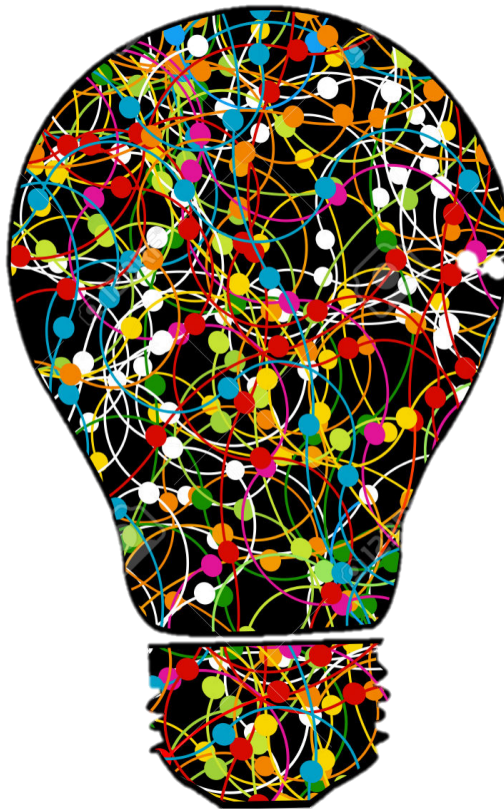




**Copenhagen
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HANDELSHØJSKOLEN

Collaboration Strategies in Innovation

How large firms can access startup knowledge



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Submission Date: 15th of September 2017
Number of Pages: 71
Number of Characters: 147,652

Abstract

With technological innovation disrupting entire industries, large firms are increasingly in the position where they see their core business model under the hazard of being disrupted by new innovations. Being traditionally in the position to fight back competition with large assets in resources and capabilities, incumbent firms in the regarding industries suddenly find themselves in positions, where internal assets do not suffice to compete anymore.

The novel competition in times of radical innovation comes in the form of young entrepreneurial ventures that enter established industries with new digital innovations. With value propositions that build on the core products of the incumbent firms, these startups bring novel products and services to the market that build on cutting-edge technologies.

Large firms are encountered with the dilemma that their internal organizational knowledge base does not render the possibility to develop equal products and services and thus lack the capability of competing with these startups for the newly establishing opportunities in the market. In this situation, the incumbent firms need to decide, if they want to take the role of the observer, while maintaining focus on their core business, or if they want to assess different forms of engaging in a participating role in the rise of technology innovation.

This study focusses on the possibilities of large firms to engage in collaboration strategies for the access to innovation that lies beyond the existing knowledge base of the firm's organization. By constructing a theoretical framework that draws on the main aspects of technology innovation, organizational knowledge creation and collaboration strategies in innovation, the present work facilitates a scientific understanding of the developments and the opportunities for adaption in view of the current trends.

Building on a qualitative case study of three companies representing the large firm's perspective, the perspective of the startup and an independent collaboration and innovation platform, the paper points towards new trends of engaging with complementary partners.

Upon an analysis of the relevance of the findings, implications for theory and practice are drawn. Eventually, the study derives implications for future research from the findings.

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List of Abbreviations

CEO	-	Chief Executive Officer
IoT	-	Internet of Things
OBD	-	On-Board Diagnosis
OEM	-	Original Equipment Manufacturer
R&D	-	Research and Development
VC	-	Venture Capital(ist)

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1. Introduction

One of the central concerns for large firms with regard to innovation today is how to cope with the current technological advancements that give rise to countless new players that push into established industries with new value propositions. Digitization triggered exponential developments in almost every industry over the last two decades. Given the low entrance barriers associated with developing digital business models, incumbent companies in the automotive industry are facing increasing competition from novel competition. Digital innovations with the potential to disrupt large firms' core fields of business are introduced by new entrants to the incumbent industries (Christensen, 1997; Davis, Planjyan, & Pozza, 2015). These developments lead to new dynamics in the competitive landscapes. One of many examples is the American company Uber. What started with the simple concept of making taxi services more accessible by directly connecting supply and demand on a digital platform, led to a threat for incumbent car manufacturers worldwide. Uber's enhanced mission of providing mobility to anyone, anywhere at any time in form of providing self-driving cars by the click of a button, puts the customer's demand for owning a car into question (Uber, 2017). The enormous growth of Uber and other large digital players alike, in combination with their financial resources and innovative capabilities, call established automotive companies to action, if they don't want to risk becoming mere providers of cars for the business models of the new digital players.

The ability to compete in such an environment is based on the capability to act upon the underlying dynamics by engaging in the right innovation strategy. With the motor vehicle as a core product of the automotive industry that has been developed over decades to a state of complexity that sets entrance barriers hardly superable, the operations of automotive manufacturers seem to be unrivaled. Technological change, however, creates opportunities for innovations that go far beyond pure vehicle construction. Cars become digitally connected platforms that serve not only as a means of transportation, but as base for tailor-made value-added services. Such services range from seamless integration of the customer's smartphone to cutting-edge sensor and connectivity technology that lays the

groundwork for autonomous driving and car-to-car, car-to-infrastructure and car-to-everything connection (Schilling, 2012; Zetsche, 2017).

As customers grow familiar with the comfort of digital services and request suitable solutions without boundaries, opportunities for additional value generation open up for both mature firms and new ventures. In the multi-billion-dollar car industry, this equals huge market potentials that anyone capable of meeting customers' demand can tap into. However, the expertise and resources of incumbent market leaders don't naturally capacitate them to supply the requested solutions. Young, agile firms can quickly react to new market signals in a more flexible way and claim a position in a specific niche. For established companies with less dynamic organizational structures, slower communication flows and a more risk-averse culture, it is a tough challenge to keep up with the fast pace of technology innovations relevant for their core business model (Davis et al., 2015).

1.1 Motivation for the Study

Large firms in the can hardly have all the competencies in store to keep up with the technology innovations that enhance their core products with new product and service offers for the customers. In order, not to leave the field to "native" digital firms and compete for the market opportunities opening up, the internal capabilities have to be enhanced by somehow creating the knowledge base needed for innovating on eye-level. To overcome the inter-organizational limits of expertise, external knowledge has to be made utilizable. Usually, the proprietary and exclusive character of intra-organizational knowledge is the foundation for successfully commercializing innovations. When searching for access to external knowledge, however, a way of tapping into extra-organizational knowledge has to be found in order to result in new sources of knowledge for the own organization. Collaboration can be a source for tapping into the innovations existing outside a firm's boundaries and thus overcoming lacking internal resources (Heidenreich, Kädtler, & Mattes, 2016).

To establish an understanding of how the desirable outcomes of a collaboration between two or more organizations can be achieved, the author wants to examine the determining factors of a successful collaboration process. When engaging in collaboration for access to

external innovation, the intention to form inter-corporate relations, the implementation of the partnership, as well as the management of interests and risks and the outcomes for the partnering organizations need to be evaluated. Collaboration enables an organization to tap into the knowledge, skills and resources of their partners and thus create the assets that enable a unique offering in the market. By leveraging the capabilities of partnering firms, challenges and barriers to own fields of expertise can efficiently be overcome. The outcome, however, is highly dependent on externalities. The realization of a beneficial partnership is not only term to agreements between the participating partners, but as well reliant on the environment surrounding the partners' sphere of action (Todeva & Knoke, 2005).

