with universities, conferences also play a significant role in sensing change in the business environment, serving as a source of information mainly on the functional level.

In the area of seizing, the creation of prototypes and testing plays a decisive role, especially in iterative cycles (Warner & Wäger, 2019; I7, L. 205). With regard to outsourcing decisions, the literature emphasizes that outsourcing is not always the best option even if costs could be reduced (Ellström et al., 2022). The results of this master thesis confirm this thesis, as core competencies in particular should be retained within the company (I7, L. 253-256). Further, flexibility is a major issue that plays an important role in the context of change. On the one hand, this is ensured by iterative cycles in research, but also by the fact that resources can be quickly reallocated (Warner & Wäger, 2019). The fact that the reorganization of the governance structure also impacts seizing is confirmed in the cases for luxury companies as well as by Khan (2020) for circular business models. A governance structure that enables locally independent decisions allows a flexible response to regional disruptive factors.
Just as the aspect of digital transformation influences all aspects of seizing to Ellström et al. (2022) and Warner & Wäger (2019), it is similar in seizing for luxury companies. Here, both production and knowledge must be aligned with the luxury appeal that is to be created.
There is a consensus in the literature that knowledge is particularly important in reconfiguring. This master thesis provides various methods of how knowledge management can be approached. Besides the reconfiguration of knowledge, the papers by Ellström et al. (2022) and Warner and Wäger (2019) largely consider digital aspects in the micro foundations of this dynamic capability. Besides knowledge management, Khan et al. (2020), like the experts in this master thesis, describe that new production facilities must be built, knowledge must be brought together, and production processes must be adapted to the new products. An insight that adds to this is that a balance needs to be struck between realizing synergies in resource and production management while simultaneously increasing local decision-making power to ensure the optimal amount of flexibility.

***Micro foundations & intangible resources***

Brand Reputation and HR were pointed out as the most important resources for reacting to change. Therefore, their specific influence on the micro foundations of dynamic capabilities will be discussed in the following.

When looking at the intangible resource brand reputation, notably it provides great potential for being leveraged for reacting to disruption and maintaining competitive advantage. This consensus exists in literature and according to the experts interviewed in this master thesis (Barney, 1991; I2, L. 101-106). A key result of this thesis is that the brand allows that

technological leadership or a first mover strategy is not necessary for luxury incumbents. Rather, the fast follower approach can be chosen with regard to non-brand-specific factors. This means that companies quickly copy and improve innovations introduced to the market by competitors, thus minimizing risk and costs (Covin et al., 2000). This strategy, however, is only possible for companies that do not hold innovation as the core of their brand identity. If this is the case, innovation that drives the market is still needed to maintain a credible brand reputation (Meffert, 2015). Next to the advantage of reduced costs for R&D, the fast follower strategy also increases the flexibility that is needed in changing business environments (Teece, 2007; I7, L. 182-186).

Teece et al. (1997) emphasize high flexibility in changing environments as the core essence of dynamic capabilities. As it is also seen as essential in the response to disruption in the cases, it can be concluded that brand reputation has a very strong influence on dynamic capabilities and their micro foundations due to its ability to increase flexibility. Thus, assessing the brand specifically in the context of sensing and implementing measures to strengthen it in seizing and reconfiguring, is of great relevance for the overall organizational transformation.

In addition, the brand enables luxury manufacturers to capture higher margins than lower-end producers, according to the experts (I4, L. 329-335). At first glance, this is also a source of competitive advantage, yet it does not consider the fact that luxury goods are generally less in demand in uncertain times and that premium manufacturers in particular may have difficulties selling them in times of crisis (Business Insider, 2021).

One factor in which an appealing brand is advantageous, however, is dealing with the shortage of skilled workers. This is seen as a major challenge by both experts and in literature (BMWK, 2024; I7, L. 300-303). In this context, the brand can be used to attract new talent and thus new competences which is essential for dealing with disruption (Berghaus et al., 2015; Fallon-Byrne & Harney, 2017; I2, L. 121-124). This point is underlined by recent studies in which luxury brands from the automotive industry in Germany occupy the top places in terms of employer popularity (Statista, 2024).

On the one hand, these competences can be used in sensing to perceive opportunities across industries or from the inside (Ellström et al., 2022). This inside out approach can be linked to the strategic research field of “emergent strategy” which explains how impulses from the operational business influence the overall strategy (cf. Mirabeau & Maguire, 2014).

On the other hand, the know-how and above all the strategic foresight of managers plays a major role in product, project, or investment decisions that are made as part of seizing

(Berghaus et al., 2015; I5, L. 267-269). Although objective decisions are always supported by decision-making bodies or analyses, in the end, it is management that has the final say. In seizing, it is particularly important to convey the luxurious brand identity to the market and to protect core competencies in order to guarantee the benefits of the brand in the long term, even if these decisions are not always the most economically sensible ones (I5, L. 57-60).

In order to make use of the employees' know-how and to remain as flexible as possible (Teece et al., 1997), the experts add that strategic foresight should be promoted above all locally through decentralized decision-making power. This makes it possible to respond more specifically to local changes, for example with regard to customer wishes (e.g. individualization wishes), and to ensure proximity to customers (Yeoman & McMahon-Beattie, 2018).

