Master Thesis

by Viola Müller & Franziska Schneider

Creating Competitive Advantage Through New Technologies

A 21st Century Approach for the Luxury Market

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Executive Summary

Today's luxury markets are in a turmoil. They experience heightened competition, an increased market dynamism and try to find back to their old strength of being innovative in an environment characterized by digitalization and technological change. In this environment, existing approaches to achieve competitive advantage are more and more insufficient. Thus, luxury firms have a clear need to find new ways to successfully (re)create and defend their competitive position. New technologies promise great value and an opportunity to recreate luxury firms´ innovativeness in a modern way. Therefore, this paper aims to explore and explain how international luxury firms can create a competitive advantage through new technologies. To investigate the research problem, ten semi-structured interviews with representatives from the luxury market were conducted. The findings of the study indicate that luxury firms can achieve a competitive advantage by crafting a unique strategy, which aims to create customer values through new technologies. More specifically, these values are convenience, customization, hedonism, reassurance and sense of belonging. Furthermore, it was found that specific factors from the internal and external environment have to be taken into consideration. Finally, three technology attitudes could be identified, which can guide firms their way from integrating new technologies into their strategy to achieving competitive advantage. These findings were condensed into a explanatory framework. Hence, this thesis contributes to the development and extension of existing approaches for achieving competitive advantage by placing them in the context of the luxury market and taking into consideration new technologies as core of the competitive strategy. Furthermore, it gives international luxury firms guidance on how they can make use of new technologies to create a competitive advantage.

Keywords: competitive advantage, luxury, new technologies, artificial intelligence, virtual reality, augmented reality, customer value

1 Introduction

As Nobel Laureate Sir Angus Deaton said: "Globalization and technical change are the roots of our future prosperity. Even if we could make them go away, it would be insane to do so" (Riecke, 2017).

1.1 Motivation and Problem Formulation

The development and spread of technologies have been promoted by globalization, while at the same time also technologies have driven and intensified the phenomenon of globalization. Technological change has made the global economy more advanced, integrated and thereby also more interdependent, which increased the degree of uncertainty dramatically, but also enabled new opportunities for businesses (Mills & Blossfeld, 2007). On the one hand, this is because access and affordability of technologies have been eased, and on the other hand companies have embraced the potential benefits technology can bring for them. In best case in the form of a competitive differentiator.

However, the inability to adapt to current developments within the dynamic and competitive environment can also become an enormous threat for firms as it might allow competitors and new entrants to outperform them. Companies have become more aware of this issue though and started to acknowledge that their future success depends on the ability to adjust and continuously innovate. Thus, a number of firms started focusing on increased specialization and the enhancement of the intensity of technology-driven R&D and innovation. This development also encouraged and enabled many new entrants and additional competitors to compete with incumbents on the basis of innovation and opportunities opened up by technologies (Erixon, 2018). This caused big shifts in many markets and transformations regarding firm's power, overall stability and market share (Wooldridge, 2016). In turn the intensity of competition further increased in a large number of industries such as media, travel and transport (Stonehouse & Snowdon, 2007), with which a new hyper-competitive situation came along, making it even harder to obtain a superior position in the market. Over time, it can be observed that even if such a superior competitive position is achieved by a firm, competitive advantage has become significantly harder to sustain. Additionally, the world is not only changing but also does so faster, and if a company cannot continuously reinvent and adjust itself as the world changes, it will be rendered irrelevant very quickly (Hamel, 2001).

This phenomenon is not limited to high-technology industries but is seen across a broad range of industries and markets (Wiggins & Ruefli, 2005) like music (Spotify), hotel (Airbnb) or transport (Uber) (Sampere, 2016). It also affects the luxury market, which is typically associated with stability and strong, lasting

competitive positions. Increased competition, digitization and technological change also make it more difficult for luxury companies to differentiate themselves and gain a competitive advantage in their market. Like in other markets, firms are required to adapt to the rapidly changing market environment, focus on customer demands and acknowledge the importance of innovation. Hence, global luxury firms should leverage the opportunity of emerging technological and consumer demands to stay competitive in the new digital and technology-driven age (Deloitte, 2015).

Subsequently, if availing oneself of the technological developments, a promising way to overcome these issues of fierce competition can be by implementing so called new technologies. In line with this, former Cisco CEO John Chambers predicts that "40% of all businesses will die in the next 10 years" if they do not manage to embrace the significance and weight of new technologies (Bort, 2015). Despite their alleged great potential, most opportunities of new technologies have not been explored by many firms yet. Also, not by global luxury firms. Hence, it seems to be time to take the huge chance to utilize new technology to escape and surpass competition.

Summarized, technological change has led to great opportunities for many firms. This fueled competition, also in markets commonly known as more stable like the luxury market, leading to a hyper-competitive market situation. In turn, firms are forced to not fear competition anymore and take risks to attack. New technologies are seen as an opportunity to do so and hold much potential to escape this problematic competitive situation and hence also portray a great opportunity for international luxury firms. Thus, to find out how new technologies can prove valuable in the exceptional competitive situation of today, this thesis will investigate the following research question:

How can international luxury companies create a competitive advantage through new technologies?

To first of all create the necessary understanding of the specific context of this thesis, the following section will start to portray the general situation of international luxury companies and what the implementation of new technologies would mean for them.

1.2 Placing New Technologies in The Context of International Luxury Companies

Occurrences like the global economic crisis did not affect the luxury market much and neither lead to a decrease of growth. Instead, the market experiences growth ever since. In 1995, the luxury segment counted a total of 90 million consumers globally. At the end of 2013 the number grew to 330 million,

which is an increase of more than 350% (Global Business School Barcelona, 2015). According to D'Arpizio, Levato, Prete, Del Fabbro, & de Montgolfier, (2019), the luxury market depicted a growth of 5% also in 2018.

An interesting fact to notice is that many known and relevant luxury firms decided to not solely focus their business on specific regions, which could have relaxed competition, but to operate internationally - forcing them to potentially compete with the broadest possible spectrum of other market players. Thus, the question arises how this influences their day-to-day-business and decision-making regarding new technologies? First, it is important to acknowledge that luxury firms require a global presence because their customer base is scattered around the world (Apple, Southward, & Bickle, 2018). Hence, to have a significantly big market that also allows further growth, luxury brands have to establish a global presence.

Furthermore, when having a closer look at the distribution of luxury consumers today, an interesting change is perceivable. Most of them are not living in developed countries, such as Germany, France or Italy anymore, where the concept of luxury had its beginning and a huge part of luxury companies were founded (Pinkhasov & Nair, 2014a). Instead, almost half of the total number of luxury consumers today are from emerging markets such as China. Thus, to keep up growth, luxury firms are trying to also serve these regions, where the demand for luxury is still increasing (Choi, Chai, Nam, & Yang, 2014). Additionally, the importance of operating internationally is forced by the fact that European markets are significantly smaller and so is their respective target audience. To anyways keep up growth, there is a clear need to explore and enter new, non-European markets. Nonetheless, the European markets still play an important role, as these markets are still the ones that set up the rules and standards and where almost 75% of luxury goods are produced (Apple et al., 2018; Global Business School Barcelona, 2015). As the importance of competing globally in the luxury market should become clear from the above, it is also obvious that luxury firms have to pursue an international competitive advantage when implementing new technologies. Subsequently, aiming to create a competitive advantage through new technologies has to be part of the overall strategy of a firm. At the same time, this situation of having globally spread customers makes it important for luxury firms to also take into consideration regional and cultural differences (D'Arpizio et al., 2019).

Next, the emergence of e-commerce has made it more important for international luxury firms to understand that the channels on which their consumers purchase or search for information changed. Statistics

underpin this by registering a growth of 22% as of 2018 in online luxury shopping and expectations that nearly half of all purchases will be made digitally (D'Arpizio et al., 2019). To be able to still successfully cater their customers, luxury firms should adjust and align all their actions to this shift in distribution channels and customer focus. Obviously, also such regarding new technologies. Moreover, according to Deloitte (2015), this trend further increases global luxury firms´ customer base and makes it even more diverse, making customer demands increasingly harder to predict.

It can thus be seen that when operating internationally, luxury firms have to take into consideration certain critical aspects when planning to implement new technologies. In particular, they need to clearly understand the different customer demands within the specific target markets and adapt the decision regarding which technology to implement and how to do so to serve these demands. Pertaining to that, it is important to note that neglecting cultural differences can lead to huge failures. Hence, cultural, ethical, religious and similar considerations as well as such about the technological infrastructure and ecosystem, are factors to be considered. A great example here are Chinese luxury customers as China is much more forward concerning new technologies. Customers are thus not much impressed by the mere implementation of recent technologies like VR goggles, which would e.g. still spark fascination by most German customers. Therefore, firms need to find a specific and appropriate strategy when implementing new technologies to attract their customers, keep them interested and fulfill their needs (Bu, Durand-Servoint, Kim, & Yamakawa, 2017).

1.3 Delimitation of the Thesis Topic

The following section will describe the three important boundaries this paper sets for its scope.

Firstly, as already indicated, this study will put the luxury market in the focus of its research. This is because first of all, the luxury market is a market with huge potential because of its size (Bain & Company;, 2018; Bellaiche, Mei-Pochtler, & Hanisch, 2010; Deloitte, 2018). Despite the fact that it is still growing, it could be noticed though that growth rates started to slow down recently (Deloitte, 2018; Pinkhasov & Nair, 2014a). Combining this fact with the increasing pace of changing customer demands, luxury firms struggle to preserve their established competitive position. Therefore, the researchers of this paper find it worth to explore new approaches that will allow to create strong competitive positions in this exemplary dynamic market. Another important factor is the fact that luxury firms have actually been known for continuously being at the forefront of innovation (Giacosa, 2014, 2018) as well as having the budgets and

investments for respective innovation and R&D activities (Giacosa, 2016; Murphy & Raulik-Murphy, 2015). In consequence, they should be predestined to explore new areas to escape their currently difficult competitive situation.

Secondly, the researchers of this thesis choose to investigate international luxury companies. This is because respective companies target the very limited segment of luxury in each of the markets they operate in and hence, if they want to thrive and grow, they have to be present and track down customers globally. In this international environment the great number of competitors brings the challenge of staying ahead of competition to another level. However, one potential way to do so is by making use of new technologies.

This is why thirdly, new technologies will be looked at as a new means for luxury firms to achieve a competitive advantage. More specifically, the research will use particular technologies, namely virtual and augmented reality (hereafter VR and AR) as well as artificial intelligence (hereafter AI) as exemplary ones, representing the broader concept of new technologies to make it more tangible and explorable. This choice will be further elaborated in section 2.2, but has been mainly made, because these new technologies seem to have the most potential in the luxury market. Moreover, these technologies can be seen as having reached the point in time, where companies should consider their implementation to be able to reap future benefits of them (compare Gartner Inc., 2018).

Hence, to investigate the posed research question this paper will be structured as follows: First, literature on the most important concepts for this work, namely luxury, new technologies as well as competitive advantage will be reviewed. Then, after a brief summary of the theoretical insights that will inform this study, the methodology of this work will be explained. Hereinafter, the analysis conducted on the basis of the methodological approach will be described and in a next step discussed in the context of prior research. Finally, a conclusion will be drawn, implications for research and practice will be presented and the limitations of this study as well as suggestions for further research will be outlined.

2 Literature Review

In the following sections, literature on the luxury market and the concept of luxury will be reviewed first to create a thorough understanding of the market specifics and particularities regarding decisions on new technologies that have to be taken into consideration. Subsequently, relevant research on new

technologies and respective strategic considerations will be looked into to understand the starting point of organizations aiming to obtain competitive advantage through new technologies. The following parts will then elaborate on the current state of research regarding competitive advantage and associated approaches suggesting how to achieve it.

2.1 The Luxury Market and the Concept of Luxury

As indicated in the introduction, the luxury market is of particular interest due to its size, strong financial resources, dynamism and thought leadership. For this reason, the next subsections of the literature review will focus on describing the luxury market in more detail and will present the current empirical state on the concept of luxury to be able to understand the basic conditions and characteristics that have to be taken into consideration, when planning to implement new technologies to create a competitive advantage in this market.

2.1.1 Relevance and State of the Luxury Market

Depending on the delimitation of the market, i.e. the included categories of goods, the luxury market size is said to amount to values ranging from 220 billion up to one trillion euros (Bain & Company;, 2018; Bellaiche et al., 2010; Deloitte, 2018). However, after years of incredible growth, abating growth rates (should) alert luxury marketers to not rest on their laurels (Deloitte, 2018; Pinkhasov & Nair, 2014a). Next to this, the market also faces fierce, global competition, high levels of volatility and a change in customer demands caused by the generational shift towards buyers from younger generations such as more millennial buyers. Moreover, retail stores that are important to many luxury brands, seem to lose their relevance due to the continuous advance of e-commerce. This is putting up the question how luxury firms can keep their close, personal anchoring with their customers on local levels (Caniato, Moretto, & Caridi, 2013; Giacosa, 2016; Pinkhasov & Nair, 2014a; Simpson, 2018).

In other respects, the luxury market until now has been well known for always being at the forefront of innovation to convince and attract their customers over and over again with i.a. new materials, unanticipated marketing techniques or the breaking up of social conventions. From this, they generally derived significant strength and in some cases even competitive advantage (Foray, 2010; Giacosa, 2014, 2018; Pinkhasov & Nair, 2014b). Conforming to the importance of innovation, also budgets and respective investments for innovation and R&D activities are usually high among the generally resource-wealthy luxury

firms (Giacosa, 2016; Murphy & Raulik-Murphy, 2015). But also in this regard, many luxury brands are struggling recently as they have been hesitant and sometimes even resistant to embrace the opportunities to create innovation through digitalization and new technologies. This is mainly because of an ignorance of how to successfully position luxury goods with regards to new technologies and the fear of blurring the boundaries of exclusivity with technologies that are accessible by everybody. Moreover, the pressure to seamlessly align innovation with luxury firms´ heritage poses an additional challenge (Choi et al., 2014; Giacosa, 2014, 2016, 2018; Morley & McMahon, 2011).

However, exactly this inability to adapt to and go with current developments within a very dynamic and competitive environment can be an enormous threat for luxury firms (Chandon, Laurent, & Valette-Florence, 2016; Pinkhasov & Nair, 2014b; Tauriello, Abbafati, & Festa, 2017). Recently, firms have become more aware of this issue and started to acknowledge that their future success depends on the ability to connect their heritage with new and innovative approach (Simpson, 2018; Tauriello et al., 2017).

2.1.2 The Concept of Luxury

However, to understand the described dynamics of the luxury market, it is necessary to fully grasp the concept of luxury. Many researchers have started to do so by distinguishing the so called non-affordable or inaccessible luxury, only available to a very limited number of people, from the more widely distributed affordable one. This is especially important since the latter has become significantly more widespread in recent years (Chandon et al., 2016; Csaba, 2008; Giacosa, 2016, 2018). Both categories will be considered by this paper. Despite this helpful differentiation, the variety of definitions is abundant and researchers could not agree upon one so far (Heine, 2012; Kapferer & Bastien, 2009). Nonetheless, there is agreement on some of the key elements of luxury goods, which are (see e.g. Choi et al., 2014; Csaba, 2008; Giacosa, 2014; Kapferer & Bastien, 2009; Morley & McMahon, 2011; Riley & Szivas, 2015):

- high quality and price
- exclusivity and rarity
- superfluousness
- brand heritage, history and traditions
- strong brand equity
- creativeness
- desirability

Taken together and as expressed by Bellaiche et al (2010) luxury can be defined as something that exhibits a certain superiority to the ordinary. In line with this understanding of luxury, Wiedmann et al. (2009) and Tynan et al. (2010) have described that luxury goods not only carry economic and utilitarian value like most goods, but additionally also individual and social value. Here, the individual value of luxury goods described aspects like self-indulgence, identification or other hedonic effects. The social or symbolic value expresses that luxury goods are often used to express social stratification or membership to a certain group. Hence, these two values play a very important role in the sale and differentiation of luxury goods, which has even grown over the last years. As also pointed out by many researchers, it thus becomes clear that a key task for luxury firms is to satisfy the emotional and psychological needs of their customers (Chandon et al., 2016; Csaba, 2008; Giacosa, 2014, 2016; Morley & McMahon, 2011).

Some researchers went even further and emphasized that the true value of luxury goods essentially is only created within the customer. They argue that despite some agreement on what constitutes luxury, it is a relative and individual concept, which carries a different meaning for different people depending on their preferences and social position, and that it can even change over time. According to this view, the special and quintessential value of luxury only emerges through the perception and valorization of each individual customer (Bellaiche et al., 2010; Csaba, 2008; Heine, 2012; Pinkhasov & Nair, 2014a; Som & Blanckaert, 2015). This, as stated by Jung Choo et al. (2012) and Shah et al. (2006), inherently fuses the value creation process for luxury goods with its consumers and forces luxury firms to take a customer centric approach to their business (Bellaiche et al., 2010; Hennigs, Wiedmann, & Klarmann, 2012). The importance and necessity of a customer centric approach, in which all decisions revolve around creating value for the customer, has moreover been recognized also beyond the field of luxury (Shah et al., 2006; Woodruff, 1997). Furthermore, as explained by Jung Choo et al. (2012) and Parasuraman (1997), an approach focused on creation of customer value can even serve as a meaningful source of superior performance and competitive advantage.

Nonetheless, the question as to how this customer value can be created still remains open. Since the consumption and thus value creation of most luxury goods is inherently linked with sensory pleasures and personal dimensions of the customer, value creation substantially happens through the experience created between the customer and the luxury good or brand (Chandon et al., 2016; Choi et al., 2014; Hawley, 2018). Again, going along with the increasing importance of the individual and social value of luxury

goods, this experience factor becomes more and more important compared to the more tangible aspects of the consumption of luxury goods (Bellaiche et al., 2010; Morley & McMahon, 2011; Simpson, 2018). Especially the consumers of affordable luxury goods, belonging mostly to the growing market of new luxury goods, have a strong preference for exceptional experiences (Csaba, 2008).

As can be seen with firms like Burberry or Louis Vuitton, some luxury brands already came to the realization that technologies and especially new ones can be used to create new and enhance existing experiences their customers have with their brands and products (Pinkhasov & Nair, 2014b). This points towards that luxury brands can make use of new technologies to overcome their current challenges described above and to create value for their customers through new or enhanced experiences. The value of technologies for luxury firms in improving different aspects at the interface with their customers, was also recognized by i.a. Choi et al. (2014) and Simpson (2018). While the former highlighted opportunities in improving engagement and communication with their customers through new technologies, the latter discussed such for personalization and integration with luxury firms´ heritage.

2.2 The Relevance of New Technologies

The following subsections will guide the reader through a brief description of the current state of literature regarding new technologies to create an understanding of how these could be of value for the luxury market. Since this work will put a focus on the new technologies VR and AR as well as AI, these will be outlined as well.

2.2.1 Added Value Through New Technologies

Due to the unique market characteristics of the luxury market, there are specific requirements to the way new technologies can be implemented and add value. In general, a technology can be defined as the "application of scientific knowledge for practical purposes, especially in industry" (Oxford University Press, 2019). Hence, although the specifics of the term new technologies are still somewhat debated, they can be understood in this work as technologies, which create new value to a firm's offerings for their customers, entail some degree of uncertainty and ambiguity and potentially have a profound impact for certain markets or society in general. Next to this, new technologies are often associated with a certain degree of novelty, innovation, and a still continuing momentum of significant growth (Kauppi & Nyman, 2017; Litvinski, 2018; Rotolo, Hicks, & Martin, 2015).

The value of making use of such new technologies is pointed out in various journals in the literature, especially in such with a focus on retailing. Pantano (2010) found that new technologies, more specifically AR and VR, can be utilized to build up and enhance customer experience. Moreover, it is conceivable to aim for improving both the shopping experience and in-store service. Pantano and Naccarato (2010) described that new technologies in the fashion industry can lead to more purchases through building a new experience in store, which is linked to excitement and fun, leading to more satisfaction. In total, it is described that the implementation of new technologies is mostly accepted by now. One example of a new technology given in the paper is the smart mirror, which provides the illusion of wearing a certain piece of clothing. This technology has on the one hand the clear advantage of providing efficiency for the customer due to not having to change as well as giving recommendations through the technology itself acting as a recommendation system, and on the other hand provides the store with information about the customer (E Pantano & Naccarato, 2010). Moreover, another paper came to the conclusion that the implementation of new technologies can help offering customers more tailored and customized services, again leading to higher customer satisfaction (N. Bharadwaj, Naylor, & Ter Hofstede, 2009). In a more recent journal from Grewal, Roggeveen and Nordfält (2017), the researchers as well stress the importance of the introduction of new technologies and identified different key areas how these add value as well as how retailing can benefit from them. Through technologies the customers receive more personalized information about the product, which in turn makes the purchase decision better founded and also improves the whole purchase experience. Due to an oversupply of goods in the market, it is substantial to stand out. One suggested way to do so is again by building greater customer experience. Future retailing will be based on blurring barriers between the online and offline world and knowing exactly how new technologies will have an impact on both.

As new technologies have to be understood as dynamic concept, i.e. the specific technologies considered new, are changing constantly (Kauppi & Nyman, 2017), this work opted to use the current new technologies XR and AI as exemplary new technologies, to make the concept more tangible. The choice has been made for these two technologies as their market value is prospected to increase drastically and exceptionally in the very near future, thus promising unique value for companies (BIS research, 2018; Statista, 2018). Moreover, Grewal et al. (2017) stated that promised technology such as AI as well as VR and AR (XR) will be finally implemented in the upcoming years, making them also relevant from temporal

perspective. The following paragraphs will thus take a closer look at these technologies and the particular value they can provide.

2.2.2 Exemplary New Technologies

Understanding XR

According to Paradiso and Landay (2009, p. 14) the term of *cross-reality* (XR) is "the ubiquitous mixed reality environment that comes from the fusion of [...] two technologies". These two technologies are on the one hand the "ubiquitously networked sensor/actuator infrastructure" and on the other hand "shared online virtual worlds" (Paradiso & Landay, 2009, p. 14). In the further course of this work the term XR will be understood as cross-reality and whenever mentioned, refers to VR as well as AR.

The term VR is understood as a "computer simulated environment that gives the user the experience of being present in that environment" (Desai, Desai, Ajmera, & Mehta, 2014, p. 175). The environment the user perceives is only virtual, in which he is separated from the real environment and only realizes computer-generated content. Implementation of VR can be done through using tools like goggles, headsets or helmets. VR absorbs the user into a whole new virtual 3D environment without any connection to the real world. In comparison, AR is a reality in which the user perceives a combination of the real as well as virtual world, where the virtual parts overlay the real environment. According to Azuma (1997, p. 355) *AR is a* "variation of [...] virtual reality"*.* When the technology is working optimal, the user would perceive the virtual and real objects as existing in the same world. AR can be considered as a technology that integrates digital information into the real world. It can be used real-time as well as non-real-time and usually comes in the form of an application, which is innovative and includes three-dimensional databases (Kealy & Scott-Young, 2006).

Although XR technologies have been around for decades, the spread of technological innovations has only recently had a bigger impact on the marketing world of companies in the luxury market. This is due to the fact that luxury customers that once simply accepted XR as new cool thing in the market, now also started to develop more concrete and elaborate expectations and demands towards the technology and its implementers. So, the fact that people are getting more and more in touch with XR technologies is leading them to slowly build up expectations towards it. Also, Deloitte (2017) refers to this increasingly ubiquitous access in their Tech Trend Report from 2018 and compares that what VR and AR will be tomorrow is what

smartphones are already today. Considering commercial aspects, XR technologies also affect how brands of luxury goods are perceived and consumed as well as how the customer can engage with the brand.

Although there is also a huge trend about how XR can be utilized in the business to business environment, this work will focus on the business to consumer (B2C) environment. This is due to the reason that luxury can be mostly understood as B2C phenomenon. Moreover, within the luxury market, new technologies are mostly relevant on the customer interface as this is where luxury firms aim and need to create value (see section 2.1). Scanning through the literature of XR and reading the latest technology trends, it becomes obvious that at the moment the tendency regarding new realities places a bit more focus on AR. This is due to the reason that AR combines the virtual with the real environment, which makes it interesting for marketers, who are selling actual goods in this real world and thus want to stay close to it. Also, by allowing to blend elements of two instead of one world, it also leaves room for more opportunities to excite customers. While VR can make the user feel isolated and like an observer, AR includes the benefit of letting the user feel interactive, connected and as being part of something (Augment, 2016). Hence, it is essential that marketers understand the importance of AR and in order to ensure a terrific experience, this technology has to be realized properly and at the right momentum (Augment, 2016). However, just because AR technologies seem to open up more opportunities through the fusion of two worlds, VR technologies are also important to consider when implementing new technologies and therefore it is crucial to define properly both, how and where to use which of these new technologies. Moreover, it can be said that the best approach to a successful implementation is characterized by the definition of an appropriate strategy with the spotlight on adding value to the customer as well as fulfilling a specific purpose for the user (Augment, 2016).

Understanding Artificial Intelligence

The second big technology with significant potential for the business environment and which organizations are already investigating, is AI. The term AI was first embossed by John McCarthy in 1956 (Costantino & Coletti, 2008). To better understand the term of AI, Wirth (2018) breaks it down into artificial and intelligence. The former part is quite unambiguous and refers to that something is happening through machines and not human beings (Wirth, 2018). On the contrary, the intelligence part is much more complex. The author refers to the well-known paper from Turing (1950) and quotes the question "Can machines think?" (Wirth, 2018, p. 436). Accordingly, AI must mean that a machine is able to think. This is of course

a prediction that is indubitable not per se possible to answer. Therefore, this work needs a suitable definition to what is understood as AI. The appropriate definition also depends on the kind of business purpose AI is deployed for, as for example some companies mainly use AI and specifically machine learning (ML) to improve its customer experience, which constitutes the connection to the customer interface. Therefore, this work wants to highlight the more customer-focused definition of AI from Amazon as well: "the field of computer science dedicated to solving cognitive problems commonly associated with human intelligence, such as learning, problem solving, and pattern recognition" (Marr, 2018).

Companies, which see the potential of AI and are using this technology, will instantaneously notice that there are huge benefits to expect. On the one hand, firms will gain better understanding of their customers and on the other hand can better forecast their behavior, desires and needs. Moreover, AI also provides different values for the companies which utilize it, whereas one of the most expected as well as achieved value is a growth of insights through analyzing huge amounts of data, and being able to, for example produce next-generation products. But of course, these values can only be created if firms have the required skills (MIT Technology Review & Google Cloud, 2017). AI systems can also offer value through processing a large amount of customer data that can be used to offer customers' personalized information by e.g. recommendation systems. This in turn requires a deep understanding of the customer and their respective individual demands. Those analytics can be described as being agile, flexible as well as portraying ease of use (Attaran & Deb, 2018). According to Attaran and Deb (2018), from the customer point of view it is desirable that these technologies are easy to use and that there is no need for further technical understanding. As shown by the above-described, new technologies provide huge potential to create value for business. However, this can only be achieved by embedding these into the strategy of the firm.

2.2.3 Strategic Alignment and Resulting Strategy Types

With the constant emergence of new technologies, the question of how to implement these in the organization's business strategy is more present than ever. The research is in line with that by stating that it is of crucial importance to define an appropriate technology strategy, which is in accordance with the business strategy (Chan & Reich, 2007). Thus, the key to success is the term of alignment. Chan, Sabherwal and Thatcher (2006) acknowledged that the alignment of one's business strategy with one's IT strategy will result in superior performance compared to organizations, which do not follow this approach. There are various different ways how the literature conceptualizes alignment, as for example Reynolds and

Yetton (2015) developed a model that portrays ways to create a sustainable alignment of the business and IT strategy. Nonetheless, there is not a commonly agreed upon definition that would hence be suitable for the use of this work. Therefore, the researchers found the best fit in the convergence of two definitions. (Reich & Benbasat (1996, p. 58) understand the term alignment as the extent "to which the mission, objectives, and plans contained in the business strategy are shared and supported by the IT strategy" (Chan & Reich, 2007, p. 300). Another complementation to this definition is as follows: "Alignment is the business and IT working together to reach a common goal" (Chan & Reich, 2007, p. 300). Considering both definitions, the researchers of this work will understand strategic alignment as an approach where both, the business strategy and IT strategy, follow a mission, objectives and plans that are coordinated with each other so that the two strategies can support each other and work towards a common goal.

Alignment is an important construct in this work due to the reason that it is a way to measure if an organization's strategies, business as well as technology, are well defined and in line with each other. Here, the business strategy is concerned with the goal of achieving a competitive advantage (Slater & Olson, 2001). As the aim of this thesis is to acknowledge that an organization can gain a competitive advantage by implementing new technologies, it is of crucial importance that both strategies are aligned to each other.

One promising approach to do so is by utilizing the Miles and Snow strategy typology (Miles, Snow, Meyer, & Coleman, 1978). The Miles and Snow strategy typology is a framework claiming that organizations' strategy result from their decisions on three different issues, namely the entrepreneurial, the administrative and the technical problem (Slater & Olson, 2001). Whereas the former is concerned with how a firm should approach its product-market domain, the latter two formulate structures and processes to do so successfully. In order to handle the depicted problems, the framework states most firms choose one of three approaches which are captured in the different technology strategy types Prospectors, Defenders and Analyzers. Each of these types follows a unique strategy with a respective composition of technology (Miles et al., 1978). According to Miles et al. (1978) there is also a fourth type, which is called Reactor and which is is seen as a failure to follow any strategy consistently.

The first type, namely the Prospectors are known to be keen to discover novel product as well as market opportunities and how to take advantage of them (Slater, Olson, & Finnegan, 2011). This type's most important aim is to manage its high reputation as an innovator, which is most likely even more valued

than high profitability. There is no scope of technologies within the organization, but rather general openness towards any new and potentially useful technology. This is why a Prospector is almost always able to respond to rapid market changes. However, these multiple technologies can prevent the company from total efficiency. The most important instrument to gain a competitive advantage here is change. To drive the desired innovation and change this type thus invests in individuals, who build a top management team and include marketing as well as R&D experts. A potential risk lies in underutilizing human resources, low profitability and overextension of resources (Miles et al., 1978).

Defenders on the contrary are more cautious and protective, aiming to expand the share in their existing markets and by this stabilizing the product range and their customer base (Slater et al., 2011). Oftentimes, the products they are producing are limited and in a special niche market, which makes it for competitors, if once well established, difficult to penetrate. To do so, they act aggressively with for example competitive pricing or focusing on high quality products. Developing only few core technologies tend to make the products of Defenders more efficient, but on the contrary by doing so, they are likely to ignore developments and trends from the rapidly changing environment. As efficiency, which also is the key for stability, is the most important characteristic for that type, they are more able to adapt to stable than unstable industries. Hence, a huge risk occurring here is being ineffective in more dynamic environments, because Defenders are unable to respond to market changes and have almost no capacity to use new opportunities (Miles et al., 1978).

Trying to find a balance between the two previous described types is the main strategy of the Analyzer. More detailed, Analyzers also try to get into novel product-market domains but at the same time try to focus on their stable product and customer base (Slater et al., 2011). Therefore, the key for Analyzers is to minimize risk while maximizing profit, although it is difficult to manage this strategy in a rapidly changing environment. Moreover, they act as an imitator but only to products, which are already proven successful. To not miss the market momentum, this makes it crucial for the Analyzer to be able to respond quickly. Their trade-off between following market demand and technological flexibility forces this type to occupy the characteristic of being stable and flexible at the same time, which might stop the organization from fully reaching out its potential either way. Hence, the most important risk to consider is being both inefficient and ineffective, if not being able to handle the above described balance (Miles et al., 1978).

Lastly, the **Reactor**, as the name already indicates, simply reacts to the market situation without clear focus either on the entrepreneurial and administrative or technical problem (Slater et al., 2011). Compared to the other three strategies of being proactive, Reactors do not stand behind one specific attitude and fail to create a dedicated strategy. Therefore, they will end up in a situation of organizational instability caused the inability to respond to events and decisions, uncertainty or an overall weak performance (Miles et al., 1978). Miles et al. (1978) named three of the most common mistakes organizations make, which cause them to end up as a Reactor. First of all, it is important that the top management team formulates as well as communicates a clear strategy for the organization. In line with that is the second reason, that the firm does not alter the structure and its processes to in turn define a proper strategy. Lastly, one of the most common failures happen, when not responding to the changing environment and staying with the obsolete strategy. If a company finds itself in the position of the Reactor, it should not stay there and hence must develop a strategy according to one of the types Prospector, Defender or Analyzer (Miles et al., 1978).

Finally, an important issue for the business and technology alignment is the question of how new technologies are supposed to enter and are developed in the firm. In general, firms can choose from a continuum of full outsourcing to full internalization of efforts. As emphasized by Lee, Miranda and Kim (2004) firms should then, independent of their specific choice, always seek to align this resulting outsourcing strategy with their overall business and technology strategy.

2.3 Competitive Advantage

In this part, the concept of competitive advantage will be reviewed. Furthermore, it will be considered how new technologies can be used to create a competitive advantage.

2.3.1 How to Gain a Competitive Advantage

Competitive advantage is a vital element in the field of strategic management and plays an important role regarding how organizations differ in their performance. One of the first scholars, who defined competitive advantage was Ansoff (1965). He stated that a superior competitive position can be reached by separated, specific characteristics. Another academic, who inevitably comes up when researching about competitive advantage is Porter (1985). His perception of achieving a superior performance is that this is only possible through a stronger market position and the capability of the organization to add value for its customers.

One way to do so is by offering lower prices than the competitors or on the contrary presenting better advantages but therefore demanding higher prices. In contrast, Powell (2002) defines a competitive advantage as something different. According to him, it refers more to the antecedents of performance, namely locations, technologies and product features etc. than the performance itself as measured by e.g. market share, profit and share price. More comparable to Porter's as well as Ansoff's first understandings of competitive advantage is the work from Wiggins and Ruefli (2003), who refer to competitive advantage as the capability or resource, which lead to an advantage over its competitors and thus lead to a higher relative performance. During the 1990s, the resources and capabilities of the firm became regarded as the main source of competitive advantage and the basis for forming a strategy (Collins, Montgomery, & Cynthia, 1995; Grant, 2012).

So far, the reviewed research mostly looked into single and rather delimited theories of gaining a competitive advantage, but no efforts have been made to reach a comprehensive one that includes all perspective. Another, more recent paper took an effort to review a number of papers on competitive advantage and hence divided approaches to competitive advantage into different point of views. One view looks at competitive advantage as superior performance as in greater financial performance, economic profit, great profitability or surpassing returns. The second view regards competitive advantage as being grounded in the identification, creation and possession of the right sources such as the right set of resources and capabilities, a dedicated differentiation or cost leadership strategy or technologies (Sigalas & Pekka Economou, 2013).

Moreover, offering value for the customer, appearing as expert in a specific market niche and building a strong brand identity can lead to a superior performance and in turn to a competitive advantage. Additionally and especially because gaining a competitive advantage is a huge challenge, it stresses the importance of it even more and is therefore is one of the key components of a business strategy. Conversely, this means that competitive advantage in this work can be understood as the possession of a clear and unique strategy (Dibb, Simkin, Pride, & Ferrell, 1991; Ghodeswar, 2008).

Next to the general discussion around the concept of competitive advantage, some scholars further differentiate it into sustainable competitive advantage (SCA) and temporary competitive advantage (TCA). Barney (1991) suggests that firms can achieve a TCA with resources that are only valuable and rare (VR) and an SCA if they possess resources that additionally possess the inimitable, and non-substitutable (IN)

attributes. Moreover, it is argued that SCA can be made up of a series of TCA over time (D'Aveni, Dagnino, & Smith, 2010; Wiggins & Ruefli, 2005). Huang, Dyerson, Wu and Harindranath (2015) support that SCA is possible to be achieved through a series of TCA but go even further by stating that a firm should establish a stronger market position in an industry to maximize outcomes of TCA but also aiming to gain a superior position in resources and capabilities for better outcomes of SCA. Hence, the researches see a leverage effect on TCA by their market position, which improves the firm's technological resource and capability position, which in turn can enhance their SCA.