Building on the case of German automotive manufacturer Daimler, Berlin-based connected-car startup Vimcar and the innovation and collaboration platform Startup Autobahn, the author wants to create an understanding of how approaches to partnership formation between large, incumbent firms and innovative startups can be designed. With comparably little research existing on the modes of engagement that lead to an efficient knowledge exchange between such different organizations, the motivation for this study is create insights on novel forms of such collaborations. By examining the case of the independent collaboration and innovation platform Startup Autobahn, the author wants to find out, if open modes of collaboration can facilitate a situation in which both large firms and startups mutually benefit from new technology innovations.

1.2 Objective of the Study and Research Question

A lot of research has been done on partner selection and the question of how collaborations are established and by whom. One sub-field being the specific organizational attributes that determine attractiveness for partnerships. Following the assumption that a partnering firm searches for access to complimentary resources, which it doesn't possess within its own organization, the two sides of a collaboration need to complement one another's respective strengths and weaknesses in order to allow for the best possible outcome of such a partnership. However, not all partnering corporations pursue the same outcomes with a

collaboration. Where one partner might seek an arrangement with partners staying autonomous, another one might seek a low-risk opportunity to assess a merger or a takeover (Todeva & Knoke, 2005).

To this regard, the present study wants to address this issue in specifically examining the role of collaboration strategies in accessing innovation. By focusing on the field of knowledge creation, an analyses of partnership modes between large firms and startups shall be facilitated. More specifically, collaboration in an industry that is subject to technology innovation, with startups entering the market with innovative offerings, is subject to the analyses within this study. Thereby, it addresses the following research question:

How can limited organizational knowledge of large firms in view of technology innovation be overcome by engaging in collaborations with innovative firms?

When negotiating the handling of authorities, responsibilities, property rights and profits or losses upon implementation of a partnership, firm size and hierarchies have to be placed back in order to achieve a mutual agreement. This being the prerequisites of the successful implementation of a partnership, the eventual focus is the performance outcome of such a collaboration. Knowledge creation as intended goal is dependent on the achievement of the preset objectives (e.g. R&D development) of the collaboration. (Todeva & Knoke, 2005).

2. Literature Review

2.1 Technology Innovation

New technologies have the potential to change the market environment and reshape the inherent competition. For an incumbent firm, it is essential to know whether it should use more resources on a new technology or keep building upon the established infrastructure. Hence, the following paragraph will further analyze the concepts and paradigms of disruptive technologies to better establish an understanding of how technological discontinuities evolve (Bower & Christensen, 1995; Schilling, 2012).

Innovations that demand few resources and small changes to improve the existing core concepts of a firm, are called *incremental innovations*. Such innovations refine firms' existing value propositions, while leaving the overall system unchanged. They can be seen to be at the low end of innovative activities in terms of novelty. *Radical innovations*, however, completely change entire industry systems. Christensen (1997), coined the term *disruptive innovation* to explain the same phenomenon. Upon the introduction of a new technology to a market that is based on a limited technology with potential to be exceeded, disruptive innovations can occur. Tipping over the core concepts of incumbent firms, such innovations demand the use of new components and configurations. Engaging in disruptive innovations bears both great opportunities and risk for an organization. Potential benefits from entering new markets based on innovative offerings built on the new technology, encounter high risks, as resources need to be allocated to build on the unproven technology (Christensen, 1997; Henderson & Clark, 1990).

Successfully handling disruptive technologies within an industry from the point of view of the incumbent firms, first of all requires an assessment of whether a technology is disruptive or sustaining. The strategic significance of the disruptive technology has to be ascertained. In the case that a disruptive technology is forecasted to develop faster than the market demand, it is likely to come to a point where the technology will be subject to customers' future demand. In this regard, it can be of strategic value to an organization. Hence, the initial market for the disruptive technology has to be determined. This process is facilitated by

iterative experimentation with products and markets that mostly young and small firms undertake. Placing the economic bet on an agile market with changing products and market strategies, bears a risk that incumbent market players try to avoid in most cases (Bower & Christensen, 1995).

The emergence of a new technology can be divided into two phases. The first phase is characterized by uncertainty about the technology within the market. Products and services based on the technology are not mature and have constraints, but potentially serve the need of some niches. At the point where producers and customers reach an agreement on the product or service attributes in demand, a dominant design emerges. This dominant design is fundamental for development of an architecture, on which the majority of manufacturers starts to build their production processes. In the following second phase, all processes and products in are built on the selected dominant design (Schilling, 2012; Utterback & Abernathy, 1975).

A new technology consists of a novel combination of attributes that existing demand generally does not already value. However, the development of such a technology can develop to comply with the performance attributes that the market demands. If this is the case, the market will adopt the new technology. At that point, the pioneers of a technology win the competition for the dominant design. This paradigm is based on the so-called performance trajectory, the improvement rate of a product over time under the influence of technological innovations. Following the underlying logic, sustaining technologies provide superior attributes that the existing customer base of a firm values. Disruptive technologies, in contrast, provide completely novel attributes that do not serve the same attributes in demand. Hence, the attributes of disruptive technologies will find applications in new offerings with the potential to create demand in new markets (Bower & Christensen, 1995).

While disruptive innovations establish new markets, sustaining innovations will serve the performance trajectory until the disruptive technology can satisfy the existing customers' needs. Due to existing revenue and cost structures, the majority of large firms do not lay focus on potentially disruptive technologies. For incumbent industry players, disruptive technologies are mostly unattractive from a financial point of view. Initial return outlooks are often

small, as such technologies first serve niche markets and future market predictions are difficult to be made. Thus, established companies rather focus to grow their market shares with sustaining technologies (Anderson & Tushman, 1990; Bower & Christensen, 1995; Schilling, 2012).

However, an increase in competition for incumbent firms in established industries and the pressure to continuously innovate going along with it is, to a large extent, due to the described characteristics of technology innovation. Opening up opportunities for the development of radically new or improved goods or services that allow access to new market potentials, technology innovation can entirely change existing market structures and create new leaders (Bower & Christensen, 1995; Schilling, 2012).

In order to examine how incumbent firms can make use of technology innovation and benefit from the new opportunities that such developments bear, the author wants to facilitate an understanding of the role that an organization's knowledge plays in such processes. By examining how knowledge is created on an individual level and how knowledge creation works in connection to an organizational level, the author wants to build the foundation to analyze situations in which the existing intra-organizational knowledge base is not sufficient and has to be overcome.

2.2 Organizational Knowledge Creation

Grant (1996) describes organizational capability as "the outcome of knowledge integration: complex, team-based productive activities such as [...] Chrysler's automobile design process, [...] are dependent upon these firms' ability to harness and integrate the knowledge of many individual specialists." (1996, p. 116). This assumption can serve as an outlook for the elaborations following in the next chapter. The description of a theory with vast scholarly acceptance that links individual human knowledge creation to organizational knowledge creation, will serve as basis for the following review of theories on the meaning of knowledge in an inter-organizational context.

2.2.1 Internal Knowledge Resources

Building on the largely influential work of Nonaka & Takeuchi (1995), the model of tacit and explicit knowledge shall serve the purpose to classify organizational knowledge creation in the context of the scope of this work. When talking about the overall term of knowledge, the scholars define it as a "meaningful set of information that constitutes a justified true belief and/or an embodied technical skill" (Nonaka, Umemoto, & Senoo, 1996, p. 205). Enhancing this definition of knowledge within an individual, knowledge creation is described as dynamic process of developing an understanding for the truth of personal beliefs, as well as shaping individual skills through the constant repetition of tasks. These considerations serve as foundation for the differentiation between tacit and explicit knowledge. Tacit knowledge is difficult to communicate, as it consists of unconscious mental frameworks, acquired individual skills or what is often referred to as "know-how". Explicit knowledge on the other side, consists of a concrete set of information that can be verbalized and hence passed on between individuals. With the construction of a framework, Nonaka et al. (1996) describe the connectedness of these two dimensions of knowledge and facilitate an understanding of their relevance for the creation of knowledge on an organizational level.