The knowledge of employees also plays a decisive role in reconfiguring, and the corresponding micro foundations. Top-down merging of different departments and strategic knowledge management can ensure that relevant knowledge remains in the company. Even if tension can occur when merging departments top-down, co-specialization through joint projects are essential in order to build resilient knowledge (Teece, 2007; I2, L. 165-171).

Particularly in the context of knowledge management, the experts list many different measures that can be taken to ensure a structured approach to it. Fallon-Byrne & Harney (2017) also see knowledge management alongside innovation and organizational learning as the most important mechanism for successful organizational change.

***Micro foundations & tangible resources***

The most important resource that has been highlighted is production, where core competencies such as drivetrains and interiors are manufactured.

In production, tangible and intangible resources are intertwined. Not only do physical production facilities need to be present, but knowledge about the most efficient production processes possible must also be guaranteed (I7, 350-353). With regard to sensing, new knowledge is continuously being sought, for example within university collaborations or poaching of supplier employees. These measures help companies increase production efficiency and understand where production processes need to develop. In production, modifications (Khan et al., 2020) may be necessary depending on the perceived trend (seizing), which is well illustrated by the example of e-mobility (I7, L. 187-190).

Another link between tangible and intangible resources exists with regard to the brand itself. The advantages of it have already been explained, but these advantages can only exist if the products that are produced also meet the expectations that are placed on them. In order to suggest heritage and savoir-faire to the customer in the luxury segment, which are the main selling points (Kapferer, 2009; Berghaus et al., 2015), seizing and reconfiguring decisions must be aligned to the brand's identity. This need for alignment can in some cases also cause decisions to be made that are economically not senseful like e.g. a centralized production in Germany. Next to its irrationality from a business perspective, a decision like this also inhibits flexibility, which is why according to Teece (2007), and the DCV it should be avoided at all costs.

Though this seems like a biased decision, decision making protocols must take the high value of the brand for customer purchasing behavior into account. Customers are happy to accept the higher costs or longer waiting times that may result due to this, due to the higher quality perception. Going along with this perception, however, is also a lower fault tolerance for luxury products. To set products apart from lower-end producers, it is therefore essential to process only premium materials and enable individualization (Yeoman & McMahon-Beattie, 2018). Only if the highest quality materials are used in production and products can be customized, will customers be satisfied with the product they buy. This ultimately also leads to the luxury status being maintained.

These examples show how the resource base influences the dynamic capabilities and their respective micro foundations from a tangible resource standpoint.

The preceding discussion suggests that no clear distinction can be made in the relevance of the resources and their influence on the micro foundations of dynamic capabilities. Both are needed to create a product that satisfies the customer.

However, it needs to be noted that as long as production is set up to confirm the expectations that luxury product consumers have of the products, the brand opens more possibilities for dealing with change.

Examples of these opportunities are the acquisition of new know-how in the form of employees, creating a way of unity, and enabling a fast follower strategy. All of these aspects increase the flexibility of incumbents in times of change. Therefore, brand reputation itself further facilitates the acquisition of relevant resources, especially non-physical ones, which can be used to create new competitive advantages. This is in line with the RBV, which states that intangible resources are more likely to be the source of competitive advantage (Barney, 1991).

## 5.2 Managerial Implications for dynamic capabilities

From the insights generated in this master thesis, relevant guidance for managers can be provided for micro foundations of sensing, seizing, and reconfiguring respectively. Notably, some of the recommendations are closely linked across the dynamic capabilities which is due to the fact they are interconnected and overlapping by nature (Leemann et al., 2021). Considering resources, a general implication is that both types of them need to be taken equally seriously as successfully adapting to change can only be ensured through an efficient and synergetic interplay of them.

### 5.2.1 Sensing

***Establish comprehensive market trend radars for tangibles and intangibles***

In the realm of sensing disruption, managers should be aware of the differences in trends concerning tangible and intangible resources. When it comes to tangible resources, consumer demands e.g. with a focus on individualization need to be monitored closely and incorporated into the production processes. Additionally, companies should continuously seek ways to make production more efficient through automation or by leveraging economies of scale.

With regard to intangible resources, managers should monitor the market closely and anticipate which know-how they might need to build to react to disruptive drivers in it. Due to the high relevance of brand reputation in reacting to disruption, sensing in this area should also focus on opportunities for strengthening the brand reputation. In line with Meffert (2015), through this, brand identity and corresponding loyalty can yield resilient purchasing behavior in times of change. Thus, the brand should be thoroughly analyzed using the tools developed in this thesis.

***Promote innovation and research on core competences***

As companies should drive the market with regard to their core competence themselves (Berghaus et al., 2015), taking an internal perspective is equally as important. Managers should consider setting up dedicated teams focused on exploring and experimenting with new business models and technologies, that enhance these competences. Adding to this, managers should foster a culture of continuous learning and adaptability within their teams, to ensure that employees think interdisciplinary and drive the organization through innovation.

***Leverage and extend network to identify trends***

As external stakeholders can provide invaluable insights on trends and disruptive drivers in the market, close communication and relationship building on a functional level should be encouraged. This refers to customers, partners, suppliers, as well as complementors and manifests the need for an open innovation approach. Moreover, managers should encourage their employees to participate in professional conferences to ensure that their knowledge remains up to date. Next to this, valuable know-how and the next generation of employees can be beneficial outcomes from collaborations with universities which is why they should be pursued as well.