On another note, Allen, Reichheld, Hamilton and Markey (2005) argue that by providing the customer with memorable experiences, it can create competitive advantages for organizations. Firms that are able to fulfill customers desire for experience can create a competitive advantage. This thought is supported by Woodruff (1997), who also stresses the importance of customer experience in the topic of competitive advantage.

There are dozens of theories how to gain a competitive advantage, but none that seems fully suitable and sufficiently comprehensive for this research. Therefore, this work needs to have a framework which encompasses the two sides of the environment, external as well as internal, the consideration of on the one hand resources and capabilities and on the other hand market performance, the differentiation of TCA and SCA and how a series of TCA lead to SCA and the importance of the customer.

Hofer, Charles and Schendel (1978, p. 12) defined in their book that a strategy is "the match an organization makes between its internal resources and skills … and the opportunities and risks created by its external environment". This definition is the basis for finding the appropriate strategy that can lead to a competitive advantage. From this it can be derived for this work that it is important to consider the external as well as the internal perspective, when analyzing the firm's environment to derive a superior competitive strategy. According to Grant (2002) a firm's strategy can generally be divided into a business and corporate strategy, where the latter defines the specific industries and markets to operate in. On the contrary, the business strategy describes how a firm will compete within the specific industry or market. Here, this strategy is concerned with the goal of achieving a competitive advantage. However, it should be noted that the overall goal of both strategies is a superior performance to compete successfully (Grant, 2002).

2.3.2 Gaining Competitive Advantage Through Technology

After elaborately explaining the development of the understanding of the concept competitive advantage in the previous section, it is crucial for this work to additionally provide an understanding of the role technology plays in here.

Starting with a study from Mcfarlan (1984), where case studies of organizations which adopted information technologies (IT) are explored, it could be established that entry barriers, switching costs as well as an adjustment of the competitive environment can be the result of IT adoption. In these early days, Porter and Millar (1985) also refer to the fact that through IT the industry structure can go through a change, potentials for competitive advantage can appear and even new business models can emerge. Argote and Ingram (2000) draw the connection to competitive advantage by saying that knowledge transfer is of crucial importance to achieve a competitive advantage. Adding to this, they introduce technology transfer as another important factor to consider.

Much literature from today are still keen to discuss the topic of IT and how it is linked to competitive advantage. In their recent research, Cao, Duan and Cadden (2019) link information processing capability and competitive advantage. Whereas Cao, Duan and Li (2015, p. 122) understand as information processing capability "the capacity to capture, integrate, and analyze data/information". Another work that focused on the retail industry concludes that "technology alone is not enough" (Powell & Dent-Micallef, 1997, p. 396), but that it is also of crucial important who, i.e. which organization, and what kind of resources, i.e. appropriate skills, are important considerations to be able to gain a competitive advantage through technologies.

Halac (2015) dedicated his research to technology orientation and found out that organizations can foster a sustainable competitive advantage by sharing strong belief in the top management, possessing technological capabilities and aiming to continuously improve learning, questioning all new information as well as changing old routines.

A more recent marketing perspective of technologies with positive effects on competitive advantage is discussed in the work from Cvitanović (2018). It was found out that one key reason why companies fail to gain a competitive advantage is still low enthusiasm to keep up with technological trends as well as low investment into new technologies. According to her, a strong competitive advantage can be achieved by

combining new technologies and marketing know-how and a superior performance of marketing activities can occur through new technologies.

Another approach describes three value disciplines, that drive competitive advantage (Weinman & Euchner, 2015): firstly, customer intimacy is the way to put in-person customer relationships online, as for example Facebook or web pages. The authors here see a whole new opportunity of building sophisticated algorithms that tease out strong inferences about customers from weak signals embedded in massive amounts of data, which they call collective intimacy. The second value refers to operational excellence that turned into informational excellence. By managing and exploiting virtual information physical operations can be extended, complemented or even optimized and hence function as disruptor of almost anything from inventory reduction to supply chain optimization. The last value describes new possibilities in processes, supply chain design and customer satisfaction. Through possibilities in customer co-creation organizations can create a richer and more intimate relationship with their customers.

A more detailed approach of new technology-based firms and strategy is provided by the work of Montiel Campos, del Palacio Aguirre and Solé Parellada (2009), who proposed a technology strategy process. They state that competition is increasingly dynamic, and that innovation and competitive advantage are intrinsically interrelated. Their process consists of four stages, whereas one step includes defining necessary capabilities to exploit the innovation as well as capabilities of possible collaborator-competitors. Another for this thesis relevant stage is the one where decisions are made for the organization's business as well as technology strategy. The latter could be aggressive by which the organization introduces the product first, or more passive, i.e. the organization would act as follower. The key takeaway from this research is, that it is of crucial importance to define an interconnected business and technology strategy, to be able to gain a competitive advantage (Montiel Campos et al., 2009).

In the literature there are many articles about competitive advantage in connection with technology, in which most of it set the focus on IT only instead of also considering e.g. new technologies. Most of them, moreover, describe that it can be gained a competitive advantage through technology but leave unclear how this can be done. Nonetheless, the above discussed literature intends to provide a deeper understanding of how technologies can create a competitive advantage. As evaluated in the above review, there is a clear gap seen in the link between new technologies and the creation of a competitive advantage for firms within the luxury market.

2.4 External Perspectives on Achieving Competitive Advantage

As was described elaborately in the previous section what a competitive advantage is, the following subsection will provide a review of tools and approaches to analyze the external environment of luxury companies and where to find potentials to gain a competitive advantage. Having a look at the external environment has proven to be a useful and successful tool for analyzing the organizations' environment to gain a competitive advantage. Hence, the literature at state provides a variety of meaningful theories. However, in light of the research question of this thesis, the researchers will only provide an overview of the PESTEL framework, the Blue Ocean Strategy as well as Porter's Five Forces, as these three are assumed to add most value to this work.

2.4.1 PESTEL - Macro-Level Factors Affecting Businesses

The PESTEL framework serves to analyze and monitor the macro-environment and hence examines, which external factors affect a business. Applying the PESTEL framework helps to identify appropriate opportunities and challenges and find out, which advantages can be exploited to thus gain a competitive advantage (Issa, Chang, & Issa, 2010).

The business environment of the firm consists of all external influences that impact its decisions and performance. Environmental influences can be classified by source, into political, economic, social, technological, environmental and legal factors – known as the elements of PESTEL analysis (Robinson & Gelder, 2017). These six factors of the macro-environment affect all organizations. More than just understanding the market itself, this framework represents a key tool of strategic management and helps to guide what an organization should do based on its contextual environment as well as it helps to identify the organization's goals and the appropriate strategies to reach those. More elaborately, the six factors can be understood as follows:

Political factors determine the extent to which a government influences the economy and herewith the industry and individual organizations. These factors include changes in laws and regulations that are associated with ideology that a government assesses, and which will affect the business environment to a great extent (Robinson & Gelder, 2017). Normally every company has to follow the country-specific government regulations and laws. However, through the rise of technology, starting with the Internet but as well more recent developments such as cloud computing and with it associated access across national

borders, the firm also has to deal with respective supranational regulations and such from other countries (Issa et al., 2010).

Economic factors influence the performance of an organization on a longer timeframe, affect the cost of operations and the spending patterns of potential customers (Robinson & Gelder, 2017). Globalization and new technologies change the whole interplay among people worldwide, which causes that boundaries blur across borders and activities in regard to economic factors experience a shift (Yüksel, 2012). Examples of economic factors that affect an organization's performance include interest rates, exchange rates, inflation as well as demand and supply among others (Busch, 2016).

Social factors cover the social environment of the market and establish determinants like cultural trends, demographic developments, population analytics etc., which can affect patterns of the customer preferences (Robinson & Gelder, 2017). Moreover, when implementing new technologies social factors such as consumers perception or ethical considerations, especially when working with personal data, need to be taken into account as well (Yüksel, 2012).

Technological factors refer to technological developments that affect the operations of the industry and the market. Examples are IT and automation, R&D and the technological awareness in the market. These factors can reshape market products or even modes of production like service delivery (Robinson & Gelder, 2017). Examples here imply such technologies ranging from internet connectivity, wireless charging, automation as well as certain 3D technologies (Busch, 2016).

Environmental factors are those that influence or are determined by the surrounding environment. Examples are global warming or energy consumption (Robinson & Gelder, 2017). Generally, environmental matters have experienced a shift into more awareness of producing and operating sustainable, although this still stays a huge challenge for organizations. New technologies hold potential solutions to reduce CO2 and provide potentials for expected sustainability challenges and opportunities (Yüksel, 2012).

Legal factors cover such originating from the organization as well as the external environment. Laws can have an effect on the business environment in a specific country, while there are also organizational policies, which the organization assigned for itself. The analysis of this factor takes both sides into account and the strategies should be charted out in light of these legislation, rules and norms (Robinson & Gelder, 2017). As already mentioned within the economic considerations, legal factors play a major role

when implementing new technologies that are highly related with data. Hence, here it also important to note that issues like for example ethics and data privacy need to be taken into account when working with new technology (Yüksel, 2012).

These six factors are interacting rather than being independent. One decision made within one of the factors can always have an effect on another factor, even if these might not be obvious. Moreover, it is suggested to analyze the factors in regard to the future rather the past, as the outcome serves to recognize and react to future opportunities and threats as well as present ones (Robinson & Gelder, 2017).

Although PESTEL is well known and a prevalently applicable framework, it has been criticized as well. First of all, to fully understand one's business six external factors are not enough. Hence by utilizing the PESTEL framework when considering new technologies, one has to be aware of potentially additional factors and the internal perspective as well (Frue, 2018). Another critique deals with the issue that it is more like a description of the macro environment of a company than a copious analysis. Furthermore, it is criticized that the specific factors of the PESTEL model have a qualitative structure, hence no measurement can be made (Yüksel, 2012). Although the analysis is used to predict future occasions, this is done based on the analysis of current factors and thus, a change in any of the six factors will alter the whole analysis, and therefore the framework cannot be considered as very dynamic. For example, a technology, which becomes redundant all of a sudden would force the firm to reanalyze their environment once again (Frue, 2018). An approach which is rather made to handle and especially understand those rapidly changing market environments will be described in the following part.

2.4.2 The Blue Ocean Strategy - Recognizing Unexplored Opportunities

Since the emergence of new technologies and innovations market structures immensely changed the competitive landscape, it is essential to get an understanding of the Blue Ocean Strategy, which aims at identifying the potential of strategic innovation to emphasize the importance of those tendencies. According to Kim and Mauborgne (2005) the most valuable opportunity for businesses lies in seeking undisputed market space, which the scholars refer to as *blue oceans*. Existing industries of bloody competition following conventional approaches of competing, what is referred to as *red oceans*, are vice versa less valuable opportunities. Blue oceans may be entirely new industries created by technological innovation but could also be a recreation of markets within existing industries by using existing new technologies. This could be implemented by finding new customer segments or reconceptualization of existing products, or

even novel recombinations of product attributes and reconfigurations of established value chains that create new positions of competitive advantage (Grant, 2002). New technologies can set such processes in motion, Kim and Mauborgne (2005) argue that market boundaries and industry structures are not given, but can be reconstructed by the actions and beliefs of industry players. Also, Hamel (2001) stays in line with the previous described and sees the business potential in deeply understanding the marketplace and exploring blue oceans, where competition is irrelevant. Once a blue ocean idea has been found, it is the next step to build a profitable business model, where its strategy is to break rather than follow market or industry rules (Andersen & Strandskov, 2008). To give a résumé, strategy according to representatives of Blue Ocean should be seen as a dynamic and creative process and challenging existing conventions. Here, it is important to balance the development of corporate mechanisms with organizational routines so that the discovery of blue oceans can be promoted.

Through the dynamism in today's business world, a once established competitive advantage can get easily be threatened by competition due to the speed of the competitors, who either imitate or innovate, even if the competitive advantages originate from a blue ocean. A way to maintain sustainable competitive advantage is to develop barriers to imitation (Andersen & Strandskov, 2008). The next section is concerned with the approach of Porter's Five Forces, which provides a big picture of where to find barriers in the external environment to be aware of how to effectively defend one's organization against competition.

2.4.3 Porter's Five Forces - Micro-Level Factors Affecting Businesses

In the following section Porter's Five Forces will be portrayed from a different perspective, namely by analyzing the different forces from the technology point of view. An organization can profit from the insights of the analysis of Porter's Five Forces through adapting their competitive position accordingly. This calls for a detailed investigation as well as an estimation of attainable future trends within the five forces. Additionally, it is important to indicate future profitability and market rivalry (Henry, 2011). The overall goal of a competitive strategy is to recognize and sustain a position in the market (M. E. Porter, 1985). Utilizing the theory of Porter's Five Forces in regard to the luxury market will provide this work with understanding to what degree the different forces impact this specific market.

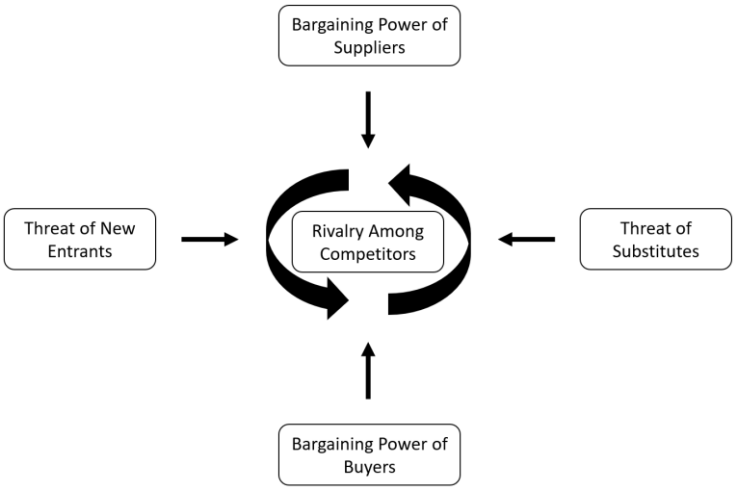

Figure 1 Porter's Five Forces (own graphic following Porter, (1985, p. 5))

The **threat of new entrants** describes the likelihood of new competitors entering the market and hence lead to a decrease of overall profitability. Here, some sources of barriers exist, which could prevent entry to the specific market. One of these barriers is capital requirement, which, if low, will lead to many new market entrants and in turn reveals that the market is profitable and attractive for competitors (Henry, 2011). In some industries economies of scale are of major importance, whereas in others product or service differentiation regulates the threat. As the focus of this work lies on the luxury market, the general influence of economies of scale does not take effect as strongly as in other industries, which has been shown e.g. by a BCG study (SCM-luxe, 2012). Moreover, switching costs impact new entrants to a large extent. The higher these costs are, the tougher it is for new entrants to attract new customers (M. Porter, 2008). Such switching costs can i.a. be created if the customer receives a special value from one firm, which he cannot get anywhere else. New technologies could help firms to create such a unique value. In a more recent journal from Porter (2008), the barrier of network effects is introduced. The larger the network of an incumbent company already is, the harder it is for a firm to have one's foot in the door. There, also the barrier of access to distribution channels is portrayed. Next, restrictions to the threat of new entrants are limited access to distribution and cost advantages (Henry, 2011). The luxury market seems to struggle to erect such barriers as a trend of more mass market brands trying to invade the luxury market in the form of premium brands can be observed (Kapferer & Bastien, 2009). Johnson (2014) chose a different approach and questioned each force in regard to today's business world and the focus on new technologies. With regards to new entrants he states that e-commerce opens up the market for many new players, which also leads to increased competition.

The **bargaining power of buyers** is another factor having an impact of the profitability of an industry and hence how firms are operating in it (Henry, 2011). Within this threat a clear division between factors influencing the price sensitivity and bargaining power can be observed. If the customer has no to little switching costs, the bargaining power of the customer is positively affected and the other way around. To nonetheless convince the customer to purchase the good, the company needs to add something extraordinary to the product to fulfill a special need and thus avoids that the customer changes to its competitor. Price sensitivity of the customer often cohere with Information the customer has about the product and additionally the degree of differentiation. If then perfect information exists, the customer will most likely decide for the product according to their needs or for the lowest price, of less or no differentiation takes place. Recapitulatory, customers are often the key to success in a market, thus organizations should constantly adapt to their needs and treat them with caution to capture market share (Henry, 2011). Porter (2008) stresses in his more recent journal that well-heeled customers are commonly less price sensitive.

Johnson (2014) reveals that with new technologies the bargaining power of buyers is temperate, due to the reasons that products and services connected to new technologies are often highly differentiated, which let customers lose certain features if switching to a competitor. Although switching costs itself are often quite low for the customer itself, which ends up in price competition for the supplier.

The **bargaining power of suppliers** is quite the opposite of the previous section. Factors that influence the market here are quality, differentiation and price. In an industry where the supplier has significant bargaining power, they are able to increase prices or reduce quality. If there are only few suppliers in the market and it is difficult to create substitutes of the product, the power of the suppliers is respectively high (Henry, 2011). In addition to that, differentiation or specialization of the produced increased the power even more and switching costs for the organization can occur if changing the supplier. Firms within the market with too high margins can lead to the supplier considering forward integration (M. Porter, 2008). According to Johnson (2014) bargaining power of suppliers can strongly depend on loyalty and trust customers have in regard to a certain brand or product, which in turn leads to lower power of the suppliers.

The **threat of substitutes** is oftentimes confused the threat of new entrants. Substitutes can be a threat for firms if the product or service from a competitor fulfills similar needs as the own one. The profitability of the industry can be limited if the substitute has a limit on the price. If the price of the own product or service is higher than customers will switch to the competitor (Henry, 2011). Firms must be aware of the

fact that an increase in demand for one product will lead to an analogous decrease in the demand for the substitute (Perloff, 2014). Porter (2008) adds here that substitutes can also impact an industry positively by increasing the growth potential for example. Moreover, it has to be mentioned that a firm operating in a market, where many substitute products to its own are offered, likely has a harder time to gain a competitive advantage, since additional convictions of the customers will be required.

Johnson (2014) refers to a study of Nakamura (2013) who notice that there is a shift notable, where specific services has become standards, which in turn lead to a change in demand. For example, customer see data transmission services as standard and hence feel the desire to go back to voice communication.

The rivalry among competitors within an industry is a force that has often the greatest influence of the market profitability. Through differentiation, lower prices, marketing, innovation or improved customer services a firm is trying to gain a superior position which will be imitated by another firm, this is often the basis for competition within one market. The counter-reaction from the competitors appears in trying to avoid that any of their customers switch and that their market position will be defended. However, it is also possible that competition will benefit all companies and will increase the overall demand. If the industry is characterized by a high amount of similarly sized companies, low growth rate, little-to-no differentiation, excess capacity and high exit barriers, it will have especially fierce competition and vice versa (Henry, 2011).

The Five Forces framework is quite popular in strategic management, and nonetheless has been criticized for its approach oftentimes, where the most relevant criticisms will be portrayed as follows. The Porter's Five Forces framework provides only a static view of the industry, hence the analyzed outcomes can only be utilized at the exact moment of the industry analysis. Another claim is that Porter's Five Forces is too myopic to adjust to today's rapidly changing business environment especially in fierce competition to define long-term future strategies. Hence, a once established strategy needs to be adjusted with the economic developments (Henry, 2011). Lastly, as already brought up while explaining the different forces, Johnson (2014) adapted the Porter's Five Forces framework to today's technology stamped time and came to the conclusion that there are more than these five forces that affect the technology environment. Factors that should be added are "digitalization, globalization, deregulation" as well as "level of innovativeness"(Johnson, 2014, p. 12). These factors should be considered when considering industry competition in a technology industry, where a deeper understanding than solely a holistic approach is needed.

2.5 Internal Perspectives on Achieving Competitive Advantage

Building on the analysis of the Five Forces described above, Porter suggested that a firm should subsequently establish a generic competitive strategy as reaction to its environment (Stonehouse & Snowdon, 2007). With this view, Porter essentially expressed that not just exogenous forces are critical to create a competitive advantage, but the firm itself also takes part in steering its fate through astute strategic positioning (K.-F. Huang et al., 2015). The approaches acknowledging that a competitive advantage can also be determined by endogenous forces can be subsumed under the term internal perspectives and will be described below. Next to Porter's generic strategies that effectively still originate from an external perspective, the following section will elaborate on the most important representatives of the internal perspective, namely approaches of the resource-based view.

2.5.1 Approaching Competitive Advantage: Generic Strategies and the Value Chain

Porter, next to his Five Forces model, is especially known for his work on the generic strategies firms can pursue to achieve a competitive advantage (e.g. Mekic & Mekic, 2014; Stonehouse & Snowdon, 2007). Those generic strategies in substance are based on the idea that organizations need to perform different value-creating activities than their competitors or carry out similar activities in a distinctive way to get ahead of their competition (M. Porter, 1996). The competitive advantage then arises from the value the organization is able to create for its customers (M. E. Porter, 1985 Chapter 1). Thus, the underlying instrument to analyze, determine and support the establishment of a competitive advantage is the value chain (M. E. Porter, 1985 Chapter 1).

The Value Chain Analysis

Particularly valued because of its simplicity and intelligibility, the value chain allows organizations to identify potential sources of competitive advantage, their drivers and inhibitors (Hadida & Paris, 2014; M. E. Porter, 1985). While the so-called primary activities describe all activities revolving around the creation, promotion and sales of the product, adding value directly, support activities do so indirectly by enabling, facilitating and enhancing the aforementioned (see figure 2) (M. E. Porter, 1985 Chapter 2; Rothaermel, 2008). Both can be sources of competitive advantage. The value created in the different steps can be measured by the willingness to pay of the potential customer. The choice of the specific activities and their idiosyncratic configuration then reflect the firm's (generic) strategy and determine if a competitive advantage can be achieved. The arrangement of the value chain ergo is influenced by and must support

the chosen competitive strategy of the firm (Hadida & Paris, 2014; M. E. Porter, 1985 Chapter 2; M. Porter & Millar, 1985; Rothaermel, 2008; Stonehouse & Snowdon, 2007).

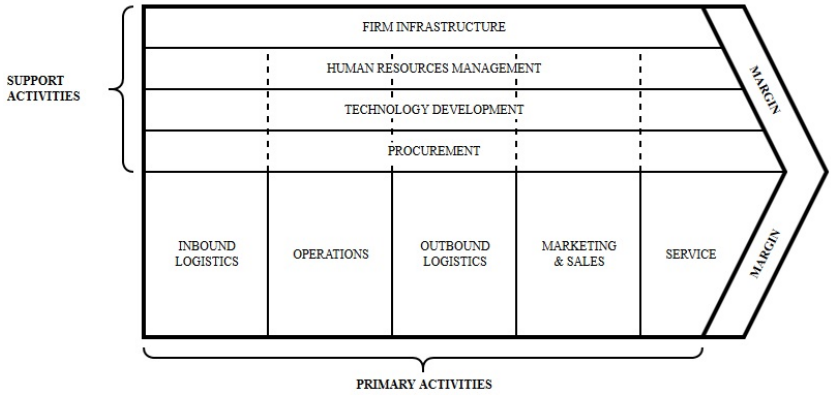

Figure 2 Value chain (M. E. Porter, 1985)

Despite many viewpoints, agreeing on the importance of technology as a factor in the value chain, the specific role of new technology development for competitive advantage has not been examined up until now. Regarding technologies in general, Porter (1985 Chapter 2) acknowledged that the development of technology is an important source of competitive advantage and can take a key position in some industries. Moreover, Porter and Millar (1985) as well as Porter (1985) established that by altering the different value activities as well as their interdependencies, technology can crucially change the sources of competitive advantage.

However, despite its usefulness, the value chain concept has also received much criticism. Amongst others, the great level of detail and thoroughness required to analyze one´s value chain as well as the lack of further specifications on the practical application have been complained about (Stonehouse & Snowdon, 2007; Urbig & Verlage, 2003). Moreover, some scholars argue the concept is outdated because of lacking customer focus (Mekic & Mekic, 2014; Merchant, 2012; Peppard & Rylander, 2006). A notion, which also appears to be relevant for companies operating in the luxury segment (compare section 2.1). In line with this, Peppard and Rylander (2006) suggested to replace the prevailing activities with the functions customer relationship, service and content innovation as well as commercialization and infrastructure management. Some researchers like Stabell and Fjeldstad (1998), Peppard and Rylander (2006) or Normann and Ramirez (1993) further suggested a perspective on the value creation process, where activities can be performed simultaneously in a network-like manner. This might be more suitable for the

dynamic nature and interconnectedness of today's economy (Hadida & Paris, 2014) and also fit to many firms operating in the luxury segment, where e.g. marketing partially already happens, while products are still produced. Finally, Hadida and Paris (2014) argues that the dynamism of the business world and especially new technologies reduce the relevance of some of Porter's value chain activities as well as their stability - increasing the difficulty to use the value chain as diagnosing tool for competitive advantage. Notwithstanding this criticism, the value chain is still much used in practice and science, just like Porter's concept of generic strategies that builds on it (Hadida & Paris, 2014; Sigalas & Pekka Economou, 2013; Stonehouse & Snowdon, 2007).

Porter's Generic Strategies

As indicated above, the choice for a generic strategy is derived from the assessment of the firm's business environment and subsequent consideration of the optimal positioning relative to its competition (Day & Wensley, 1988; Mutisya, 2015; Ortega, 2010). For each generic strategy, an organization has to make two choices: The first being about the strategic target (cost leadership or differentiation), the second about the strategic scope (narrow market or broader industry segment) (M. Porter, 1997; M. E. Porter, 1985; Tanwar, 2013). These decisions result in a differentiation, cost leadership or focus strategy, which might then lead to a competitive advantage reflected in e.g. higher market share, more profitability or greater customer satisfaction (Day & Wensley, 1988; Ortega, 2010).

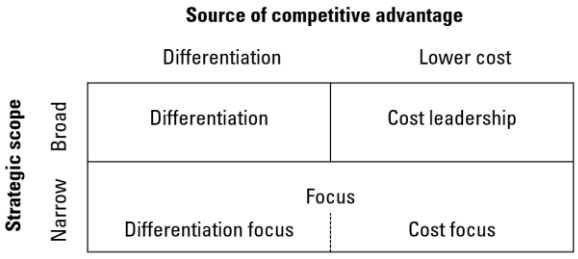

Figure 3 Generic strategies (own graphic following Porter (1985))

According to Porter (1985 Chapter 1) the failure to pursue one of the generic strategies, will put a firm at a disadvantage with competitors. An example of how to concretely realize the differentiation strategy could be through a dedicated technology or innovation strategy (M. Porter, 1985).

The Differentiation Strategy

An organization, pursuing a differentiation strategy, focuses on exhibiting uniqueness or superiority compared to competitors along certain dimensions knowingly valued by the firm's customers. Such dimensions could e.g. be product design, a specific brand image or the use of certain technologies (Day & Wensley, 1988; M. E. Porter, 1985; Tanwar, 2013). This superiority then is supposed to translate into higher perceived value for the customer, who thus is willing to pay a premium price (Day & Wensley, 1988; M. Porter, 1997; Stonehouse & Snowdon, 2007; Tidd, Bessant, & Pavitt, 2005). To the best of our knowledge, no attempt has been made to comprehensively explain the contribution of new technologies to achieving competitive advantage through differentiation. Important to mention is that a firm must also be able to signal and convince the customer of the unique value it produced, so that he/she exhibits the desired price-inelasticity on the demand side (M. E. Porter, 1985 Chapter 1; Tidd et al., 2005) - a key element for firms operating in the luxury segment. Moreover, superior value often is accompanied by higher costs and if the additional costs equal out the premium price received, no advantage is left. Thus, sufficient efforts to achieve at least cost proximity are also needed from differentiators (M. E. Porter, 1985).

The Cost-Leadership Strategy

A firm trying to create competitive advantage through a cost-leadership strategy usually focuses on efficiency through e.g. the exploitation of economies of scale and scope or proprietary technology. Cost-leaders aim to become the lowest cost producer in their market (M. Porter, 1997; M. E. Porter, 1985 Chapter 1; Stonehouse & Snowdon, 2007; Tanwar, 2013). Oftentimes it´s the development of new technologies, which allows firms to identify and leverage new efficiencies. However, to still be considered as relevant product by potential customers, also cost leaders must offer a at least proximity with regards to differentiation compared to their competitors (Day & Wensley, 1988; M. Porter, 1997; M. E. Porter, 1985 Chapter 1).

The Focus Strategy

Finally, a firm pursuing a focus strategy only serves a narrow target segment like e.g. a specific customer group, geographic region or product range (Mutisya, 2015; M. E. Porter, 1985; M. Porter & Millar, 1985 Chapter 1; Tanwar, 2013). In the segment, the organization can opt for either a differentiation or cost-leadership strategy. Firms following a focus strategy aim to achieve a competitive advantage by

dedicating more resources to and serving a narrow market segment better than competitors (Stonehouse & Snowdon, 2007; Tanwar, 2013). This is exactly what is done by firms targeting the luxury segments of their respective markets.

As with almost all other major contributions in science, also Porter's generic strategies have received a substantial amount of critique (e.g. Mekic & Mekic, 2014; Urbig & Verlage, 2003). More specifically, some scholars have highlighted that next to the strategic positioning, factors like entry timing or the quality of strategy implementation also have significant impact on the actual performance but have been neglected by the concept (Day & Wensley, 1988). Others have pointed out a range of drawbacks for each of the generic strategies such as e.g. differentiation also requires very high investments in R&D or that focus strategists usually experience costs disadvantage compared to competitors serving whole market (M. Porter, 1997; Tanwar, 2013). More importantly though, many papers have opposed Porter´s negative perception of being *stuck in the middle*. Researchers taking this stance, have expressed their goodwill towards mixed strategies since considerable evidence has amounted that such strategies can prove advantageous for many organizations. Particular circumstance like e.g. a significant (technological) innovation can bring a firm in a position, which enables it to achieve both strategies at the same time (Miller, 1992; M. E. Porter, 1985 Chapter 1; Stonehouse & Snowdon, 2007). A stance that might be relevant for many firms in the cost-disregarding luxury segment as well. An argument brought forward by Porter (1985 Chapter 1) himself is that an organization cannot settle with a certain strategy because competitors will always try to catch up and most industries undergo constant change. The resulting need for continuous adaptation might be even more relevant in today's fast-paced, continuously changing world.

Finally, a completely different school has questioned more fundamentally the value of generic strategies: The resource-based view (hereafter RBV) emphasizes the importance of resources and capabilities, which lay within the firm as true source of competitive advantage (J. Barney, 1991; Stonehouse & Snowdon, 2007). This is in opposition to Porter, saying that although a firm chooses its strategy, the essential impulse for a firm's strategic positioning comes from external forces. They furthermore agree with that generic strategies are a way too rigid and static approach to competitive advantage in an economy that continues to change so dramatically (Bridoux, 2004; Grant, 1991; Stonehouse & Snowdon, 2007). Furthermore, as put by Lado, Boyd and Wright (Lado, Boyd, & Wright, 1992), Porter's strategies do not describe a real choice for a comprehensive strategy, but only a decision between few given alternatives. The RBV

on the other hand, offers the possibility of a true selection of a strategy for competitive advantage, characterized by firms´ possibilities to be proactive and truly create new opportunities to improve performance.

2.5.2 The Resource-Based View on Creating a Competitive Advantage

Both approaches, the generic strategies as well as the RBV, agree on that a competitive advantage ultimately is obtained from strategic activities, which are opted for and executed by the firm (Ortega, 2010). According to the RBV however, Porter's strategies neglect the importance of organizations´ resources for achieving this advantageous strategic position (Grant, 1991; Mutisya, 2015; Priem & Butler, 2001). Representatives of this view argue that this internal approach to competitive advantage is the only viable one since using a constantly changing competitive environment as orientation to decide on a durable strategy as suggested by Porter is close to impossible. The RBV has thus developed into one of the dominant approaches to achieve competitive advantage in an environment characterized by continuous innovation, dynamic customer demands and disruptive technologies (Bridoux, 2004; Foss & Knudsen, 2003; Grant, 1991; Penrose, 1959; Priem & Butler, 2001). Many firms have moreover embraced it as a tool to identify sources of competitive advantage within their organization (J. B. Barney, 2001).

To fully comprehend and be able to use the resource-based approach, one however has to first understand the underlying concepts of resources and capabilities. Resources in the RBV are all tangible and intangible assets, which can be used as inputs for the different value creating activities a company performs (see section 2.5.1). They can occur as physical, human or organizational resources (Mata, Fuerst, & Barney, 1995) and are the source for capabilities. Capabilities then describe the capacity to make effective and strategic use of the resources to create superior value and ultimately a competitive advantage (Grant, 1991; Mutisya, 2015; Ortega, 2010; Rothaermel, 2008; Stonehouse, Pemberton, & Barber, 2001; Wernerfelt, 1984). They are reflected in skills and knowledge and need experience and learning to develop (Stonehouse et al., 2001; Stonehouse & Snowdon, 2007). This experience and learning can be pursued proactively to create, enhance or renew relevant capabilities (Lado et al., 1992). Again, although the relevance of access to and the idiosyncratic usage of technologies has been acknowledged, no step has been taken so far to clarify the specific role of new technologies.

A competitive strategy developed on the basis of the RBV ergo comprises not only the right management and exploitation of the firm's current resources and capabilities but also the exploration and development of such necessary for the future (Grant, 1991; Melville, Kraemer, & Gurbaxani, 2004; Penrose, 1959;

Wernerfelt, 1984). Hence, an organization has to identify firstly, which resources and capabilities are needed today and in the future and how they have to be deployed in the most effective and efficient way to achieve and sustain superior performance. Secondly, next to the ability of superior value creation through resources and capabilities, a firm must also be able to capture this value (Grant, 1991; Kor & Mahoney, 2004; Ortega, 2010; Priem & Butler, 2001).

Moreover, it is important to recognize that to gain a competitive advantage based on your resources and capabilities, they have to be specific to your firm and competitors should face certain costs to imitate your position (Lado et al., 1992; Mata et al., 1995; Melville et al., 2004). Such costs contribute to protecting a competitive advantage and, according to Barney (1991, p. 10 ff.), can e.g. stem from *unique historical conditions* that made it possible for a firm to obtain certain resources and capabilities, *causal ambiguity* regarding how resources, capabilities and competitive advantage are linked exactly or *social complexity* regarding relationships and interdependencies within and of a firm, which are not easy to replicate. These barriers and especially unique historical conditions are often leveraged by firms operating in the luxury segment.

This observation leads to two premises, which have been put forward in the RBV: To be able to create and sustain a competitive advantage, it is necessary to assume that firms are heterogeneous with regards to their resources and capabilities and that this state can endure because some resources (and capabilities) are not perfectly mobile and can only be acquired at certain costs (J. Barney, 1991; Bridoux, 2004; Foss & Knudsen, 2003; Mata et al., 1995; Priem & Butler, 2001; Wernerfelt, 1984). Beyond these premises Barney (1991) with his VRIN/VRIO framework describes four further attributes resources must possess to be a source of competitive advantage (K.-F. Huang et al., 2015; Mutisya, 2015).