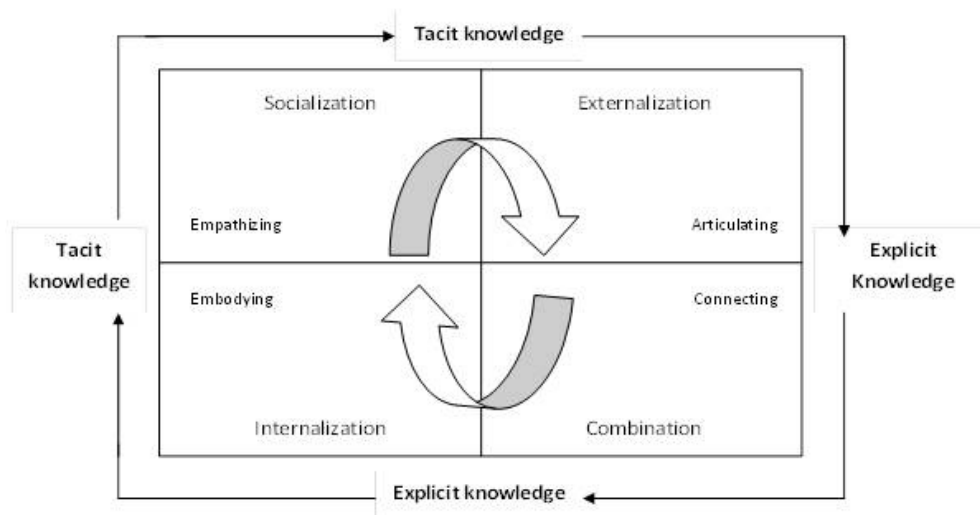


Figure 1: The SECI Model (Nonaka & Takeuchi, 1995)

Based on the assumption that knowledge is inherent to the individual, it can only be passed on through human interaction. New knowledge is then created if individuals with different knowledge bases interact with each other. On an organizational level, the SECI model describes the dynamic process underlying the exchange of tacit and explicit knowledge (see figure 1). The conversion of the two forms of knowledge is described by the four modes of (1) socialization, (2) externalization, (3) combination and (4) internalization. In a first step, common tacit knowledge is created when individuals share experiences (1) and thus develop a common ground of beliefs and skills. The common tacit knowledge of an organization then serves as basis for the development of explicit knowledge. Articulating tacit knowledge with the aim of creating concepts such as a new business model for example, leads to its externalization (2). In the following step, the new external knowledge can then be combined with existing external knowledge. Thus, existing and new outcomes of concept creation can be connected (3) and thereby form the basis for systemic knowledge. In the fourth step, the external knowledge is captured and processed for internalization (4). With this final step in the circle of the SECI model, explicit knowledge can eventually be converted into operational, tacit knowledge again. This knowledge conversion process depicts how organizational knowledge can be created when individuals and groups interact in a context that stimulates common knowledge creation. The organization facilitates this process by providing the appropriate frame for the different phases of the knowledge spiral. In other words, an environment in which the members of an organization are motivated to create and share tacit knowledge, will foster organizational knowledge creation (Gemünden, Alwis, & Hartmann, 2004; Nonaka et al., 1996).

The dynamic and continuous process of knowledge creation happens both inside an organization, as well as at the touch points to the outside environment. When a product is introduced to the market, the interactions of the customers with the product give meaning to it. This tacit knowledge about the qualities of a new product can be observed through the interactions of the customers with the product and then serve as the foundation of a new process of organizational knowledge creation within the producing organization (Gemünden et al., 2004).

Looking at organizational knowledge creation from the perspective of the resource-based view of the firm, Grant (1996) describes a knowledge-based view as an important component. The basic components of the theory of the firm, namely coordination, structure, management, decision-rights, boundaries of the firm and innovation, can all be addressed from a knowledge-based view. Coming from Cohen & Levinthal's (1990) theory of absorptive capacity, which is based on the assumption that it depends on the ability of a recipient, if new knowledge can be added to existing knowledge, most tacit knowledge that is created within the boundaries of an organization is rooted within its context and therefore firm-specific (Grant, 1996). The scholar distinguishes tacit knowledge as know-how from explicit knowledge as the knowledge about facts and theories and stresses the issue of the transferability of these two forms of knowledge and their appropriability within an organization. As tacit knowledge can only be acquired by practicing after observing its application, the transfer between individuals takes time and investment and underlies uncertainty. This indirect form of transfer limits its appropriability. While explicit knowledge can be directly communicated, the issue is rather that anyone in possession of such knowledge can apply it and appropriability is therefore not a given. Hence, the absorptive capacity and appropriability of knowledge within an organization are important resources for effective organizational knowledge creation (Cohen & Levinthal, 1990; Grant, 1996).

When looking to enhance the resources of intra-organizational tacit knowledge, an assessment of the capabilities existing within the members of an organization can disclose areas with potential for strengthening competences both from within and outside the organization. Concepts for driving the internal learning processes of the individuals can help increasing the tacit knowledge base within the organization, while efforts to recruit new members with distinctive tacit knowledge from outside the organization can further amplify the knowledge base of an organization (Gemünden et al., 2004). The endeavor to enhance the internal knowledge base becomes increasingly difficult, the broader the knowledge required for the organizational capabilities gets. Following the assumption that the achievable depth of knowledge within an individual is finite, the knowledge required within an organization needs to be covered by specialized knowledge that different employees carry. However, the broader the required knowledge base of the organization becomes, the lower is the common

knowledge between the individuals within the organization. Hence, the members of the organization possessing specialized knowledge will have to move around the organization and integrate into the parts of the organization that requires their knowledge. Therefore, with a growing breadth of the required knowledge, the integration mechanisms become a more important facet of the organizational capabilities than the depth of specialist knowledge of its individual members (Grant, 1996).

According to Heidenreich et al. (2016), knowledge in an organizational context is not only rooted in the skills, competences, experiences and routines of the members, but as an outcome of these factors part of all products, services and technologies of the organization. The multiplicity of factors forming the knowledge base of an organization show that it can hardly be a constant with universal validity. On the one hand, knowledge serves as the foundation for characteristic capabilities and is captured by the structures and boundaries of an organization. On the other hand, it is a variable that is subject to the risks of limitedness, errors and failure. Accordingly, the validity of a knowledge base in an organizational context is given, as long as it proves itself for the internal operation and innovation processes. However, as soon as unforeseen developments, such as disruptive technology innovations, challenge the potential of the knowledge available to the organization, its limitations become apparent (Heidenreich et al., 2016).

2.2.2 Accessing External Knowledge

When it comes to innovating at the cutting edge of a technology that exceeds a firm's core capabilities, it seems obvious that sourcing the entire knowledge required from within the firm is practically impossible. But, this doesn't mean that the knowledge base required for innovation isn't already existing. It is most likely spread over different locations, occupations and organizations and rooted in the according social setting (Heidenreich et al., 2016).