### 5.2.2 Seizing

***Early seizing of sensed opportunities***

Upon sensing opportunities or disruptive drivers, managers must act on them quickly. Though it can be challenging to find the right timing, it can make sense to explore a delineation of the business model iteratively through prototyping to ensure that no opportunity is missed. As incumbents do not need to drive the market (Teece, 2007) managers should consider a fast-follower strategy but need to act diligently, once a trend seems to manifest. Only through this, inertia like the one that the German automotive industry has still not recovered from with regard to BEV can be avoided.

***Focus on core competence***

Control over core competences including brand reputation needs to be maintained within the company. This includes all aspects that have the potential to provide a competitive advantage over competitors. Examples can include the manufacturing process of luxury goods, brand management or all services that are directly client facing. Only if core competences are maintained inside, control over them and thus high quality can be guaranteed which directly impacts consumption of luxury products. Services or products that are not directly connected to the brand identity can be outsourced to save cost and have more capacity for exploring the core competences. Decision making protocols should incorporate this focus on the core competence and particularly brand health, to profit from its benefits in times of disruption.

***Ensure employees are committed to change***

As HR is seen as a key resource for reacting to disruption, managers should lead by good example to ensure that employees are committed to change initiatives. This involves transparent communication, demonstrating commitment to new initiatives, and increasing

employees' ability to influence the change themselves. Teece (2007) points out that a collaborative, non-hierarchical management style can be chosen for this.

Furthermore, older employees need to be engaged and included in the change process specifically to prevent resistance and ensure the necessary flexibility. This can be achieved through targeted change management strategies, training programs, and also by leveraging brand identity. The latter means that managers should use the identification with the brand to create a feeling of community. By creating this feeling, the barrier for employees to leave is higher, while simultaneously their commitment to good work results increased. Complementing these soft factors, material incentives such as high pay and corporate benefits should be provided as hygiene factors securing employee satisfaction.

### 5.2.3 Reconfiguring

***Actively promote knowledge management***

To ensure that all relevant skills are available in the organization for the disrupted environment, a structured approach to knowledge management should be taken by managers. Employees should not be overwhelmed with quick changes, but instead given time to build the necessary competences. This is also connected to strategic foresight, as managers need to identify early on which competences will be relevant in the future to provide the necessary time to build them. The tools provided in this master thesis can be used as a benchmark and should proactively be implemented in knowledge management. If it is deemed necessary to merge departments as part of knowledge management, managers need to consider change management to avoid internal resistance in addition to the external change.

***Ensure flexible production processes with high standards***

Production needs to remain as flexible as possible due to the disruptive drivers that prevail in the business environment of the 21st century. Therefore, while synergies should be leveraged, non-standardized processes to adapt to local needs are equally relevant. Only if local flexibility is granted, can products incorporate geographical differences and stay closer to customer's needs. Additionally, managers of luxury manufacturers need to consider the high value of a strong brand reputation in times of disruption. Therefore, production needs to support the brand by using premium materials and high manufacturing quality.

***Establish governance for flexibility***

Many of the previous implications would not be possible without a governance structure that enables managers to remain flexible. It should be set up so that individual fields of action for local adaption are granted to avoid the slow central decision-making processes usually present in incumbents. Through higher local decision power, companies stay more adaptable and can react to changes quickly. Further, direct reporting lines to key stakeholders in the organization can help to communicate changes in the market frictionlessly and adapt faster to them. Additionally, governance should protect tacit know-how in interorganizational collaborations as it can also be seen as a crucial factor for dealing with disruption.

# 6 Conclusion

## 6.1 Final Observation

The goal of this master thesis was to delve deeper into the research field of micro foundations of dynamic capabilities and their interplay with the resource base. This research field had so far only gotten little attention in prior research that mainly focused on micro foundations for digital transformation. Therefore, taking a new perspective and developing them for luxury incumbents can be seen as an addition to prior research. Further, due to the high value of brand reputation for developing competitive advantage (Barney, 1991), its exceptional presence in companies from the luxury segment allowed for an extended analysis of the influence of the resource base on micro foundations. The research question: "**How does the resource base influence the micro foundations of dynamic capabilities in companies from the luxury segment for dealing with disruption?**" was answered.

To do this, a multiple case study approach was selected, as by analyzing different companies, more heterogeneous insights on the topic could be generated. The data collection method of expert interviews provided a variety of different individual factors and operationalized micro foundations. They served as a good extension to the explorative research design of the multiple case study. Despite differences in the perspectives, a large part of the insights generated was literally replicable which points to the strength of the cases selected. The operationalized micro foundations can be found in the results chapter and can indeed be seen as unique from traditional industries. Upon their definition, the analysis indicated that the resource base does influence the micro foundations of dynamic capabilities. The relationship between dynamic capabilities and resource base can therefore be seen as reciprocal.

Contrary to the insights from the literature review, the relevance of the different types of resources, tangible and intangible, for reacting to change is equal. While both resources influence the dynamic capabilities of sensing, seizing, and reconfiguring with regard to different aspects, both are ultimately needed to create a product provides value for customers. Only if the products align with the physical expectations that customers have of them, can the brand reputation be maintained. In this case, the brand opens up a variety of opportunities for dealing with change and developing competitive advantage.