VRIN/VRIO Framework

VRIN is an acronym for the resource attributes *valuable, rare, imperfectly imitable* and *non-substitutable* (J. Barney, 1991). The framework describes that resources firstly have to be *valuable* and *rare* to qualify as a source for competitive advantage. Secondly to be a source of a sustainable competitive advantage, resources also have to be i*mperfectly imitable* and *non-substitutable* (J. Barney, 1991; Mata et al., 1995; Melville et al., 2004; Priem & Butler, 2001; Rothaermel, 2008). In a revision of his work, Barney adapted the VRIN framework suggesting that a resource has to be made effective use of by its *organization* to serve as a source of a sustainable competitive advantage (J. B. Barney, 1995; Bridoux, 2004). To include

this addition of an organization's capacity to exploit its resources effectively and efficiently but not let go of the *non-substitutable* attribute, some scholars have requested VRINE as a new acronym (Carpenter & Sanders, 2006).

While scholars have pointed out that most IT - and same might be true for new technologies - is basically ubiquitous and easily accessible, rendering it unusable as a VRIN resource (Carr, 2003), the capability to make use of technology has widely been recognized as important source of competitive advantage (A. Bharadwaj, 2000; Mata et al., 1995; Ortega, 2010). In the same line, critics have argued that it is not the four attributes that make a resource a good source for competitive advantage, but rather the unique capabilities of a firm to elicit superior performance from the available, potentially ordinary resources (Mata et al., 1995; Rothaermel, 2008). Additionally, Day and Wensley (1988), Melville et al.(2004) and Priem and Butler (2001) pointed out that the RBV view says little about how resources and capabilities are used most effectively and efficiently and how exactly they translate into a competitive advantage. According to Bridoux (2004), the RBV also does little to account for the complex linkages and interplays between different resources and capabilities. Drawbacks, which might also prevent organizations from making effective use out of new technologies and associated capabilities. Next to this, many researchers critique that the RBV representing the internal perspective to competitive advantage, is actually externally defined, because the value of a resource or capability, as described above, is to a great extent determined in relation to your competitors (Foss & Knudsen, 2003; Grant, 1991; Lall, 1992; Priem & Butler, 2001). Moreover, they argue that factors of the market environment like e.g. technological change are actually determining how valuable a resource or capability is by defining what new opportunities can be leveraged, what threats have to be fought off and what resources and capabilities are suitable to do so (J. B. Barney, 2001; Priem & Butler, 2001). These market factors influence the ability of firms to obtain resources and capabilities (Lall, 1992). A clear delimitation of the external and internal perspective thus seems impossible.

Finally, one stream of researchers argues that in the fast-changing business world of today, resources and capabilities themselves can never be a source of competitive advantage, because there will be constantly new demands, expectations and challenges to handle, which in turn will always requiring enhanced, different or even completely new resources and capabilities (K.-F. Huang et al., 2015; Leonard-Barton, 1992). This issue was addressed by more dynamic approaches to the RBV, which will be explained in the following section.

2.5.3 Dynamic Approaches to the Resource-Based View

Dynamic Capabilities

Even though the RBV originally was intended to be a dynamic approach, most of the following research attributed a more static nature to it (Priem & Butler, 2001). This limitation was tackled by representatives of the dynamic capabilities view, who argued that so called dynamic capabilities are required to achieve competitive advantage in times of intense, innovation-based competition and unpredictable, fast change (Bhatt & Grover, 2005; Eisenhardt & Martin, 2000; D. J. Teece, 2007; D. J. Teece, Pisano, & Shuen, 1997). Many different definitions of the concept have been put forward (i.a. Barreto, 2010; Helfat, Finkelstein, Mitchell, Peteraf, & Singh, 2009; D. J. Teece, 2007; D. J. Teece et al., 1997; Zollo & Winter, 2002), but they can be boiled down to the following: Dynamic capabilities refer to the ability of an organization to recognize and create new, integrate, reconfigure and release relevant resources and capabilities, given the changing business environment as well as firm's specific path-dependencies and strategy to maintain or achieve a competitive advantage eventually.

Dynamic capabilities do not only allow to recognize and react to change though, but also help organizations to proactively influence and steer change through innovation (Lahovnik & Breznik, 2014; D Teece, Peteraf, & Leih, 2016). This can e.g. be driven through systematic development of new products or processes like early testing and rapid prototyping (Eisenhardt & Martin, 2000). Next to this, dynamic capabilities are an important means to better respond to the unexpected through increased agility (Karimi & Walter, 2015; Lavie, 2006; D Teece et al., 2016). Taken together, these different factors allow dynamic capabilities to influence performance significantly and ultimately become a source of competitive advantage (Barreto, 2010, p. 9). Teece et al. (1997) suggests that the idiosyncrasy of dynamic capabilities, needed to achieve a competitive advantage with them, can result from the unique path-dependencies and current strategy of the firm. Eisenhardt & Martin (2000) argue however that dynamic capabilities can also have common features among firms, recognizable in best practices like alliancing or elements of new product development processes like cross-functional teams or brainstorming.

According to Teece et al. (2016) and Teece (2007), there are three fundamental processes underlying dynamic capabilities: Firstly, the *sensing* of relevant opportunities and threats that might require actions. Tools like scenario planning, open innovation, but also analytical frameworks like Porter's Five Forces or R&D as search mechanism can help firms to systemize this process. Secondly, firms must *seize* the right

resources and capabilities to leverage the recognized opportunities or divert threats. Here, flexible sourcing arrangement, excess capacities and in general good resource investment and allocation decision skills are needed. Thirdly, the resources and capabilities of a firm must continually be reconfigured and *transformed*. Approaches that foster quick implementation, learning and adjustment cycles are helpful for this. Moreover, Lavie (2006) suggested three mechanisms for the reconfiguration of capabilities: substitution, transformation and evolution.

To successfully promote the creation of dynamic capabilities it is important to understand the two sources of them: learning and experience, which can be gained from i.a. repeated practice, trial and error, imitation of other market players as well as knowledge management processes like the creation of manuals or communities of practice (Barreto, 2010; Bhatt & Grover, 2005; Eisenhardt & Martin, 2000; Lahovnik & Breznik, 2014; D. J. Teece, 2007; Zollo & Winter, 2002). The respective knowledge should be generated from internal sources (e.g. strategy, culture and history) as well as external ones (e.g. market surveillance, assessment of user needs) and trigger a continuous process of realignment between strategy, resources and capabilities and external factors (Lavie, 2006; D. J. Teece, 2007; D. J. Teece et al., 1997; D Teece et al., 2016). Of course, learning and experience can only happen if organizations provide for the right conditions and obviously involve trade-offs, investments and risks (Lavie, 2006; D. J. Teece, 2007; D Teece et al., 2016).

Next to the costs involved in developing and enhancing dynamic capabilities, critics have pointed out further drawbacks: Eisenhardt and Martin (2000) e.g. argued that the relationship between dynamic capabilities and competitive advantage still is very ambiguous. Stonehouse and Snowdon (2007) and Barreto (2010) agree with this notion and argue that the interdependence with external factors like the customer is greatly neglected. A clarification in these areas could help firms to make use of dynamic capabilities and thereby better leverage new opportunities that might be arising through e.g. the emergence of new technologies. More crucially, : Eisenhardt and Martin (2000) as well as Mikalef and Pateli (2017) criticize that dynamic capabilities themselves cannot be a source of competitive advantage but rather the resulting reconfigured resources and capabilities - pointing back to the classical RBV. Furthermore, Aragón-Correa and Sharma (2003) add that not just the ability but the successful implementation of dynamic capabilities is needed to achieve superior performance. Nonetheless, taking a deeper dive into dynamic capabilities

one can identify two specific types of them, which seem particularly relevant with regards to new technologies and which will thus be explained in the following.

Technological Capabilities

Several scholars have identified technology and especially technological capabilities as an important source of competitive advantage. However, most of the work in this area has disregarded the field of new technologies so far and has exclusively looked at the value of IT to achieve superior performance (A. Bharadwaj, 2000; Mata et al., 1995; Ortega, 2010; Rothaermel, 2008). It is important to clarify though that despite the value and usefulness of most technologies, the mere resource will presumably not be a source of competitive advantage due to its affordability and accessibility nowadays (A. Bharadwaj, 2000; Carr, 2003). This is also true for new technologies like AI, AR or VR. What is required is firstly, the tailoring of the use of technology to the firm's idiosyncratic strategy and culture as well as the development of respective capabilities, which allow to leverage and master technology in a unique and value-creating way (A. Bharadwaj, 2000; Henderson & Venkatraman, 1999; Mata et al., 1995). As stressed e.g. by (Melville et al. (2004) and Mata et al.(1995) managerial or human IT skills are thus of particular relevance.

A technology capability can then be seen as dynamic capability allowing to effectively respond to opportunities and threats imposed by (new) technologies to pull past competitors (Bhatt & Grover, 2005; Lahovnik & Breznik, 2014). Moreover, technological capabilities as a dynamic capability allow firms to adjust, improve and create new organizational capabilities related to technology, which further improves the agility and responsiveness of firms towards external and internal change (Mikalef & Pateli, 2017). Accordingly, it can be concluded that there is an important interplay between technological and organizational capabilities and that the former take effect through combining them with the latter. This is also reflected on the research stream on so called IT-enabled dynamic capabilities (see e.g. Mikalef & Pateli, 2017).

Innovation and Innovation Capabilities

Technological capabilities are very often linked with another concept said to be an important driver of competitive advantage, namely innovation. Many researchers regard technology and technological capabilities as the significant driver for innovation and, at the same time acknowledge that most technologies are usually introduced through innovation processes (e.g. Katz, Preez, & Schutte, 2013; Koellinger, 2008;

Zhou & Wu, 2009). Hence, the two are inherently intertwined and to understand how new technologies can help to create a competitive advantage, light must also be shed on the concept of innovation. Numerous researchers argue that innovation is the only remaining viable answer to markets that as their only constant can offer continuous change (Breznik & D. Hisrich, 2014; Lahovnik & Breznik, 2014; Reguia, 2014; Rothaermel, 2008). However, despite this acknowledgment, there seems to be a huge gap between knowing and doing: according to Hamel (2001), companies lack effort as well as time and monetary investments to acquire the evidently required capabilities to promote and execute innovation.

To get a clearer understanding what exactly is behind innovation capabilities, one has to first unravel the concept of innovation. Within the plethora of definitions, one can distill innovation as introduction and implementation of a new idea, while the mere idea can be defined as invention (Chaochotechuang, Daneshgar, & Sindakis, 2015; Reguia, 2014). For many organizations an integral part of such innovation happens in the course of new product development (Nadeau & Casselman, 2008; Rondeau & Bhatt, 1994). Moreover, Reguia (2014) differentiates three levels on which innovation can happen: the functions or concept, product/process and business model level. Finally, a great number of scholars differentiates innovation along its level and impact. Here, they speak of incremental innovations if simply existing products or processes are improved, of disruptive innovations when new business models for an existing market are created and of radical innovations when it comes to the creation of completely new markets or industries (Chaochotechuang et al., 2015; Hacklin, Raurich, & Marxt, 2004; Prange & Schlegelmilch, 2018). The innovation can be impacted by external (e.g. politics, competition, technology) as well as internal (e.g. strategy, resources) factors and can be pushed from inside or pulled from the market (Damanpour, 1996; Reguia, 2014). The potential benefits of innovation, which in the best case translate into a competitive advantage, have to always be balanced with the risk of failed innovations as well as the general costs of the effort though (Chaochotechuang et al., 2015; Noordin & Mohtar, 2013; Reguia, 2014).

From this understanding, innovation capabilities can be conceptualized as ability to generate, transform, implement and manage new ideas in a way that allows an organization to leverage or create new business opportunities leading to additional economic value (Hii & Neely, 2000; Noordin & Mohtar, 2013; Saunila & Ukko, 2013). A capability, which clearly holds value for making use of new technologies, by enabling companies to continuously reconfigure their resources and capabilities so that the they can answer upcoming or induce new opportunities through relevant innovation efforts (Koc, 2007). As already mentioned

in the critique of dynamic capabilities in general, it also holds for innovation capabilities that it is indispensable to also capture the value to derive success thereof (Lages, 2016; DJ Teece, 2010).

2.6 The Need to Combine Internal and External Perspectives

A explained by Zirger & Maidique (1990), good innovation requires the combination of internal and external perspectives. Ortega (2010), Rothaermel (2008), Bridoux (2004) and many other researchers came to the conclusion that same is true for achieving competitive advantage and argue that the two perspectives very well complement each other. Some scholars like Melville et al. (2004, p. 12) have even suggested combined models of the two perspectives, which is why the following two sections will shed light on frameworks helping to better understand the relationship of and contribute towards pulling together the internal and external perspective.

2.6.1 Combining Perspectives Through Marketing Pull vs Technology Push

Today's business environment is marked by increasing competition, rapidly changing market requirements, greater technical obsolescence, shorter product-life-cycles and the raising importance of meeting the customer needs (McGrath, Michael, & Shapiro, 1992). An earlier study from Souder (1989) describes a way to overcome the problem when an organization has seemingly useless technologies, which is to push a few of these into the marketplace. It should, founded in the study, enhance the organization's success and promote professionals, generate new products as well as increase R&D productivity. Most firms are used to operate technology pull as well as push strategies, however in the end of the study it was concluded that the most effective way of handling all these new technologies and to improve productivity can be achieved by implementing a successful iterative technology push process (Souder, 1989).

More lately, the environment had to experience a shift from *technology push* strategies to *market pull,* which is marked by customer needs becoming more sophisticated and complex (Shepherd & Ahmed, 2000). Many companies realized that they have to adapt to their customer needs by developing more complex products, providing a higher level of customer service and make use of IT to offer greater functionality and performance in order to provide value and gain customers. In the field of customer needs a shift is identified to customers becoming increasingly more sophisticated and tech savvy, which result in greater *market pull*. Organizations now are forced to act even more as solution providers and take a step further by working with customers to reveal and define problems for which solutions are required. The

new developed relationship can be understood as powerful, synergetic relationship, in which the organization acts as a trustful advisor rather than a supplier (Shepherd & Ahmed, 2000).

The study from Walsh, Kirchhoff and Newbert (2002) researched the relationship between the market implementation of new technologies and the respective market strategy, either market pull or technology push. They found out that already established firms clearly tend to prefer market-pull strategies for most of their new technologies and go even further by stating that they avoid technology push, especially for disruptive innovations (Walsh et al., 2002).

These findings can be applied to the case of this work since the researched firms are all established international luxury firms. Therefore, we assume that a more market-pull approach will add the most value to the research problem of this thesis. Nonetheless, the previous literature review taught us the importance of combining the internal as well as external environment if an organization aims to successfully implement a new technology.

2.6.2 Combining Perspectives Through the SWOT Framework

A second approach to pulling together internal and external perspectives to evaluate organizations´ potential competitive advantages is the SWOT framework. As Rothaermel (2008, p. 207) explained, the goal of the SWOT analysis is to derive a strategy, which allows for the best "fit between the company's resources, capabilities, and competencies" building the company's internal strengths and weaknesses on the one hand, and its competitive environment on the other hand. Thus, there are two steps of analysis (Gürel & Tat, 2017; Humphrey, 2005): First, for the internal analysis, it has to be established what resources and capabilities are currently lacking or preventing (weaknesses) and which are promoting (strengths) the creation of value. As pointed out before, technology can turn out to be an important strength or weakness here. In the external analysis, it has to be investigated which external conditions and situations will hinder (threats) or allow the firm to realize (opportunities) its goals. Such external factors can include i.a. competition, changing customer demands or technological forces. It is important to acknowledge that the framework is inherently context-dependent, i.e. that some factors or conditions might be a strength or opportunity under one objective or in one department but transform into weaknesses or threats under others (see e.g. Humphrey, 2005).

Regarding the use of the framework for new technologies there have been limited attempts besides the one of Rizzo and Kim (2005) for VR technology. However, on a more general level SWOT was applied for different analyses in the area of IT (see Ghazinoory, Abdi, & Azadegan-Mehr, 2011; L. Huang et al., 2012) as well as to specialized technologies (e.g. Aich & Ghosh, 2016). Helms and Nixon (2010) also described that SWOT might prove useful to discern opportunities and threats and to anticipate future market behavior - an approach that seems also very useful when pursuing to proactively create and sustain competitive advantages through new technologies.

Contrasting this view, critics say that SWOT analysis is only a snapshot, too static to allow for sufficient adaptability to constantly changing competition, demands and technology trends (Ghazinoory et al., 2011; Gürel & Tat, 2017; Hill & Westbrook, 1997; Koch, 2000; Valentin, 2001). Mintzberg, Ahlstrand and Lampel, (2005) furthermore explain that uncertainty and complexity of today's business environment simply make it impossible to know what factors and conditions will turn out as strengths or weaknesses and threats or opportunities. Another stream of critique faults the SWOT framework as being oversimplified. Moreover, excessive formalization and the inability to guide critical and objective assessments of internal and external factors make the framework ineffective in practice. Scholars, therefore, have added adaptations of the SWOT framework and recommended to use data from internal and external sources to solidify the analysis (Gürel & Tat, 2017; Helms & Nixon, 2010; Koch, 2000; Valentin, 2001). Arising from this critique Gürel and Tat (2017), Mintzberg et al. (2005) as well as Hill and Westbrook (1997) have emphasized that SWOT does not go beyond a descriptive stage and needs to become more explicit about how to execute and implement its findings to allow firms to successfully pursue strategies for competitive advantage. In line with this, many researchers suggested and carried out a supplementation and combination of SWOT with other frameworks like the RBV, Porter's Five Forces framework and generic strategies (Ghazinoory et al., 2011; Gürel & Tat, 2017; Helms & Nixon, 2010).

2.7 Summary of the Literature Review

After providing a detailed overview of the construct competitive advantage, the relevant external and internal perspectives and why the combination of these two is of crucial importance for answering the research question, the following section will provide a mid-conclusion of the above discussed. From this we will then derive a theoretical framework, summarizing and bringing together the relevant theoretical

constructs, to contribute towards the identification of how international luxury firms can gain a competitive advantage through the implementation of new technologies.

Drawing on the research revolving around the construct competitive advantage, it can be said that establishing competitive advantage is seen as the important objective of the organization's business strategy (Grant, 2002). A way to maintain a competitive advantage is to develop barriers to imitation (Andersen & Strandskov, 2008). However, technology and new innovations changed the way competitive advantage is viewed nowadays. Thus, a strategy for gaining a competitive advantage is not only about defining an appropriate business but also a technology strategy, which are interconnected (Montiel Campos et al., 2009). Moreover, the development of the concept of competitive advantage destroy the perception of being able to have a sustainable competitive advantage. Therefore, the competitive advantage shaped through technology, can be made up of a series of TCA over time, leading to a somewhat new form of SCA (D'Aveni et al., 2010; Wiggins & Ruefli, 2005).

Regarding the main takeaways of the external perspectives, the following can be said: From the PESTEL framework we know that when implementing new technologies, also macroeconomic factors need to be taken into consideration. Moreover, the technological factors of the framework focus on the overall technological development and emphasizes the value of new technologies. Nonetheless, it has to be taken specific awareness to the interconnection of all the factors as they influence each other. Additionally, the factors of PESTEL can and should be seen as valuable tool to assess the future rather than the past.

The Blue Ocean Strategy is adding value to the overall theoretical framework by advocating and encouraging to identify and pursue new opportunities in uncontested markets. New technologies can transform markets, where competition then does not play a major role anymore. Hence, it should be an aim to find a blue ocean because here a firm's dynamic strategy, that focuses on creativity and ongoing challenging existing conventions, protects the firm from competition. Especially when luxury firms want to implement new technologies, the Blue Ocean Strategy adds value, as it provides space for these. Also, it recognizes the threat that a competitive advantage can be easily destroyed through the dynamism of today's business world, which is why aiming for a TCA find its motivations in this concept as well.

The Porter's Five Forces framework effectively helps a firm to defend against competitors by identifying and protecting the its market position, which is very relevant to luxury firms which constantly have to defend their very unique competitive position. Additionally, in the theoretical framework the focus lies on

the force of the customers and is particular relevance as they are the ones who have to appreciate new technologies. Moreover, in the mass market fashion a trend toward a premium segment can be observed, which illustrates a current threat of new entrants (Kapferer & Bastien, 2009). Hence, these new and potentially more tech-savvy entrants can blur the boundaries of the luxury segment - a factor that should also be considered when trying to create competitive advantage through new technologies.

Notwithstanding, the importance of keeping an eye on external factors, combined approaches like described in section 2.6.2 show that the increasingly dynamic environments of companies force them to also take a proactive approach originating from the inside of the firm (K.-F. Huang et al., 2015; L. Huang et al., 2012). Otherwise they might be caught in an endless spiral of only reacting to more and more new external changes. Hence, without having a look at the internal perspective as well, it is impossible to succeed in the dynamic environment of today.

Thus, moving on to the internal perspective, by choosing which specific activities in the value chain the firms want to perform, it can guide what and how value will be created. Since the customer in the end decides on what is perceived as valuable, activities from the areas of marketing and service lying at the customer interface, play a significant role in shaping how the created value is perceived (M. E. Porter, 1985). These but also other value creating activities can be greatly enhanced by technology in the luxury market. In this way, technology can create, redistribute and shift power for the different market players and even become a source of competitive advantage. Moreover, technology can support the generic strategies guiding the selection of the value creating activities. The generic strategies itself, become sort of a filter function, which means that e.g. a differentiation focus strategy as pursued by most luxury firms should govern, which technological opportunities should be pursued by a firm.

Moving to the RBV, we can distill from Penrose (1959), Wernerfelt (1984), Barney (1991) & Co. that technology-related resources and capabilities are an important source of competitive advantage. The RBV furthermore highlights that it is very crucial how resources and capabilities are implemented. As described in section 2.1, this is also of exceptional importance for companies operating in the luxury segment. Finally, Barney (1991) also shed light on how competitive advantage can be protected from competitors trying to catch up or imitate. Here, especially *unique historical conditions* seem to be an important factor, companies in the luxury segment could leverage to secure their advantage.

However, as described in section 2.5.2, it has become more and more clear that only the mere resources and capabilities of a firm will most often not be sufficient anymore to achieve a competitive advantage, which even applies to new technologies. Secondly, the dynamic and fast changing environment of today, makes it impossible for a firm to develop and perfect a stable set of resources and capabilities that will provide them with a SCA (Leonard-Barton, 1992). Rather for luxury firms a constant reconfiguration and rebuilding of the resources and capabilities is necessary to keep up or recreate competitive advantages over time (L. Huang et al., 2012; D. J. Teece et al., 1997).

This is why it is important to also consider dynamic capabilities, which are necessary to be able to react to, but also proactively induce change (Koc, 2007). It furthermore helps to understand how to connect and bridge past, present and future of the firm - an aspect that is as well very important for the commonly tradition-rich luxury segment. Besides that, dynamic capabilities help to combine and match the internal environment of the firm with external opportunities and threats (see section 2.5.3). Specifically, regarding new technologies, the concept of technological capabilities can help firms to make use of technologies in an idiosyncratic and sensible way and use technology to shape new organizational capabilities, which in turn can positively impact firm performance. Next to this, innovation capabilities allow organizations to continuously create new value for their customers leading to the renewal of existing or creation of new competitive advantages. These capabilities are imperative to stay competitive long term, in conditions of transient competitive advantages (Brown & Eisenhardt, 1997; K.-F. Huang et al., 2015; Wiggins & Ruefli, 2003). As indicated above, it can be defined that the core of a competitive advantage lies in a unique strategy characterized by creating a successful match between the internal and external environment (Hofer, Charles & Schendel, 1978), in order to create a competitive advantage.

From the review of the selected strategies, one can infer that, to the best of our knowledge, there does not yet exist a comprehensive approach for achieving competitive advantage that perfectly fits the dynamic business environment of today nor one that advises researchers and companies how to do so with new technologies in the luxury market. However, the review shows that necessary foundations for such an approach would need to combine the essence of all these viewpoints as described above. Therefore, we suggest the following framework that links the insights derived from the different perspectives from above as a basis for an approach that help international luxury firms to achieve a competitive advantage in the dynamic environment of today, and more specifically through the use of new technologies:

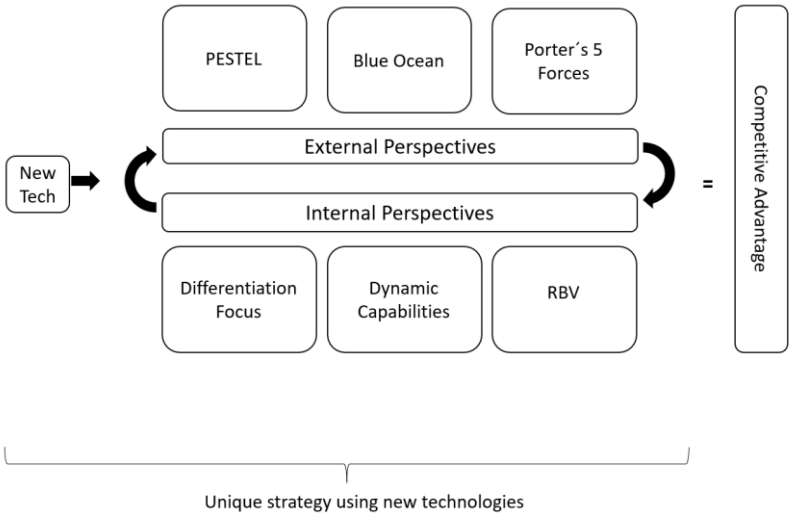

Figure 4 Theoretical framework (own graphic)

The above depicted theoretical framework summarized what could be found out so far from current literature regarding the to be investigated research topic. The consideration and focus on specific factors of the framework as well as their specific combination in regard to new technologies can compose the unique strategy. Building on this theoretical framework, this study aims to uncover the specific factors firms have to focus on to craft this unique strategy that will allow them to achieve a competitive advantage through new technologies.

3 Methodology

Moving onwards from the current body of knowledge described above, the following section will explain the methodological approach taken to clarify, how this work will go about extending it. The decisions regarding philosophy of science, research approach and design specified in the ensuing paragraphs, will consequently impact the generation, interpretation and evaluation of knowledge in and thus also the results of this thesis.

3.1 Philosophy of Science: A Critical Realist Approach

The philosophy of science describes the research perspective regarding the beliefs about reality, knowledge and the relationship between the theoretical and empirical world (Orlikowski & Baroudi, 1991). This work will be inspired by the critical realist perspective, which assumes that there exists one objective reality, regardless of the perceptions of people. But that this reality can be perceived and construed very differently by each individual, depending on historical, cultural, social and other contexts (Maxwell, 2016;

Mingers, Mutch, & Willcocks, 2013). Critical realism focuses on questions like "how does a certain phenomenon work" and seeks to explain, why certain phenomena arise as well as what underlying mechanisms led to them, which is oftentimes done by situating, modifying or replacing existing theories (Mingers et al., 2013; Saunders, Lewis, & Thornhill, 2000; Vincent & O'Mahoney, 2018). Since this is exactly what the thesis aims for - namely to uncover the underlying structures and mechanisms, which allow luxury firms to translate the use of new technologies into competitive advantage on the basis of what is known and what can be learned from empiricism - the researchers of this work chose to be guided by this philosophy.

More specifically, the realist ontology (i.e. nature of reality) of the critical realist philosophy assumes that there is one reality subject multiple interpretations. This leads to a state, where there is some level of common understanding of reality, which can be approximated and discovered by research, but at the same time has to be always considered in the specific given context (Jeppesen, 2005). Hence, claims about reality have to always be placed into context and critically examined to reach the best approximation of reality (Letourneau & Allen, 1999). In critical realism it should be taken care of that the researcher does not follow too strictly the realist ontology, but that he or she also pays sufficient attention to the subjective viewpoints of the investigated organizations and individuals. In line with that, this work believes in that constructs like competitive advantage and luxury (goods) do exist, since they clearly have real consequences on people, markets, events and the like. But that there might be different interpretations of and approaches to them, varying on the basis of time and context. Moreover, critical realism acknowledges that reality is generated and can be changed by actions of people and organizations and at the same time changes them (Malhotra, 2017). This fits to the necessary assumption of this thesis that organizations can make use of new technologies to generate competitive advantage and change their competitive positions through their actions. Finally, the critical realist perception of a multi-layered reality helps to better understand the structure and interdependencies of this research: it tries to explain the underlying but unobservable mechanisms (*real* layer) generating competitive advantage for certain firms (actual layer), which are then observable by the different market players (*empirical* layer) (Mingers et al., 2013).

Regarding the epistemology of critical realism, a mildly subjectivist view is taken on the basis of the belief that knowledge and perceptions can differ between individuals, be potentially fallible and do constantly change (Jeppesen, 2005; F. Lee, 2012; Mingers et al., 2013). Transferred to this work, it allows to

acknowledge that organizations might change their priorities regarding what they consider important with regards to achieving competitive advantage, that their understanding of new technologies, themselves and their competition might develop and that people might have shifting expectations and preferences with regards to what they expect from the implementation of new technologies. Hence, the final explanation of this thesis on how new technologies can be used to create competitive advantage should take account of this dynamism. Moreover, since all knowledge might be fallible and subject to change, the strength of conclusions drawn from people's descriptions and explanations, should always be examined very critically (Mingers et al., 2013).

The critical realist perspective on knowledge and reality furthermore must lead to the acknowledgement that it will be difficult to test or use any theory on the creation of competitive advantage for predictive purposes due to context-dependencies and the constant development and dynamisms of reality and knowledge (Mingers et al., 2013). Likewise, it is also not the aim of the study to be exactly and perfectly repeatable due to the described context-dependency and the fact that a reality is depicted, which is subject to constant change (Saunders et al., 2000). The objective should be rather to create a framework or theory of explanatory nature, which will help firms to better understand their own and competitors´ actions regarding the use of new technologies and what they can learn from this to more effectively and efficiently work towards the creation of competitive advantage.

Agreeing to the described critical realist point of view also means to accept that knowledge and thus also the understanding of researchers is value-laden, i.e. mediated by their previous experiences, preferences, attitudes, etcetera (Patomaki & Wight, 2000). The most important underlying assumption resulting from this is that technologies in this work are perceived as being constructive for companies (i.e. able to create competitive advantage), which might be assessed differently by other papers. This in turn leads the researchers of this work to acknowledge that alternative explanations to the researched phenomenon might exist and reinforces their conviction that the objective of this work should not be to develop a universal truth about how things work, but rather help luxury firms gain a deeper understanding and give them guidance through a framework that can be placed within the specific context of an organization and its competitive environment. In line with this and because of the embracement of the complexity and variety of meanings, this work will aim to generate a framework with a sufficiently high level of abstraction.

Additionally, it is worth to mention that the context-sensitivity can be perceived as advantage since it contributes towards an enhanced external validity (Jeppesen, 2005).

3.2 Research Approach

After clarifying this work´s perception on knowledge and reality, the following section will describe, how the researchers will approach their own acquisition of new knowledge to contribute towards the extension of the existing body of knowledge.

Since clearly a rather large body of literature exists on competitive advantage in general, but no relevant literature for this exact phenomenon of creating competitive advantage through new technologies could be identified, this thesis will aim to contribute towards the development of a new theory based in or a modified theory from existing research (Ali & Birley, 1999). This will be done through an abductively inspired approach, which "relies on the skillful development of theoretical explanations with the help of everything that is known empirically and theoretically about the issue being examined" (Lukka & Modell, 2010, p. 467). Thus, after the thorough familiarization with existing theory outlined in 2 Literature Review, the researchers will seek to combine, modify and expand the existing knowledge with new insights generated from their own empirical observations. The entirety of inductively and deductively generated knowledge will then tried to be placed into a conceptual framework, allowing for a new and better understanding of how luxury firms can approach competitive advantage through new technologies (Danermark, 2002; Saunders et al., 2000). According to Lukka and Modell (2010), such an abductive approach will allow an inference to the best explanation of the researched phenomenon. Moreover, it will reduce the risk of being led astray with theories and knowledge, which were generated in a different context but will not show relevant to the investigated phenomenon, while at the same time overcoming ignorance of existing scientific work, which could meaningfully inform this research. As put by Timmermanns and Tavory (2012), abduction prevents an unnecessary rediscovery of a phenomenon, but also allows to be open for new and unexpected findings. On the other hand, abduction provides the risk that researcher let themselves be guided to strongly by existing research, potentially compromising the richness of empirical insights and preventing the emergence of alternative explanations (Lukka & Modell, 2010). However, if carried out thoroughly it allows to tightly intertwine newly generated data with existing theories and the posed research question, leading to a more comprehensive and deeper understanding of the researched phenomenon (Jeppesen, 2005).

3.3 Research Design

To be able to generate exactly this comprehensive and deep understanding, the researchers of this work will opt for an explanatory research design, which strongly links the above described philosophy and research approach to an appropriate choice of methods.

Choice of the Data Collection Method

Since to answer the posed research question, it is essential to truly grasp luxury firms´ current attitude towards, understanding and perception as well as their current state of initiatives with regards to new technologies, it is established that this can only be done through the use of qualitative data. This argument is further strengthened by the fact that a quantitative approach would most likely not sensibly capture the complex and diverging perceptions and interpretations of reality of the study subjects representing the to be investigated luxury firms. However, the access to exactly this information is needed to judiciously answer the research question.

Accordingly, it has been decided to conduct an interview study to generate the necessary in-depth information needed to explain how new technologies can be used by firms operating in the luxury segment to create a competitive advantage. By conducting individual expert interviews with luxury firm representatives, the researchers expected to gather deep and specific insights regarding the implementation of new technologies within these firms. Moreover, since data from multiple interviews allow to identify the intersection of many subjective experiences, the researchers agreed on that this approach might be the best way to approximate reality and thereby ensure a sufficient degree of measurement validity (S. Smith & Johnston, 2014). To efficiently use the limited time of the interviewed experts, to make data better comparable and to work in already acquired knowledge on the topic, while at the same time granting sufficient freedom for the interviewees to express their views and to let new insights emerge, semi-structured interviews were chosen. These are non-standardized interviews commonly used for exploratory and explanatory studies in qualitative research (Saunders et al., 2000; Teo & King, 1996). For this thesis, the interviews were structured according to particular areas of interested like personal perceptions of, or luxury specifics with regards the use of new technologies as well as e.g. the influence of the international aspect. It was decided to not directly use the theoretical approaches described in the literature review to structure the interviews and questions to not hinder new or alternative explanations from emerging. Furthermore, it was tried to work with questions as open as possible, especially in the beginning to not bias

the respondent´s answers, while at the same time finding a level not too abstract, so that respondents could stay focused on topics of relevance to the researched phenomenon.

The resulting interview guide moreover did not use explicit concepts or themes from prior research and has thus been designed rather unstructuredly and exploratory to receive honest and thought-through answers. Accordingly, it was designed as open as possible "with little pre-planned structure", so that the interviewer could "[follow] up on the interviewee's answers and seeks new information about new angles in the topic" (Kvale, 2007, p. 38). This helped to prevent that the interviewees were inadvertently biased to give certain answers (Justesen & Mik-Meyer, 2010). This approach was moreover followed to, on the one hand not prevent any new insights from emerging and on the other hand, because prior research investigated the phenomenon on a rather high level of abstraction, on which no fruitful information could have been acquired from the interviewees. Taken together, these measures were made use of to generate a satisfactory measurement validity. Another reason for opting for the described approach was that it made possible to reveal deep and rich information about the true opinions of the interview subjects (Malhotra, 2017).

Subsequently, a pool of exemplary, open, follow-up and probe questions were developed along the interview guide to be able to get the most elaborate answers from the interview subjects on the areas of interest. The use of follow-up and probe questions served to challenge the statements of the interviewees and to shed light on their responses from different perspectives, leading again to an enhanced validity and higher credibility of their insights (Saunders et al., 2000). The pool of questions was furthermore used to familiarize the interview subjects with the topic and to clarify confidentiality issues upfront. The exact amount of, order and specific phrasing of the questions was determined by the particular interviewee, the resulting course of the interview as well as the overall flow of conversation (Saunders et al., 2000). The aim for all interviews was to foster an open dialogue, which is why it was always up to the interviewer, which questions, phrasings and order of topics she wanted to pursue, given the specific interview (e.g. industry, knowledge of the interviewee, topics touched by the interviewee, etc.) she was conducting. An exemplary interview guide with a respective pool of questions can be found in appendix II. To foster a higher level of reliability, the two researchers continuously refined the interview guideline and pool of questions through discussion after each interview. This prevented e.g. that questions were misunderstood by several interviewees and allowed to adjust questions in a way that would yield more relevant insights.