An essential element of innovative capabilities is the capability of recognizing new developments in relevant technological fields and acting upon such information. The integration and application of this information for the purpose of commercialization refers the Cohen and Levinthal's (1990) theory of an organization's absorptive capacity. Thus, the existing knowledge base of an organization comprises the ability of exploiting relevant external

knowledge, or absorptive capacity, as Cohen and Levinthal call it (1990). Especially in times of fast technological developments, keeping up with external developments that exceed the existing internal knowledge base, requires a firm to create absorptive capacity. To do so, R&D efforts must be focused on the task of realizing the breadth of internal specialist knowledge that is needed to absorb knowledge from outside the firm. However, this might mean that current gains from knowledge specialization might have to be sacrificed for the uncertain aim of obtaining the intangible resource of absorptive capacity (Cohen & Levinthal, 1990).

These assumptions clarify that specialization is fundamental to new knowledge creation. The difficulty lies in the trade-off between dedicating the specialized knowledge to the production and commercialization of products or services or applying it to the expansion of the internal knowledge base. In order to efficiently utilize the knowledge, the knowledge base of a firm needs to be consistent with the goods or services that the firm supplies. However, such congruence is not a given, as the knowledge required for a firm's production is rarely fully available within the limits of the firm. Grant & Baden-Fuller (2004) distinguish the exploration from the exploitation of knowledge in their argument that replication of knowledge tends to be cheaper than discovering new knowledge. Exploitation, or knowledge application, requires a diverse knowledge base, while the production of goods and services tends to require various different forms of knowledge. The scholars argue that exploration, or knowledge creation, of the broad specialized knowledge needed for the expansion of a firm's product range is difficult to source completely from within the firm. One possible solution of coping with this dilemma is exploring and exploiting additional knowledge by engaging in collaborations with outside firms. The access to new combinations of knowledge that is needed for the production of novel products and services, can be facilitated by the achievement of early-mover advantages. Especially in an environment of rapidly advancing knowledge, the fast identification of new knowledge combinations and the access to and integration of them is crucial for the appropriation of the returns from such new knowledge. As the needed speed for early-mover advantages draws more on the recombination of knowledge than the generation of new knowledge for innovative products, strategic alliances can be an important source for exploring and exploiting the knowledge deriving from latest

technological developments. The formation of alliances being focused on areas with high R&D intensity points to technology as an important driver of collaboration (Becker & Dietz, 2002; Grant, 1996; Grant & Baden-Fuller, 2004).

Alliances can lead to an increase in the efficiency of both exploring and exploiting knowledge, as they can help leveraging external knowledge bases for new product and service creation. Especially when there is a high degree of uncertainty with regards to future knowledge needs, accessing knowledge through the formation of alliances can benefit efficiency of internal resource allocation. However, the motive underlying the establishment of a strategic alliance for access to external knowledge isn't necessarily connected with the goal to acquire that knowledge. An acquisition of knowledge from an alliance implicates that a firm seeks to transfer and internalize the partner's knowledge into the own organization. This might be the underlying motive for the formation of some alliances. However, according to Grant and Baden-Fuller (2004), the approach of accessing complementary knowledge has a variety of advantages over aiming at acquiring it through an alliance.

The author of this paper follows the scholars' contention that accessing knowledge in opposition to acquiring knowledge is the main motivation for knowledge-based alliances. In line with the above-mentioned claim, that new product development in an environment of rapid technological change, requires many different types of knowledge, it seems adequate to assume that the majority of firms cannot realistically internalize all knowledge required to independently produce at the cutting-edge of technology. Doz & Hamel (1997) support this approach by pointing out the several barriers in connection to an internalization of an alliance partner's knowledge base. Give that a technology is not only tacit, but as well highly embedded within the organizational structures of a firm, the attainable imitability is subject to uncertainty, while the required efforts for the imitating firm might exceed its resources and capabilities. These issues form the main distinction to the overarching approach of organizational learning. The concept of learning as in acquiring knowledge, opposes the assumption that the simple access to complementary knowledge leads to the specialization of a firm's inherent knowledge base. Hence, reaping the benefits from gaining access to the partner's knowledge base is supposed to be favorable approach.

Building on the specialized internal knowledge and exploiting the partner's complementarities for new product creation from a strategic alliance empowers a firm to enhance core competencies from the internal knowledge base rather than dedicating resources to the absorption of knowledge from the partnership. When Daimler established its collaboration with Swatch for the joint design of the Smart car model, for instance, the partnership was characterized by the mutual desire to combine each partner's distinctive knowledge base and create new value. Neither by Daimler's desire to acquire the capabilities of Swatch in precision engineering or micro-design, nor by the desire of Swatch to acquire Daimler's know-how in car manufacturing (Grant & Baden-Fuller, 2004).

The specialization of firms in different fields allows for a more efficient integration of different knowledge types. When focusing on accessing complementary knowledge, a successful alliance will not only gain stability and increase the specialization of the partners' knowledge over time while they maintain differentiated knowledge bases. Simultaneously, it allows a firm to pursue various alliances at the same time. Grant and Baden-Fuller (2004) argue that an internalization of knowledge can even diminish the positive effects of alliances. When acquiring the alliance partner's knowledge, the finite absorptive capacity within a firm sets a natural limit to the number of possible alliances. Besides, knowledge acquisition attempts can destabilize an alliance, when both partners try to absorb each other's knowledge and additionally limits the life span of the alliance to the time needed for acquiring each other's knowledge (Grant & Baden-Fuller, 2004).

In times of high uncertainty, facing market developments that exceed their core business and inherent resources and capabilities, innovation is to be found in partnerships rather than single firms. In their quest of gaining access to external knowledge and resources, firms need to be aware that success is linked to the joint production, combination and distribution of ideas and reliant on the depth of ties with other firms in diverse fields (Powell, 1998). Therefore, the following chapter will analyze the various modes and approaches that firms incorporate in order to access external sources of knowledge.

2.3 Collaboration Strategies in Innovation

The process of creative destruction that Schumpeter (1947) first described, can lead to the replacement of incumbent firms in industries that face discontinuous innovation. New entrants with an innovative offering that makes better use of new technological possibilities and a value proposition that matches the shifted customer demands, are in the starting blocks to take over incumbent's market shares. However, with the right application of their resources and capabilities, incumbent firms bear a chance of adapting to a discontinuous innovation. By collaborating for access to the complementary assets of new entrants, incumbent firms might even be in the superior position to leverage the own specialized knowledge and successfully manage the transition to commercialization of a radically new technology. Hence, for many companies, strategic alliances have become an integral part in pursuing competitive advantages through access to new markets and the development of new competences. In comparison to the attempt of achieving the same outcomes independently, the participants of such collaborations can benefit from greater speed, more flexibility and less cost involved, when partnering up for a joint project (Larsson, Bengtsson, Henriksson, & Sparks, 1998; Rothaermel, 2002).

The underlying goal of engaging in collaboration with an external partner is generally a reinforcement of competitive advantage. Hamel, Doz & Prahalad (1989) differentiate between two different kinds of competitive advantage from collaboration. On the one hand, both partners of a partnership can gain an external competitive advantage compared to other firms. On the other hand, each partner can strengthen the own position compared to the other partner in the alliance. This differentiation exemplifies that there can be both up- and down-sides to collaboration. The access to complementary resources and capabilities of a partner opens up cost and risk reduction potentials compared to the own acquisition of new skills for the exploitation of new business and market potentials. Thus, the establishment of a collaboration can help avoiding investments. However, collaborations can simultaneously bear the risk of competitive compromise. Information, skills and technologies that are integral parts of the own specialized knowledge, are in most cases not supposed to be transferred to the collaborating partner. Especially in the case that various employees from different functions and hierarchy-levels of an organization are working in direct contact with

employees of the collaborating partner, the exchange of sensitive information is a risk. A different set of difficulties can range from an unwillingness of employees to learn from a collaboration partner, or an unwillingness to help externals, to an inability of working together and transferring knowledge. Hence, engaging in collaboration comes at the cost of potential downfalls. Nonetheless, in consideration of the immense cost for a purely internal development of new products and the penetration of new markets, collaboration is a necessity for most firms (Hamel et al., 1989; Hansen & Nohria, 2004).