Thus, micro foundations of sensing need to identify trends on the physical side e.g. enabling more efficient production, and on the intangible side, identifying new consumer expectations for luxury brands management. Seizing decisions build up on this, as projects need to be initiated that exploit both opportunities. Notably, in reconfiguring, the intangible resource

know-how plays a central role. However, it must also be noted that if production is not reconfigured to produce BEV demand will decline which is why know-how cannot create a competitive advantage alone.
The same applies to all other luxury products, where the brand reputation can only be maintained if tangible and intangible resources complement each other.

## 6.2 Limitations of this thesis

The results of this study point to a reciprocal influence of dynamic capabilities and the resource base. However, due to the small sample size which only incorporated three of the four major German luxury car manufacturers, it is possible that certain tools, methods or influences have not been captured. The same applies to the number of experts interviewed. More interviews could have yielded further insights. However, they were not possible due to the limited network of the author and no responses from potential interview partners on social media. Though it could be argued that external sources such as newspaper articles or company reports could have extended the data collected from the interviews, they were explicitly not included to ensure the anonymity of the companies analyzed.
While the results of this master thesis are not representative for all luxury companies due to the small sample size, it needs to be noted that representative results are not the goal of qualitative research. The goal of this research approach is to uncover relevant individual factors (Mayring, 2015) which was achieved. Further, the literal replication proves a relevant selection of cases and interview partners while simultaneously indicating the reliability of the research approach and its results.
While many of the results are specifically relevant to luxury companies, further narrowing the analysis down to a specific functional area or theoretical concept like e.g. innovation could have led to more differentiated insights.

## 6.3 Outlook

The previously described limitations of this master thesis indicate opportunities for further research. Firstly, the results could be quantitatively verified across luxury and non-luxury companies to confirm their representativeness. This concerns the operationalized micro foundations as well as the influence of resources on change processes. Building up on this and the fact that the micro foundations have been operationalized for luxury companies, a comparison to those of traditional industries would yield new insights into differences between the two segments. While the brand strongly influences decisions in the luxury segment, which

aspects particularly influence them in non-luxury companies? Further, how are the non-luxury car producers dealing with the change to BEV? How do they leverage and reconfigure their resource base within this transformation? These are just three examples of research questions that could be raised based on the results of this thesis. Additionally, as it was pointed out that know-how of employees is particularly valuable in transforming, analyzing how it influences certain processes like e.g. innovation in times of change would also yield novel insights.
All in all, the results and implications of this thesis guide management for dealing with change and open up many further research fields, especially with regard to the micro foundations of dynamic capabilities.

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# 8 Appendix

**Appendix 1: Interview Guideline (translated)**

*Disruptive Drivers*

**MQ1**: What are the most important disruptive drivers that you have observed/are observing in your segment?

*Typical responses*

**MQ2**: How does your company typically respond to these disruptions?

*Relevance of resource base*

**MQ3**: What role does the change of resources and capabilities play for your company when responding to disruption?

**MQ4**: Do you think there is a difference in relevance between tangible and intangible resources when it comes to responding to disruptions in the luxury segment?

*Tangible resources*

**MQ5**: Which tangible/intangible resources do you think are most important for your company to adapt to market changes?

**MQ6**: How do you perceive these resources on a day-to-day basis and how do they contribute to your company's competitive advantage?

*Intangible resources*

**MQ7**: Which intangible resources/assets are most important to your company and why?

**MQ8**: How do you perceive these resources in everyday life and how do they contribute to your company's competitive advantage?

***Sensing***

*Processes to Direct Internal R&D and Select New Technologies*

**MQ9**: Can you describe how your company conducts internal R&D and selects new technologies to be pursued in the future?

*Processes to Tap Supplier and Complementor Innovation*

**MQ10**: How does your company monitor its ecosystem and networks or work together with complementary companies or suppliers for innovations?

*Processes to Tap Developments in Exogenous Science and Technology*

**MQ11**: What processes does your company use to identify scientific and technological developments in the external environment that could be relevant in the future?

*Processes to Identify Target Market Segments, Changing Customer Needs, and Customer Innovation*

**MQ12**: Which processes/tools are used in your company to identify changing customer needs and target segments?

*Integration of resources in sensing micro foundations*

**MQ13**: What role do tangible or intangible resources play within the processes described?

**Seizing**

*Delineating the Customer Solution and the business Model*

**MQ14**: If it is recognized that the business model needs to be changed in whole or in part (e.g. as in the case of EV), what processes does your company use to determine which functions and technologies should continue to be relevant?

*Selecting Enterprise Boundaries to Manage Complements and "Control" platforms*

**MQ15**: How does your company strategically decide to develop a new technology, service or product internally or outsource the development?

*Selecting Decision-Making Protocols*

**MQ16**: How does your company prevent strategic decision-making processes from being influenced by bias and errors? In other words, how is objective decision-making ensured?

*Building Loyalty and Commitment*

**MQ17**: In times of change in your company, how do you ensure that employee loyalty and commitment are strengthened?

*Integration of resources in seizing micro foundations*

**MQ18**: What role do tangible or intangible resources play within the processes described?

***Reconfiguring***

*Decentralization and Near Decomposability*

**MQ19**: How is the decision-making structure in your company organized (centralized vs. decentralized) and how does this affect change processes in particular?