Choice of Interview Subjects

To be able to have access to the largest, richest and deepest amount of data given the time, costs and other restrictions of this research, potential interviewees likely to yield the most useful insights for answering the posed research question were contacted. It was required that the interviewees worked in an international luxury company, that they had a sufficiently high position to have enough insights about the firm's operations and that they were located in departments that were responsible for decisions about or the execution of new technology initiatives. The researcher furthermore paid attention to look for a heterogenous group of interview subjects regarding demographics like gender, age and origin, to capture the richest possible spectrum of insights. Based on the ease of access, availability and time constraints, ten interview subjects were selected consequentially, after which the researchers decided to have gathered sufficient data on the topic to generate insightful findings and thus not proceed with further subjects. To get a sufficiently broad perspective over the luxury market experts from the following industries were consulted: fashion (4[1]), automotive/car (3), jewelry (2) and beauty (2[1]). The investigation of luxury segments of the four different industries also contributed towards an increased external validity, i.e. strengthened evidence that the observed mechanisms might also work in luxury segments of additional industries, which were not investigated (S. Smith & Johnston, 2014, p. 16).

Due do the international aspect of the firms chosen to be interviewed, it was opted to conduct the interviews in a manner most convenient for the interviewees. Thus, seven of the conducted interviews have been telephone/skype interviews, one was conducted in person and two were answered writtenly, due to limited time of the interviewees. Moreover, because of the fact that all of the interviewees work in a known and renowned organizations and hold high positions within their company, all company names as well as interviewee names were anonymized. Although the researchers cannot make use of the well-known names of the companies, which would add value to this research, it was important for the researchers to only conduct interviews with established and well-known luxury companies in order to ensure the importance of the research topic in the free economy.

[1] one interviewee worked for a beauty and afterwards for a fashion company

3.4 Data Analysis

In line with the above-described research approach, an abductively inspired approach has been taken to analyze the data, meaning that the analysis was an iterative process going back and forth between data and what is already known from literature to develop the most comprehensive explanation answering the posed research question (Lukka & Modell, 2010). Thus, on the continuum between theory- to data-driven approaches as described by Boyatzis (1998) the approach taken approximately corresponds to a place in the middle. Since the optimum outcome of this work is to contribute towards the modification or development of a new theory explaining how firms can gain a competitive advantage through new technologies, abduction, which is known to be used for theory construction, seems reasonable to be used for the data analysis (Timmermans & Tavory, 2012).

Approaches like the one taken in this thesis, which rely on a data- as well as theory-driven analysis have also been opted for by other researchers: Perry and Jensen (2001) e.g. suggested a quasi-inductive approach combining themes from prior research with purely inductively developed ones. Fereday and Muir-Cochrane et al (2006) combined inductive thematic with deductive template analysis and Maass, Parsons, Purao, Storey and Woo (2018) developed a framework for information systems (IS) research aiming at bringing together data- und theory driven research. Within this logic a number of researchers decided to work with the so-called framework analysis as a method of data analysis that brings together data- and theory driven considerations.

The framework analysis, usually attributed to Spencer, Ritchie, Lewis and Dillon (2004) has been mostly used in social and especially health science, but has been also recognized to be useful for answering strategic research questions pursuing the identification of new theories and development of often underlying conceptual frameworks in general (Parkinson, Eatough, Holmes, Stapley, & Midgley, 2016; J. Smith & Firth, 2011). The step-by-step procedure of framework analysis shares some characteristics with thematic analysis. However, the framework analysis works with so called *thematic frameworks*, which are matrix-based tools consisting of a priori themes and such that emerged inductively. These frameworks are then used to organize the entirety of data (Spencer et al., 2004; Woodfield, 2008). This way analysis is dynamic and can be firmly anchored in the data while acknowledging relevant contributions of prior research leading to less ignorance and openness to the unexpected at the same time (Timmermans & Tavory, 2012). Although framework analysis has also been used in IS research (Feller & Fitzgerald, 2000),

the analysis of this work will orient itself at the original steps of Spencer and Ritchie (2002) as well as the more detailed descriptions of Srivastava and Thomson (2009), Gale, Heath, Cameron, Rashid and Redwood (2013) and Parkinson et al (2016). Minor adjustments to the steps have been made to account for the characteristics of this work and due to simplifications of the process through the usage of the qualitative data analysis software Nvivo. Although described as a clear, rather sequential and linear process below, the actual data analysis involved a lot of refinements, redoing and going back and forth between steps. This thorough carrying-out of the analysis process including continuous refinements of the frameworks and respective themes helped to ensure internal validity of the study, i.e. "establishing a chain of evidence that the generative mechanism", which is to be uncovered by this research is the likely cause of the competitive advantage of a firm (S. Smith & Johnston, 2014, p. 18). In summary the data analysis looked about as follows:

Step 1: Transcription of and Familiarization with the Data

The first step of the framework analysis, just like in thematic analysis, was to transcribe and familiarize with the data. Smooth verbatim transcription was used to transcribe the interviews, which means that they were transcribed word for word but utterances were left out. Since the transcription of the interviews was split up between the two researchers of this work, another round of (re-)listening and (re-)reading of all the interviews followed the transcription process to fully familiarize with the data.

Step 2a: Initial Coding

To ensure that important themes from the data were not missed, the researchers secondly engaged in an open coding session for the interviews, meaning that anything appearing relevant to the researchers was coded. The codes were developed only from the content of the interviews (data-driven coding), whenever possible in vivo but partly labels were also coined by the researchers. The goal was then to consolidate the codes and identify recurrent themes.

Step 2b: Choice of a Priori Codes

To be able to develop a comprehensive analytical framework, the researchers also consulted prior research on the topic of competitive advantage to be able to derive potentially relevant themes from this source. Therefore, they oriented themselves to the theoretical framework derived from the literature review of this study.

Step 3: Development of an Initial Analytical Framework

In the third step, it came to the reflection, discussion and consolidation of key themes from the initial coding session and the selection of a priori themes to decide on the themes for the initial *thematic framework*. Guiding this process, was the objective of developing a framework, which would help answer the research question. As described by Parkinson (2016) the degree to which the inductively derived versus a priori themes are used in the development of the framework, depends on the particular study. In the case of this analysis, it was possible to group some inductively generated themes into overarching a priori themes. Other themes were merged, discarded or remained as initially developed, leading to an initial analytical framework.

Step 4: Application and Refinement of the Initial Analytical Framework

Next, the initial analytical framework was applied to five of the interviews by each researcher. In this process, the researchers were in continuous exchange to adjust and refine the framework on an ongoing basis. Through discussion and reflection, the researchers decided on consolidation, renaming and supplementation of themes as well as restructuring of the initial framework - always guided by the question how the framework must be changed so it will best support the answering of the research question. During the application it was tried to be careful to not force data into a priori themes and to be always open to let new insights emerge from data. At the end of the process, the researchers had agreed on a final framework, which was applied to all interviews (see Appendix VI).

Step 5: Charting Data into the Framework Matrix and Interpretation

Finally, with the support of the matrix function of Nvivo, the relevant pieces of data were placed into a chart representing the final framework with all the themes agreed upon. As suggested by Parkinson (2016) step five also involved the interpretation of the themes and thereof resulting description of them and their overarching concepts, as well as the establishment of relationships between them. This again, was done through discussion and reflection between the two researchers and aided by the visualization of the themes and their relationships on blackboards, post-its and posters. The resulting matrix can be found in appendix IV, the visualization of the derived framework in Figure 5 of section 4.

4 Results of the Study

The following section will present the findings of the conducted study. Before the different parts and specific themes of the framework will be analyzed in detail, a brief description of the data sample as well as concomitant organizations and interviewees will be given.

4.1 Sample Description

By conducting ten individual industry expert interviews, we are looking for individual luxury market specific insights regarding the implementation of new technologies on the customer side. In total we interviewed seven men and three women. Whereas one interview was face to face, seven were held via telephone or Skype and lastly, two of the interviewees provided us with written answers due to a limited time frame but still wanted to evince their interest in this research. We were keen to interview people from a heterogeneous group by meaning of gender, origin as well as industry background, which we consider as important to establish a broader indication of the expected findings.

The following will provide a brief company description as well as a brief description of the respective interviewee itself.

Car Company 1 is a British luxury automotive manufacturer, was established 1906 and registered a sales of 4.107 cars in 2018. The headquarter is in in the United Kingdom but the company is operating globally. Hence, CCM1 is working in the UK and holds the position as Global Digital Marketing Manager since the beginning of 2018, where the interviewee is responsible for the strategic development and ongoing management for all global digital and social channels.

Car Company 2 is a German multinational automotive corporation with its headquarter in Stuttgart, Germany. It was founded through a merger of two other companies in 1926 and operates worldwide. The interviewee CCW2 works in a specific division of Car Company 2 in Brand Experience and works for Car Company 2 since 2016, which allows the interviewee to give very narrow and detailed insights about the digital transformation process.

The third company from the car industry, Car Company 3, is the same German multinational automotive company. However, CCM3 works for a different division, in which the interviewee holds the position as Head Market and Customer Intelligence. This allows us to both find connections as well as intercompany differences in regard to the research problem.

The second big industry within the luxury market is the fashion industry, whereas Fashion Company 1 is a German luxury fashion house and was founded 1924. As all of the selected companies Fashion Company 1 performs globally and owns more than 1,100 retail stores around the globe as of 2016. FCM1 works as Director of Digital Transformation in the United Kingdom since 2016.

Fashion Company 2 is the same company as the one mentioned above, but FCM2 holds the position as Director Transformation within a specific division in the company and pursues the job in Germany. This and the long-term experience of five years at Fashion Company 2 let us again connect and also compare the different insights we conduct through the various interviews.

Almost the same can be concluded about Fashion Company 3, however in which FCW3, who is again an employee of the same company as described previously, holds a different position in Communications, Marketing & Digital in the German headquarter.

Coming to the next market of Beauty, Fashion & Beauty Company 1 is a perfect addition to our interviews. FBCM1 is an interviewee who gives us insights in the Beauty as well as Fashion world due to the reason that he worked first for a fashion company and then for a beauty Company, which is why the interviewee provides insights from both. The corresponding fashion company is a French high-fashion house that specializes in haute couture and ready-to-war clothes, luxury goods and fashion accessories. It was founded 1909 and operates worldwide. FBCM1 worked for in total 11 years as Marketing Director in France and Germany, as well as Regional Head of Marketing and Communications in Singapore for the respective fashion company. Moreover, FBCM1 can give us insights in the beauty industry as well, where he worked before for 5 years as Product Manager as well as Marketing Director in Germany. This makes him a valuable interviewee who can give many different insights not only company wise but also globally. The Beauty Company the interviewee worked at is a French personal care company and is the world's largest cosmetics company, founded 1909.

Beauty Company 1 is an American based multinational beauty company founded 1904 with served areas around the world. BCM1 works for more than three years for the organization starting as Innovation Accelerator Leader worldwide and holding currently the position as Director Stretch Innovation in Paris.

The last industry in the luxury market, which the researchers of this work found interesting is the jewelry industry. Two different companies were selected to give valuable insights. Jewelry Company 1 owns

several of the world's leading companies in the field of luxury goods, with particular strengths in jewelry, watches and writing instruments. It is a Switzerland-based global company founded in 1988. JCW1 is acting more than nine years at Jewelry Company 1 and currently holds the position as Digital International Manager in Suisse.

The second company which is seen as attractive for this research is Jewelry Company 2, which is an Austrian producer of lead glass operates in the fashion, crystal as well as jewelry industry, which makes it an interesting company. JCM2 is working for almost 17 years at Jewelry Company 2, currently holding the position as Innovation Development Manager.

4.2 Presentation of Findings

In the final framework used for analyzing the interviews, nine themes including their respective subthemes were maintained. The themes were all found in at least eight of the ten interviews, while all subthemes were found in at least four interviews. A more detailed overview over the final themes and subthemes can be found in appendix VI. They can be grouped into three overarching categories, namely the objective luxury firms pursue when implementing new technologies, the aspects they consider for decisions revolving around new technologies as well their overall attitude towards them. These will be explained in the following.

4.2.1 The Goal of Using New Technologies: Creating Five Types of Customer Value

When asked about applications of, opinions on and strategies revolving around new technologies, the interviewees all seemed to agree that they have one overarching objective in mind, which is to create value for their customers through the implementation and use of new technologies. This theme of ***customer values*** could be found in all ten interviews. More explicitly five different kinds of value could be identified. Furthermore, it is worth to mention that in many of their statements the interviewees connected the creation of the different customer values with the enhancement of the customer experience.

With the value ***convenience*** the interviewees described that new technologies can help them to fulfill their customers´ demands and wishes whenever and wherever they want. This was i.a. nicely described by JCW1: *"I can tell you that our aim is really to find services, digital services that help and ease the customer to have a seamless journey whatever channel he wants to engaged and whatever channel he wants to be reached*". The value also is about reducing any effort of a customer to a minimum while

generating the highest possible level of efficiency. Amongst others this can be done through offering customers services at home, in the car or other convenient places, so that he saves time and effort to go to a store or another location to receive the service. An offering that often was associated with the augmented and virtual reality technologies. Time and effort can however also be saved through directly offering the customer products or services that instantly satisfy their needs. This can be done through XR: *"imagine going to a store and you could hold up your phone and it would just highlight or grey out all the clothes that won't fit you"* (FCM1) as well as machine learning and AI: *"So really know much better what the customer really wants based on his or her profile and it's easier to respond to that need."* (FCM2).

Secondly, the customer value **hedonism**, as FBCM1 put it, is about *"what kind of emotions you're provoking about happiness, about love, about valorization"*, i.e. equipping the customer with some sort of psychological value. Oftentimes, this value was created by enhancing or adding elements to existing, or even by creating completely new customer experiences through new technologies, which made customers perceive the luxury brand or product in new or more intense ways. In the majority of the interviews this making the customer feel pleasure, emotions and fun was an important objective with regards to the use of new technologies. JCW1 substantiate this objective as follows: *"a luxury brand should be inspirational and should be really rated on creativity and everything"*.

Moreover, seven of the interviewees explained that getting the firm's offerings perfectly tailored to the customer´s needs and preferences is something they (want to) pursue when implementing new technologies. The importance of this value of ***customization*** was also explained by FCM1: *"I think it's all about creating an individual experience for the customer and making it the most relevant experience for them"*. FCW3 furthermore argued, that because a luxury customer *"has a higher demand, and wants to have something very, very special"*, customization is of exceptional importance in the luxury area. As exemplified by FCM1 with his statement "so it all comes down to that each customer is individual and the better you can understand, what needs the individual has the better you can service them", the interviews suggested that the final goal here is to provide offerings as individual as the full spectrum of different customers.

Another concern for some of the interviewees was to create some ***sense of belonging*** for their customers. The interviewees had different viewpoints here on what kinds of connections are important but agreed on the overall objective to make the customer feel that he is part of something. According to the

interviews, customers can get this feeling of belonging from the increased interactivity and connection with the brand as described e.g. by CCM1 *"it becomes an opportunity there to have a direct line of communication with somebody in a virtual world and that's where I think the value conveys"*. But as well as through more connection with other customers of this brand as e.g. put by FBCM1: *"as we see in this world today it's all about community thinking right"*. The interviewees suggested to build this better connection e.g. through virtual and more interactive communication channels or AI-based pre-qualification of customers to be able to respond to them more individually. It is worth mentioning however that the value sense of belonging was mentioned by fewer interviewees than the preceding subthemes.

Same is true for the value of ***reassurance***. Nonetheless, four interviewees explained that new technologies help them to provide their customers with a feeling of confidence, support and security and to make their customer more certain about their decisions and interactions with the luxury brand and its products. For example, JCW1 described that they *"work with the artificial intelligence [...] to ensure that [they] can foresee or at least try to anticipate when the customer will have some issues and then add some mitigation action*". FCM1 reported another scenario, where AR is used to help the customer make more informed decisions: *"AR it's a super interesting question from a showing customers how [the piece] might fit to them"*. The interviews suggest that this reassurance is an important characteristic which should be conveyed to the customer since the luxury brands are or want to be associated with security and quality (see CCM3, CCW2, JCW1).

It stayed unclear however, if the customer values described by fewer firms were of simply minor importance to the specific firms or interviewees that did not mention them, or if the respective brands were just unable to realize them until now. A significant difference according to distinct industries represented by the interview partners could not be identified.

4.2.2 How to Create Customer Value: Perspectives and Aspects to Consider

In the second overarching category, the interviewees described different aspects they have to or want to consider when thinking and making decisions about the implementation and use of new technologies. The themes of this category include factors that according to the interviewed luxury firms are necessary or desirable to consider to carry out new technologies initiatives effectively and efficiently, hence, determining the success or failure of them. The following paragraphs will shed light on these factors, grouped into

aspects pertaining to the external and internal perspective as well as those specifically framed as barriers to the implementation of new technologies by the interviewees.

Aspects Pertaining to the External Perspective

In the interviews we could identify diverse aspects firms considered with regards to the implementation of new technologies that were attributable to different approaches and frameworks of the external perspective.

More specifically, four different macro-level factors could be identified, which firms found worth considering, when making choices about the implementation and use of new technologies. These were pooled under the theme *PESTEL*, identified in all interviews.

The first of these macro-level factors, ***cultural differences***, was described by all luxury brand representatives as the distinct attitudes, habits and ways of thinking of customers from specific regions of the world. FCW3 for example explained that *"the Chinese people have different demands than the European people"*. JCW1 agreed to this by stating that *"if look you at US market and if you look at the Chinese market the behavior, the customer will be completely different and interaction that you will have on your I would say services may be different as well"*. The interviewees also gave specific examples that e.g. in China or Korea you have to always integrate key opinion leaders or influencers to make initiatives and offerings successful. Although various countries and regions were named, most often China was contrasted with either Europe or the US.

Somewhat related to the subtheme of cultural differences was the one of ***social acceptance***. Here, the interviewees discussed the level of general societal approval for or consent to new technologies. Although the readiness and stage of adoption of new technologies were sometimes linked to different countries or regions as exemplified by FCW3 *"I think that the Chinese people are much more forward with the technology [...] And I think in Europe it started a little bit later, so they are [...] catching up",* the interviewees also referred to it on a more general level, as can be seen by this quote of CCM1: *"So, I think that's a difficult one because I think they are in general, this needs time for people to accept it"*. Beyond this, at many occasions, the respondents did not explicitly clarify if the social acceptance is only an issue at the customer side or if this also translates into an organizational issue.

The third macro-level factor debated by the interviewees was the ***technological ecosystem***. With this they referred to the region-specific technological landscape that build the infrastructure and playground for companies´ operations. As JCW1 put it, *"you have completely different ecosystems if you are in Asia or if you are I would say in a Western country "* and thus *"you need to [..] ensure that this [technology] will work as well with this kind of ecosystem"*. Amongst others, the interviewees discussed important platforms and applications like KakaoTalk and WeChat or inclinations to different types of devices that should be accounted for when implementing new technologies as can be seen by the following quotes:

"And we have WeChat, where WeChat is everything right. I guess you're aware of this and so you do everything with it [...] So when you have this in China and then you come to Korea, which is also one of the fourth most important markets with KakaoTalk" (FCBM1)

"China is ahead of everyone so that so we´ve already at 95 percent mobile use vs desktop. Whereas in Europe it's more around 60 percent." (FCM1)

Finally, another aspect the interviewees mentioned to consider, which also differs across different regions, were ***regulations***. JCM2 (translated) for example mentioned that *"it is for sure like this that legal aspects are present in different countries in disparate ways and that in some markets it is easier than in others "*. In general, the interviewees when talking about regulations referred to the local as well as country-spanning laws, agreements and restrictions setting limits for the way companies do their business. FCM1 e.g. reported that in his firm *"they have many many security, privacy, restrictions, legal restrictions for a roll out"*. Regarding the types of regulations, a special emphasis was moreover put on regulations concerning data protection, where according to BCM1 *"the most present element to consider is [the] GDPR"*.

Next to macro-level factors, the company representatives also addressed different aspects they have to consider regarding their competitive environment, when deciding on new technologies. These aspects they need to draw conclusions about their own competitive positioning were summarized under the theme ***five forces***. More precisely, within the 82 references found in ten interviews, two subthemes could be extracted:

Firstly, ***benchmarking*** was mentioned as important activity firms engage in to identify and clarify its own competitive position and following from this, what subsequent initiatives they should pursue to defend or

optimize their position. Some companies like the one of BCM1 seemed to do it more passively as described with this quote: *"As far as traditional competitors are concerns, from a personal point of view, it looks like we are all in the same bath, and progressing at the same speed"*. Others seemed to more actively map own activities to those of competitors to derive counteractions: *"it's a lot of copy paste, copying and or a look at what my competitor does and then I would do the same or I will copy the same"* (JCW1). However, it is important to highlight that although nine out of the ten interviewees disclosed that they are engaging in benchmarking activities, the felt significance seemed to be very different.

Secondly, firms engaged in activities aiming at better anticipating, understanding and responding to what their customers want. This orientation of firms towards the needs, desires, preferences and requests of their customers was labelled with the subtheme ***customer demand***. This oftentimes meant that technologies were rendered as means to satisfy the customer as illustrated by a statement of BCM1: *"first and foremost, we need to check whether technologies are an enabler to deliver against a consumer need. Technology for the sake of technology is not something I am personally a fan of"*. Almost all interviewees talked about how important it is to ground initiatives around new technologies in an actual customer need, which FCM1 formulated as *"it depends on the use cases of the customers"*.

Besides macro- and micro-level factors eight interviewees pointed towards that they also consider and try to explore uncontested areas in which you can create new offerings for customers through new technologies. These considerations were subsumed under the theme ***blue ocean***, consisting of the subthemes new experiences and new services.

New experiences describe how firms open up unknown and unexpected moments, encounters and happenings for their customers through new technologies. FBCM1 e.g. spoke of that *"there can be a business model that distribution doesn't exist anymore tomorrow. That you come home you have your, you have a virtual clothing room"*. New experiences as described by the interviewees are all about the customer´s sensing, perceiving and understanding brands and products in a new way. Thus, the actual experience only emerges through the interaction of firm offering and the customer himself. Moreover, it seemed like such experiences were not always necessarily linked with a direct commercial interest or the company's product. For example, CCW2 (translated) when talking about a VR experience of her company said: *"you only knew that it was about surfing and the experience really was about riding this wave and not seeing the X class in the end. This also was not [...] the value behind it"*.

New services other than new experiences are performed by a company and are repeatable until the day the company decides to stop perform the service. FCM1 e.g. described one such possible service: "*So [...] imagine going to a store and you could hold up your phone and it would just highlight or grey out all the clothes that won't fit you"*. Examples of new services as described by the interviewees were all about how firms piece together their brand, products and new technologies to resolve issues, fulfill new needs of their customers or existing ones in a new way. In line with this, JCW1 explained that for special kinds of products *"to avoid mistakes, [they] propose to make some simulation that is done with augmented reality"* and that for rare products they *"have some connected mirror where the customer can see [their] face and see what the piece could look like on him"*.

Aspects Pertaining to the Internal Perspective

As well as aspects attributable to approaches and frameworks of the external perspective, aspects relatable to frameworks and approaches of the internal perspective could also be identified.

In particular, the most important aspects firms consider regarding their competitive position when making use of new technologies, so that they only have a positive impact on the brand could be put together under the theme ***differentiation focus***. This was the first out of three themes related to the internal perspective, containing the two subthemes customer segmentation and uniqueness.

In the majority of interviews it became clear that there was an unambiguous specificity of the luxury brands´ customer compared to those of other market segments, and that the respective firms moreover performed an even finer differentiation within their target segment. This very distinct ***customer segmentation*** of the interviewed luxury firms is about serving customers according to their cultural, social and financial background with the ultimate goal to do so according to their very individual background. An aspect that according to more than half of the interviewees should not only be nodded through but can specifically be leveraged and improved through new technologies as e.g. described by FCM1: *"once you get into AI, machine learning I think that there's lots of potential for obviously data mining, customer segmentation and how customers react"*. Thus, it can be said that supporting the unique customer segmentation of luxury firms through new technologies on the one hand is perceived as challenge, but on the other hand is also recognized as great opportunity to even further improve serving customer according to their very individual background.

Secondly, ***uniqueness*** describes the combination of the high standards, special offerings and high expectations towards luxury brands that most of the interviewees perceived as forming the very core of their brand. Again, as exemplified by CCM1 safeguarding this uniqueness when combining it with new technologies can be a great challenge but also an opportunity: *"when someone looks at a very expensive item [...] they just want it because it makes them feel that certain way and that's where the technology can play a little bit different. But that's where it is quite difficult because technology can only do so much"*. More specifically, some of the interviewees explained that when consciously opting for a luxury-specific way to implement new technology, their brands´ uniqueness can even be enhanced.

Next to those aspects considerable as direct building blocks of luxury firms´ competitive strategy, all interviewees also mentioned several different resources and capabilities needed to successfully make use of new technologies. These resources and capabilities, captured in the theme ***RBV***, were seen as potentially being influenceable by new technologies in either positive or negative ways.

The first subtheme under the RBV, ***brand equity***, is about the value of a brand that has an important influence on strategic decisions and oftentimes determines what is sensible and possible for a firm to do with regards to new technologies and what not. Half of the interviewees agreed upon that knowing about and aligning your brand with initiatives like such on new technologies, is an important factor. Like FBCM1 said, *"there were brands who could increase their brand equity, [...] because they were so smart in using it"*. Hence, creating a fit between new technology initiatives and brand equity seems to be an important success factor and can enhance the brand value even further. In sum this means that brand equity is not only valuable as a resource but the capability of actually successfully leveraging it is what is truly important.

Secondly, (sufficient) financial resources and right processes needed to execute initiatives around new technologies were also talked about by the interviewees. CCM1 e.g., when speaking about new technology projects, which were not put into practice, explained that *"there wasn't enough to justify the budget for the business basically that was what it came down to"*. The issue of insufficient ***budget*** or willingness to invest was also described by FBCM1, FCM1 and FCM2. What is important to mention is that the factor budget was only critically remarked by four out of ten interviewees. From the rest of the interviews it did not become clear if budget constraints were not mentioned because they are non-existent or because the interviewees did not have insight into such considerations.

Skilled people emerged as a third subtheme under the RBV. Regarding this aspect, the interviews were not only about literally having skilled people within the company but rather more generally having access to the necessary competencies to prepare, handle, implement and execute initiatives revolving around new technologies. This can happen through internal or external staff as well as partnerships as put forward by FBCM1: *"you have to have the people for it, to analyze it to go behind or external sources or agencies"*. The importance of this factor was amongst other stressed by FCM2 stating that *"I think people will need to learn different skills and if they cannot then we have some some serious issues"*. Also, some of the interviewees did not only speak of individual people but also dedicated departments that should be able to take care of implementing and executing initiatives revolving around new technologies.

Next, the respondents spoke of ***CRM***, when referring to the understanding a firm should have of its customers as well as the ability to create and grow it to build and nurture strong customer relationships, which eventually will lead to customer loyalty. This subtheme appeared to be important, since a real understanding of customers will show firms where new technologies can really create value: *"this definitely is one of the highest criteria of the firm [...] understanding the development of customer needs and fulfilling them. Maybe even customer needs that the customer currently is not even aware of, so basically telling the customer what he actually needs"* (JCM2 translated). Moreover, the interviewees made clear that customer understanding is an important asset especially for luxury firms that should never be compromised, but rather tried to be enhanced through new technologies. As e.g. described by JCM2 especially machine learning and AI promise fruitful opportunities here.

Since most customer understanding originates from some sort of data about the customer, a subtheme very related to CRM is ***data***. Pulling together the insights given by eight interviewees on this topic, data is all about having, knowing about and making use of all the necessary information that (potentially) exist within the company, which can then be fed into or used in preparatory phases for reasonable and effective implementation of new technologies. Confirming this JCM2 (translated), e.g. stated that *"with machine learning it is like this that you need the data or a foundation of data"*. In a next step, after having gathered the data, it is imported for firms to know *"then also how to interpret them*" (FBCM1). For many of the interviewed companies, this seems to have only become imperative recently as can be seen with this quote of CCW2 (translated): *"and right there we are in a phase of radical change where we try to*

reposition ourselves and try to collect more data and try to evaluate the data to draw some conclusions from it".

Finally, ***DNA*** covers all resources and capabilities mentioned by the luxury brand representatives, which revolve around a firm´s heritage, traditions, history, skills in their particular craft, their unique understanding of creativity as well as the right management of these. As phrased in the interviews, when thinking about new technologies, luxury brands would think *"really five times more about [their] brand DNA and [their] heritage"* (FBCM1) and always make protecting their DNA a big priority in such initiatives. Although JCW1 said that there is also the opportunity of *"using technology to keep control of the heritage of the maison"*, most interviewees rather perceived it as a threat or at least a significant challenge to combine their brand´s DNA with new technologies.

Building upon the firm's existing resources and capabilities, the last theme pertaining to approaches and frameworks of the internal perspective is ***dynamic capabilities***. This theme aggregates the statements of eight interviewees on the desirable ability of a firm to use new technologies to create value directly or indirectly by leveraging other resources and capabilities. More specifically, the interviewees talked about the subthemes mindset, creating relevance and technological capabilities here.

Half of the interviewees stressed that there should exist a necessary awareness and attitude of a firm to successfully make use of new technologies. This ***mindset*** seems to have to do with openness to something new as indicated by FCM1: *"we are trying to have a very flexible attitude upfront to allow people to innovate"*. Moreover, according to FBCM1 it is about being ready for change, *"to invest and to have a test and learn approach"*. Moreover, JCW1 explains that "it's important now that they really understand that technology that it's more than just IT", i.e. that there really exists a firm belief in the possibilities and progress new technologies can create. Having some of the respondents not indicating considerations regarding the subtheme, leaves it unclear once more if mindset is only a factor worth considering in some firms, if the firms are unaware of it or if just the person questioned did not know or qualify to speak about the topic.

Next to mindset, the interviewees however also talked about their ability to demonstrate the potential value of new technologies for the customer and the firm. This connecting the new and the existing and embedding new technologies in the firm in a way that they are preserving or even advancing the core company values, image and strategy was captured in the subtheme ***creating relevance***. FBCM1 nicely

described this ability as *"today everybody is using these technologies [...] so then it´s again the question of how you can make it more translated in a way to make it more relevant"*. To put it a bit differently, creating relevance essentially is about creating sufficiently strong business cases to evidence that and how new technologies can be implemented in value-creating ways that are different from what has been done so far with existing technologies.

Following the successful demonstration of the value of new technologies, seven interviewees highlighted that the ability to successfully implement and execute new technologies is equally important. Or as FCM1 phrased it: *"I don't see that [...] new technologies will fundamentally change the perception, it will be more about the execution of it"*. Thus, the ***technological capabilities***, i.e. the ability to leverage new technologies in a way, that allows to effectively respond to opportunities and threats imposed by them, were pooled as third subtheme of dynamic capabilities. As described by BCM1 (new) technologies can thus also be seen as enabler. Additionally, he emphasizes though that *"it's an option to do it badly and an option to do it well, [...] and so if you do it badly, it will make your brand look cheaper and if you do it well it will make you stand out and be enhancing for the brand"*. Following from it seems like it is important for firms to possess such kinds of dynamic capabilities to not hurt its own brand when putting new technologies into practice.

4.2.3 Barriers to Creating Customer Value

Finally, all interviewees indicated that they already implemented or at least experimented with new technologies in some way within their organizations. While reflecting on these initiatives of their organizations, there were a number of aspects specifically perceived as impairing the ability to make use of new technologies by the interviewees. These were subsequently grouped under the theme ***barriers***. Most of them clearly relate to or were already pointed out as factors above but were because of their specific phrasing additionally coded as barrier (see underlined formatting). Even though the particular barriers were not as present as other subthemes, they are important to mention since they, in the course of the analysis, seemed to be relevant to almost all interviewees.

The first subtheme that could be identified as barrier based on the phrasing of the interviewees was ***capabilities***. As can be exemplified by the quote of FCM2, the highlighted parts caused the researchers to categorize the data as barrier capability: *"I think people will need to learn different skills and <u>if they cannot then we have some some serious issues</u>"*. In general, when talking about capabilities as a barrier, the

interviewees referred to the difficulty to make effective and strategic use of new technologies. This understanding clearly shows a relationship to the subtheme technological capabilities described further above and can be reaffirmed by CCM3 (translated) describing the *"Complex technical implementation [...] no real understanding for the business model and output of new technologies. No competencies in these areas"*.

Similar things can be said about the second barrier ***cost-benefit***. Again, a line can be drawn to the earlier mentioned subtheme budget as cost-benefit is describing the issue of not seeing or not being able to create sufficient benefit to justify the costs of using new technologies. As the subtheme budget, also cost-benefit was only mentioned by a minority of interviewees, opening up similar questions as described above. Again, CCM1 can be turned to to illustrate the subtheme, with the highlighted part emphasizing the impairing aspect of the factor: *"there wasn't enough to justify the budget for the business basically that was what it came down to"*.

The third barrier ***customer acceptance*** describes the challenge for companies to get acceptance for their use of new technologies from the customer-side. Here, a line can be drawn to the factor social acceptance under the PESTEL theme. CCM1 e.g. describes that a new technology sometimes *"feels too invasive to a customer"* or *"because people aren't used to it [...] [it could] put people off"*. This clearly shows that the technologies used by the companies are sometimes not embraced by the customers that should get a benefit out of them. The quote by CCM1 suggests that the reason why some applications of new technologies get accepted and others not has to do with the familiarity of the technologies. CCW2, JCM2 and FCM2 on the other hand refer to the general attitude of customers that might also depend on cultural background.

Next, ***determination*** describes the challenge of firms to internally have the right mindset for making use of new technologies. Clearly, this subtheme relates to the dynamic capability mindset defined in section 2.5. More specifically, the interviewees talked about that they face significant efforts to push forward with regards to new technologies and to develop effective plans for implementing them. Also, some companies had to fight against resistance within the company, because *"internally the barriers were so high"* (FBCM1). On another note, CCM3 e.g. explained *"It is decisive that we have the courage to implement them consistently. This, with the current brand, is barely possible though"*.

Furthermore, it could be identified that ***firm-specific alignment*** to some degree is relatable to the subtheme creating relevance. Firm-specific alignment describes the challenge for companies to create a fit between the firm's unique history, ways of working, brand as well as organizational conditions and the way new technologies are used. More specifically, it somewhat describes what concrete aspects the interviewees struggled with in regard to creating sufficient relevance for new technology initiatives. FBCM1 e.g. describes his insecurity about *"how do [you] rejuvenate the brand without losing [your] real DNA and becoming more relevant to the millennials or the younger ones"*.

Finally, the last barrier ***technology performance***, is the only one not attributable to some of the factors described in sections 2.4 or 2.5 but rather an impediment stemming from the new technology itself. CCM1 for example, when talking about VR stated that *"it was trying to be a halfway house but it wasn't doing a good enough job"*. The interviewees describe this barrier as the issue luxury companies have with the current quality, maturity and scope of functionalities of new technologies as well as with the ease to combine them with existing systems and products. Moreover, some interviewees had a pretty strong opinion that some aspects of their daily business are just unable to be improved through new technologies: *"this algorithm would have never known because the conversation and there is no path in the past which could have explained or foresee that you will buy eyewear or whatever"* (FBCM1).