It makes sense to keep in mind the resource-based view of the firm that was already discussed in the chapter about the internal knowledge resources of a firm, when further examining strategic alliances between organizations. As such partnerships are established with the main purpose of gaining access to external firms' vulnerable resources, the formation of a strategic alliance becomes more likely when the partnering firms are either in the need of resources or in the possession of resources to share. The above-mentioned aim of achieving competitive advantages through a strategic alliance can be explained with the outlook of achieving greater resource combinations in collaborating for the unique resources and combinations of resources that a single firm possesses according to the resource-based view (Das & Teng, 2000).

For organizations today, numerous approaches exist to tap into the resources and capabilities of external firms. Generally, there is no single best approach to leveraging outside capacities. A strategic trade-off can be facilitated by various different forms of collaboration (Pisano & Verganti, 2008). Over the last decades, collaboration strategies and their underlying motives, formation, administration and outcomes have been focal point to a vast body of research. An examination of all potential strategies for organizations to engage in inter-firm partnerships would extend the scope of this work and dilute the aim of establishing a state-of-the-art guideline for collaboration strategies in innovation. Hence, the author wants to put the focus of the following parts of this work on the ways how firms collaborate for access to innovation. A brief study of various forms of strategic alliances in chapter 2.3.1 will serve the purpose of facilitating an understanding of traditional forms of partnerships along the value chain of an organization. However, the focus will then be set on the approaches to inter-firm collaboration for innovation.

2.3.1 Strategic Alliances

In an environment of new technologies that are difficult to absorb and manage, alliances play a key role in the process of implementing technology strategies. For mature organizations that are an incumbent within their industry, competitive success strongly relies on the ability to access new technologies by partnering up with other firms. In order to continuously exploit and strengthen the established capabilities in terms of market access know-how, management skills and prestige that an organization built, it is dependent on gaining access to the new technologies developed by other firms. Unless the existing assets of a mature firm can be applied to a steady flow of new products and technologies, their value diminishes over time. As Doz & Hamel summarize, "Existing companies need innovative products to exploit existing distribution networks and to capitalize on the management disciplines they have cultivated; innovation thus becomes the key to protecting the value and future longevity of past efforts." (1997, p. 560).

Looking at inter-firm partnerships in general, a strategic alliance is built between two or more partner firms according to different criteria. Firstly, the partners of a strategic alliance remain their legal independency after the formation of the alliance. Secondly, both benefits and managerial control of the joint project are shared. Thirdly, the partners of such an alliance continuously contribute to the partnership by providing technology or products. Therefore, the partnership between firms through strategic alliance is characterized as an interdependent relationship between economic units that maintain their autonomy while mutually benefitting from the exchange of intangible assets through continuous inputs into the partnership (Todeva & Knoke, 2005).

As indicated above, partner selection in collaborations, as well as the surrounding conditions and governance forms, comprise a vast field of empirical research. Therefore, the author of this paper wants to illustrate the most common forms of strategic alliances in the paragraphs to follow. However, this shall only be the foundation to then narrow the field for the following observations to a sub-field of collaboration strategies in innovation.

The cooperation research literature names various types of collaboration models with diverse structures. These models reach from very loose market relations to the complete take-

over of another firm. The below overview lists the most common forms of strategic alliances with a brief definition of each form in rising order from loose transactions modes to very hierarchical forms.

Market relations are exchanges between different organizations that are solely coordinated by the price mechanism. Such transactions are often called 'arm's length exchanges' between firms. *Subcontractor networks* are established between inter-connected firms where the long-term prices, production flow and schedules for delivery of a supplier are negotiated by a subcontractor. With *licensing*, one company acquires the right from another company to use a patented technology or manufacturing methods in exchange for royalties and fees. When engaging in *franchising*, the franchisee is granted the right to use the name and identity of the franchiser's brand within a specified geographic area, whereas the franchiser remains in control over standardized service norms, pricing and marketing. *Cartels* are a form of collusion between large firms within a specific industry and follow the aim of limiting competition through the joint control over production or prices respectively. *Strategic cooperative agreements* are contractual collaborations in business networks with the aim of aligning strategic key decisions and mutually taking responsibility for the performance outcomes. *R&D consortia* are agreements over collaboration in research and development that are characteristic for fields of fast technological developments. *Cooperatives* are coalitions between small enterprises, in which collective resources are merged and managed between the partners. With *equity investments*, a firm acquires equity in another firm by purchasing shares. The number of shares held by the acquiring firm is decisive for the influence on the other firm. A *joint venture* is an independent legal organization. It is formed and owned by the parent firms with the limited purpose of pursuing joint undertakings, as for instance in R&D or marketing. Finally, *hierarchical relations* exist, where one firm takes control over the assets of another firm through mergers or acquisitions (Todeva & Knoke, 2005).

This brief overview of the fundamental forms of collaboration exemplifies that partnerships between two or more firms are a common mechanism with a myriad of different designs. Each form serves its own unique purpose and has very distinctive characteristics. With the focus of this work being the access to technology innovation that goes beyond a mature firm's internal innovative resources and capabilities, the range of collaboration modes to be

considered for this purpose is narrowed. The forms that mostly play a role for collaboration strategies in innovation range from the above-mentioned strategic cooperative agreements, to equity investments and joint ventures, as well as R&D consortia. The choice of the collaboration form highly depends on the respective aims of a partnership within research and development. Hence, the author limits the following analysis on partnerships in R&D and sets the focus on the characteristics and developments of R&D collaboration for technology innovation.

Within the field of R&D collaboration, various alternative forms of partnerships serve different purposes and motives. Firms may pursue strategic alliances that let them learn a new technology. Such exploration alliances need to be close enough to allow the partnering firms to share tacit knowledge. In the case that the motive for the collaboration is the access to the partner's complementary assets, an exploitation alliance for the exchange of explicit knowledge can allow an incumbent firm to directly benefit from the access to a new entrant's technological expertise (Rothaermel, 2001). The sub-fields within R&D collaboration follow the same logic as generally with strategic alliances, with alternatives mostly depending on the equality that exists between the collaborating partners. One side of the spectrum of options is the case, where the decision-making power lies mainly at one partner. Problem fields deriving from the internal R&D department can be assigned to R&D contractors or external research institutions, or licenses for further in-house development or direct implementation can be purchased from external firms. On the different end of the spectrum are collaborations that are triggered by the market demands. R&D can be for instance carried out in collaboration with lead customers. The middle ground are collaborations where both partners retain equal decision-making power as in joint ventures that are established both in the same, as well as across industries (Becker & Dietz, 2002; Grochowski, Warschat, & Dasher, 2017).

The framework of four key modes of collaboration in research and development established by Pisano & Verganti (2008), can help to get an overview of the motives underlying inter-firm partnerships for innovation initiatives. The scholars distinguish between the participation and the governance mode of what they call collaboration networks, to differentiate between (1) closed-hierarchical networks or elite circles, (2) open-hierarchical networks or innovation

malls, (3) open-flat networks or innovation communities, and (4) closed-flat networks or consortia.