*Cospecialization*

**MQ20**: What processes does your company have in place to promote collaboration between departments and thereby create new value with regard to change?

*Governance*

**MQ21**: Can you describe the incentive mechanisms that your organization uses to ensure that employees act in the interests of the organization?

*Knowledge Management*

**MQ22**: How does your organization manage and integrate both internal and external sources of knowledge in response to change?

*Integration of resources in reconfiguring micro foundations*

**MQ23**: What role do tangible or intangible resources play within the processes described?

*Other*

**MQ24**: Is there anything else you would like to add that might help me understand how your company recognizes and responds to market changes given its unique resource set?

**Appendix 2: Old Interview Guideline**

*Disruptive Drivers*

**MQ1**: What are the key disruptive drivers you have observed in the luxury your segment?

*Typical responses*

**MQ2**: How does your company typically respond to these disruptions?

*Relevance of resource base*

**MQ3**: Which role does changing resources or capabilities play for your company when reacting to disruption?

**MQ4**: Do you think there is a difference in relevance between tangible and intangible resources when reacting to disruption in the luxury segment?

*Tangible resources*

**MQ5**: What tangible resources do you believe are most critical for your company in adapting to market changes, and why?

**MQ6**: How do these resources contribute to your company's competitive advantage?

*Intangible resources*

**MQ7**: Which intangible resources/assets are most crucial to your company, and why?

**MQ8**: How does your company leverage these intangible assets in the face of market change?

- Follow up: Does brand reputation as a resource play a special role when reacting to changes in the environment?

***Sensing***

*Processes to Direct Internal R&D and Select New Technologies*

**MQ9**: Can you describe how your company conducts internal R&D and selects new technologies to be pursued?

*Processes to Tap Supplier and Complementor Innovation*

**MQ10**: How does your company monitor its ecosystem and networks to identify opportunities and make use of them?

*Processes to Tap Developments in Exogenous Science and Technology*

**MQ11**: Can you describe processes used in your company to identify scientific and technological developments in the external environment?

*Processes to Identify Target Market Segments, Changing Customer Needs, and Customer Innovation*

**MQ12**: What processes or mechanisms are employed at your company to identify and understand changing customer needs and target segments?

*Integration of resources in sensing micro foundations*

**MQ13**: Within these described processes, which role do tangible or intangible resources play?

- Follow up: Consider also that knowledge, networks or brand reputation are also intangible resources.

***Seizing***

*Delineating the Customer Solution and the business Model*

**MQ14**: Can you describe a time when your company had to reevaluate or redesign its business model to better align with customer needs?

**MQ15**: How does your company determine the key features or technologies to include when the need for change is seen?

*Selecting Enterprise Boundaries to Manage Complements and "Control" platforms*

**MQ16**: Can you describe a strategic decision your company made about developing a new technology or service in-house versus partnering with another entity?

**MQ17**: What were the key factors in this decision, and how did it affect your company's ability to innovate and maintain control over essential components or platforms in your industry?

*Selecting Decision-Making Protocols*

**MQ18**: Can you discuss a situation where your organization had to make a major investment or strategic decision?

**MQ19**: How did you approach the decision-making process to minimize biases and errors, and what procedures or tools did you employ to ensure objective and effective decision-making?

*Building Loyalty and Commitment*

**MQ20**: Can you describe strategies used in your company to build employee loyalty and commitment for when the organisation needs to change?

- Follow-up: E.g. communication or leadership style

*Integration of resources in seizing micro foundations*

**MQ21**: Within these described processes, which role do tangible or intangible resources play?

- Follow up: Consider also that knowledge, networks or brand reputation are also intangible resources.

***Reconfiguring***

*Decentralization and Near Decomposability*

**MQ22**: Can you describe a scenario where your organization had to decentralize its decision-making process?

**MQ23**: How did this decentralization affect the company's responsiveness to customers or new technologies, and what strategies were implemented to maintain a balance between autonomy of individual units and overall organizational integration?

*Cospecialization*

**MQ24**: Can you describe a situation where your organization had to integrate or align different specialized assets or technologies to create a more efficient system or product?

**MQ25**: How do different departments inside your company work together and use asset combinations to create this new value?

*Governance*

**MQ26**: Can you describe the governance and incentive mechanisms your organization has implemented to encourage learning and knowledge integration?

*Knowledge Management*

**MQ27**: Following up on this, how does your organization manage and integrate both internal and external knowledge sources to react to change?

- Follow up: What measures are in place to protect this intangible resource?

*Integration of resources in reconfiguring micro foundations*

**MQ28**: Within these described processes, which role do tangible or intangible resources play?

- Follow up: Consider also that knowledge, networks or brand reputation are also intangible resources.

*Other*

**MQ29**: Is there anything else you would like to add that could help me understand how your company identifies market changes and reacts to them considering its unique resource setup?