4.2.4 Attitudes Towards New Technologies

Finally, in nine interviews the representatives of the luxury brands described an overall stance their firms take towards new technologies from their point of view. This ***technology attitude*** seemed to have impact on the handling of initiatives revolving around new technologies, although specific consequential actions could not be identified.

The first type of technology attitude that was described by the luxury brand representatives was one portraying the innovators of the markets with regards to new technologies. BCM1 e.g. explicates his perception about beauty company 1´s technology attitude as follows: *"My team is on the scout of new technologies, and enable project that go beyond the current scope of our innovation pipeline, to deliver "1st in the industry" product and services, to serve our most discerning beauty consumers"*. Thus, when talking about the type of firm belonging to this category, the interviewees spoke about such brands that dared to experiment and take risks in order to always be ahead of the rest of the competition, which is why the subtheme was termed ***pioneer***. What is important to remark is that this subtheme was supported by the

least references compared to the other two technology attitudes. Moreover, companies did not only talk about themselves but also about competitors as pioneers as can be seen by this statement of FCM1: *"So I think that Burberry who were long held I would say at the forefront of the digital curve".*

The second technology attitude that could be identified can be subsumed under the term ***laggard***. Under this category such statements of the interviewees were pooled, which describe that the firm feels rather comfortable in an observing position when it's about the implementation of new technologies, like described by CCM1: *"So, it's interesting what has been talked about quite a lot in the business, but we don't feel like it's a priority for us at the moment"*. Firms in this category often waited until they could see a proof of concept of the application of a new technology at their competitors or customers, before they themselves reacted. Unlike the pioneers, they considered themselves as not being *"very brave in doing experiments"* (FCM2) and rather waited until they could be practically certain about the success of an initiative. Usually they then also only tried to draw even with competitors instead of making an attempt to outdo them.

However, most of the time when talking about their technology attitude, the interviewees talked about their firms as a sort of ***opportunist*** as can be seen by the 38 references supporting this subtheme. Companies attributable to this attitude were such that carefully considered opportunities and threats of new technologies and mapped them to the company's strategy, values and principles. Interviewees like BCM1, FCM1 or JCW1 clearly expressed that they need to see the benefit of the use of new technologies before they decide to implement it (e.g. *"when we use this such technology you need to see what it can bring for you from a commercial point of view"* (JCW1)). It became clear that what is important for opportunists is not that they *"have to be always first"* (FBCM1). They, if they are convinced of something, appeared to rather not wait for others to proof the case or use competitors as orientation points, but turned their focus inwards and based their decisions on the business case of their own firm.

What has to be noticed is that the interviewees not always talked about their companies in a consistent way regarding their technology attitude. Their statements sometimes could be attributed to more than one technology attitude and other times seemed to position the company in between two of them. From the interviews one could not derive however if this was caused by a lack of awareness of the interviewees regarding the technology attitude or because the companies just sometimes held elements of multiple attitudes.

Taken together, the results of the analysis can be summarized and distilled into the following framework:

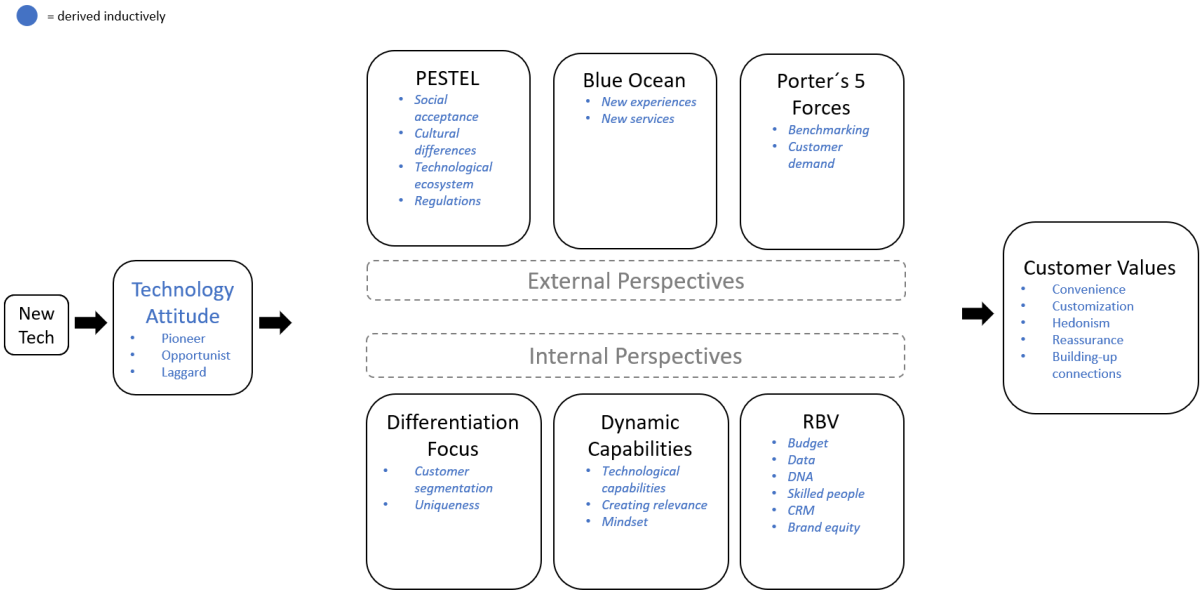

Figure 5 Summary of the results from the framework analysis (own graphic)

In summary, the framework, from left to right, shows that when considering new technologies, the interviewed companies exhibited specific technology attitudes to a certain degree, which seemed to influence how they go about employment of new technologies. They considered various factors of their external and internal environment to make decisions revolving around and ultimately aimed to create some degree of customer value through new technologies.

5 Discussion

In the following section, the findings will be discussed in light of relevant literature, to elucidate on how these contribute towards answering the question of how international firms in the luxury market can create a competitive advantage through new technologies.

5.1 New Technologies Creating Customer Value - a Strategy for Competitive Advantage

As described in section 4 and identifiable from Figure 5, luxury companies pursue the goal of creating customer value, when implementing new technologies. This seems just logical, considering what has been described in section 2.1, namely that the essential value of luxury goods only exists through the valorization of the luxury good by the customer (Csaba, 2008; Pinkhasov & Nair, 2014a). Moreover, it is also very much in line with the necessity for luxury firms to take a customer-centric approach, described

by e.g. Bellaiche (2010) and Reguia (2014). This importance of a customer-focus has not always been accounted for by the different approaches for achieving competitive advantage described in section 2. Especially for the value chain analysis and the dynamic capabilities view, researchers have critiqued the neglect of it (Barreto, 2010; Merchant, 2012; Peppard & Rylander, 2006; Stonehouse & Snowdon, 2007).

Additionally, as described by Teece (2010), the recent economic developments, have shifted market power even more towards the consumers, leading to a further increased relevance of customer-centric approaches for doing business. Hence, it seems like businesses, which have not done it so far, should re-evaluate the value propositions they present to customers and firmly integrate them into their competitive strategies. Conforming to this, Teece (2007) highlighted that customer-centric firms are often able to better anticipate opportunities for new technologies. A comprehensive approach for achieving competitive advantage in today's business environment should therefore take into consideration the importance of creating value for their customers - and the relevance of doing so only increases for firms operating in the luxury market. When using new technologies, the above-described findings suggest that luxury companies can do so by selecting one or more of the five customer values described in section 4.2.1 as objective in their business strategy. Although it should be recognized that most luxury companies operate internationally and thus should also account to a certain extent for cultural and regional differences of their target group, it is at the same time important to find more universal objectives that can be applied globally and guide the brand so that it is perceived in a strong and consistent manner (compare section 1.2). The customer values identified, should allow luxury firms to do so, while at the same time leaving them sufficient space for local adaptations. Moreover, a focus on the five customer values should help luxury brands to overcome common issues of aligning the implementation of new technologies with their luxury DNA (see section 2.1) as these values seem to be tightly intertwined with key characteristics of luxury goods and brands:

Hedonism, which describes the objective of firms to make the customer feel pleasure, emotions and fun, was the first value identified. Pantano and Naccarato (2010) already described an example of how XR can be used to create this kind of value, namely through enhancing the customer experience by making it more exciting and fun. This aim of creating pleasure, clearly relates to the value of luxury goods to satisfy emotional and psychological needs (Giacosa, 2014; Morley & McMahon, 2011). Since the fulfillment of these needs goes beyond what most normal products create in terms of value, a connection can also be

drawn to the luxury element superfluousness. More specifically, the ability of a product to promote e.g. self-indulgence and social stratification is clearly something that goes beyond the regular economic and utilitarian value of a product, and from a rather objective point of view is not really needed (Tynan et al., 2010; Wiedmann et al., 2009). The characteristic of luxury goods to outshine what is perceived as common can also be applied to other aspects like e.g. quality (Bellaiche et al., 2010). Taken together this superiority to the ordinary on all kinds of levels is the basis of the customer value **convenience**. Similarly, the customer value **customization**, can be related to the individual value of luxury goods as described by Wiedmann et al (2009). The ability of new technologies to add value through customization has moreover been put forward by Bharadwaj et al.(2009).

Next, **sense of belonging**, i.e. the value of making the customer feel that he is part of something, can be clearly associated with the social value of luxury goods put forward by Giacosa (2016) and Wiedmann et al. (2009) as this describes the use of luxury goods to express membership to a certain group. Augment (2016) already gave an example how AR can achieve this by immersing the user in an experience and thereby provides making him or her feel interactive, connected and as being part of something. Besides this, another line can be drawn to the element of high brand equity of luxury firms outlined by (Riley & Szivas, 2015), since this allows customers to better identify with the brand. Finally, the value **reassurance** can be linked with the fact that customers of luxury brands usually expect a high quality standard from the brand (Morley & McMahon, 2011) and associate the brand´s heritage, history and traditions with a specific certainty about knowing what they will get from the brand's products (Giacosa, 2014; Simpson, 2018).

Besides the described anchoring in key characteristics of luxury goods and brands, the five customer values also have in common that their creation was often connected with the enhancement of customer experience. This is in line with the fact that the value creation for luxury goods mainly happens through the experience created between the customer and the brand as explained by Hawley (2018), Chandon et al. (2016) and Choi et al. (2014). As described by the findings of this study, the way to this value creation is composed of a sum of decisions on different factors from the internal and external perspective, which together can be aligned and composed to a unique strategy, which can induce a competitive advantage (Dibb et al., 1991; Ghodeswar, 2008). As stressed by Chan et al. (2006) and Slater and Olson (2001), one important key to achieve this nowadays lies in the right alignment of business and technology strategy.

Moreover, it is obvious to say that the importance of such an alignment only increases, when technologies are placed at the center of a firm's strategy as suggested by this work. Here, there seems to be a discrepancy between what would be the optimal case from a theoretical point of view and what could be observed from the interviews, since most interviewees seemed not able to report at a deeper or more detailed level, the specific approach of how they go about the integration of (new) technologies into their business strategy. It can be argued that this unclarity prevents many luxury firms from realizing a competitive advantage from new technologies.

5.2 The Way to the Right Strategy - Combining Perspectives Without Losing Focus

Figuring out a comprehensive and unambiguous approach for how new technologies can be put into practice to achieve competitive advantage is not an easy endeavor, since a plethora of different factors have to be considered and combined in a consistent way (Stonehouse & Snowdon, 2007). This, as well as the fact that a comprehensive approach has to combine factors from the internal as well as external perspective has already been explained in the sections 2.6.1 and 2.7. Interestingly, in all of the interviews factors from both perspectives were found. However, many interviewees rather emphasized the importance of focusing on customer demand having to *pull* new technologies, i.e. an external perspective, as predicted by Walsh, Kirchhoff and Newbert (2002). As emphasized by i.a. Ortega (2010), Rothaermel (2008) and Bridoux (2004) companies should however incorporate both perspectives, if they want to successfully implement a new technology.

Furthermore, the surveyed companies seemed to select a number of specific factors from both perspectives, although dedicated considerations regarding their interdependencies and most beneficial combination were not always discernible. This leads to the question if a more systematic approach for the selection and combination of factors from the different approaches could help firms to become better focused and thus more successful in implementing new technologies. An initiative that could be guided by a comprehensive framework, whose absence has been critiqued in the Literature Review and thus been drafted from the findings of this work (see section 4.2). Such a framework could help firms to sharpen their attention on the right factors, so that they can focus on the most effective and efficient approach of implementing new technologies.

Going back to the understanding of reality and knowledge in this work, described in section 3.1, it however has been acknowledged that firms can change their priorities regarding what factors they consider

important for achieving competitive advantage. Thus, it has to be embraced that the different factors identified as potential basis for a unique strategy of luxury firms might be subject to change. This dynamic nature can be a further challenge for firms in approaching the usage of new technologies for competitive advantage in a more systematic way and at the same time renders an appropriate guiding framework even more relevant. With the abundance of factors and combinations to consider as well as the additional dynamic nature of them, the question occurs, how firms can find and follow such a praised, systematic approach to combine them to a unique strategy. Although all factors exhibit some importance, the answer is to focus on those factors that fit best to the overall strategy and objectives of a firm. Hence, the following section will shed light on how this focus can be found.

5.3 Three Paths to Gain a Competitive Advantage Through New Technologies

Throughout the interviews it could be identified that companies show tendencies of specific attitudes influencing their decisions and behavior towards new technology. However, there is no clear approach detected. Hence, more awareness and understanding on how to handle the implementation of new technology could help to sharpen the strategy of the company. Building on what has been said in section 2.2.1, it was figured out through the literature that having a clear and unique strategy is of crucial importance for gaining a competitive advantage (Grant, 2002). Moreover, Miles and Snow record that a technology strategy and most importantly the alignment to the business strategy is key for being successful (Miles et al., 1978; Slater & Olson, 2001).

As already mentioned in the presentation of findings (see 4.2), three technology attitudes could be identified in the interviews. The interview insights reveal that firms, when considering or even implementing new technologies, try to identify themselves with a specific technology attitude, which has some impact on the handling of initiatives revolving around new technologies. Hence, these attitudes could be linked to the strategy alignment types of Miles and Snow described in section 2.2 to derive more concrete ideas, how companies could sharpen their understanding of new technologies and thereof resulting strategic approaches to achieve better alignment with their overall strategy.

1st Path: Pioneers Focusing on Internal Perspectives

The technology attitude of the **pioneer** can be equated with that of the innovator of the market, who dares to experiment and take risks in order to reach a superior position. The fact that least references refer to

this attitude and that the interviewees also mainly talked about competitors, when referring to pioneer firms makes this attitude even more interesting. The researches of this work assume two main arguments regarding this observation. First, due to the reason that the implementation of new technologies is still on the rise (Marr, 2018), there are not yet many companies that dare to take risks in regard to technologies. Secondly, firms have a certain inability to properly classify themselves regarding their technology attitude. This can be said since similar struggles to explicate their attitude were also observable for the other technology attitudes. Resulting from this, firms seem to be unable to decide on how to handle those new technologies. In turn, if firms would be visionary enough to understand the importance of new technologies as well as how they could implement them in a way fitting to their technology attitude and overall strategy, they could potentially more successfully create a competitive advantage.

To support such a process the pioneer attitude can be linked to the type *Prospector* from Miles et al.(1978) leading to some valuable insights and learnings. Firstly, pioneers can be understood as companies, which do not limit their business to any specific technology, so that they can respond flexible to rapid market changes. When defining themselves with this attitude, it can be derived from Miles and Snow's that it is recommended to follow a specific path focusing foremost on the internal perspective instead of setting the focal point on what the competitors do. However, this doesn't mean that the external perspective should be neglected completely. Instead the specified path serves as guidance on what should be focused primarily in order to avoid certain mistakes and handle the specific technology in an appropriate way. What can be learned from Miles and Snow (1978) is further that in order to acquire its most important instrument of change, pioneers should invest in their internal resources. Next to this, pioneers should especially consider factors relating to their generic strategy and promote the development of dynamic capabilities.

It is of crucial importance to note, that within each path certain barriers can occur, which are imperative to be aware of as they can impair the ability to make use of new technologies and create customer value. For firms focusing on the internal perspective this means that they should be aware of lacking technological capabilities becoming a significant barrier to them. Hence, the neglect of such capabilities might be the reason for missing success of new technology initiatives, as this is also one of the most important risks that can occur according to Miles and Snow (1978). The right resources are not valuable without the capability to utilize them. Moreover, if a company determines that their strategy seems to be ineffective,

a lack of firm-specific alignment can be a reason for that. Therefore, creating relevance within the whole company to achieve a common understanding is very important. Lastly, the company's´ determination can turn out as likely impediment to realize competitive advantage through new technologies. That can be oftentimes observed in more mature companies, where there are still older employees. These employees often have a less positive attitude than younger ones (Edison & Geissler, 2003), which can impact their efforts for the company so that they do not develop a sort of determination. This can be a huge barrier for a company as pulling together is essential, however by for example further educations this barrier can be passed over. An internal mindset that includes one common vision to recognize the importance of new technology is essential. Having a closer look at the RBV, the budget can turn out to be a barrier for new technology initiatives as oftentimes their cost-benefit relation is not convincing. More specifically, it can be said that some firms do not see the value in investing big amounts of money in new technology, which might result in a failure of being successful with them. If a company aims to implement new technologies, they should be aware of the costs here and if not being successful while already doing it, consider whether or not they invest enough. For pioneers trying to push forward in such initiatives, it can be recommended to internalize the development of new technologies by investing in R&D (J.-N. Lee et al., 2004). So, to execute the technology attitude appropriate and subsequently implement a technology strategy effectively, it can be learned from the Miles and Snow typology (1978) that focusing on the internal perspective and building strong resources and capabilities to be able to create change and thus gain a competitive advantage are important for companies with a technology attitude resembling the one of the pioneer.

2nd Path: Laggards Focusing on External Perspectives

When identifying oneself with the technology attitude of the **laggard**, which is quite the opposite of the pioneer, a different path is recommended. As companies with this attitude are usually comfortable observing their environment, the focal point for them should lie on the external perspective. Hence, they should have a closer look at factors pertaining to PESTEL, the Blue Ocean Strategy as well as Porter's Five Forces. Nonetheless, the internal perspective should not be left aside. Referring to Miles and Snow (1978), the laggard can be associated with the *Defender* type and can thus be further characterized as more cautious and protective with the aim to expand market share as well as customer base. What can additionally be derived from the Miles and Snow typology (1978)is that a huge risk occurring here is being

ineffective in more dynamic environments. Hence, it is important for laggards to constantly consider threats and opportunities that result from the environmental changes.

A likely barrier for laggards on their way from new technology implementation to competitive advantage is social acceptance. A great technology is worth nothing in the luxury market if the customers do not accept and see the value of it. Moreover, as all companies operate internationally, the cultural background is important to take into consideration, as different cultures have on the one hand differing understandings of new technologies, disparate needs and also diverse expectations. The following quote from IBM´s Senior Vice President, van Kranlingen sums up what customers expect in nowadays rapidly changing market environment: "The last best experience that anyone has anywhere, becomes the minimum expectation for the experience they want everywhere" (Gowers, 2016). In summary, after elaborately analyzing the external environment, dealing with potential barriers on the path, and creating the right customer experience through appropriate customer values through new technology brings, laggards can arrive at a unique strategy from which a competitive advantage can result.

3rd Path: Opportunists Combining Internal and External Perspectives

A third and final path to take from new technology to competitive advantage is the approach of firms with the technology attitude **opportunist**, which is relatable to the type of the *Analyzer* from Miles and Snow (1978). This attitude is like a mixture between the two previous described ones. The researchers learned from Miles and Snow´s (1978) Analyzer type that companies of this type can also act as an imitator, however only when products are already proven successful. Further, it is very important for Analyzer and hence also opportunists to not miss the market momentum of implementing new technologies, which makes it crucial to respond quickly. Their trade-off between following market demand and technological flexibility forces this type to occupy the characteristic of being stable and flexible at the same time, which might stop the firm from fully reaching its potential either way. To overcome these issues, it is advised to take the internal environment into account and be aware of the potential barriers of capabilities, firm-specific alignment, determination as well as cost-benefit. However, what is special for this type is that the opportunist should focus to the same degree on the external environment, whereas it is recommended for the other two attitudes to clearly focus on one environment in order to successfully enforce its unique strategy. Hence, the opportunist should also focus on factors belonging to the approaches of PESTEL, the Blue Ocean Strategy as well as Porter's Five Forces and the barrier customer acceptance. In sum,

opportunists have to create the best match between their internal strengths and external opportunities and threats, so that they can be most sensibly leveraged or diverted.

When comparing again with the section 2.2 The Relevance of New Technologies of this research, Miles and Snow (1978) portray a fourth type in their typology alignment, the Reactor. This type is not considered relevant for this work, because as explained by Miles & Snow, the Reactor does not provide a specific strategy to follow, instead portrays an organization's instability. As this works value is to provide different unique strategies to gain a competitive advantage, the reactor is not elaborated further upon.

To make the picture complete, it has to be noted that independently of the technology attitude, many firms seemed to struggle with the technology performance. Reasons like quality or maturity issues, a limited scope of functionalities or the difficulty of combining new technologies with existing systems in the firm, seem to be a major barrier for achieving competitive advantage through new technologies. To resolve these issues Lee et al. (2004) suggested that a fitting technology sourcing strategy is needed. Thus, firms can be advised to, depending on their technology attitude, pursue internalization of technology development activities (recommended for pioneers), outsourcing (better for laggards) or a sourcing strategy in between the two (sensible for analyzers).

Furthermore, due to the continuously changing customer demands, the dynamic environment as well as fast technological development it is indispensable that any approach to make use of new technologies to create a competitive advantage has to be sufficiently dynamic and flexible itself. Moreover, the researchers of this work acknowledge that especially the perceptions of the individual customer and also the concept of competitive advantage can underlie continuous adjustment. Theory confirms this by stating that the concept of a sustainable competitive advantage is not prevailing anymore, especially in regard to new technologies (see section 2.3.2). Due to the dynamic environment causing markets and industries to merge and lose their boundaries, it is almost not possible anymore to gain sustainability with regards to one´s competitive advantage. In contrast, the new quest seems to have become the gaining of a series of TCA (K.-F. Huang et al., 2015). The key here might be to continuously stay aware of overall trends of new technology, because technology will in all probability become even more important as it already is nowadays. This is supported by the critical realist perspective of this research, which states that reality can be changed by actions of people and organizations and at the same time changes them (see 3.1 Philosophy

of Science: A Critical Realist Approach). Accordingly, new technologies can generate a competitive advantage and change the firm's competitive position.

In general, it is important to understand that companies, in order to compete against competitors, have to consider different factors from different levels (macro, micro and firm level) as well as different perspective (internal and external) and from this build a unique strategy which can lead to competitive advantage. The next two sections will discuss firstly the factors from the external and secondly those from the internal perspective as well as their respective relevance regard to the research question.

5.4 Luxury Firm´s Most Important Factors Within the External Perspectives

After providing a detailed description of the different paths from implementing new technologies to gain competitive advantage, this section will discuss the importance of the factors from the external perspective for the implementation of new technologies. Here, it should be remembered that the factors are of special importance for companies with the technology attitude of the pioneer. Furthermore, the third path of the opportunist has to carefully evaluate the factors of this perspective to find out where the best fit to its internal power can be created.

Four Macro-Level Factors Necessary to Consider

The macro-level factor **cultural differences** could be found in all interviews as it is of crucial importance when implementing new technologies. A unique strategy for every company should always consider both, global and local aspects. It is recommended to have one unifying global strategy to create a common brand identity, however regional adaptations also have to be made. Since all the investigated luxury brands operate internationally, it is essential to find a balance between local vs global. Pursuant to this, Stonehouse and Snowdon (2007) stress that an important decision to make involves determining how geographically dispersed international activities can be coordinated. This is also a decision, which should be considered in regard to the technology strategy of a firm in order to maintain an aligned overall strategy throughout the company. One trend that can be observed and which is also discovered throughout the interviews is that emerging markets, especially China, are getting more important for luxury brands. Since these are at the very forefront in regard to technology, this is an essential factor to consider in for luxury firms planning to use new technologies for their competitive strategy (Global Business School Barcelona, 2015). Here, it is inevitable to handle those different customer demands resulting to a great extent from

cultural differences. For example, what is already a standard in China, is something by which German customers can still be excited.

As already mentioned, when referring to potential barriers, **social acceptance** of new technology is another important factor to discuss. As indicated in the literature review, the PESTEL framework (Robinson & Gelder, 2017) can be utilized here to better predict customer demands and trends, which in turn can help to increase social acceptance by better understanding and responding to the customer. Moreover, throughout the interviews it has become obvious that the readiness and stage of adoption of new technologies by customers is an important consideration. Thus, firms need to find the right market momentum to introduce new technologies for their customers. Related to this issue is the fact that employees might be taken up by customers, who underestimate the value of new technologies, so that they neither perceive it. Therefore, it is important to create social acceptance within the customers but as well to convince employees to fully dedicate their efforts and capabilities to the implementation of new technology, so it can turn out successful.

Next, the findings from the conducted interviews stay in line with the literature (see 2.4) that firms have to be aware of the **technological ecosystem** of the market they operate in. More specifically, certain regions like e.g. China or South Korea might have a different technological infrastructure, different standards regarding technologies as well as differing legislations in this regard. This factor is also closely related to cultural differences, as there might be regional distinct preferences and customs concerning technologies and the usage behavior thereof and moreover, as stated above, some regions are more ahead than others with regards to technology. Summarizing, it is argued that throughout there are relevant regional differences and hence the ecosystem sets the agenda for how firms can implement new technology as well as to what extent. Some ecosystems are most likely better breeding grounds for the success of the introductions of new technology than others (comparison China vs Germany).

The next factor discovered that is crucial to consider when implementing new technologies is **regulations**. As theory proposes, legal aspects are an important factor impacting the definition of a unique strategy to achieve competitive advantage (Robinson & Gelder, 2017). In the specific case of this work, it has been found out that especially data regulations are critical and thus significant to examine. When talking about new technology, and in particular AI, working with data is indispensable. Here, a connection can be drawn to the much discussed GDPR (general data protection regulation), which was also mentioned by a number

of interviewees and that one should definitely pay attention to. Lastly, when considering regulations, also the terms of local vs global emerged. This points towards that local as well as country-spanning laws need to be analyzed and accounted for.

As stated in the literature (see 2.4.1) the PESTEL framework overarching the four macro-level factors found helps to direct the attention to the appropriate opportunities, threats and general changes to examine which ones can be exploited. The interviews revealed a clear focus on the above described four factors. Here it is again important to note that all factors are interdependent and effect one another (Robinson & Gelder, 2017). When a company is able to understand and act upon these factors and their interdependencies, they can implement new technologies more successfully through better recognizing opportunities and threats. Throughout the interviews there is a clear need seen for more adaptability, which can be helped to understand through PESTEL by analyzing and understanding the dynamic market.

Exploring New Services and New Experiences in Uncontested Markets

From literature it is known that technological innovations are able to create so called blue oceans, which can be new products, markets or entire industries. However, also markets within already existing industries can be recreated by using new technologies. This can be done e.g. by finding new customer segments or reconceptualizing existing products. Also, novel recombinations of product attributes or reconfiguarations of established value chains can be a way to do so - all which can allow firms to create new positions of competitive advantage (Grant, 2002). On the other hand, it could be identified that at the moment firms´ considerations regarding the advancement into new areas are mainly thought-experiments and not nothing market-ready yet. For most companies the real exploration of blue oceans is still an uncharted path, and thus an avenue for improvement and great opportunity for getting closer to a competitive advantage. Moreover, companies´ analyses until now are most of the time limited to customer segmentation or rethinking existing products and services, revealing a clear lack of the exploration of specific potentials. Creating new markets or industries seems to be something most firms are not even considering at the moment. Same can be said about the reconfiguration of value chains to improve distribution operations. Nonetheless, findings indicate that at least the opportunity to explore uncontested areas in which new offerings for customers through new technologies can be created were recognized.

The findings indicate that so far firms in the luxury market realized the importance of and also partly implemented **new services** through bringing together their brand, products and new technologies to create

value for their customers in a certain new way. Secondly, companies clearly understood the importance of creating **new experiences**, and tried to push forward in this area. This is relevant in particular since according to Hawley (2018), Chandon et al (2016) and Choi et al.(2014) value creation substantially happens through experiences. Thus, the exploration of blue oceans in the form of new experiences can be a relevant means to approach competitive advantage through new technologies. The results of this study point towards that these experiences can be realized through the creation of unexpected moments, encounters and happenings for their customers made possible through new technologies. Especially, AR and VR seem to play an important role here. On similar terms researcher like Hamel (2001) see the business potential in deeply understanding the marketplace and exploring blue oceans, where competition is irrelevant. Of course, the technology attitude (Miles et al., 1978) of a firm also plays a role in how likely and sensible it is for firms to try and explore blue oceans through new technologies. More proactive and little risk averse players like pioneers are most likely more prone to explore such opportunities. However, many current players seem to not be bold enough to start such endeavors. According to Andersen and Strandskov (2008) exactly this boldness to dare and create a unique strategy to break market and industry rules rather than to follow them might be the key to competitive advantage though. Hence, it is of crucial importance and recommended to consider when implementing new technologies to analyze as well as utilize the huge potential of blue oceans. Some scholars argue that such a competitive advantage created through blue oceans can then be maintain and sustainable if barriers to imitation are developed (Andersen & Strandskov, 2008). This however seems questionable on the basis of the findings of the study as well as newer research. In contrast, the key to success seems to be to aim for a series of TCA (K.-F. Huang et al., 2015), which can be e.g. gained through the repeated exploration of blue oceans through new technologies. In sum, it becomes clear that firms operating in the luxury market are one the one hand aware that they have to discover and explore new opportunities to stay ahead of their competition and that new technologies could play an important role here. On the other hand, those firms until now seem not to be bold enough to takes risks, dare to pioneer their market and explore those uncontested blue oceans.

Using Benchmarking and Customer Demand to Localize New Technology Initiatives

From theory it is known that a firm can benefit from the analysis of industry forces through changing competitive positions accordingly (Henry, 2011). Regarding these industry forces, it can be determined from the results of this study that **benchmarking** is an important activity firms can engage in to superiorly

position themselves in the market. However, it was found that every firm seems to value the significance of doing it differently. An explanation for this could be the different technology attitudes (Miles et al., 1978). Firms are not aware of and even not able to identify themselves with a specific position they hold within the luxury market. That in turn makes it more difficult for firms in the luxury market to position themselves, although it is clearly learned from the theory of how crucial importance it is to find the appropriate position in the market. As already mentioned in section 1.2 firms can stand out from competition with new technologies. However, here it is important to practice benchmarking and observe competitors, as Henry (2011) already mentioned by stating that rivalry among competitors is often the most important factor influencing the profitability. Also, Miles and Snow (1978) stress the importance of paying attention to competition. However, depending on the type of strategy this is more or less important. Moreover, as Giacosa (2016) states that the luxury market is competitive and also nine out of ten interviewees revealed that they do benchmark activities, it is clearly advised to be aware of one's competitors and undertake benchmarking in order to stay competitive and position oneself superior in the luxury market.

The second important factor mentioned throughout the interviews and which is therefore essential to discuss is **customer demand**. Porter (2008) already mentioned that well-heeled customers are commonly less price sensitive, which can be supported throughout the interviews. The factor of price sensitivity was not mentioned by any interviewee in regard to considerations about new technologies in the luxury market. Besides that, it is acknowledged from theory that bargaining power of customers is an important influence in order to operate successful (Henry, 2011). This was also confirmed by the conducted interviews. Firms are strongly engaged in activities aiming at better anticipating, understanding and responding to what their customers want. Hence, firms are focused on implementing technologies that are oriented towards customers and especially satisfying their needs. Nonetheless, the above described is yet more an expectation than reality. No firm is really pushing forward and wants to be the first mover, which leads to an overall inertia. Additional, customer demands are constantly changing and sometimes unforeseeable, which makes it difficult to predict and adapt to them. This stays in line with what Simpson (2018) declared, which is that due to a generational shift customer demands will change even more and the experience itself comes to the center of attention. Here, the importance to stand out in order to compete profitable (see section 1.2) takes effect again, and this in turn can be reached through implementing new technologies. These enable to create customer values and hence build a customer experience, which can then lead to competitive advantage. Furthermore, the fact that the researched companies are operating

international opens up the whole economy and leads to new opportunities induced by new technologies. Adding to this comes the fact that customers are different all over the world in regard to cultural and social backgrounds and thus also have diverse demands. All this makes it harder to anticipate the rapidly changing customer demands which lead to increases uncertainty of companies to successfully answer to these demands (Lavie, 2006).

Consequently, it is of substantial importance for firms to understand the meaningfulness of creating value for the customer and a great customer experience.

5.5 Luxury Firm´s Most Important Factors Within the Internal Perspectives

Turning to the internal perspective, the following section will shed more light on the factors of the internal sphere of influence of firms, which are important for crafting a unique strategy around the use of new technologies to aim for competitive advantage. As described above, the factors of this perspective are especially relevant for firms with the technology attitudes of laggard and opportunist, where the latter however also focuses on the external environment to the same extent.

Creating Fit Through Awareness of Customer Segmentation and Uniqueness

Looking at the aspect of strategy from a rather high level, the type of generic strategy most luxury firms pursue, as has been already described in section 2.5.1, is a differentiation focus strategy. This is expressed by the serving of a specific customer group with goods that promise to deliver additional and superior value compared to the mere economic and utilitarian value of regular goods (Tynan et al., 2010; Wiedmann et al., 2009). From the analysis of the data of this work, one could derive that the differentiation focus strategy has been reflected by the consideration of two specific factors, namely customer segmentation and uniqueness.

Regarding the **customer segmentation**, the findings from the interviews showed that just as predicted by (Stonehouse & Snowdon, 2007; Tanwar, 2013), luxury firms tried to serve a certain narrow target segment better than competitors. The interview data showed that this can be done by serving customers according to their cultural and social background with the goal to do so as individualistic as possible. According to the findings, new technologies can proof helpful here through supporting a further improved serving of the customer according to their very individual background. As explained by Csaba (2008) as well as Tauriello et al.(2017) the next years will be characterized by a further growth and relative increase of the

newer, affordable luxury segment. Hence, affected brands will have to rethink, if they want to continue to serve this group through their very individualistic customer segmentation or need to find new approaches. It might also be worth to consider, if serving this or other additional segments will blur the market boundaries of the luxury market too much and open the doors for more focused competitors. Because as Tanwar (2013) and Porter (1997) remarked, customers are usually served better by more tightly defined segments. Finally, the interviews showed that considering the factor **uniqueness**, firms have to figure out a luxury-specific way to implement new technology. Referring to the above, the pursuit of creating one or several of the described customer values anchored in diverse luxury characteristics can help to solve this challenge. Moreover, as described in section 2.7, the generic strategy of a firm should serve as filter function setting limits to which opportunities should be pursued and hence, the two described factors could help to guide luxury firms on which new technology initiatives they should go after.

Following the strategic decisions, we know from Stonehouse and Snowdon (2007), Porter and Millar (1985) and related researchers that strategy is then realized through the configuration of the value chain and its underlying activities. Thus, luxury firms should carefully think about designing and configuring their value creating activities, so that new technologies can help to generate the desired customer values successfully. As described in section 2.7, most likely activities from the areas of marketing and service that lie at the interface with the customer, will proof relevant for successfully creating the five customer values identified in this work. In accordance with this, it is suggested to generally work closely along customer demands, when deciding on the value creating activities, since it's the customer in the end that determines the value created (M. Porter, 1997; Stonehouse & Snowdon, 2007). Looking at the findings of this study, luxury firms seem to have understood this need for a greater customer focus in their value creation process as e.g. put forward by Merchant (2012).