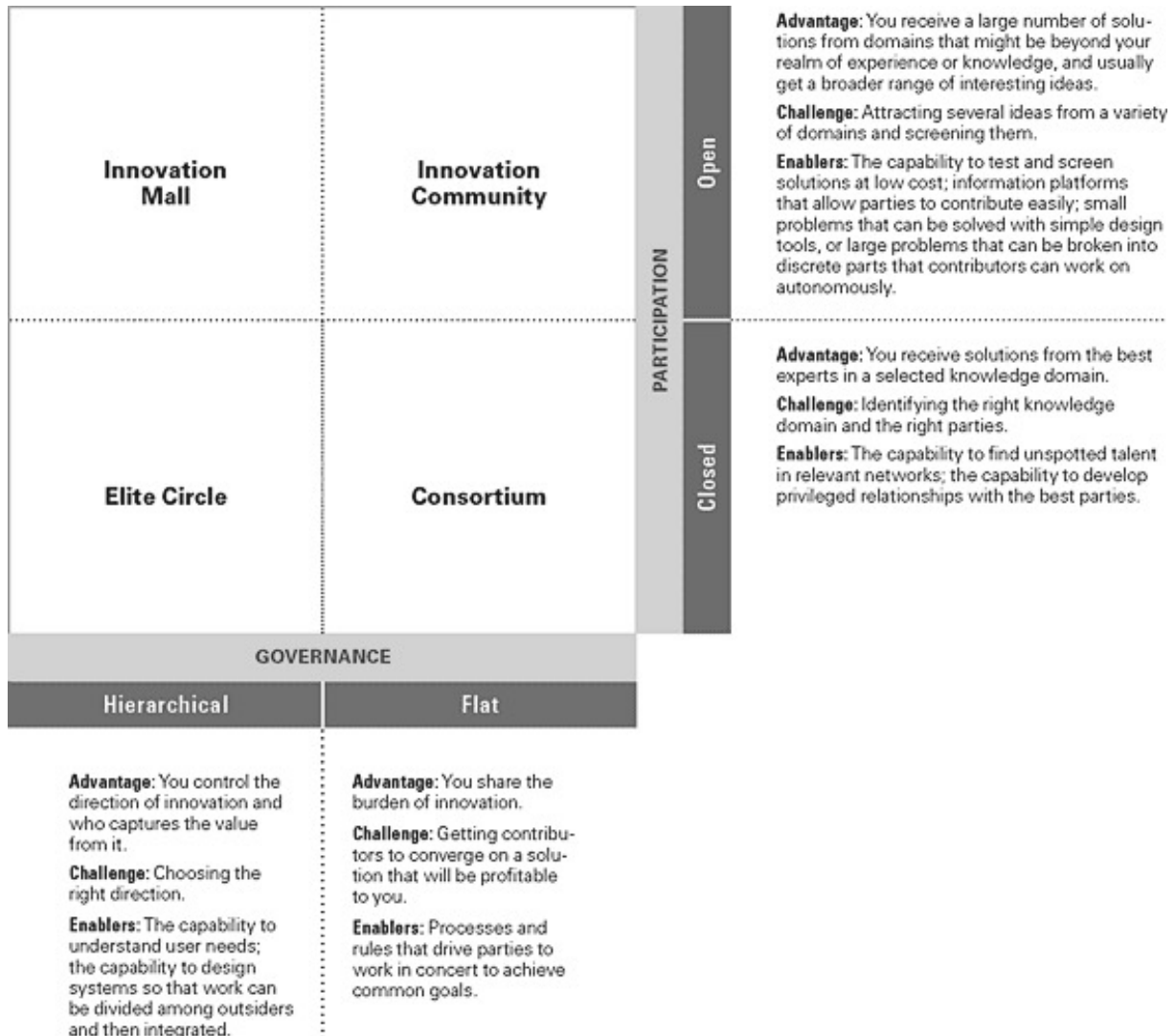


Figure 2: The Four Ways to Collaborate (Pisano & Verganti, 2008)

Closed networks can be compared to private clubs, where the participant selection and choice of governance form are made by one initiating firm, that selects one or more partners based on their potential contribution to a pursued innovation and then decides whether the problems to be solved shall be tackled under the leadership of the initiating firm or at eye-level between equal partners. The decision for a closed mode makes most sense, when the initiating firm has identified from which knowledge domain the problem solution can be

sourced and which collaborators are the right pick within the field. With open networks, on the other hand, the most suitable knowledge domain or the according experts within the domain do not have to be identified upfront. In an open network, problems can potentially be solved by partners from fundamentally different fields and therefore provide innovative solutions that would not be considered under normal circumstances. The main differentiation when it comes to the chosen form of governance is the responsibility for problem definition and solution choice. The hierarchical form provides one organization with the ability to control directions and outcomes of innovation efforts from a collaboration. The flat form leaves these decisions to a joint body of collaborators, that profit from the advantage of sharing the challenges of costs and risks of innovating. Choosing the appropriate collaboration mode for the pursued innovation initiative of an organization depends on a prior consideration of the trade-offs of the different options. The capabilities of the own organization and the required assets for the management of the collaboration form have to be weighed, while incentives for the attraction of suitable collaboration partners have to be designed. Eventually, the executives in charge of the collaborative efforts have to evaluate which of the own unique resources and capabilities are supposed to be enhanced by exploiting complementary external asset and then choose a mode that is in line with the own strategy (Pisano & Verganti, 2008).

In the field of innovation, the motives underlying collaboration are the sought-for complementary resources and capabilities in a respective external firm can be distinctively differentiated by firm age and size. In succession of radical technological change, an affected market is typically entered by numerous new entrants that are trying to commercialize the new technology. Such new entrants are the main source of the new technology for large, incumbent firms (Rothaermel, 2002).

Characteristically, startups are firms with the aim to search for a business model that is repeatable and scalable. By bringing new ideas to a market in the eponymous phase of starting up, a startup is fundamentally a new entrant with the aim of transforming into an enterprise that can economically sustain (Spender, Corvello, Grimaldi, & Rippa, 2017). Therefore, the author follows the assumption that startups play a crucial role in innovation processes and implies that new entrants are to a large extent startups. There might be cases

in which this assumption does not depict the characteristics of all firms entering a market with new technologies. However, the chosen simplification serves the purpose of drawing a clear picture of the overarching trends within collaboration strategies in innovation. In the cases where firm size and age of a new entrant significantly differ from the characterization of a startup, the same underlying mechanisms for the collaboration between new entrants and incumbent firms are supposed to be relevant.

Startups are by definition new and small firms with flexible company structures and the agility to build on creative business models when exploring novel technologies. They tend to possess specialist expertise which allows them to build on distinctive knowledge for the exploitation of new innovations. Simultaneously, the age and size of startups tends to be a limiting factor when it comes to resources in finances, production capacities and commercialization expertise. The knowledge of distribution, marketing and sales mechanisms is embedded within the incumbent firms' routines and not freely accessible for new entrants to the industry. Hence, each side holds complementary assets that the respective other requires for a successful commercialization at the cutting-edge of new technology. Large firms seek access to new technologies and try to improve internal performance in terms of innovation speed and output. To that effect they tend to be looking for startups as collaboration partners in order to build on their expertise and creativity in new technology exploration. Startups, on the other hand, seek to leverage the experience and market power of large firms in collaborations (Hogenhuis, Van Den Hende, & Hultink, 2016; Rothaermel, 2002).