## Appendix 3: Coding Guideline

| Theoretical Concept | Category | Sub-Category | Anchor Example | Coding Rule |
|---|---|---|---|---|
| **Disruption** | Disruptive Drivers | - | "At the moment, I would say that electromobility is the biggest field for action. From my point of view, my company is still struggling to get customers to switch to this new technology and to be prepared to accept it.", I3, L. 5-8 | Descriptions, mentions and statements on the disruptive drivers in the automotive segment |
| | Typical response to Disruption | - | "We are currently electrifying everything. Legislation says: combustion engines from 2035. I think we want to have 80% electrified by 2030. Let's see if there is a turnaround", I4, L. 54-55 | Statements of the interview partners on the usual reaction to disruption of their company |
| **Resource Based-View** | Relevance of Resource base | - | "Extremely important. (...) But that's the point. Who is adaptable?", I1, L. 129-132 | Statements the interview partners make about how important they perceive the resource base |
| | Tangible Resources | - | "In the case of production facilities, this is certainly due to the fact that labor costs are of course also an issue, as is capacity utilization. So, setting up production facilities is a huge investment. If they are not fully utilized, this is of course also critical to success.", I2, L. 87-90 | Information which tangible resources the interviewees see as important and how they add to the competitive advantage of their company |
| | Intangible Resources | - | "(…) because the people (at my company) really come up with great ideas, that's, uh, that's really impressive" I5, L. 39-40 | Information which intangible resources the interviewees see as important and how they add to the competitive advantage of their company |
| **Dynamic Capabilities** | Sensing | Processes to Direct Internal R&D and Select New Technologies | "The market is changing. First of all, you look at the sales of different vehicles and different equipment levels in quantitative terms. From this you can say that more EVs are being sold in this market. That's just normal market planning", I9, L 105-108 | Processes and Tools described by the interviewee that are used to manage internal R&D and select research opportunities or technologies for future use |
| | | Processes to Tap Developments in Exogenous Science and Technology | "Of course, we have a research network with major universities, where there are also collaborations", I7, 130-131 | Processes and Tools used by the company to sense disruption through using external research and science |
| | | Processes to Tap Supplier and Complementor Innovation | "The fourth feature and tool, you could also say, is the topic of co-creation, which we do from time to time. We started it with the show car a year and a half ago, where we actually designed a space vehicle together with Chinese customers (...)", I1, L. 383-386 | Processes and Tools used by the company to leverage their network to identify opportunities |
| | | Processes to Identify Target Market Segments, Changing Customer Needs, and Customer Innovation | "Market surveys are of course always conducted to see what customers want. Where are the cars today and what would they like to see in the future", I3, L. 83-83 | Processes and Tools used by the company to identify changing target segments, customer needs and customer innovation |
| | Sensing - Integration of resources | Tangible | "They hand over the vehicles, they are then allowed to test the vehicles in parts, i.e. not to move them, but to sit in them, open them, turn them on, turn them off and things like that, because these are mostly exhibition halls or exhibition grounds", I4, L.. 311-313 | Influence of tangible resources on the processes and tools of sensing change |
| | | Intangible | "Well, we already have a regular brand monitor, where we look at how our brand is developing across the regions, how it is being received by customers, including in the individual brand facets, and how we stand against competitor brands, so to speak", I7, L. 160-163 | Influence of intangible resources on the processes and tools of sensing change |
| | Seizing | Delineating the Customer Solution and the business Model | "Yes, of course, based on the trends that have been identified, so that's no secret either, " I7, L. 173-174 | Processes to decide how to change the customer solution or business model after change was sensed |
| | | Selecting Enterprise Boundaries to Manage Complements | "That means we are already looking at what we want to keep with us. As I said, that's the chassis, drive, probably the battery and charging too", I5, L. 205-207 | Decision processes in make-or buy decisions for technologies and products |

| | | | | |
|---|---|---|---|---|
| | | and “Control” platforms | | |
| | | Selecting Decision-Making Protocols | "There are always one or two levels above that he also has to show it to", I6, L. 331 | Processes and Tools in place to avoid biased decisions |
| | | Building Loyalty and Commitment (inside the company) | "Because there are vehicle projects that people are keen on. This sports series, this huge SUV thing, that had the internal project name "the Rockstar". And people were keen on it", I6, L. 584-586 | Processes and initiatives to ensure that employees are committed to the change |
| | Seizing - Integration of resources | Tangible | "We already have most of the projects internally. The main point that affects such a decision is, of course, the capacity of the physical resources that are available during the development period", I4, L 188-190 | Influence of tangible resources on the processes and tools of seizing in reaction to change |
| | | Intangible | "So, number 1 is always the brand. It has to live on, it really has to be pushed further, because in many cases that is the number one selling point", I5, L. 281-282 | Influence of intangible resources on the processes and tools of seizing in reaction to change |
| | Reconfiguring | Decentralization and Near Decomposability | "You have more, you have stronger decentralized focal points, of course. You still have to find the sweet spot and what makes sense to implement overall and synergistically, so that you can of course make use of it. But of course, taking into account what the key success factors are regionally", I7, L. 30-33 | Organization of decision structure inside the company and effect on reacting to change |
| | | Cospecialization | "Rather difficult, yes. Changes tend to be made top-down by merging two departments into one. Then they inevitably have to exchange ideas", I3, L. 299-301 | Processes and Tools in the company to improve collaboration between departments and create new value |
| | | Governance | "For inventions, of course, you can be included for invention disclosures. For patents or similar, there are incentives", I3, L. 313-315 | Governance and incentivization mechanisms within the change period |
| | | Knowledge Management | "For example, where you have weak points and suppliers have strengths, you also try to bring in employees. It is very common for people to move from a supplier to an OEM in order to transfer precisely this know-how", I3, L. 338-341 | Processes and Tools for integrating and managing knowledge during the change process |
| | Reconfiguring - Integration of resources | Tangible | "Other resources have of course also been built up, i.e. from outside the plant: engine production has been completely converted so that the electric motors are produced where the combustion engines were built", I3, L. 25-27 | Influence of tangible resources on the processes and tools of reconfiguring in reaction to change |
| | | Intangible | "In other words, where do we maximally promote cooperation, for example by relocating human resources, i.e. employees, or where are similar tasks that may nevertheless bring about change in the future, which should be bundled and not decentralized in different places", I2, L. 585-589 | Influence of intangible resources on the processes and tools of reconfiguring in reaction to change |
| **Others** | | | "I think it's important to be fundamentally agile. We realize, of course, with all predictions, or as this beautiful word says, forecasts are always difficult when they concern the future. So in this respect, I think you have to have precisely this agility, to keep updating where we are going, where the journey is going", I7, L. 369-373 | Statements made that do not fall in any of the categories but help to answer the research question |