Six Resources and Capabilities Needed for Implementing New Technologies

To be able to realize the described value creating activities and thereby put the firm's strategy into practice, certain resources and capabilities are needed. From the analysis six resources and capabilities could be identified that play an important role, when firms want to achieve competitive advantage through new technologies. For all six factors that will be described in the following, it is important to keep in mind that they were attributed to the resource-based view and thus should be understood and considered not only

as a resource but also as capability, i.e. the ability to make effective and strategic use of the resource (Bhatt & Grover, 2005; Ortega, 2010).

The first factor that could be identified and is important to consider was **brand equity**. As known from theory, brand equity is an essential element and asset of luxury companies (Giacosa, 2016; Morley & McMahon, 2011). However, many luxury firms fear to dilute their brand image and thereby decrease the brand value through the initiatives revolving around new technologies (Choi et al., 2014; Morley & McMahon, 2011). Hence, aligning the actions in regard to new technologies with the firm´s brand equity is crucial. To be able to do so, firms need the right capabilities to handle new technologies in a way that only increases and not compromise the value of the brand. Consequently, it is not sufficient to merely possess the resource brand equity, but the capability of successfully leveraging it in the context of new technologies is, where the true value lies.

Closely related to the issue around brand equity, many interviewees also perceived the combination of their **DNA** with new technologies as a significant challenge. This is in line with literature stating that the alignment of luxury firm´s heritage and traditions for most companies is at least a challenge and in some cases even an inhibitor to new initiatives (Giacosa, 2016; Morley & McMahon, 2011; Tauriello et al., 2017). Only little data pointed towards that luxury companies recognized new technologies also as an opportunity to leverage their DNA, even though Barney (1991)already 1991 conceptualized the for luxury firms commonly given *unique historical conditions* as great chance to secure one´s competitive advantage. Ergo, as with brand equity, it is likewise important for firms not only to possess the resource DNA but also the capability to integrate it in a beneficial way to make new technology initiatives more successful. As Pantano (2010) and Grewal et al. (2017) remarked, technologies provide great potential to create value, but it has become clear that the development of appropriate capabilities is indispensable to achieve this.

Next, **budget** seemed to be a factor requiring some attention, when planning the implementation of new technologies. This is quite interesting, since literature suggests that luxury firms are equipped with rather abundant financial resources and should thus not be hold back by this factor (Giacosa, 2016; Murphy & Raulik-Murphy, 2015). Two explanations can be considered: firstly, Porter (1985) already recommended for companies not pursuing a cost-leadership strategy, to anyways put sufficient efforts in to achieve at least cost proximity with their competitors. Secondly, the a rather dominant way budget was discussed in the interviews was in terms of a cost-benefit ratio. Thus, companies might not see the budget itself as

critical, but rather its ratio with the value created. Such considerations might lead companies to analyze the budget factor of new technology initiatives. Finally, it is likely that such a process of weighing up cost and benefit of new technology initiatives might be related to and influenced by the companies´ technology attitudes as described above in section 5.3.

Fourthly, it became clear that **skilled people** are a crucial factor to deploy new technologies effectively. This importance of human resources has also already been recognized by Barney (1991). However, the findings of this study emphasized rather the possession of appropriate competencies in the firm than the actual human resource. Nonetheless, since people are essentially where competencies, in the form of skills and knowledge, reside in, this debate seems to be superfluous (Stonehouse et al., 2001; Stonehouse & Snowdon, 2007). More interestingly, the results of the study show that skilled people can come in the form of internal employees as well as externals. How much firms wish to have these competencies internally might then depend on their strategy as indicated in section 2.2. What should guide the sourcing decision here, is the successful alignment of the firm´s outsourcing and business as well as technology strategy as explained by Lee et al. (2004). Especially when trying to build competencies in-house, efforts are needed to ensure that employees have the right learning, development and practice environment (Bhatt & Grover, 2005). However, the fact that the results of this study indicate that externally recruited skilled people can work just as good, points towards that mere technical skills might not be decisive but rather a hygiene factor in achieving competitive advantage. This is in accordance with Lado (1992), declaring that resources and capabilities must be specific to your firm to be of value, i.e. adapted to the particular firm peculiarities and condition.

Another factor that proved to be important was **CRM**, capturing the importance of understanding the customer as well as building, nurturing and growing a relationship with him. This factor is important for the implementation of new technologies because a good customer understanding will help firms to identify, where new technologies can create additional value for the customer. This fits well together with the findings of researchers like Bellaiche et al. (2010) and Hennigs et al. (2012) explaining the exceptional significance of a deep customer understanding in the luxury market. As explained further above, the particular relevance of CRM in the luxury market originates from the fact that a luxury product only receives is extraordinary value through the subjective high valorization of the good by the customer, meaning that a luxury good can only be categorized as such if it is perceived like one by the customer (Bellaiche et al.,

2010; Jung Choo et al., 2012). Beyond this, it could be established that not only is customer understanding helpful for the successful implementation of new technologies but that in turn also new technologies can help to improve customer understanding. This fits to findings of Attaran and Deb (2018), describing the opportunity of enhanced customer data processing and hence better customer understanding through AI.

Very much related to CRM, is the relevance of **data**, since it builds the foundation of customer understanding and helps to guide the reasonable implementation of new technologies. As just pointed out, especially AI can be used to leverage this resource (Attaran & Deb, 2018), but data can be combined with other new technologies just as well in e.g. areas where data can drive the enhancement of customer experiences. However, the results from this study suggest that due to many data regulations, this resource can also turn out to be a liability though. The ability to rightly handle data thus becomes even more important.

In conclusion of the RBV, it can be said that the above-mentioned six resources and capabilities are of special importance, when pursuing to implement new technologies successfully. Ortega (2010), Grant (1991) and Wernerfelt (1984)thus advise organizations to, after identifying what resources and capabilities are needed today as well as in the future, then develop steps to renew, enhance or obtain the selected resources and capabilities. According to Lado et al. (1992) the creation and development of them can be driven by experience and learning. Regarding the question if these resources and capabilities have to fulfill criteria like recommended by Barney's VRIN framework (J. Barney, 1991), it seems questionable if these propositions still hold. A number of researchers like Rothaermel (2008) and Mata et al. (1995) have agreed to this position.

Four Dynamic Capabilities to Continuously Leverage New Technology

Moving on from the RBV, the findings of this study as well as advocates of the dynamic capabilities view suggest that it is rather important to possess dynamic capabilities allowing you to adapt and align your current resources and capabilities with the changing business, market and macro-environment than merely possessing VRIN resources and capabilities (Bhatt & Grover, 2005; Eisenhardt & Martin, 2000; D. J. Teece, 2007; D. J. Teece et al., 1997). It is still open for debate and might be worth exploring though, if the VRIN criteria are sensible to be applied to dynamic capabilities.

On a more general level, current literature and the findings of this study are in agreement with the fact that dynamic capabilities are extremely valuable for successfully matching and bridging the gap between

the internal environment of the firm with external opportunities and threats as well as connecting past, present and future of the firm (see sections 2.5.3 and 2.6). The latter is specifically important for tradition-rich luxury market that is anchored in the past but at the same time commonly seeks to be innovative future-oriented (Giacosa, 2014; Morley & McMahon, 2011; Pinkhasov & Nair, 2014b). Depending on the nature of the gap to be bridged as well as the pace and uncertainty of change, Lavie (2006) suggests that three mechanisms of dynamic capabilities can be made use of by firms: evolution, substitution and transformation. More importantly though, Lavie (2006) says, is that firms recognize that and what kind of gap has to be bridged. The latter being an aspect, many of the interviewed firms still struggle with. Going into more detail, the following four dynamic capabilities should be considered as of particular importance:

First, **technological capabilities** helping organizations to successfully encounter opportunities and threats imposed by new technologies and accordingly transform organizational resources and capabilities related to technology were singled out. Their importance has also been embraced by scholars in the field of research (Ortega, 2010; Wernerfelt, 1984), although concrete theoretical considerations have only been developed for IT (A. Bharadwaj, 2000; Mata et al., 1995). Such capabilities can help firms to adapt to always new situations, which is of crucial importance when trying to capitalize on new technologies, whose nature is to change constantly (Kauppi & Nyman, 2017). Despite the recognition of the importance of technological capabilities, it could be identified that many firms still do not possess them and hence struggle to make effective use of new technologies. This calls for more efforts and investments to be put into technological capability development. The findings of the analysis moreover confirm what has been already established by Bharadwaj (2000), Henderson and Venkatraman (1999) and Mata et al. (1995): that it is important to have the capabilities to leverage new technologies in a unique and firm specific way, so that you eventually can create a competitive advantage from this. Therefore, technological capabilities might have two dimensions, namely one focusing on leveraging the opportunity of the specific new technology and the other one concentrating on making the whole process adjusted to and thus idiosyncratic for the firm.

Another dynamic capability, namely **innovation capabilities**, which has been acknowledged as being important by literature (Lahovnik & Breznik, 2014; Mutisya, 2015; Tidd et al., 2005), could not be identified as factor based on the data of this study. According to theory and as described in section 2.5.3, innovation capabilities can be understood as ability to generate and manage new ideas in a way that allows an

organization to leverage or create new business opportunities (Hii & Neely, 2000; Noordin & Mohtar, 2013; Saunila & Ukko, 2013). Hence, next to technological also innovation capabilities should be endorsed as being important dynamic capabilities allowing firms to leverage opportunities from new technologies (Koc, 2007). Since the results of this study showed that innovation capabilities until now seem not to be a priority of luxury firms, but that exactly these firms still struggle to really successfully make use of new technologies, this capability could maybe help them overcome their issues and be a key for enabling the creation of competitive advantage through new technologies.

Next, it could be identified that most firms were aware of the potential value of new technologies, but that furthermore sufficient openness, readiness for change and a positive attitude towards them is needed, which was captured by the dynamic capability **mindset**. It seemed that oftentimes, internal resistance and issues to mobilize efforts in the firm, led to a barrier of insufficient determination to successfully implement new technologies. Exactly this determination is needed though to carry out new technology initiatives successfully. Moreover, the development of a right mindset towards such initiatives can also been seen as first step towards creating a good innovation capability, whose importance has been pointed out above. Looking at Teece et al. (2016), trying to create a fit of new technology initiatives with the company culture from the beginning could be one way to potentially resolve this issue.

Lastly, throughout the interviews it became clear that it will not be sufficient for luxury companies to simply implement new technologies or to achieve the ability to create right resources and capabilities. What will be needed is that firms can again and again identify, demonstrate and **create relevance** for new technology initiatives towards the own firm and its customers. This can be achieved by continuously pursuing alignment between the company's different strategies and resulting actions as described in section 5.3, followed by the successful communication of the relevance resulting thereof towards the relevant stakeholders of the firm. Such considerations will help to ensure that the brand's image, values and strategy will not be compromised through the implementation of new technologies - also not in a dynamic environment as in the present case. Next to these issues revolving around the firm-specific alignment, another key issue related to the creation of sufficient relevance which could be identified was that luxury firms oftentimes could not see the (full) business value of new technology initiatives. From this, one could conclude that a commercialization strategy as suggested by Teece (2010) is needed, so that firms can better understand new technology´s relevance through unambiguous business cases.

In sum, it can be inferred that dynamic capabilities are really key for luxury firms to be able to continuously leverage opportunities from new technologies and fend off threats from them like the dilution of the firm´s brand image or blurring of market boundaries. They will allow firms to shape, enhance and create new organizational resources and capabilities, so that they will not only be able to react to but also proactively induce change (Koc, 2007). As with the resources and capabilities described in the RBV, also dynamic capabilities can be enhanced by experience and learning. Repeated practice, trial and error, imitation of other market players as well as knowledge management and codification processes have been suggested to be able to so by different researchers (Barreto, 2010; Eisenhardt & Martin, 2000; Zollo & Winter, 2002). Some of these approaches and tools have been also recognized by the subjects of this study, but a more systematic approach to implement and follow through with them could be developed. Specifically, the three fundamental processes underlying dynamic capabilities as explained by Teece et al. (2016) and Teece (2007) could be driven as follows:

- The *sensing* of new opportunities could be fostered by tools like scenario planning, real option analysis or open innovation. Also, analytical frameworks like SWOT could help firms to more systematically recognize opportunities of new technologies.
- To then *seize* the right resources and capabilities to leverage the recognized or divert opportunities and threats, arrangements like flexible sourcing and the building-up of excess capacities can be sensible.
- Finally, the fast and effective *transforming* of necessary resources and capabilities can be driven by processes that foster quick implementation, short feedback as well as learning and adjustment cycles like e.g. in rapid prototyping.

6 Conclusion

Pulling together the above-discussed, the following sections will summarize the results of this study answering the question of how international luxury firms can achieve a competitive advantage through new technologies and outline subsequent implications and limitations. Finally, a brief outlook will be given.

6.1 Summary of Results

In brief, it can be said that the creation of a competitive advantage through new technologies is enabled by a firm's unique competitive strategy. For international luxury firms this strategy should be pieced together as depicted in the final framework of this work and illustrated in the following figure.

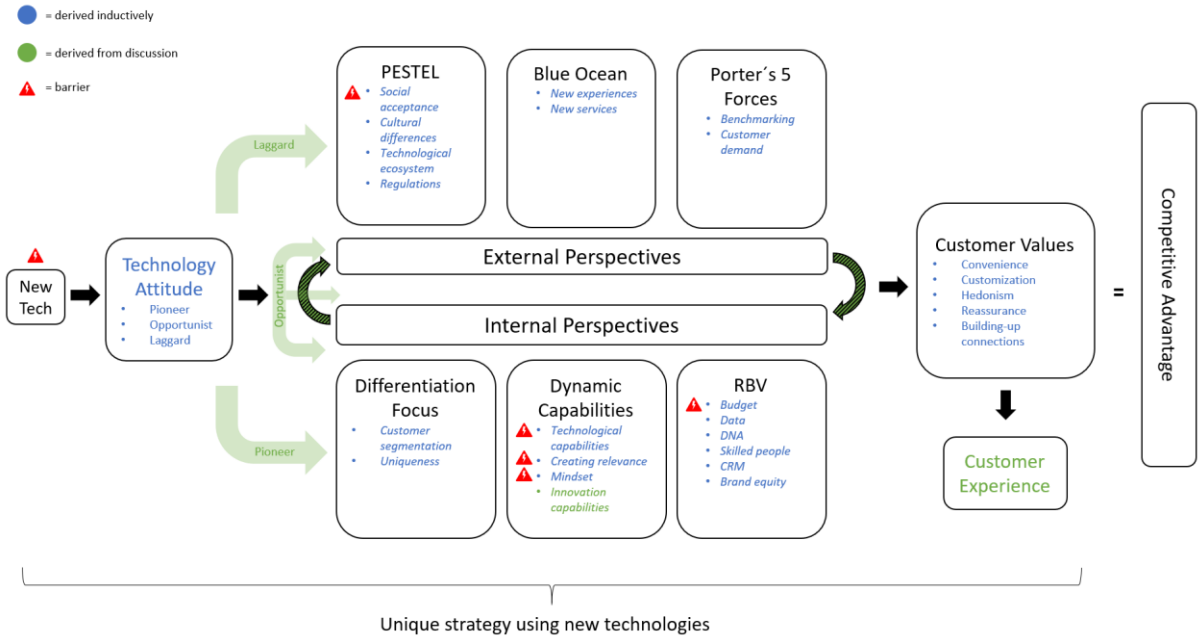

Figure 6 Final framework (own graphic)

The final framework embeds and extends existing theories on and approaches for competitive advantage in a holistic manner, so that it is suitable for the dynamic and extremely competitive environment of today. Moreover, it is crafted in a way that caters the specific characteristics and requirements of the luxury market. In more detail, the framework can be understood as follows:

Firstly, the approaches of firms trying to achieve a competitive advantage through new technologies in today's fast-paced, continuously changing and hyper-competitive business environment have to acknowledge that the creation of customer value is indispensable and should be the goal of their competitive strategy. For international organizations operating in the luxury market, the researchers of this thesis identify five specific customer values which potentially allow these companies to connect new technologies with their company's distinctive luxury DNA, so that they can ultimately outperform their competitors. The research identifies these values to be ***convenience, customization, hedonism, reassurance*** and ***sense of belonging***. Moreover, these specific customer values are generated through the creation of an experience between the customer and the brand.

Secondly, the results of this thesis indicate that luxury firms need to be more aware of how the integration of new technologies into their competitive strategy should be conducted, so that not only customer value but a competitive advantage can be created. To achieve this, the findings allow to conclude that a

combination of factors from the internal as well as external perspective have to be taken into consideration to create a unique strategy. However, despite the importance of both perspectives, it is suggested that international luxury firms place their focus on certain factors depending on their attitude towards technology, which should make them opt for a certain path as depicted in the final framework (see Figure 6). Three attitudes are identified here, namely *pioneer, opportunist* and *laggard*. More specifically, companies that fall in the category of the pioneer should focus on factors from the internal perspective when trying to achieve a competitive advantage through new technologies. In contrast, if matching the attitude of laggards, companies should initially put more emphasis on the right configuration and alignment of factors from the external perspective. Finally, opportunists should try to most reasonably match their internal strengths with the external conditions. Pertaining to this, luxury companies on their specific paths should be aware of different barriers to being successful with their strategy. The barriers are illustrated as a red stop sign in the final framework in Figure 6. More specifically, their impact can differ depending on which path has been chosen. In line with this, it becomes clear that the alignment of business and technology strategy plays a crucial role in making a competitive strategy successful. Driving this alignment can again be supported by following one of the three suggested paths.

Thirdly, it is identified that luxury firms´ capabilities of employing relevant resources in a way that new technologies will have a positive impact are more important than the mere possession of resources, even if they might exhibit the VRIN attributes. Furthermore, the ownership of dynamic capabilities is found to be even more important than having simple organizational capabilities. This is due to the extremely dynamic business environment of the luxury market causing a constant change regarding the resources and capabilities firms need to have to be able to excel. Finally, innovation capabilities could be identified as the one dynamic capability global luxury firms still have to recognize and develop to be able to implement new technologies in a way which will allow them to create a competitive advantage.

6.2 Implications for Research and Practice

In light of the results of this study, the following paragraphs will reflect on the contributions of this work for research as well as practice.

Firstly, this thesis contributed towards the integration and development of existing theories and approaches for achieving competitive advantage to create relevance and make them useful for the competitive environment of today. This has been done through the formation of a holistic framework for achieving

competitive advantage through new technologies, which has been placed in the context of the luxury market. The suggested framework moreover accounts for the importance of the customer for competitive strategy - the absence of which has often been critiqued at other approaches like the value chain or the dynamic capabilities. Additionally, the findings of this study contribute to the body of knowledge revolving around the value of new technologies, specifically in the context of the luxury market. Also, this work integrated Miles and Snow's strategy typology into theoretical approaches for competitive advantage.

Regarding the managerial implications of this study, the resulting framework will provide guidance for organizations, which want to make use of new technologies to enhance their competitive position. In general, the findings of this study should raise firm´s awareness to take into consideration both, internal and external perspectives and to place a focus on the creation of customer value when crafting their competitive strategy in today's business environment. More specifically, luxury firms are given advice on which specific factors and barriers they should take into consideration for creating a unique strategy based on making use of new technologies. Furthermore, this study tells luxury firms, which customer values are sensible to create with new technologies, given the specific characteristics of the luxury market. Thereby, the proposed framework and the accompanying implications of it give international luxury companies advice on how they can better handle the opportunities and threats emerging from new technologies and how they can leverage and divert them to create a superior competitive positioning. The framework can further help to instruct companies on how they can approach the creation of a unique strategy that will potentially lead to competitive advantage. Lastly, this work alerts companies that organizational and dynamic capabilities have to be created and developed to be able to continuously recreate and defend a firm's competitive advantage. Beyond this it advises them that this can be done through learning and experience and gives them concrete tools and approaches at hand.

6.3 Limitations and Further Research

Despite the thoughtful and thorough approach to this study, there are still several limitations. Some of these also directly point towards areas of further research. These and additional avenues of future research as well as the mentioned limitations will be elaborated on in this section.

Firstly, as with most works of this type of research the restricted amount of time for this study causes some limitations, especially with regards to external validity (Malhotra, 2017). Due to a limited time it was not possible to conduct an elaborate validation of the framework in order to proof its applicability

outside of this study context. However, establishing generalizability was not the aim of this study because of its qualitative nature (compare section 3). Also, it has to be acknowledged that the results of this study embrace the dynamism of organizations, markets and other macro-level factors as well as the fact that perceptions between individuals and hence also firms can differ and change. Thus, the findings, will be only generalizable and success of its application repeatable (hence demonstrating reliability) inasmuch the particular context of the firm, the competitive as well as the macro are accounted for.

On a similar notion, the restricted number of interviewees is another limitation associated with the short timeframe of the study. It is left unclear, if in the case of the researchers having more time to conduct additional interviews, these could uncover further factors within the different approaches. However, this is also a limitation most qualitative studies have to deal with and a reason why this work did not aim to establish a universal truth but rather to enhance and deepen the understanding regarding the phenomenon of competitive advantage in the particular context of this study (compare section 3.1).

This goes hand in hand with the fact that it was only looked at certain different industries within the luxury market, namely fashion, car, beauty and jewelry. Accordingly, the researchers stay nescient whether the results are transferable to all other industries of the luxury market, since different industries will surely have particularities that also should be taken into account when implementing new technologies. Delimiting the investigation further to a specific industry could have potentially provided even deeper insights here.

Moreover, since the representatives of the interviewed companies were essentially asked to reveal information about how they will secure their future survival, the gained insights are very sensitive. Therefore, it remains questionable whether especially sensitive or confidential information was withheld. Hence, it could be argued that the presented findings are biased or incomplete without the knowledge of the researchers. However, to ensure integrity and the highest possible level of reliability of the gathered data, the researchers tried to create a very trustful and pleasant interview atmosphere. Furthermore, they guaranteed for anonymization for all interviewees and confidentiality with respect to shared data. Furthermore, interviewed subjects were informed about having the right to skip questions at any time upfront.

Next, choosing the luxury market, the researchers were aware that they work with a very specific market with characteristics such as wealthy customers, superfluousness and goods with special qualities like emotional and psychological value. These characteristics are important in the operating market, however

in other markets these could be way weaker. Hence, it has to be recognized that the findings might not be transferable to non-luxury markets.

Moreover, the general issue revolving around luxury that there neither exist one unambiguous and agreed-upon definition nor that market boundaries of the luxury market can be clearly determined (see section 2.1), also made it difficult to precisely define the scope of this thesis. In addition, although it is most likely that there will be always products individuals consider subjectively as luxury goods, the perception of luxury might change in the future. Such blurring boundaries can lead to a dissolution of what we know as luxury market today, which might result in even more subjective and if not disruptive perceptions of luxury, which in turn could make the presented framework of this study less useful.

Also, this work makes the strong assumption that new technologies are valuable and constructive for all organizations and markets. However, it might be argued that in the luxury market new technologies are more of a threat (see section 3.1), because this market lives from the proximity to the analog world. Then, the question would be though, if this is not true for many new developments and if companies should not always seek to turn potential threats into opportunities if possible. On a more general level, it can be concluded that the framework is adaptable to the dynamic market environment, but this might not implicate major disruptions of market structures, industries etc.

Besides this and as pointed out in the literature review, competitive advantage is understood as a unique strategy. Hence, the researchers do not take the perspective of scholars equating the concept with performance measures like revenue and market share, which could lead to different results regarding how to approach competitive advantage through new technologies.

Moreover, it was focused on big international industry players, which is why applicability to small or locally operating firms might be limited. Issues could arise, because small firms might not be big enough to have the required resources and not have a clear need to make such thoughtful considerations about competitive approaches and defining a unique strategy. Additionally, it was observed that alignment is a huge issue when considering the implementation of new technologies. Contrary, small firms oftentimes have flat hierarchies and alignment, especially technology-wise, thus happens somewhat automatically.

Finally, it is argued that the five identified customer values can lead to and be realized in a customer experience. However, it could not be determined whether these can be prioritized and even further, if

these need to be pursued collectively. Moreover, based on the findings of this study, it is not possible to argue about any dependencies or correlations between the different values.

Next to the already mentioned areas of further research, the exploration of industry differences within the luxury market, i.e. if specific factors have more impact when implementing new technologies in a particular industry of the luxury market could also be interesting. Additionally, the study could be extended to non-luxury markets as well. Also, as the study did not set a strict focus on certain new technologies, the explicit asking for a particular technology in the interviews could yield additional insights regarding technology-specific factors. Further research could moreover look at specific company contexts e.g. size, industry, centralization, degree of innovativeness, non-/family-owned business, etc. and find out which specific combinations of considerations are optimal for achieving a competitive advantage in these.

Beyond this, a next step could be to check if the proposed framework and accompanying findings are empirically valid. This could be done by firstly analyzing formalized strategies according to the identified characteristics. Secondly, multiple case studies would have to be conducted in regard to the technology attitudes pioneer, laggard and opportunist to then identify, if different approaches to create customer value yield different levels of success depending on the technology attitude. This could also lead to a further refinement of the identified technology attitudes of the framework. Moreover, intriguing insights could be revealed by doing more research on customer expectations to potentially identify further customer values and how they as well as the five existing ones are perceived in terms of ranking and prioritization. In course of this, it can be also found out whether a specific combination of the customer values is of importance or if even only one value is sufficient to create customer experiences that will help the respective company to create a competitive advantage. This goes hand in hand with investigating the interconnection, relation as well as correlation between the different values. This could be done by conducting customer surveys or focus groups.

Finally, two additional approaches could be of specific interest. First, an interesting avenue of further research could be to combine this study with neuroscience. Customer values could be made measurable through neuroscientific approaches, where pleasure is being measured through brain imaging techniques like EEG, MEG and fMRI. The second approach addresses big data. An interesting step for further research that could be done here would be to collect big data from customers through tracking the online and offline world before as well after the implementation of a new technology. This would then be followed

by testing different alternatives and constellations to observe, how successful the specific technology was. If then the resulting customer experience leads to a better purchase behavior, this could indicate how the developed framework could be improved regarding the optimization of how to implement new technologies. Exploring such opportunities and further enabling organizations and individuals to realize the promises of new technologies as this study tries to will empower us to fulfill Sir Deaton's vision of future prosperity.

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Appendices

List of Appendices

I. Concept Matrix

The following appendix portrays the concept matrix, covering the most important theoretical concepts for this thesis.

	Competitive advantage		External perspective			Internal perspective							Combined perspective	
Author, Year	The Concept of CA (definition, delineation sustainable CA, etc)	Competitive Advantage and Technology	Porter´s 5 Forces	PESTEL	Blue Ocean Strategy	Porter´s Generic Strategies	Value Chain Analysis	RBV general	RBV - VRIN/VRIO	RBV- Dynamic Capabilities	RBV- IT/Tech Capabilities	Innovation (Capabilities)	Marketing Pull vs Technology Push	SWOT
Attaran & Deb, 2018		x												
Barney, 1991	x		(x)						x (VRIN)					x
Barney, 1995			x						VRIO					x
Bowonder, Dambal & Kumar et. al., 2010												x		
Boynton, Victor & Pine II, 1993												x		
Chaochotechuang, Daneshga & Sindakis, 2015												x		
Covin & Miles, 1999												x		
Cvitanović, 2018		x												
Day & Wensley, 1988						x	x	x						(x)
Dereli, 2015												x		
Friar, 1995						(x)						x	(x)	
Gebauer, Gustafsson & Witell 2011												x		
Haghighi & Kimiagary, 2015												x		
Halac, 2015		x							x			(x)		
Herstatt & Lettl, 2004												x	x	
Huang, Dyerson & Wu et. al., 2015	x		x			x		x	VRIN	x				
Johannessen, Olaisen & Olsen, 1999												x		
Juel Kristensen & Reinholdt, 2015			x					(x)	VRIN					
Lado, Boyd & Wright, 1992						x	(x)	x				(x)		
Lambrecht & Tucker, 2015									VRIN					
Marcano, 2015						x		x						
Mikalef, Pateli & van de Wetering, 2016										x				
Montiel Campos, del Palacio Aguirre &Solé Parellada , 2009		x										x		
Nadeau and Casselman, 2008												x		
Ortega 2010						x		x	(VRIN)					
Piccolo & Ives, 2005								(x)						
Porter & Millar, 1985	x	x	x			x	x							
Porter, 1985	x		x			x	x					(x)		
Porter, 1996						(x)	(x)							
Powell & Micallef, 1997		x						x						
Price, 1996			(x)									(x)	x	
Reguia, 2014						x						x	(x)	
Rhyne & Teagarden, 1995												x		
Robertson & Gatignon, 1986												x		
Rondeau & Bhatt, 1994												x		
Shepherd & Ahmed, 2000												x	x	
Sigalas & Economou, 2013	x					x		x		x				
Souder, 1989												x	x	
Walsh, Kirchhoff & Newbert, 2002												x	x	
Weinmann & Euchner, 2015		x												
Widyastuti, Qosasi & Noor et al., 2017												x		
Stonehouse & Snowdon, 2007						x	x	x						
Mintzberg, 1995						(x)								x

	Competitive advantage		External perspective			Internal perspective							Combined perspective	
Author, Year	The Concept of CA (definition, delineation sustainable CA, etc)	Competitive Advantage and Technology	Porter´s 5 Forces	PESTEL	Blue Ocean Strategy	Porter´s Generic Strategies	Value Chain Analysis	RBV general	RBV - VRIN/VRIO	RBV- Dynamic Capabilities	RBV- IT/Tech Capabilities	Innovation (Capabilities)	Marketing Pull vs Technology Push	SWOT
Stonehouse, Pemberton, & Barber 2001								x						
Tanwar, 2013						x								
Porter, 1997						x								
Teece, 1997										x				
Tidd 2011												x		
Mutisya, 2015			x			x		x				x		
Rothaermel, 2008							x	x	VRIN					x
Hamel, 2001					x							x		
Mekic & Mekic, 2014			x			x	x							
Grant, 1991						(x)		x						
Bridoux, 2004			x					x	VRIO					
Melville, Kraemer & Gurbaxani, 2004								x	VRIN					
Peteraf, 1993								x						
Foss & Knudsen, 2003								x						
Priem & Butler, 2001								x	VRIN					
Mata, Fuerst & Barney, 1995								x			x			
Wernerfelt, 1984								x		(x)				
Kor & Mahoney, 2004								x		(x)				
Penrose, 1959								x						
Barney, 2001								x						
Mikalef & Pateli, 2017										x	x			
Teece, Peteraf & Leih, 2016										x				
Eisenhardt & Martin 2000										x		(x)		
Teece, Pisano & Shuen, 1997			x			(x)		x		x				
Verona & Ravasi, 2003										x		x		
Breznik & Hisrich, 2014								x	VRIN	x		x		
Barreto, 2010										x				
Lavie, 2006										x				
Lahovnik & Breznik, 2014										x	(x)	x		
Zollo & Winter, 2002										x				
Teece, 2007			x							x				
Gürel & Tat , 2017								(x)						x
Ghazinoory, Abdi & Azadegan-Mehr, 2011								(x)						x
Humphrey, 2005														x
Helms & Nixon, 2010									(VRIO)					x
Valentin, 2001			(x)					x						x
Mintzberg, Ahlstrand & Lampel, 2005			x			x		x		x				x
Ansoff, 1965	x													
Powell, 2002	x													
Wiggins & Ruefli, 2003	x													
Grant, 2012	x													
Dibb, Simkin, Pride & Ferrell, 1991	x													
Ghodeswar, 2008	x													
Wiggins & Ruefli, 2005	x													
Allen, Reichheld, Hamilton & Markey, 2005	x													
Woodruff, 1997	x													
Hofer, Charles & Schendel, 1978	x													
McFarlan, 1884		x												
Argote & Ingram, 2000		x												
Cao, Duan & Li, 2015		x												
Robinson & Gelder, 2017				x										

	Competitive advantage		External perspective			Internal perspective							Combined perspective	
Author, Year	The Concept of CA (definition, delineation sustainable CA, etc)	Competitive Advantage and Technology	Porter´s 5 Forces	PESTEL	Blue Ocean Strategy	Porter´s Generic Strategies	Value Chain Analysis	RBV general	RBV - VRIN/VRIO	RBV- Dynamic Capabilities	RBV- IT/Tech Capabilities	Innovation (Capabilities)	Marketing Pull vs Technology Push	SWOT
Kim & Mauborgne, 2005					x									
Grant, 2002	x				x									
Andersen & Strandskov, 2008					x									
Huang, Dyerson, Wu, & Harindranath (2015)	x													
Henry, 2011	x		x			x	x	x						x
Porter 2008	x		x											
Issa, Chang & Issa, 2010				x										
Yüksel, 2012				x										

II. Interview Guideline with Exemplary Questions

Master Thesis Copenhagen Business School

Viola Müller & Franziska Schneider

Company:

The following questions will set a guideline for the interview with your company. The guideline does not have to be followed strictly and questions can be skipped at your request any time. The data will be anonymized and treated confidentially, only for the purpose of this master thesis.

- when talking about new technologies we ...
    - mean very new or emerging technologies
    - do not mean technologies that are already quite well established like digital platforms, big data, etc.

- when talking about opportunities, examples or applications of new technologies we ...
    - mean such that help your organization to improve or innovate your customers´ experience with your products and brand(s)
    - mean such that emerge at the interface with your customers

Interview Questions

1. Could you please quickly introduce yourself and describe the position you hold within your company?

2. Could you please describe the role new technologies play in your company/industry?

3. What opportunities and potentials do you see when thinking about new technologies that are or could be used in your company at the interface with your customers?

4. What are current challenges your customers have that could be overcome with new technologies?

5. What are the reasons your company/industry is (not) adopting new technologies?

6. Thinking about the needs and desires of your customers - what do they expect from your company/industry with regards to adoption of new technologies?

7. In how far do new technologies play a role in your company's strategy?

8. Regarding specific features or the design of your product/brand - how do you think new technologies could have an impact on these?

9. Regarding the products/services you offer to your customers - how do you think new technologies could have an impact on these?

10. Regarding (the expansion of) your product portfolio/new business models - how do you think new technologies could have an impact on this?

11. In how far is your market/industry different when it comes to the implementation and usage of new technologies?

12. How do new technologies impact your company, your brand and the products you offer?

13. How does your company take into consideration their heritage and traditions when choosing or implementing new technologies?

14. Since you operate internationally, are there any differences between country markets or regions you operate in with regards to the use of new technologies?

15. How do you see your global competitors' attitude towards the use of new technologies?

16. Are there any specific challenges you have to consider when using new technologies in an international context?

III. Pool of Interview Questions

Could you please describe the role new technologies play in your company/industry?

Are you aware of any applications of new technologies in your company/market/industry?

Since when are you working with such technologies and what led you to use/think about them?

What opportunities and potentials do you see when thinking about new technologies that are or could be used in your company at the interface with your customers?

How could new technologies provide value for your customers?

What initiatives could you, with this regard, see in the future?

What are current challenges your customers have that could be overcome with new technologies?

What about challenges within your company?

What about challenges within your industry?

What are the reasons your company/industry is (not) adopting new technologies?

Thinking about the needs and desires of your customers - what do they expect from your company/industry with regards to adoption of new technologies?

What objectives does your company pursue when considering/ implementing/using new technologies? And with regards to your customers?

What factors influence your thinking and your decisions about new technologies in your firm?

What facilitates the adoption and the use of new technologies?

What hinders the adoption and the use of new technologies?

In how far do new technologies play a role in your company's strategy?

What about your technology or innovation strategy?

Do new technologies impact your strategy?

When thinking about innovation initiatives in your company - in how far do they have to do with new technologies?

In how far can new technologies change the experience customers have with your brand/products?

In what ways can they make your company/brand more innovative?

Regarding specific features or the design of your product/brand - how do you think new technologies could have an impact on these?

In which way can new technologies proof beneficial?

Can they enhance your efficiency or add new value?

Regarding the products/processes you offer to your customers - how do you think new technologies could have an impact on these?