The question in focus is, what enables the establishment of such seemingly asymmetrical collaborations. Large, incumbent firms have to select suitable partners from the community of new entrants that match their motives for collaboration. Such motives being the implementation of synergy effects with gaining access to external knowledge, complementing internal capacities with new ideas in order to stay competitive and increasing the know-how about new technologies and innovation while reducing the costs of an equivalent internal R&D process. Assuming a collaboration that can cope with these motives, such a partnership can reduce the time to market of new products and facilitate market entry by pooling the complementary resources and capabilities of the partners and thus opening up new

opportunities for the partnering large firm (Grochowski et al., 2017). For startups, the overarching motive of seeking collaborations with large firms is fundamentally gaining access to a market where incumbents dominate the existing sales and distribution channels (Rothaermel, 2002).

Given the need of a broad range of new ideas to choose from in order to maintain the ability of introducing competitive products to the market, large firms face the dilemma that even with sufficient resources for the internal R&D process, it is barely possible to keep up with the amount of new ideas entering the market in line with fundamental technological developments. Thus, it is indispensable for large firms to realize that opening up the internal innovation process, in order to gain access to new ideas that cannot be generated internally, is crucial. To cope with the pace of the market developments, filling the internal innovation pipeline with such ideas from outside the firm's boundaries is necessary to create the knowledge needed to compete for the commercialization of a new knowledge (Grochowski et al., 2017; Rothaermel, 2002).

The opening of the internal innovation activities for the exploitation of new technological opportunities is subject to broad research. Going by the name of open innovation today, this process is analyzed by scholars worldwide. With the notion that the necessary openness for the access to external ideas goes along with the collaboration with the holders of such ideas, the concept of open innovation combines the objects of investigation of this work. Building on the established understanding of technology innovation and organizational knowledge creation and based on the examination of collaboration strategies between different firms in general and large firms and startups in particular, the author wants to focus the following analysis on the concept of open innovation and its implications for the examination of collaboration strategies in innovation. Following the assumption that collaboration with startups is the essence of increasing innovativeness for large firms, the following chapter will thoroughly analyze the contributions of the promising concept of open innovation. Specifically in consideration of the current developments that "Once the notion of interorganizational innovation collaboration has entered an industry, everyone who does not participate will cope with serious competitive disadvantages." (Enkel, Gassmann, & Chesbrough, 2009, p. 311).

2.3.2 Open Innovation

Especially in industries of fast technological developments, the efforts of large firms to reach out to startups have increased over the last years. Following large firms' pursuit of innovation and speed, a variety of ways of collaborating with startups has been produced following the concept of open innovation (Weiblen & Chesbrough, 2015). This paradigm of opening up the internal innovation process by engaging in inter-firm collaborations highly contrasts to the traditional model of vertically integrated innovation activities. This process of developing and distributing products and services that purely derive from a firm's internal sources of innovation is generally referred to as closed innovation. In contrary, the model of open innovation as first coined by Chesbrough (2003), follows the assumption the closed approach to innovation is too limiting for firms that aim at advancing their innovations (Chesbrough, 2003, 2012).

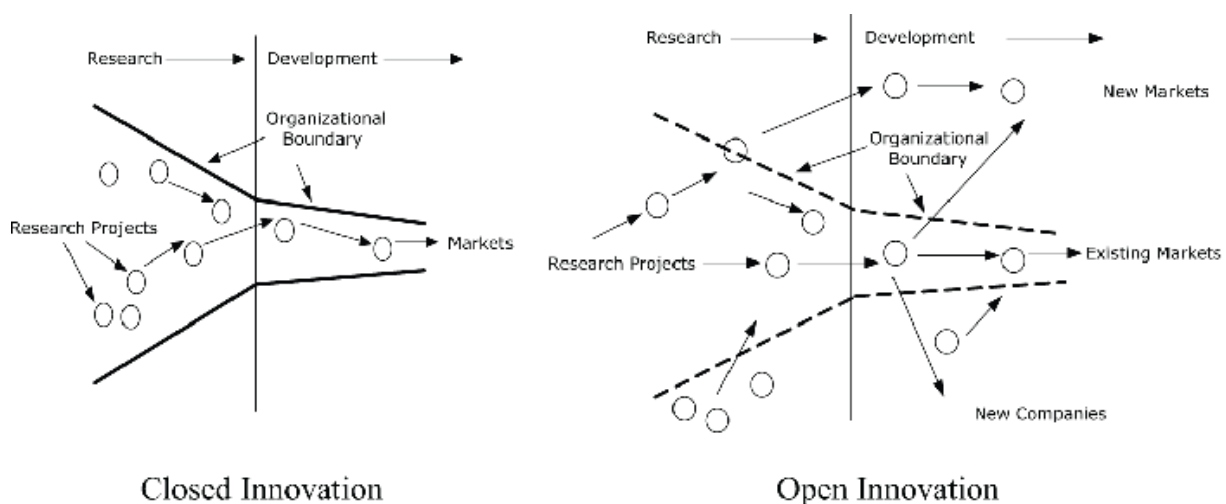


Figure 3: The models of Closed Innovation and Open Innovation (Chesbrough, 2003b)

A comparison of the two models of closed innovation and open innovation illustrates the main distinctions in approaching innovation. Firms that apply a closed innovation model, source research projects from their internal technology base. The projects selected as promising, enter the internal development process and are eventually introduced to the firm's target market. The left model of figure 3 depicts this process, during which several ideas are assessed in the research phase, while only some turn into successful projects that are developed until market-ready. In such a process of closed innovation, all research and

development projects happen without external influences inside the firm. When looking at the right side of figure 3, the model of open innovation has some particular differences. With this approach, the ideas and technologies fundamental to a new research project are sourced both from within and outside the boundaries of a firm and can be incorporated into a running project at various stages of the research and development process. The combination of both internal and external technology sources allows for the development of projects that exceed the needs of a firm's traditional target market. Hence, some innovation projects will open up the possibility for the firm to target a new market, license the outcome of a project to external firms or even spin-off a new company with the purpose of commercializing it (Chesbrough, 2006).

This concept of open innovation moved the focus from the predominant comprehension of R&D as the discovery within a firm, towards an engagement beyond a firm's boundaries. Today, the concept of open innovation is used to describe basically any new approach to sourcing and commercializing innovation. Mostly, the application of open innovation in companies' practices is a combination of a traditional R&D approach, internal sourcing of external technologies and controlled outflows of internal technologies. Such an open system of corporate innovation activities builds incorporates the assumption that not all sources of innovation can come from within a firm. Chesbrough clarifies that "Open Innovation means that valuable ideas can come from inside or outside the company and can go to market from inside or outside the company as well. This approach places external ideas and external paths to market on the same level of importance as that reserved for internal ideas and paths." (2003, p. 43). Thereby, open innovation is a process that can raise the effective exploitation of internal and external knowledge for any form of organization that engages in innovation initiatives (Chesbrough, 2006; West, Salter, Vanhaverbeke, & Chesbrough, 2014).