## Appendix 4: Deductive Categories

TC= Theoretical Category

C= Category

SC = Sub-Category

| Theoretical Concept | Category | Sub-category | Code |
|---|---|---|---|
| **Disruption** | - | | TC 1 |
| | Disruptive drivers | - | C 1 |
| | Typical responses | - | C 2 |
| **Resource-Based View** | - | - | TC 2 |
| | Relevance of Resource base | - | C 3 |
| | Tangible Resources | - | C 4 |
| | Intangible Resources | - | C 5 |
| **Dynamic Capabilities** | - | | TC 3 |
| | Sensing | - | C6 |
| | | Processes to Direct Internal R&D and Select New Technologies | SC 1 |
| | | Processes to Tap Developments in Exogenous Science and Technology | SC 2 |
| | | Processes to Tap Supplier and Complementor Innovation | SC 3 |
| | | Processes to Identify Target Market Segments, Changing Customer Needs, and Customer Innovation | SC 4 |
| | Seizing | - | C 7 |
| | | Delineating the Customer Solution and the business Model | SC 5 |
| | | Selecting Enterprise Boundaries to Manage Complements and "Control" platforms | SC 6 |
| | | Selecting Decision-Making Protocols | SC 7 |
| | | Building Loyalty and Commitment (inside the company) | SC 8 |
| | Reconfiguring - | - | C8 |
| | | Decentralization and Near Decomposability | SC 9 |
| | | Cospecialization | SC 10 |
| | | Governance | SC 11 |
| | | Knowledge Management | SC 12 |
| Other | - | - | TC 4 |

**Appendix 5: Disruptive factors Company A**

One factor that was echoed in both interviews is the rising importance of e-mobility which is seen as a disruptive "blockbuster" mainly starting with the founding of Tesla according to Interviewee 1 (L. 16-18; I2, L. 4).

The second big challenge is seen in China where "Within short period of time (company A) was confronted with more than 130 competitors" (I1, L. 29-30) and where regulatory conditions are completely different than in Europe. With this, Interviewee1 refers to lower employee protection standards (I1, L. 36-37, I1, L. 74-77), lower employee participation (I1, L. 134-138), lower CO2 standards (I1, L.504) and governmental subsidies (I1, L. 25). With regards to employees, Interviewee 2 adds that the competition for them has also increased (L. 20-24) and needs to consider new ways of working (L.13-14) in order to avoid a brain drain (L. 131-135) which is seen as a great threat.

Further disruptive factors seen by the experts are a need for material supply (I2, L. 6) especially semiconductors (I2, L. 80-85) as well as charging infrastructure with regards to EV (I2, L. 5) and changes in the business model of automobile producers. According to interviewee 1, cars are more strongly influenced by a software logic than before (L. 31-36), autonomous driving is becoming more relevant (L. 73-74) and lastly, consumers seek access over ownership with regards to cars (L.54-58). Another trend that is pointed out by Interviewee 1, is that craftsmanship and storytelling will also gain higher relevance in the lower segments of the automotive market as these segments also seek a good story behind their product (I1, L. 256-260). Furthermore, market demands are becoming increasingly local which requires individualized solutions depending on local needs and pose a threat to profits due to increased difficulty to leverage synergy effects (I2, l. 630-635).

On a general side, company A reacts to these threats by engaging in active risk management, (I2, L.32-36) prioritizing needs (I2, L. 41-43), anticipating (I1, L. 92-93) and implementing counter measures early on after identifying a threat (I1, L. 44-47).

**Appendix 6: Disruptive factors Company B**

The first disruptive factor pointed out by all experts from company B is the e-mobility (I4, L. 5-6; I5, L. 2), which is seen as the "most crucial field of action" (I3, L. 5-6). Expert 4 points out, however, that also within electro mobility there are challenges like extreme cold which deprives batteries of energy quickly (I4, L. 13-16). The next common factor is related to customer demands that according to the experts are high (I3, L. 10-11) and differ strongly depending on geographies (I4, L. 93-96; I5, L. 27-30). Furthermore, according to experts 4 (L. 5-6) and 5 there is uncertainty about what the future car will look like, especially with regards to generative AI that will have a strong impact on software development and autonomous driving (I5, L. 37-40). Competitive concerns are also mentioned with regards to finding the right price point (I4, L. 73-79) in the luxury segment and an increased competition in infotainment (I5, L. 3-4). Lastly, expert 4 refers to regulatory issues in Europe that "do not represent the rest of the world" (L. 29), strong competition from China (L. 18-22), feminization of luxury (L. 102-108) as well as supply chain issues (L. 133-134).
Company B reacts to this by electrifying everything (I4, L. 54-55) and changing the message of communication for the target segments (L. 90-91).