In which way can new technologies proof beneficial?

Can they enhance your efficiency or add new value?

Regarding (the expansion of) your business models - how do you think new technologies could have an impact on this?

In which way can new technologies proof beneficial?

Can they enhance your efficiency or add new value?

In how far is your market/industry different when it comes to the implementation and usage of new technologies?

In how far do you need to adapt your products to today's market and consumer demands? What roles do new technologies play here?

Are you using new technologies different in any way than companies in your industry that focus more on the mass market?

How do new technologies impact your company, your brand and the products you offer?

In how far do new technologies impact the exclusivity of your brand/products?

When making decisions about new technologies, in how far do you take into consideration the special needs of your customers?

What exactly are the special needs of your customers?

Do you try to satisfy special needs of your customers when implementing new technologies? If so how, if not why?

How does your company take into consideration their heritage and traditions when choosing or implementing new technologies?

Does your company's heritage influence your decisions towards new technologies?

IV. Framework for Analysis with Selected References

The following appendix presents selected references, exemplifying and supporting the themes and sub-themes of this thesis, which were used to develop and fill the thematic framework of the analysis.

	Interviewee									
	1 : BCM1	2 : CCM1	3 : CCM3	4 : CCW2	5 : FBCM1	6 : FCM1	7 : FCM2	8 : FCW3	9 : JCM2	10 : JCW1
A : Barriers #58 References in # 9 Interviews										
A1 : Capabilities #6 References in #5 Interviews			Komplexe technische Umsetzung. Noch keine richtige Struktur und kein richtiges Verständnis für Business Modell und Output der neuen Technologien. Keine Kompetenz in den Feldern. Keine Skills.		can we be as unique as we are, as luxury as we are, in, on a platform which is digital, where you cannot touch you can only see.	Yeah, just like with any new technologies, it's an option to do it badly and an option to do it well, because you and people will be learning and so if you do it badly, it will make your brand look cheaper and if you do it well it will make you stand out and be enhancing for the brand	I think people will need to learn different skills and if they cannot then we have some some serious issues			
A2 : Cost-benefit #8 References in #4 Interviews		there wasn't enough to justify the budget for the business basically that was what it came down to.				But almost I tell you we have to be careful about what is worth it and what's not from a commercial point of view its cheaper at the moment to shoot real photos of the other ones than it is to create a digital model.	I think we are now waking up because we see the potential. And also the cost associated to this. That can be saved and therefore I think it was a question of time it was not needed in the last 10 years.			
A3 : Customer acceptance # 10 References in # 4 Interviews		I think, I think at the moment it feels too invasive to a customer. having the headset on your head is quite an alien thing at the moment for us. Just in general because people aren´t used to it. And so, that could put people off.		ist halt nicht so dass die gewerblichen Kunden schon so gern den neuen Technologien gegenüber aufgeschlossen sind			I think we need to really differentiate because those people were more advanced and would get bored with the solutions we are offering at the moment and found them very useful in Germany.			
A4 : Firm-specific alignment #12 References in 7 Interviews		Because it's almost like, you can´t, you know it's almost like an out of the box thing that works for 99 percent of businesses and then we look at it and we think doesn't quite work for us. How can we take this technology and make it work for us. And that´s the difficulty.		Man muss natürlich auch sagen in unserem Konzern ist die Altersstruktur natürlich total unterschiedlich Ich bin eher noch jemand von der jüngeren Generation die natürlich auch irgendwie versucht Dinge mal anders zu tun oder andere Wege zu gehen und nicht immer nur die Produkte in den Vordergrund zu stellen	But how do we rejuvenate the brand without losing our real DNA and becoming more relevant to the millennials or the younger ones.				this is a challenge that we face when I say that our, our world is more conservative. You know sometimes technology is really equal for them to mass market. And you don't want to be mass market.
A5 : Determination #10 References in #5 Interviews			Entscheidend, wenn wir den Mut haben, diese konsequent einzusetzen. Dies ist aber mit der vorhandenen Marke kaum möglich		So you have even internally first of all, internally the barriers were so high. So we had really to have a internal road show to explain why this customer classification is very important. But if you're not using it, you cannot expect to have the mindset and as everything, everything goes with the mindset		because they have to let go of things they know and have done for many many years now. And this is obviously scary when you say 'But I'm experienced I've done this for 30 years' Yes. Then for 30 years. But you cannot continue to work on what you are good at			That technology is really I would say key as a very missed step up in a way so we have still see technology just like IT you know[...] So at the moment it is really a transformation for different industries to really embed technology into the heart of their strategy.

A6 : Technology performance #12 References in #6 Interviews		it was trying to be a halfway house but it wasn't doing a good enough job			this algorithm would have never known because the conversation and there is no path in the past which could have explained or foresee that you will buy eyewear or whatever				Ich glaube schon dass es gewisse Möglichkeiten gibt. Generell Glas schmelzen und das Herstellen von Glas ist extrem schwierig mit Technologie zu verbinden [...]	which is not true for I would say the selling part, where, this is an attentive process where you need to have straight telling and a lot of I would say explanation, which cannot be replaced by some I would say artificial intelligence
B : Blue ocean #44 References #8 Interviews										
B1 : New experiences #23 References in #6 Interviews				Einen sogenannten Sprinter Experience Room wo ich quasi mit einer Agentur zusammen eine AR App erstellt habe die die Produktdetails eines Sprinters spielerisch erklärt hat und dargestellt hat	And this show is all about the experience which then of course is a different if, I would say you can reproduce this kind of experience with augmented reality or with virtual reality when you are really like completely isolated in something [...] you think like wow what do you experience now it's, it's yeah it's touching your emotions. there can be a business model that distribution doesn't exist anymore tomorrow. That you come home you have your, you have a virtual clothing room, and you brought different playful elements, which means you, you invited the important personalities of the world whatever and then you had to for example only an empty room, [...] and then [...] you take your iPhone and [...] you could see the atelier of Gabrielle Chanel			I was in London at Burberry, and it really fascinated me to have this mirror. You put on a t-shirt, you try it on and stand in front of the mirror. And then on the mirror pops up pictures of pieces that would go with it they propose it and then you can ask the service person to bring it to you. So you can also try it on.		
B2 : New services #21 References in #6 Interviews					how would it be if tomorrow as a consumer, I come home I have my box and I tell her [...] "Hey bring me three new pants from Acne with them same colour whatever I want to have them in two days". So what if the consumers is not any more interested in where to buy but only what to buy So imagine now there, right, if you can dream a little bit and you have this conversation with Fred not at home where you want to be with your kids, but in time when you're on your car and you have displays and then he's talking to you [...] to use this time more efficiently. And so there are no borders and I think there are things today we cannot really imagine right.	we should be able to potentially say okay I want my sort order on my website to be in what best fits my body shape. And potentiallly we scan their body shape or with their phone they can take a couple of pictures of their body and we can work out the rest. So if we could, imagine going to a store and you could hold up your phone and it would just highlight or grey out all the clothes that wont fit you. So something like that.	if you would provide information about how your closet is looking then and your personal wardrobe is looking then we could add the missing pieces or give some sort of recommendation or we could also say based on what others are doing or about what is currently trending we could give you the information about what you are currently missing to complete your style for instance. Again combining the virtual word with the with the real existing words for this we would need to have some sort of pictures or just a selection of some of your garments at home.	They make proposals for outfits, like combinations. Like if you, if you're looking at a certain dress, they will propose a sweater, our blouse to go with it.		But for certain of our products that are really special like this one bracelet for example it is different [...] the sizing aspect is difficult. So to avoid mistakes, we propose to make some simulation that is done with augmented reality about this, this product And for certain items of jewellery for example we have just one piece [...] But the customer can be everywhere. And in order to, not to move the piece from a country to another country, [...] we propose to see how the item they like would look like on them and then so we have some connected mirror where the customer can see his face and see what the piece could look like on him.
C : Customer values #175 References in #10 Interviews										

C1 : Convenience #62 References in #8 Interviews		For me is always effortless, so to make an effortless experience or bring out effortlessness at the top. That´s our aim.			The question is there again if you would ask me how you make this purchase channel as practical as possible. So imagine now there, right, if you can dream a little bit and you have this conversation with Fred not at home where you want to be with your kids, but in time when you're on your car and you have displays and then he's talking to you […], but to use this time more efficiently. And so there are no borders and I think there are things today we cannot really imagine right.	It´s much more natural to hold the product up to the mirror and find it automatically than to browse through in the same way that you would in a browser interface. As you know the most frustrating thing for the customer is to […] go through lots and lots of products, which won´t fit me […] So if we could, imagine going to a store and you could hold up your phone and it would just highlight or grey out all the clothes that wont fit you. so then you can just concentrate exactly. Because people are generally cash rich and time poor, they do not want to waste time trying to find the things they should even be considering	if he can make already proposals what we think this customer could like it's also more convenient and […] people do not have to spend so much time by that they´re searching for things It's convenience and […] much more tailored demand driven fulfillment of needs. That's the two main objectives.			And in order to, not to move the piece from a country to another country, […] we propose to see how the item they like would look like on them and then so we have some connected mirror where the customer can see his face and see what the piece could look like on him. I can tell you that our aim is really to find services, digital services that help and ease the customer to have a seamless journey whatever channel he wants to engaged and whatever channel he wants to be reached
C2 : Customization #42 References in #7 Interviews	But at the same time, we use AI and ML to help recommend the right fragrances for those consumers at the back of the experience.	I can't work it out yet but for me it being personal. So, I think gone are the days where people, people they´ve just getting talked at. For me, the especially important thing now is making a journey or an interaction with a brand a personal thing.			it goes without saying for me, when I talk about emotional relationship, it's about personalization. it'd be like a private concierge. And I know because I've known people working for different apps, the best concierge for you. And you have your private concierge and I think this is what you want right, this is a personal service.	But it's about, I think it's all about creating an individual experience for the customer and making it the most relevant experience for them.		I think that in the luxury area, it is more important to personalize the things than for example in the mass market, because the customer has a higher demand, and wants to have something very, very special.		So obviously again to reach our clients I would say and propose this exclusivity aspect whatever if it´s service, product or whatsoever, technology will play a role. But again it will play a role in what I said, in customizing some feature or proposing some specific aspect
C3 : Hedonism #31 References in #7 Interviews		So, I mean looking at the different technology, it needs to be less functional and bit more like a immersive because it's more of an emotional product here.			And I'm saying always it's all about emotions. For me it's always the love relationship right. and the in the head what kind of emotions you're provoking about happiness, about love, about valorization. I think when it comes to this, I think there's a product which can create some emotions and then there's that experience. And I think there's a difference if I live something and if I am really like in the box in a completely different universe with my with my own hands, with my head, with my eyes with the, voice, the smelling and all this and you brought different playful elements, which means […] you had to for example only an empty room, […] you take your iPhone and you had like a bullet point and with an app, which you downloaded, you could see the atelier of Gabrielle Chanel	where for Valentine's Day you could, they mocked your screen on your phone you could basically kiss that. And it would record this and you could then send it to your Valentine. Which is kind of fine but it's gimmicky completely.				You know they have some, sometimes some really I would say pragmatic questions and our answer is more inspirational information. And this is a gap because whe should, I understand that it's key that a luxury brand should be inspirational and should be really rated on creativity and everything.

C4 : Reassurance #17 References in #4 Interviews			Sicherheit ist Kernwert und wichtig auch bei modernen Tools. Genauso: Qualität / Zuverlässigkeit / Design. Deswegen: Dauert länger als nötig. Hält aber.			AR it's a super interesting question from a showing customers how it might fit to them and if you can get the right data and then the right learning algorithm then we should be able to potentially say okay I want my sort order on my website to be in what best fits my body shape [...]				we work with the artificial intelligence [...] to ensure that we can foresee or at least try to anticipate when the customer will have some issues and then add some mitigation action So this is what we experiment with the augmented reality, [...] if the customer is really I would say more confident about taking, because he is much more sure about his size. This should be kind of a good help in terms of the product. So if we can reassure him in his decision journey it's really better. and we can display around his neck for example if it´s a necklace the piece so he can see are they a good fit Or when the customer can have some questions with the size for example with a ring like I mentioned, [...] then the we can see the customer would be reassured
C5 : Sense of belonging #22 References in #4 interviews		it becomes an opportunity there to have a direct line of communication with somebody in a virtual world and that's where I think the value conveys		Es geht immer um Markenbewusstsein, Markenimage um Markenwiedererkennung. Wie kann ich das schaffen. Das schaffe ich eigentlich, sind wir alle überzeugt immer über Emotion. Über Emotion und über Begeisterung und Interaktivität, also Interaktion, wo der Kunde auch die Möglichkeit hat die Marke vielleicht auch mal anders zu erleben	And then of course there I think you have to make it smart about community today you know as we see in this world today it's all about community thinking right. So you want to belong to somebody, you want to belong to certain					So here the artificial intelligence is used much more for having some conversional, conversational bot and helping our customer to engage with the maisons with this I would say bot. For sure because more and more our customers are connected, which is a statement. And more and more they are keen on exchanging but as well engaging with the maisons through these digital touch points, whatever digital touch points. And it´s appreciated from our customers because again they are more connected
D : Dynamic capabilities #70 References in #8 Interviews										

D1 : Creating relevance #18 References in #6 Interviews	For beauty and luxury, there is also the balance we need to maintain. Our consumers, especially in luxury, are expecting durability, quality, history. Devices and tech can be seen as gimmicky. We do have various activities though where we make sure that technology is not what we sell, technology is an enabler				But how do we rejuvenate the brand without losing our real DNA and becoming more relevant to the millennials or the younger ones. But today everybody is using these technologies and a lot of these new technologies [...] so then it´s again the question of how you can make it more translated in a way to make it more relevant. In a modern way. So meaning in a relevant way for younger audiences, because the objective was there how we can bring the young London girls to make it relevant	I think it´s that any technology whether it is new or not is to be evaluated as to how it can benefit the company. And it may be past the point that is defined as new or maybe an emerging technology as you said.				
D2 : Mindset #19 References in #5 Interviews					But if you're not using it, you cannot expect to have the mindset and as everything, everything goes with the mindset So Burberry was a good example, how someone from the top brought it in and how to yeah to build up the mindset internally. It's the key But you have to be ready to invest and to have a test and learn approach	we are trying to have a very flexible attitude upfront to allow people to innovate, and then once it goes in production that´s the point at which you start to essentially productionize it and make it compliant to everything	it's very very very interesting to observe how the mentality and also how people experience these challenges and approaches			So it's important now that they really understand that technology that it´s more than just IT, that technology can really ease or introduce apps to keep and to preserve this heritage.
D3 : Technological capabilities #33 References in #7 Interviews	We do have various activities though where we make sure that technology is not what we sell, technology is an enabler	So at the moment we haven't got a new technology in place, because we're going through the process probably in the next few weeks to start analyzing that. And we have essentially like a recruitment process to find the suppliers. So it's not quite there yet.			And this is a test and learn approach so afterwards, now it's coming more and more On the other hand there were brands who could increase their brand equity, their relevance because they were so smart in using it	So that's essentially not an emerging technology. But then you get new a new usage of it. So for example if you have a magic mirror in store then holding, you need RFID technology to detect where the product is, what product is in front of the mirror, so you can then bring up the piece with all the details automatically. Yeah, just like with any new technologies, it's an option to do it badly and an option to do it well, because you and people will be learning and so if you do it badly, it will make your brand look cheaper and if you do it well it will make you stand out and be enhancing for the brand So, I don't see that so usually new technologies will fundamentally change the perception, it will be more about the execution of it	We don't want to change everything and not what we have done the last 50 years is wrong. No not at all. But how would you translate what we are good at into this next century			My major function or my position today is a really to bring I would say solution and advice into implementation of key or major digital projects for maisons right into certain areas
E : Differentiation focus #62 References in #8 Interviews										

Themes											
	E1 : Customer segmentation #21 References in #6 Interviews		It´s different in that our targets are different.		man muss die einzelnen Zielgruppen auch ein bisschen anders ansprechen [...] und so versucht man ja irgendwie den verschiedenen Zielgruppen unterschiedliche Möglichkeiten aufzuzeigen wie man einfach mit der Marke vertraut bleibt oder agiert oder im Endeffekt sie dann kauft wenn man eine Kampagne in Frankreich macht muss das Auto immer auf der Straße zu sehen sein. Das ist ein ganz kleiner Hint, das muss man wissen, wenn man das nicht weiß [...] dann kann man die Kampagne einfach nicht machen [...] für die X-Klasse Einführung haben wir für Südamerika einen anderen Kampagnenfilm gehabt, für Südafrika einen anderen Kampagnenfilm, für Australien auch nochmal anders. Also es muss alles immer schon angepasst werden	how you can reach and target them differently in order, by using the algorithms to see also where we can touch them.	once you get into AI, machine learning I think that there's lots of potential for obviously data mining, customer segmentation and how customers react	a friend of mine I talked to him on Friday said always when I fly from Frankfurt to Shanghai. So the travel is 10 hours plus five years because China is five years ahead of this technology and what they're using [...] I think we need to really differentiate because those people were more advanced and would get bored with the solutions we are offering at the moment and found them very useful in Germany. Where in Germany you can still excited for things which are common in other countries			What we see is, because our, I would say new customer, our new wealthy customers they don´t want to spend time in our boutique or if they go to our boutique they would like to have the best, the best experience and that everything is already prepared. But while we do this, we´re completely at the front, we really push the limit because of this VIP segment. The VIP segment is really, it´s really personalized service.
	E2 : Uniqueness #41 References in #8 Interviews		when someone looks at a very expensive item [...] they just want it because it makes them feel that certain way and that's where the technology can play a little bit different. But that's where it is quite difficult because technology can only do so much. Because it's almost like, you can´t, you know it's almost like an out of the box thing that works for 99 percent of businesses and then we look at it and we think doesn't quite work for us. How can we take this technology and make it work for us. And that´s the difficulty. in how far do you think your, the exclusivity or the luxury role plays a role when you think about new technologies. [00:50:47.98] - Interviewee Depends on how you look at it, I think. It plays a role in that people expect a high level of experience, a high level of technology, a high level of quality and then also pay, it plays a part in that I expect a lot		da haben wir natürlich versucht innovative Technologien oder Dinge anders zu machen und irgendwie anders an die Kunden heranzutragen	again consumer centricity because it's there where you are using, where using tools in order to give a consumer experience which is so unique compared to the competition to other industries. can we be as unique as we are, as luxury as we are, in, on a platform which is digital, where you cannot touch you can only see.					I think more or less that we have [...] same type of software. But in the way that we use it I think it´s different. And we push, we push a lot I would say certain, certain technology components They put some constraints or or this is a challenge that we face when I say that our, our world is more conservative [...] You know sometimes technology is really equal for them to mass market. And you don't want to be mass market. In IT and it´s part of our world, we speak with them and say that digital could be really exclusive a lot, not necessarily mass market. Obviously a lot of examples would be in a mass market approach but we can use otherwise technology to be exclusive.
	F : Five forces #82 References in #10 Interviews										

F1 : Benchmarking #41 References in #9 Interviews	Our historical competitors are not our only competitors. Small players are now digital and global native, and can grow and expand very quickly. As far as traditional competitors are concerns, from a personal point of view, it looks like we are all in the same bath, and progressing at the same speed.	When we look at, when you look at all the other luxury retail brands it, in my opinion you might have a different opinion, but they don't necessarily do the best job. Yeah I know for a fact that our competitors are trying different things that we haven't tried but you know. Maybe it´s coming down for those guys just having higher budgets and selling more units.						So I think that's important for the customers to differentiate themselves from the mass		But it´s normal because, with luxury we target a different population. But on other things I think we are quite a little bit advanced. If we compare us with the competition, the same competition, in the same industry. Sometimes we have the same answer but then we are still apart And afterwards because of the reason that I said, people from the same product different company it´s a lot of copy paste, copying and or a look at what my competitor does and then I would do the same or I will copy the same. So there are a lof of mystery shopping, there are a lot of things that if for example we really don´t understand something for example and we can see that you know, so from my point of view and this is what I see it´s quite similar. We are equal from I would say more from a high level strategy at the moment.
F2 : Customer demand #40 References in #9 Interviews	First and foremost, we need to check whether technologies are an enabler to deliver against a consumer need. Technology for the sake of technology is not something I am personally a fan of In everything we provide to the consumers, we first need to understand what the tension is, then hypothesize ways to address that need. Only then, when looking at the options, will we see whether digital technologies are actually important to address this pain point. Our company is consumer-first. We will consider technology as long as this helps with their needs, and is an economically viable solution.					It depends on the use cases of the customers. So when you decide that you take a picture of a piece of clothing and you have a wider assortments to offer an alternative then that's a very useful usecase. Maybe the customer just wants to find out where where they bought it and don´t buy that one in which case you may be sent him to a rival. However, that said you have to be where customer is. And the customer expects you to be wherever they are	the approach to the market and its way to the customer also based on what we just said is very specific. So we try to treat US customer in an US-specific way and the Japanese customer more in the Japanese specific way in the way the layout of the stores and the sales associates in the stores. That's different and we we have some lets say global guidelines which we are not moving away from but you definitely have some local adaptations to make it relevant for the customers because they are always different and have different needs	I think that in the luxury area, it is more important to personalize the things than for example in the mass market, because the customer has a higher demand, and wants to have something very, very special.	Die Richtung geht sicher dahin dass der Kunde immer mehr Informationen über sich selber und über andere haben die die Schnittstelle zum Handy wird da auch immer relevanter, das sind halt Kundenbedürfnisse, was wir jetzt schon eindeutig festgestellt haben. Und wenn man es schafft den Kristall oder das Produkt mit Sensoren und einer App quasi zu verbinden. Ist das sicher eine Möglichkeit, die für den Kunden ein Mehrwert darstellt.	They want all services performed at home and or I would say wherever they want.
G : PESTEL #98 References in #10 Interviews										

G1 : Cultural differences #47 References in #10 Interviews		I am mainly talking from my own opinion now but. I think those guys like to be the first to these things. If that makes sense. That´s my opinion, it´s that they, they seem to want to make their lives easier, more, and so for example maybe the European market is a bit more stuck in their ways.	Lokale Gesetzgebungen sind unterschiedlich (vgl. China). Genauso lokale Dienste / Programme / Gewohnheiten.	wenn man eine Kampagne in Frankreich macht muss das Auto immer auf der Straße zu sehen sein. Das ist ein ganz kleiner Hint, das muss man wissen, wenn man das nicht weiß kann man Kampagnen. Das gabs schon , gibt es alles.	So in China you can have a local ambassador or ambassadors where she can be or the Korean pop right where you know all this, the Korean drama, where you say whatever if she's using one lipstick it's sold out next day immediately.			the chinese market is very special. The Chinese people have different demands than the European people. I'm not sure, they want it more lively and also in apps they can work with GIF's, or can pass on, I don't know, special information. I just know that the Chinese market is very special		if look you at US market and if you look at the Chinese market the behavior, the customer will be completely different and interaction that you will have on your I would say services may be different as well. But in China you should really target on exclusivity. Meaning this product will be available on this three days, which you cannot do at all on the US market for example In China, if you don't have any people which is a key opinion leader, forget. Chinese doesn´t want to wait in a queue. He doesn´t like qeue, he doesn´t like queue. So, so you need to perform something that in a boutique you have, you have some tool that help to make more efficient the step to make a purchase. Otherwise you loose the customer
G2 : Regulations #10 References in #6 Interviews	The most present element to consider is GDPR, regulation around personal data in Europe		Lokale Gesetzgebungen sind unterschiedlich (vgl. China). Genauso lokale Dienste / Programme / Gewohnheiten.			And then its the case of ok how do we take that data, it´s also pretty personal data, so can we get permission to use it. They have many many security, privacy, restrictions, legal restrictions for a roll out.			Es ist sicher so dass die legal aspects in unterschiedlichen Ländern unterschiedlich vorhanden sind und dass es da in einigen Märkten leichter ist als in anderen.	
G3 : Social acceptance #22 References in #7 Interviews		So, I think that's a difficult one because I think they are in general, this needs time for people to accept it. So, it´s becoming more of a daily thing. You know, so once we start getting VR in homes and we're using it on a daily basis then it becomes less alien I think.			No I think it was a normal behavior. So we didn't discuss this and to them it was normal	That will change once you get mass adoption. So for example if every other app has visual search and our app doesn´t they will be like where is you visual search, because that´s what they are used to.				In China, if you don't have any people which is a key opinion leader, forget.
G5 : Technological ecosystem #19 References in #8 Interviews	Both regulations and existing tools are different. While China doesn't have the same social network we would have here in Europe (no Instagram no google, no facebook, but wechat, weibo and co are crazy active, and years ahead).				What do we do in China. And we have WeChat, where WeChat is everything right. I guess you're aware of this and so you do everything with it. So when you have this in China and then you come to Korea, which is also one of the fourth most important markets with Kakao talk and we can see that Kakao talk is copying more and more WeChat to say okay we want to add all these elements					So you have completely different ecosystems if you are in Asia or if you are I would say in a Western country. So in China for sure. But not only, there is also Japan that is completely different and Korea which is as well completely different. And there their complete ecosystem you need to I would say to ensure that this will work as well with this kind of ecosystem. This for sure will work differently from I would say from the whole ecosystem in Europe or the US ecosystem
H : RBV #127 References in #10 Interviews										

H1 : Brand equity **#21 References in** **#5 Interviews**				Die Marke soll sich natürlich immer weiterentwickeln. Es ist schon ein abgedroschen Wort, aber man möchte ja immer so eine 'Lovebrand' bleiben geht ja auch vieles eher in Richtung die Marke die ist cool die machen was Cooles. Ich begeister mich für die, die Produkte stehen erst mal gar nicht im Vordergrund aber die Marke ist total toll natürlich auch immer der Blick, was ist neu was ist gerade vielleicht auch ein bisschen edgy. Wo geht die Reise hin auch Richtung IT, Richtung Daten und Car Company 2-Konzern natürlich auch bewusst unsere Traditionen beachten aber dennoch auch die Marke weiterentwickeln	to show how unique fashion company 1 is compared to all the other luxury brands, because there is a difference and I'm not saying this because I worked for fashion company 1, but because of all the studies on brand equity and whatever we did On the other hand there were brands who could increase their brand equity, their relevance because they were so smart in using it		So if you have the experience in a mono brand online store [...] people will not come back to your site [...] so then the fashion industry will only survive if they are on those platforms because the traffic to their own stores will dramatically decrease if you don't have something exciting			
H2 : Budget **#12 References in** **#4 Interviews**		there wasn't enough to justify the budget for the business basically that was what it came down to. So it's not a very glamorous point but it's quite realistic point in a lot of times it comes out to time and money			You have to be ready to invest, a mid-term investment because you won't see that would come immediately	But almost I tell you we have to be careful about what is worth it and what's not from a commercial point of view Obviously not to invest too much until you are sure it´s going to be worth it				
H3 : CRM **#27 References in** **#9 Interviews**					we were really old school and this was the strength. It was like, every let's say sales girl, she has a black book and she was writing everything by hand and so she knew about Franziska. She was like your best girlfriend right	So it all comes down to that each customer is individual and the better you can understand, what needs the individual has the better you can service them.	really know much better what the customer really wants based on his or her profile and it's easier to respond to that need.		Das heißt dass man mit Machine Learning die gewissen Algorithmen hat, die es schaffen das auszuwerten was für ein Kunde relevant ist und dann weitergedacht Richtung künstlichen Intelligenz dass sich das Ding ja wirklich weiterentwickelt und mit jeder Information dazulernt was für den Kunden relevant ist und was nicht. das ist definitiv eines die obersten Kriterien von der Firma Kundenbedürfnisse zu verstehen. Die Entwicklung von Kundenbedürfnissen zu verstehen und diese zu erfüllen vielleicht sogar Kundenbedürfnisse wo der Kunde aktuell nicht bewusst ist dass er diese Bedürfnisse hat also dem Kunden quasi zu sagen was er eigentlich braucht	And that is exactly what we try to reach. Meaning that really to identify, where, for example, where we can improve a small pain point or a little pain point that really I would say gets on your nerves.

H4 : Data #18 References in #8 Interviews	Underlying all that, data is key, for 1/ future guessing, 2/ increased reactivity for in market activity, and 3/ new insights generations that can't be seen without the latest data science tools			Und da sind wir gerade im Umbruch wir stellen uns ja auch anders auf, versuchen mehr Daten zu sammeln und versuchen die Daten auszuwerten und zu evaluieren und irgendwie daraus Schlüsse zu ziehen wie können wir zukünftig neu auf die Kunden zugehen					Bei machine learning, es ist so dass man die Daten braucht oder eine Grundlage von Daten und ich glaube da ist es global immer noch so dass sehr viele Unternehmen Daten sammeln ohne wirklich zu wissen welche Daten sie brauchen und ich sage jetzt nicht die ersten Züge davon aber man versucht jetzt wirklich langsam das Thema Daten zu verstehen und sorgfältig auszuwählen welche Daten braucht man wirklich und welche nicht. Um dann eben Technologie [...] wirklich so einzusetzen dass sie einen Mehrwert für Kunden und fürs Unternehmen hat	
H5 : DNA #29 References in #7 Interviews				Ja Tradition ist ein sehr wichtiges Thema [...] auch heute 130 Jahre später liegen wir noch einen Wert darauf dass unsere Tradition unsere Geschichte natürlich in den Köpfen der Mitarbeiter bleibt und natürlich auch in den Köpfen der Kunden.	I think you would think really five times more about your brand DNA and your heritage. Because when you talk about brand value, I think fashion brands [...] have a certain DNA and then when it brings, when it comes to this point of using new technologies and how you name it, you have to see how this is not, how, what's the word of verwässern? [00:45:19.20] - Franziska ... like blurring? [00:45:21.66] - Interviewee Exactly, keeping, more protecting your DNA.		we are known for engineering and now we use this technology data and virtual to build this in a virtual augmented way			They put some constraints or or this is a challenge that we face when I say that our, our world is more conservative [...] You know sometimes technology is really equal for them to mass market. And you don't want to be mass market. our maisons they are key on using technology to keep control of the heritage of the maison[...] to ensure that we keep the knowledge of our history because they realized that the new, that the, everything in the maison is based on heritage And in this sense technology I would say help to preserve our heritage.
H6 : Skilled people #20 References in #8 Interviews		a lot of these companies are, obviously have departments that are just doing this. But all they're doing is implementing new technology into the business. At car company 1 we aren't quite there yet.	Noch keine richtige Struktur und kein richtiges Verständnis für Business Modell und Output der neuen Technologien. Keine Kompetenz in den Feldern. Keine Skills.		the task was really to build a professional marketing team and not to lose the roots of the brand But, so he´s working with Harvard people, in whatever ways and says "I want to re-, revolutionize retail business because this is the future. You have to have the people for it, to analyze it to go behind or external sources or agencies		I think people will need to learn different skills and if they cannot then we have some some serious issues			
I : Technology attitude #62 References in #9 Interviews										

I1 : Laggard #15 References in #5 Interviews		So, it's interesting what has been talked about quite a lot in the business, but we don't feel like it's a priority for us at the moment. I think as well, VR, the thing is for me it needs to become more mainstream before it becomes a benefit to us.	Wir sind fast follower. Keine Innovatoren.				in the past Fashion Company 2 was never the forerunner or the trend setter so we were early adopters and followers of technology. we are not the first mover we are not very brave in doing experiments		dass Sie VR, AR, und Machine Learning und solche Technologien als neue Technologien darstellen glaube waren wir sehr spät dran. Am ehesten vielleicht im Bereich VR & AR wo wir uns wirklich Gedanken gemacht haben wie man das am besten einsetzen kann	
I2 : Opportunist #36 References in #8 Interviews	First and foremost, we need to check whether technologies are an enabler to deliver against a consumer need. Technology for the sake of technology is not something I am personally a fan of the fundamental needs of our company are not about technology, they are about the benefits from technology			Vorreiter ist immer schön gesagt aber es gibt genügend andere Konzerne draußen die schneller [...] sind als wir [...] Um nicht abgehängt zu werden sind wir ja auch gerade ein bisschen immer wieder auf der Suche nach, wie können wir mit wem kooperieren um nicht den Anschluss zu verlieren oder um Vorreiter zu sein	And for this type of company then to say we don't have to be always first - we were first for a lot of creative let's say tools	I think it´s that any technology whether it is new or not is to be evaluated as to how it can benefit the company. And it may be past the point that is defined as new or maybe an emerging technology as you said So, we try to keep coming back to the customer and to the value for the business rather than trying out new technologies to see if they might be able to do something.				when we use this such technology you need to see what it can bring for you from a commercial point of view. Most of the time, we okay, we won't reinvent the wheel, we don´t really are, if a way a software is either on the market or something, we, we do it like the others in terms of industry
I3 : Pioneer #11 References in #5 Interviews	My team is on the scout of new technologies, and enable project that go beyond the current scope of our innovation pipeline, to deliver "1st in the industry" product and services, to serve our most discerning beauty consumers			Damals waren wir Pioniere und das ist ja auch so ein bisschen unser Anspruch. Dieser Pionier auch weiterhin zu bleiben		So I think that Burberry who were long held I would say at the forefront of the digital curve			Es ist jetzt vielleicht nicht ganz möglich und Technologie so einfach verbindet wie man es will aber Jewelry Company 2 ist ja eine der größten Maschinenfertiger in Österreich und da ist man sehr wohl ganz vorne mit dabei. Hinsichtlich neuen Technologien durch Virtual Reality, Augmented Reality ist da schon im Einsatz	especially on certain markets we are really advanced, with the service, with the e-commerce, with the digital capabilities in China and leveraging I would say customers of the Chinese market , but it´s the same for Korea and it's the same for many specific markets where we used technology We know that we are the only ones who are there trying or at least trying to make really, but we don't know yet everything. At least it´s a small step on this transformation journey

V. Translation of Used References

Original Reference	Interviewee	Translation
Komplexe technische Umsetzung. Noch keine richtige Struktur und kein richtiges Verständnis für Business Modell und Output der neuen Technologien. Keine Kompetenz in den Feldern. Keine Skills.	CCM3	Complex technical implementation. No right structure yet and no real understanding for the business model and output of new technologies. No competencies in these areas. No skills.
Ich glaube schon dass es gewisse Möglichkeiten gibt. Generell Glas schmelzen und das Herstellen von Glas ist extrem schwierig mit Technologie zu verbinden [...]	JCM2	I really think that they are certain opportunities. [But] in general to melt glass and the production of glass is very difficult to combine with technologies
Entscheidend, wenn wir den Mut haben, diese konsequent einzusetzen. Dies ist aber mit der vorhandenen Marke kaum möglich	CCM3	It is decisive that we have the courage to implement them consistently. This, with the current brand, is barely possible though.
Einen sogenannten Sprinter Experience Room wo ich quasi mit einer Agentur zusammen eine AR App erstellt habe die die Produktdetails eines Sprinters spielerisch erklärt hat und dargestellt hat	CCW2	A so called Sprinter Experience Room where I basically together with an agency created an AR app , which explained and displayed the product details of a sprinter in a playful way.
Es geht immer um Markenbewusstsein, Markenimage um	CCW2	It is always about brand awareness, brand image and brand recognition. How can I do

Markenwiedererkennung. Wie kann ich das schaffen. Das schaffe ich eigentlich, sind wir alle überzeugt immer über Emotion. Über Emotion und über Begeisterung und Interaktivität, also Interaktion, wo der Kunde auch die Möglichkeit hat die Marke vielleicht auch mal anders zu erleben		that? We are all convinced you that you can do that through emotions [...] excitement and interactivity. Meaning interactivity where the customer also has the chance to experience the brand in a different way.
man muss die einzelnen Zielgruppen auch ein bisschen anders ansprechen [...] und so versucht man ja irgendwie den verschiedenen Zielgruppen unterschiedliche Möglichkeiten aufzuzeigen wie man einfach mit der Marke vertraut bleibt oder agiert oder im Endeffekt sie dann kauft	CCW2	you also have to target the different customer groups a bit different [...] and that is how one tries to show the different target groups different possibilities to stay close to or interact with the brand or ultimately buy it
Es ist sicher so dass die legal aspects in unterschiedlichen Ländern unterschiedlich vorhanden sind und dass es da in einigen Märkten leichter ist als in anderen.	JCM2	It is for sure like this that legal aspects are present in different countries in disparate ways and that in some markets it is easier than in others
geht ja auch vieles eher in Richtung die Marke die ist cool die machen was Cooles. Ich begeister mich für die, die Produkte stehen erst mal gar nicht im Vordergrund aber die Marke ist total toll	CCW2	also, a lot is rather about this brand is cool, they do something cool. I am enthusiastic about them. The products for the moment are not in the focus but the brand is really great
Das heißt dass man mit Machine Learning die gewissen Algorithmen hat, die es schaffen das auszuwerten was für ein	JCM2	That means that with machine learning, which has certain algorithms that manage to evaluate what is relevant for a customer

Kunde relevant ist und dann weitergedacht Richtung künstlichen Intelligenz dass sich das Ding ja wirklich weiterentwickelt und mit jeder Information dazulernt was für den Kunden relevant ist und was nicht		and thinking further in the direction of AI that the whole thing develops and learns with each piece of new information what is relevant for the customer and what not
das ist definitiv eines die obersten Kriterien von der Firma Kundenbedürfnisse zu verstehen. Die Entwicklung von Kundenbedürfnissen zu verstehen und diese zu erfüllen vielleicht sogar Kundenbedürfnisse wo der Kunde aktuell nicht bewusst ist dass er diese Bedürfnisse hat also dem Kunden quasi zu sagen was er eigentlich braucht	JCM2	this definitely is one of the highest criteria of the firm to understand customer needs, understanding the development of customer needs and fulfilling them. Maybe even customer needs that the customer currently is not even aware of, so basically telling the customer what he actually needs
Bei machine learning, es ist so dass man die Daten braucht und eine Grundlage von Daten ist global immer noch so dass sehr viele Unternehmen Daten sammeln ohne wirklich zu wissen welche Daten sie brauchen und ich sage jetzt nicht die ersten Züge davon aber man versucht jetzt wirklich langsam das Thema Daten zu verstehen und sorgfältig auszuwählen welche Daten braucht man wirklich und welche nicht. Um dann eben Technologie [...] wirklich so einzusetzen dass sie einen Mehrwert für Kunden und fürs Unternehmen hat	JCM2	With machine learning it is like this that you need the data or a foundation of data and I think it is globally still like this that many companies collect data without really knowing which data they need and I am not saying now it is in the very first attempts but now you really start slowly to understand the topic of data and to choose carefully which data you need and which not. To then make use of technology [...] in a way that really creates value for the customer and for the company
Und da sind wir gerade im Umbruch wir	CCW2	And right there we are in a phase of

stellen uns ja auch anders auf, versuchen mehr Daten zu sammeln und versuchen die Daten auszuwerten und zu evaluieren und irgendwie daraus Schlüsse zu ziehen wie können wir zukünftig neu auf die Kunden zugehen		radical change where we try to reposition ourselves and try to collect more data and try to evaluate the data to draw some conclusions from it how we can approach customers in the future
Damals waren wir Pioniere und das ist ja auch so ein bisschen unser Anspruch. Dieser Pionier auch weiterhin zu bleiben	CCW2	Back then we were pioneers and that also is a bit of the standard we want to set ourselves. To still stay this pioneer
Es war auch gut, man wusste nur dass es ums Surfen geht und das Erlebnis war auch wirklich diese Welle zu reiten anstatt am Ende irgendwie die X-Klasse zu sehen. Das war auch gar nicht, es war auch gar nicht der Mehrwert dahinter	CCW2	This was also good, you only knew that it was about surfing and the experience really was about riding this wave and not seeing the X class in the end. This also was not [...] the value behind it.