**Appendix 7: Disruptive factors Company C**

For company C, the most disruptive factors that both experts agree upon is China as it "represents 30% of market share for high-price models" (I6, L. 13-14), it is increasingly differentiating itself from Europe in regulatory terms (I7, L. 354-357) and has customer preferences that are increasingly specific (I7, L. 5-7). Expert 6 adds that e.g. brand loyalty in China (L. 85-88) is particularly low and that there currently is a price battle going on (L. 83-85). Next to China both experts agree upon the challenge of "war for talents" (I6, L. 42-43; I8, L. 300-303) where especially software engineers are rare, and on the car of the future that is seen as way more digital than today (I6, L. 223-228, I7, L. 3). Further disruptive factors pointed out are e-mobility (I7, L. 4), individualization of customer solutions (I6, L. 45-49), change in the sales model towards direct sales (I7, L. 9) as well as maintaining a stable supply chain (I6, L. 134-138) even in face of unexpected events (I6, L. 100).

Reactions generally are expanding the customer segments served (I6, L. 22-26), considering local differences more strongly and innovating more broadly (I7, L. 18-20, 22-23).

**Appendix 8: Disruptive factors Market Experts**

Interviewee 8 sees that disruptive drivers come from the customer base on two factors, namely ways of ownership as well as interior (I8, L. 3-5). With the art of ownership, he points to the changed need of customers that do not want to own cars anymore but instead seek access to them (I8, L. 5-9) or to selected technical solutions within them whenever they need them (I8, L. 18-24). What will matter more than hardware in the future are thus the features available to the customer and entertainment inside the car (I8, L. 30-31; I9, L. 87-91).

The next disruptive driver that the experts agree upon is the emergence of EV (I8, L. 49; I9, L. 53) and the respective need for charging infrastructure (I8, L. 50-53). Expert 9 points out that the development of EV is responsible for a giant loss, however states that due to their brand reputation, the luxury incumbents have an advantage as they can charge higher prices for their products (I9, L. 52-55). Expert 8 points to the same relevance of brand reputation with regards to monetization of features inside the car (I8, L. 40-43) and the general ability of luxury incumbents to leverage their brand reputation for higher profits (I9, L. 82-85).

Furthermore, both experts point to the increased threat of China that in some cases uses espionage to gain a competitive edge (I8, L. 81-83) and generally uses regulatory levers to support production of EV in China by making it more attractive for European producers (I8, L. 78-81; I9, L. 68-71).

Additional disruptive factors pointed out by the experts are fragility of supply chains, which makes supply chain resilience important (I8, L. 56-58) and the changes in sales structures of cars from B2B to B2C (I8, L. 153). Additionally, it is pointed out that due to the size of most incumbents in Germany, their structures are rigid and hard to change quickly (I8, L. 149-150). This is not at last due to the mindset of middle managers who are not incentivized enough to change common business practice as they are focusing too much on their retirement (I8, L. 171-174).

**Appendix 9: Cross-Case Synthesis of Disruptive factors**

The most consistently identified disruptive factor across all companies is e-mobility, primarily due to its transformational impact on the industry. This factor is universally recognized by experts within the consulting field and across various companies. This highlighting its foundational role in the research conducted and proofs an appropriate selection of companies involved. For instance, e-mobility is acknowledged as a disruptive force by experts from Company B (I4, L. 5-6; I5, L. 2), from Company A as a disruptive "blockbuster" starting mainly with Tesla (L. 16-18; I2, L. 4), and also noted in Company C (I7, L. 4).

Additionally, experts agree that China represents a major disruptive influence due to its substantial market share in high-price models (I6, L. 13-14), its regulatory environment increasingly differentiating from Europe (I7, L. 354-357), and strong competition from over 130 competitors (I1, L. 29-30). These conditions place significant pressure on German manufacturers to adapt in terms of product offerings and compliance with local regulations and market conditions.

Changing automotive designs and sales structures are also central themes. The shift towards localized market demands requires companies to tailor solutions more closely to specific geographic needs which complicates efforts to leverage global synergies (I2, l. 630-635). The uncertainty surrounding the future design of cars, particularly with the integration of generative AI and its implications for software development, interior and autonomous driving, is also highlighted by the experts (I5, L. 37-40; I8, L. 30-31; I9, L. 87-91). Additionally, the evolution towards direct sales models is noted (I7, L. 9; I8, L. 153). To address these dynamic and varied customer needs effectively, a strong local presence and ongoing research are critical. This approach helps companies quickly sense and respond to changing customer preferences, which vary significantly across different geographies (I3, L. 10-11; I4, L. 93-96; I5, L. 27-30).

The "war for talents," especially for software developers, is a widespread challenge across all cases. This issue is critical as the automotive industry becomes increasingly digitalized, necessitating a skilled workforce capable of driving innovation in software and digital solutions (I2, L. 20-24; I6, L. 42-43; I8, L. 300-303; I6, L. 223-228, I7, L. 3)