VI. Final Themes and Subthemes

Theme	Subtheme	Number of references/ interviews	Explanation	Exemplary references
Barriers		58/9	Barriers capture those aspects, which interviewees perceived as impairing their ability to make use of new technologies.	See subthemes
	Capabilities	6/5	The barrier capabilities describes the difficulty to make effective and strategic use of new technologies.	Yeah, just like with any new technologies, it's an option to do it badly and an option to do it well, because you and people will be learning and so if you do it badly, it will make your brand look cheaper and if you do it well it will make you stand out and be enhancing for the brand (FCM1) I think people will need to learn different skills and if they cannot then we have some some serious issues (FCM2)

				Complex technical implementation. No right structure yet and no real understanding for the business model and output of new technologies. No competencies in these areas. No skills. (CCM3 translated)
	Cost-benefit	8/4	The barrier cost-benefit describes the issue of not seeing or not being able to create sufficient benefit to justify the costs of using new technologies.	there wasn't enough to justify the budget for the business basically that was what it came down to (CCM1) But almost I tell you we have to be careful about what is worth it and what's not from a commercial point of view (FCM1) I think we are now waking up because we see the potential. And also the cost associated to this. That can be saved and therefore I think it was a question of time it was not needed in the last 10 years. People also did not see the benefit (FCM2)

	Customer acceptance	10/4	The barrier customer acceptance describes the challenge for companies to get acceptance for their use of new technologies from the customer-side.	I think, I think at the moment it feels too invasive to a customer (CCM1) having the headset on your head is quite an alien thing at the moment for us. Just in general because people aren´t used to it. And so, that could put people off (CCM1) I think we need to really differentiate because those people were more advanced and would get bored with the solutions we are offering at the moment and found them very useful in Germany (FCM2)
	Determination	10/5	The barrier determination describes the challenge of firms to internally have the right mindset for making use of new technologies. This means firms face efforts to push forward, to decrease internal resistance towards and to develop effective	So you have even internally first of all, internally the barriers were so high. So we had really to have a internal road show to explain why this customer classification is very important (FBCM1) But if you're not using it, you cannot expect to have the mindset and as everything,

			plans for implementing new technologies.	everything goes with the mindset (FBCM1) It is decisive that we have the courage to implement them consistently. This, with the current brand, is barely possible though (CCM3 translated)
	Firm-specific alignment	12/7	The barrier firm-specific alignment describes the challenge for companies to create a fit between the company´s unique history, ways of working, brand as well as organizational conditions and the way new technologies are used.	Because it's almost like, you can´t, you know it's almost like an out of the box thing that works for 99 percent of businesses and then we look at it and we think doesn't quite work for us. How can we take this technology and make it work for us. And that´s the difficulty (CCM1) But how do we rejuvenate the brand without losing our real DNA and becoming more relevant to the millennials or the younger ones (FBCM1) You know sometimes technology is really equal for them to mass market. And you don't want to be mass market (JCW1)

	Technology performance	12/6	The barrier technology performance describes the issue companies have with the current quality, maturity and scope of functionalities of new technologies as well as with the ease to combine them with existing systems and products.	it was trying to be a halfway house but it wasn't doing a good enough job (CCM1) this algorithm would have never known because the conversation and there is no path in the past which could have explained or foresee that you will buy eyewear or whatever (FBCM1) I really think that they are certain opportunities. [But] in general to melt glass and the production of glass is very difficult to combine with technologies (JCM2 translated)
Blue ocean		44/8	Under blue ocean this work captures uncontested areas in which firms try to create new offerings for their customers through new technologies.	See subthemes
	New experiences	23/6	New experiences describe how firms open up unknown and unexpected moments,	A so called Sprinter Experience Room where I basically together with an agency created an AR app, which

			encounters and happenings for their customers through new technologies. It is all about the customer´s sensing, perceiving and understanding brands and products in a new way. Thus, the actual experience only emerges through the interaction of firm offering and the customer himself. Oftentimes such experiences do not directly have to lead to commercial value.	explained and displayed the product details of a sprinter in a playful way (CCW2 translated) And this show is all about the experience which then of course is a different if, I would say you can reproduce this kind of experience with augmented reality or with virtual reality when you are really like completely isolated in something [...] you think like wow what do you experience now it's, it's yeah it's touching your emotions (FBCM1) there can be a business model that distribution doesn't exist anymore tomorrow. That you come home you have your, you have a virtual clothing room (FBCM1) I was in London at Burberry, and it really fascinated me to have this mirror. You put on a t-shirt, you try it on and stand in front of the mirror. And then on the mirror pops up pictures of pieces that would go with it

				they propose it and then you can ask the service person to bring it to you. So you can also try it on (FCW3)
	New services	21/6	New services describe how firms piece together their brand, products and new technologies to resolve issues, fulfill new needs of their customers or existing ones in a new way. A service other than an experience is performed by a company and is repeatable until the day the company decides to stop perform the service.	So if we could, imagine going to a store and you could hold up your phone and it would just highlight or grey out all the clothes that wont fit you. So something like that (FCM1) But for certain of our products that are really special like this one bracelet for example it is different [...] the sizing aspect is difficult. So to avoid mistakes, we propose to make some simulation that is done with augmented reality about this, this product (JCW1) And for certain items of jewelry for example we have just one piece [...] But the customer can be everywhere. And in order to, not to move the piece from a country to another country, [...] we propose to see how the item they like would look like on them and

				then so we have some connected mirror where the customer can see his face and see what the piece could look like on him (JCW1) They make proposals for outfits, like combinations. Like if you, if you're looking at a certain dress, they will propose a sweater, our blouse to go with it (FCW3)
Customer values		175/10	Customer values describe the different kinds of values organizations are able to create for their customers through the implementation and use of new technologies.	See subthemes
	Convenience	62/8	The value convenience for the customer means that he gets his wishes fulfilled whenever and wherever he pleases, i.e. instant gratification of his needs. This moreover happens in a way	I can tell you that our aim is really to find services, digital services that help and ease the customer to have a seamless journey whatever channel he wants to engaged and whatever channel he wants to be reached (JCW1)

			which reduces effort for the customer to a minimum and generates the highest possible level of efficiency.	It´s much more natural to hold the product up to the mirror and find it automatically than to browse through in the same way that you would in a browser interface (FCM1) So imagine now there, right, if you can dream a little bit and you have this conversation with Fred not at home where you want to be with your kids, but in time when you're on your car and you have displays and then he's talking to you [...], but to use this time more efficiently. And so there are no borders and I think there are things today we cannot really imagine right (FBCM1) For me is always effortless, so to make an effortless experience or bring out effortlessness at the top. That´s our aim (CCM1)
	Customization	42/7	The value customization for the customer means that he gets the offerings of a firm	But at the same time, we use AI and ML to help recommend the right fragrances for those

			perfectly tailored to his needs and preferences. The final goal here is to provide offerings as individual as the full spectrum of different customers.	consumers at the back of the experience (BCM1) I can't work it out yet but for me it being personal. So, I think gone are the days where people, people they´ve just getting talked at. For me, the especially important thing now is making a journey or an interaction with a brand a personal thing (CCM1) But it's about, I think it's all about creating an individual experience for the customer and making it the most relevant experience for them (FCM1) I think that in the luxury area, it is more important to personalize the things than for example in the mass market, because the customer has a higher demand, and wants to have something very, very special (FCW3)
	Hedonism	31/7	The value hedonism describes the	and the in the head what kind of emotions you're provoking

			customers experience of pleasure, emotions and fun. Hedonism is about touching the customer in a certain way, so he receives some sort of psychological value from it.	about happiness, about love, about valorization. I think when it comes to this, I think there's a product which can create some emotions and then there's that experience. And I think there's a difference if I live something and if I am really like in the box in a completely different universe with my with my own hands, with my head, with my eyes with the, voice, the smelling and all this (FBCM1) So, I mean looking at the different technology, it needs to be less functional and bit more like immersive because it's more of an emotional product here (CCM1) You know they have some, sometimes some really I would say pragmatic questions and our answer is more inspirational information. And this is a gap because we should, I understand that it's key that a luxury brand should be inspirational and should be

				really rated on creativity and everything (JCW1)
	Reassurance	17/4	The value reassurance provides the customer with a feeling of confidence, support and security. It is about making the customer more certain about his decisions.	we work with the artificial intelligence [...] to ensure that we can foresee or at least try to anticipate when the customer will have some issues and then add some mitigation action (JCW1) So this is what we experiment with the augmented reality, [...] if the customer is really I would say more confident about taking, because he is much more sure about his size. This should be kind of a good help in terms of the product. So if we can reassure him in his decision journey it's really better (JCW1) AR it's a super interesting question from a showing customers how it might fit to them (FCM1)
	Sense of belonging	22/4	The value sense of belonging describes the feeling a customer gets from the	And then of course there I think you have to make it smart about community today you know as we see in this

			increased interactivity and connection with the brand as well as other customers of this brand. Sense of belonging is about building up different kinds of connections to make the customer feel that he is part of something.	world today it's all about community thinking right. So you want to belong to somebody, you want to belong to certain (FBCM1) it becomes an opportunity there to have a direct line of communication with somebody in a virtual world and that's where I think the value conveys (CCM1) For sure because more and more our customers are connected, which is a statement. And more and more they are keen on exchanging but as well engaging with the maisons through these digital touch points, whatever digital touch points (JCW1) It is always about brand awareness, brand image and brand recognition. How can I do that? We are all convinced you that you can do that through emotions [...] excitement and interactivity. Meaning interactivity where the

				customer also has the chance to experience the brand in a different way (CCW2 translated)
Differentiation focus		62/8	Under differentiation focus this work captures the most important aspects firms consider regarding their competitive position when making use of new technologies, so that they only have a positive impact on the brand.	See subthemes
	Customer segmentation	21/6	Customer segmentation is about the specificity of the luxury brands´ customer as well as the even finer differentiation within their target segment. It is about serving customers according to their cultural, social and financial background with the ultimate goal to do so	once you get into AI, machine learning I think that there's lots of potential for obviously data mining, customer segmentation and how customers react (FCM1) a friend of mine I talked to him on Friday said always when I fly from Frankfurt to Shanghai. So the travel is 10 hours plus five years because China is five years ahead of this technology and what they're using

			according to their very individual background.	[...] I think we need to really differentiate because those people were more advanced and would get bored with the solutions we are offering at the moment and found them very useful in Germany (FCM2) But while we do this, we´re completely at the front, we really push the limit because of this VIP segment. The VIP segment is really, it´s really personalized service (JCW1) you also have to target the different customer groups a bit different [...] and that is how one tries to show the different target groups different possibilities to stay close to or interact with the brand or ultimately buy it (CCW2 translated)
	Uniqueness	41/8	Uniqueness describes the combination of the high standards, special offerings and high expectations towards luxury brands that	when someone looks at a very expensive item [...] they just want it because it makes them feel that certain way and that's where the technology can play a little bit different.

			form their essence and have to be safeguarded and enhanced.	But that's where it is quite difficult because technology can only do so much (CCM1) Because it's almost like, you can´t, you know it's almost like an out of the box thing that works for 99 percent of businesses and then we look at it and we think doesn't quite work for us. How can we take this technology and make it work for us. And that´s the difficulty (CCM1) in how far do you think your, the exclusivity or the luxury role plays a role when you think about new technologies. [00:50:47.98] - Interviewee […] It plays a role in that people expect a high level of experience, a high level of technology, a high level of quality and then also pay, it plays a part in that I expect a lot (CCM1) In IT and it´s part of our world, we speak with them and say that digital could be really

				exclusive a lot, not necessarily mass market. Obviously a lot of examples would be in a mass market approach but we can use otherwise technology to be exclusive (JCW1)
Dynamic capabilities		70/8	Dynamic capabilities describe the ability of a firm to use new technologies to create value directly or indirectly by leveraging other resources and capabilities.	See subthemes
	Creating relevance	18/6	Creating relevance describes the ability of a firm to demonstrate the potential value of new technologies for the customer and the firm. It is about connecting the new and the existing and about embedding new technologies in the firm in a way that they are preserving or even advancing the core	But how do we rejuvenate the brand without losing our real DNA and becoming more relevant to the millennials or the younger ones (FBCM1) But today everybody is using these technologies and a lot of these new technologies [...] so then it´s again the question of how you can make it more translated in a way to make it more relevant (FBCM1) I think it´s that any technology whether it is new or not is to

			company values, image and strategy.	be evaluated as to how it can benefit the company. And it may be past the point that is defined as new or maybe an emerging technology as you said (FCM1)
	Mindset	19/5	Mindset describes the necessary awareness and attitude of a firm to successfully make use of new technologies. It has to do with openness to something new, willingness to learn and change as well as belief in progress.	But if you're not using it, you cannot expect to have the mindset and as everything, everything goes with the mindset (FBCM1) But you have to be ready to invest and to have a test and learn approach (FBCM1) we are trying to have a very flexible attitude upfront to allow people to innovate, and then once it goes in production that´s the point at which you start to essentially productionize it and make it compliant to everything (FCM1) So it's important now that they really understand that technology that it´s more than just IT, that technology can really ease or introduce apps to

				keep and to preserve this heritage (JCW1)
	Technological capabilities	33/7	Technological capabilities describe the ability to leverage new technologies in a value-creating way, which means to effectively respond to opportunities and threats imposed by them. They are essentially all about the successful implementation and execution of new technologies.	We do have various activities though where we make sure that technology is not what we sell, technology is an enabler (BCM1) Yeah, just like with any new technologies, it's an option to do it badly and an option to do it well, because you and people will be learning and so if you do it badly, it will make your brand look cheaper and if you do it well it will make you stand out and be enhancing for the brand (FCM1) So, I don't see that so usually new technologies will fundamentally change the perception, it will be more about the execution of it (FCM1)
Five forces		82/10	Five forces capture what aspects firms consider regarding their competitive environment when	See subthemes

			deciding on new technologies to draw conclusions about their own competitive positioning.	
	Benchmarking	41/9	Benchmarking describes the activities a firm engages in to identify and clarify its own competitive position and following from this, what subsequent initiatives they should pursue to defend or optimize their position.	As far as traditional competitors are concerns, from a personal point of view, it looks like we are all in the same bath, and progressing at the same speed (BCM1) And afterwards because of the reason that I said, people from the same product different company it´s a lot of copy paste, copying and or a look at what my competitor does and then I would do the same or I will copy the same (JCW1) So there are a lof of mystery shopping, there are a lot of things that if for example we really don´t understand something for example and we can see that you know, so from my point of view and this is what I see it´s quite similar. We are equal from I would say more

				from a high level strategy at the moment (JCW1) Yeah I know for a fact that our competitors are trying different things that we haven't tried but you know. Maybe it´s coming down for those guys just having higher budgets and selling more units (CCM1)
	Customer demand	40/9	Customer demand describes the orientation of a firm towards the needs, desires, preferences and requests of their customers. It is about anticipating, understanding and responding to what the customer wants.	First and foremost, we need to check whether technologies are an enabler to deliver against a consumer need. Technology for the sake of technology is not something I am personally a fan of (BCM1) In everything we provide to the consumers, we first need to understand what the tension is, then hypothesize ways to address that need. Only then, when looking at the options, will we see whether digital technologies are actually important to address this pain point (BCM1) It depends on the use cases of the customers. So when you

				decide that you take a picture of a piece of clothing and you have a wider assortments to offer an alternative then that's a very useful usecase (FCM1) I think that in the luxury area, it is more important to personalize the things than for example in the mass market, because the customer has a higher demand, and wants to have something very, very special (FCW3)
PESTEL		98/10	PESTEL captures macro-level factors firms (feel like they) have to consider when making choices about the implementation and use of new technologies.	See subthemes
	Cultural differences	47/10	Cultural differences describe the distinct attitudes, habits and ways of thinking of specific regions of the world.	the chinese market is very special. The Chinese people have different demands than the European people. I'm not sure, they want it more lively and also in apps they can work with GIF's, or can pass on, I

				don't know, special information. I just know that the Chinese market is very special (FCW3) if look you at US market and if you look at the Chinese market the behavior, the customer will be completely different and interaction that you will have on your I would say services may be different as well (JCW1) In China, if you don't have any people which is a key opinion leader, forget (JCW1) So in China you can have a local ambassador or ambassadors where she can be or the Korean pop right where you know all this, the Korean drama, where you say whatever if she's using one lipstick it's sold out next day immediately (FBCM1)
	Regulations	10/6	Regulations refer to the local as well as country-spanning laws, agreements and	The most present element to consider is GDPR, regulation

			restrictions setting limits for the way companies do their business.	around personal data in Europe (BCM1) And then its the case of ok how do we take that data, it´s also pretty personal data, so can we get permission to use it (FCM1) It is for sure like this that legal aspects are present in different countries in disparate ways and that in some markets it is easier than in others (JCM2 translated)
	Social acceptance	22/7	Social acceptance is about the readiness and stage of adoption of new technologies by a majority of people. It is about a certain level of general societal approval for or consent to new technologies.	So, I think that's a difficult one because I think they are in general, this needs time for people to accept it (CCM1) So, it´s becoming more of a daily thing. You know, so once we start getting VR in homes and we're using it on a daily basis then it becomes less alien I think (CCM1) That will change once you get mass adoption. So for example if every other app has visual search and our app

				doesn´t they will be like where is you visual search, because that´s what they are used to (FCM1) No I think it was a normal behavior. So we didn't discuss this and to them it was normal (FBCM1)
	Technological ecosystem	19/8	Technological ecosystem refers to the region-specific technological landscape that build the infrastructure and playground for companies´ operations.	So you have completely different ecosystems if you are in Asia or if you are I would say in a Western country (JCW1) you need to I would say to ensure that this will work as well with this kind of ecosystem. This for sure will work differently from I would say from the whole ecosystem in Europe or the US ecosystem (JCW1) So when you have this in China and then you come to Korea, which is also one of the fourth most important markets with Kakao talk and we can see that Kakao talk is copying more and more WeChat to say

				okay we want to add all these elements (FBCM1) Both regulations and existing tools are different (BCM1)
RBV		127/10	The resource-based view captures all the different resources and capabilities that are needed to successfully make use of new technologies and that can be positively or negatively influenced exactly these technologies. *The subthemes usually refer to the respective resource as well as the corresponding capability.*	See subthemes
	Brand equity	21/5	Brand equity is about the value of the brand that has an important influence on strategic decisions and oftentimes determines	to show how unique fashion company 1 is compared to all the other luxury brands, because there is a difference and I'm not saying this because I worked for fashion company 1, but because of all

			what is sensible and possible to do or not.	the studies on brand equity and whatever we did (FBCM1) On the other hand there were brands who could increase their brand equity, their relevance because they were so smart in using it (FBCM1) also, a lot is rather about this brand is cool, they do something cool. I am enthusiastic about them. The products for the moment are not in the focus but the brand is really great (CCW2 translated)
	Budget	12/4	Budget refers to the financial resources and right processes needed to execute initiatives around new technologies.	there wasn't enough to justify the budget for the business basically that was what it came down to (CCM1) So it's not a very glamorous point but it's quite realistic point in a lot of times it comes out to time and money (CCM1) You have to be ready to invest, a mid-term investment because you won't see that would come immediately (FBCM1)

				But almost I tell you we have to be careful about what is worth it and what's not from a commercial point of view (FCM1)
	CRM	27/9	CRM refers to the understanding a firm has of its customers and the ability to create and grow it to build and nurture strong customer relationships, which eventually will lead to customer loyalty.	So it all comes down to that each customer is individual and the better you can understand, what needs the individual has the better you can service them (FCM1) And that is exactly what we try to reach. Meaning that really to identify, where, for example, where we can improve a small pain point or a little pain point that really I would say gets on your nerves (JCW1) That means that with machine learning, which has certain algorithms that manage to evaluate what is relevant for a customer and thinking further in the direction of AI that the whole thing develops and learns with each piece of new information what is relevant

				for the customer and what not (JCM2 translated) this definitely is one of the highest criteria of the firm to understand customer needs, understanding the development of customer needs and fulfilling them. Maybe even customer needs that the customer currently is not even aware of, so basically telling the customer what he actually needs (JCM2 translated)
	Data	18/8	Data is about having, knowing about and making use of all the necessary information that (potentially) exist within the company, which can then be fed into or used in preparatory phases for reasonable and effective implementation of new technologies.	Underlying all that, data is key, for 1/ future guessing, 2/ increased reactivity for in market activity, and 3/ new insights generations that can't be seen without the latest data science tools (BCM1) With machine learning it is like this that you need the data or a foundation of data and I think it is globally still like this that many companies collect data without really knowing which data they need and I am not saying now it is

				in the very first attempts but now you really start slowly to understand the topic of data and to choose carefully which data you need and which not. To then make use of technology [...] in a way that really creates value for the customer and for the company (JCM2 translated) And right there we are in a phase of radical change where we try to reposition ourselves and try to collect more data and try to evaluate the data to draw some conclusions from it how we can approach customers in the future (CCW2 translated)
	DNA	29/7	DNA covers all resources and capabilities within a company that revolve around a firm´s heritage, traditions, history, skills in their particular craft, their unique understanding of creativity	I think you would think really five times more about your brand DNA and your heritage (FBCM1) Because when you talk about brand value, I think fashion brands [...] have a certain DNA and then when it brings, when it comes to this point of using

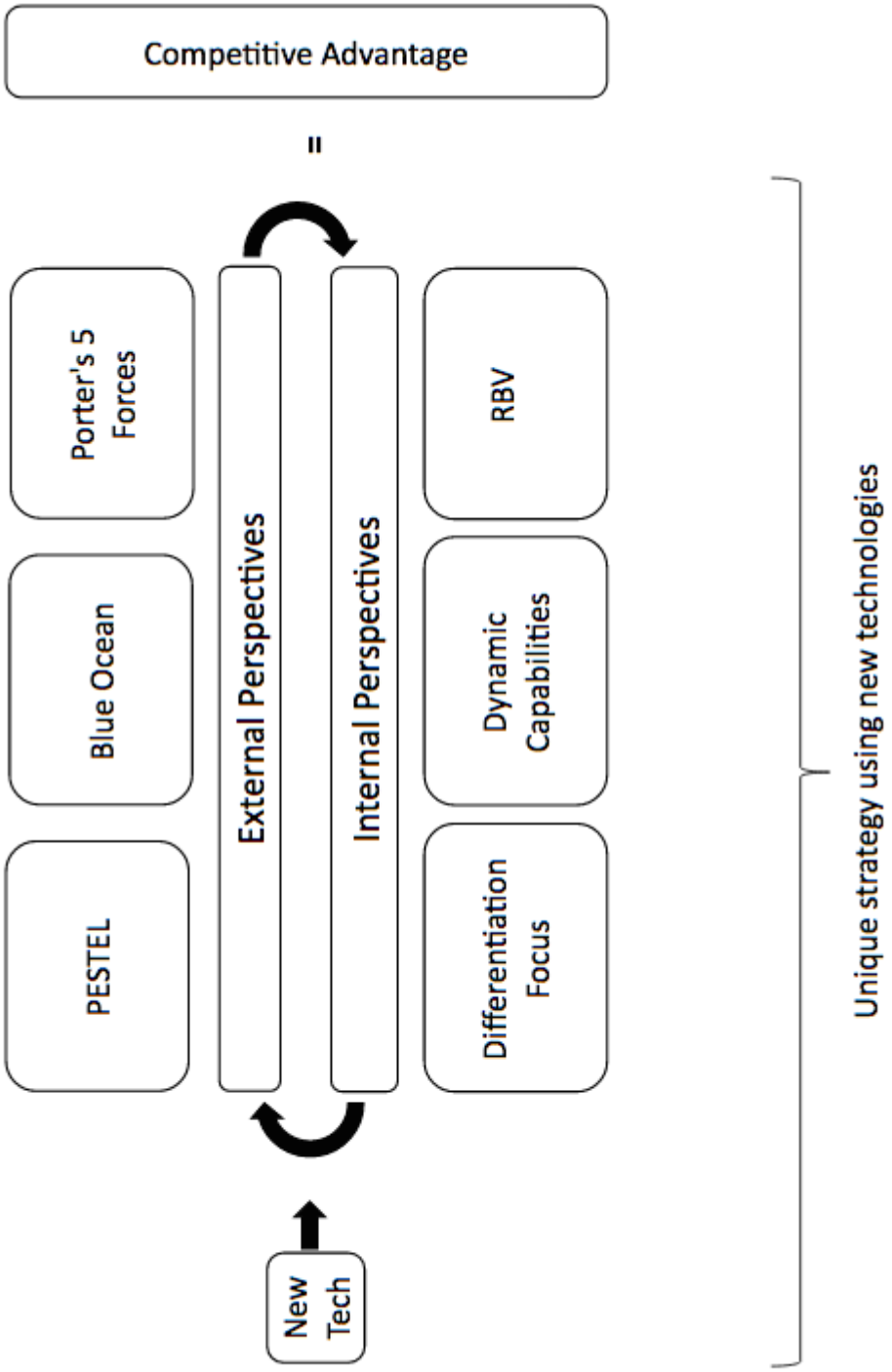
			as well as the right management of these.	new technologies and how you name it, you have to see how this is not, how, what's the word of verwässern? [00:45:19.20] - Franziska ... like blurring? [00:45:21.66] - Interviewee Exactly, keeping, more protecting your DNA (FBCM1) They put some constraints or or this is a challenge that we face when I say that our, our world is more conservative [...] You know sometimes technology is really equal for them to mass market. And you don't want to be mass market (JCW1) our maisons they are key on using technology to keep control of the heritage of the maison[...] to ensure that we keep the knowledge of our history because they realized that the new, that the, everything in the maison is based on heritage (JCW1)

	Skilled people	20/8	Skilled people is about having access to the necessary competencies to prepare, handle, implement and execute initiatives revolving around new technologies. This can happen through internal or external staff as well as partnerships.	a lot of these companies are, obviously have departments that are just doing this. But all they're doing is implementing new technology into the business. At car company 1 we aren't quite there yet (CCM1) But, so he´s working with Harvard people, in whatever ways and says "I want to re-, revolutionize retail business because this is the future (FBCM1) You have to have the people for it, to analyze it to go behind or external sources or agencies (FBCM1) I think people will need to learn different skills and if they cannot then we have some some serious issues (FCM2)
Technology attitude		62/9	Technology attitude describes the overall stance firms take towards new technologies.	See subthemes

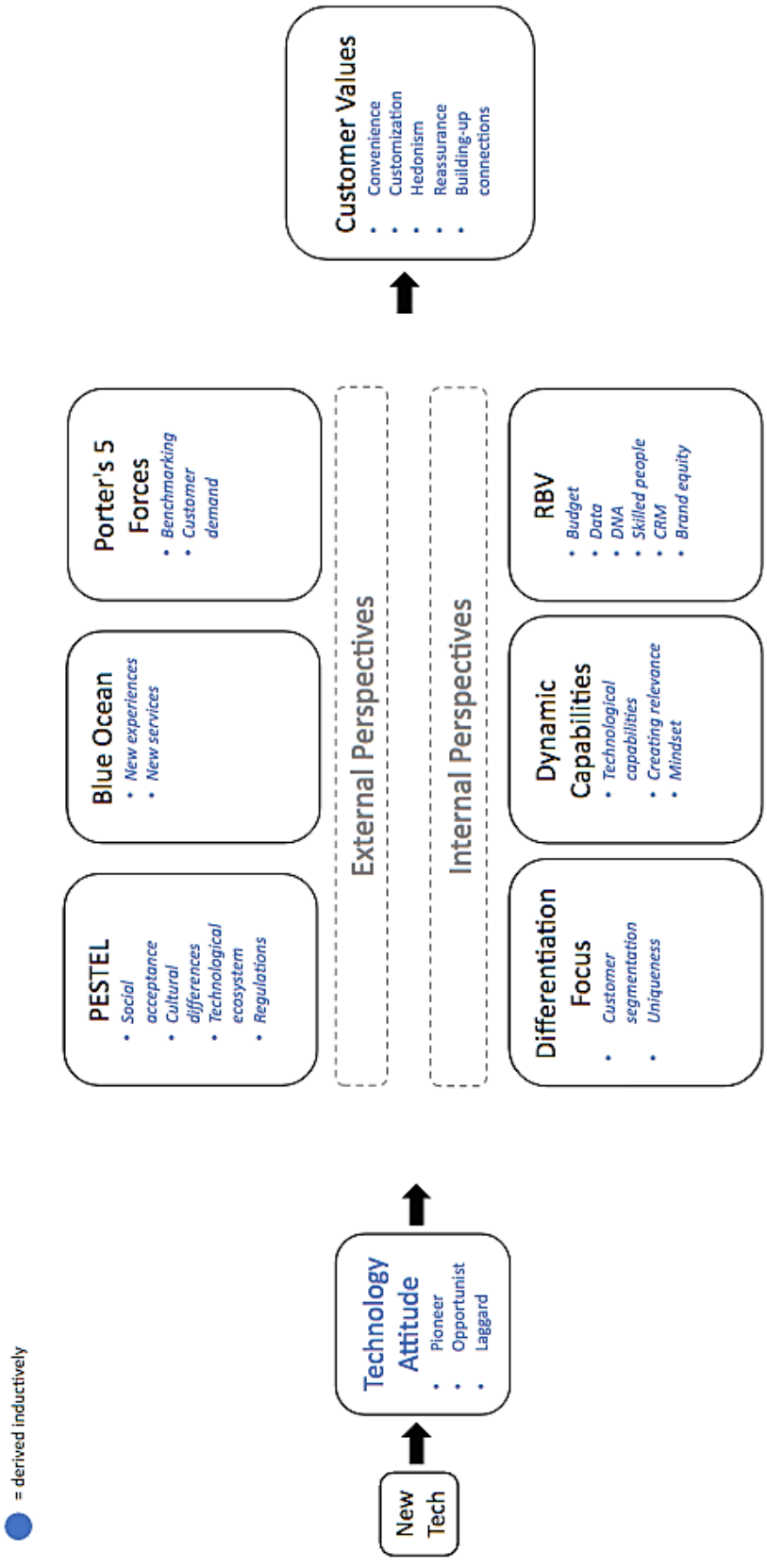
	Laggard	15/5	Laggards are the firms of a market, which feel most comfortable in an observing position. They wait until they can see a proof of concept at their competitors or customers and when they are almost certain about the success of an initiative, they react and try to draw even.	So, it's interesting what has been talked about quite a lot in the business, but we don't feel like it's a priority for us at the moment (CCM1) I think as well, VR, the thing is for me it needs to become more mainstream before it becomes a benefit to us (CCM1) we are not the first mover we are not very brave in doing experiments (FCM2)
	Opportunist	36/8	Opportunist describes firms, who need to see the benefit of the use of new technologies before they decide to implement it. They carefully consider opportunities and threats of new technologies and map them to the company´s strategy, values and principles. If they are convinced of something, they don´t wait for others to	First and foremost, we need to check whether technologies are an enabler to deliver against a consumer need. Technology for the sake of technology is not something I am personally a fan of (BCM1) the fundamental needs of our company are not about technology, they are about the benefits from technology (BCM1) So, we try to keep coming back to the customer and to the value for the business

			make the first move but push forward.	rather than trying out new technologies to see if they might be able to do something (FCM1) when we use this such technology you need to see what it can bring for you from a commercial point of view (JCW1)
	Pioneer	11/5	Pioneers are the innovators of their markets. They dare to experiment and take risks in order to always be ahead of the rest of the competition.	My team is on the scout of new technologies, and enable project that go beyond the current scope of our innovation pipeline, to deliver "1st in the industry" product and services, to serve our most discerning beauty consumers (BCM1) Back then we were pioneers and that also is a bit of the standard we want to set ourselves. To still stay this pioneer (CCW2 translated) So I think that Burberry who were long held I would say at the forefront of the digital curve (FCM1)

VII. Theoretical Framework



VIII. Summary of the Results From the Framework Analysis



IX. Final Framework