When looking to leverage external innovations, the first step is the identification of such innovations. In order to complement the internal knowledge base, the external sources of innovation have to be obtained by the focal firm. Once the access to an external innovation is established, the critical endeavor is the integration of an external innovation into the firm's own R&D activities. However, it is only when the organizational and managerial capabilities

within a firm facilitate and drive the internal openness towards such external influences, that an effective assimilation of external innovations enables the focal firm to successfully commercialize the innovation. While describing these steps as the linear process of open innovation within their framework of the four-phase model of open innovation, West & Bogers (2013) supplement the process with the aspect of interaction between the firm and the external collaborators. This fourth phase recognizes the constantly occurring feedback loops between the partnering firms (see figure 4).

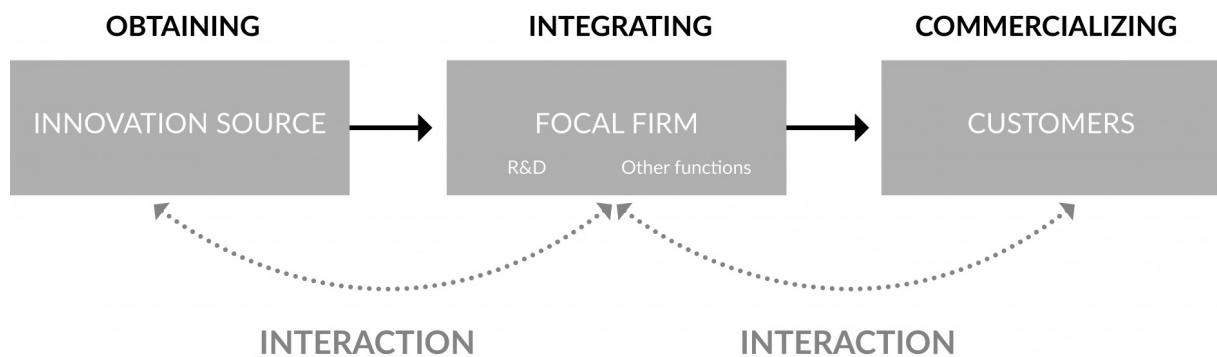


Figure 4: Four-phase model of leveraging external innovation (West & Bogers, 2013)

Where West & Bogers (2013) stress the importance of an effective integration of external sources of innovation into the internal structures, Witzeman et al. (2006) further elaborate on the potential internal pitfalls of engaging in open innovation. The willingness of a firm's employees to combine new external sources of innovation with previously sufficient own approaches may be limited. This dilemma, commonly known as the "not-invented-here syndrome", can be particularly inherent to firms with a previous record of successful internal innovations. In order to drive the willingness and ability to engage in collaborations with extern partners and making use of external sources of innovation, effective leadership is crucial. Managers have to communicate the importance of integrating external resources into the firm and highlight their role in achieving innovation and growth. Developing an open mindset towards external innovation, where internal researchers get encouraged to comprehend the external environment as the technology base for the own firm, can help

overcoming the "not-invented-here syndrome" and shifting from the insular concept of closed innovation to the "invented anywhere" approach of open innovation. Such a change in employee thinking is fundamental to effectively take advantage of external technology (West & Bogers, 2013; Witzeman et al., 2006).

As the comparison between open and closed innovation by Chesbrough (2003) indicated, there are several aspects that distinct the two modes of innovating. Gassmann & Enkel (2004) categorized these aspects in their framework of the three core processes archetypes within open innovation (see figure 5). The first one is the outside-in or inbound process. Following the assumption that knowledge creation does not necessarily happen in the same location as innovation, the outside-in process integrates external sources of knowledge into the firm and thereby enriches the internal knowledge base. Thus, the outside-in process can increase the innovativeness of a firm. The inside-out or outbound process, on the other hand, describes the opposite process, in which a firm monetizes its knowledge base and innovativeness by transferring ideas to external firms. With this process, a firm dissolves the restriction of having to serve the market itself. Moreover, a firm can generate new income streams from monetizing its innovation by transferring it to external firms and thereby moving the point of exploitation outside the boundaries of the firm. With the inside-out process, ideas can be brought to market by means of licensing, spin-offs, joint ventures or similar and can potentially create faster and more income than through internal development. The third process is referred to as the coupled-process of open innovation. This hybrid form refers to the case in which complementary partners co-create by both internalizing and externalizing knowledge for the joint development of innovation. Such a combination of the outside-in and the inside-out process happens between firms of all sizes that possess substantial resources. Given that innovation happens upon the recombination of prior knowledge and technology, solutions from external industries bear most potential to improve the development of new products and services (Gassmann & Enkel, 2004).

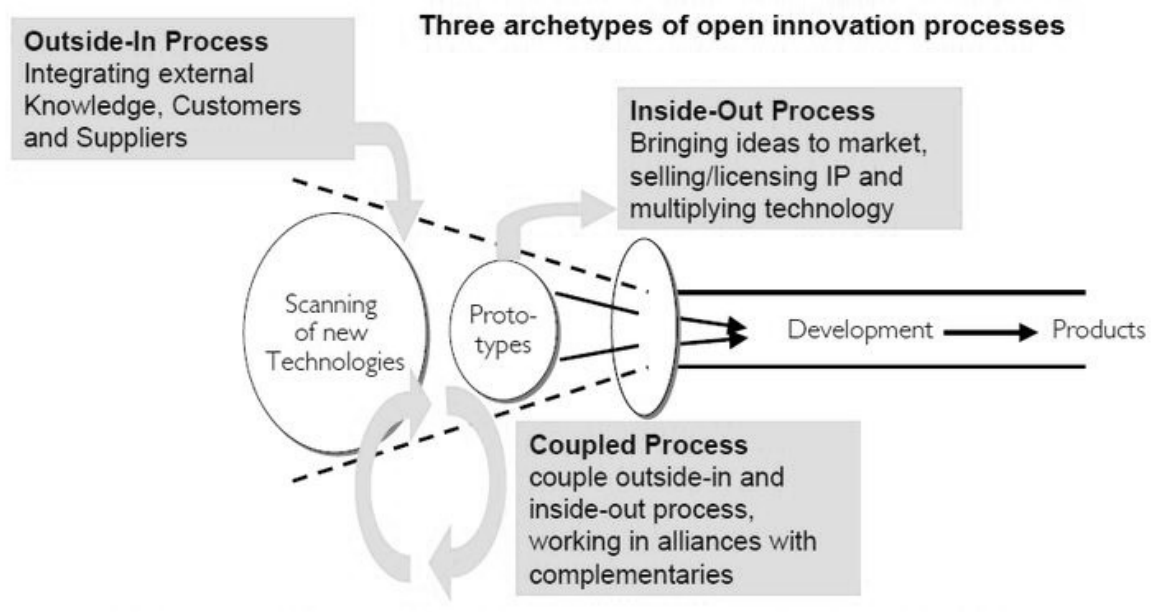


Figure 5: The Three Core Process Archetypes of Open Innovation (Gassmann & Enkel, 2004)

Pointing out the implications and shifting focus to the value of engaging in open innovation as substantial part of collaboration in R&D, the concept of open innovation gained massive impact on the research and management practices over the recent decade. Most attention lies on the inside-out process of open innovation, which can be assigned to the fact that the majority of firms are rather in the position of using new technology than creating it. Another aspect is the popularity of this process among practitioners in reducing costs (West et al., 2014).

According to Trott and Hartmann (2009), the concept of open innovation is mainly getting this high amount of attention among practitioners and researchers due to its simplicity and self-explanatory truth in pointing out the limitations of the fundamentals of closed innovation. The scholars argue that open innovation as first characterized by Chesbrough (2003) conveys the message that the concepts of open and closed innovation are mutually exclusive alternatives that firms face. Following this line of argument, the practiced reality of innovating in firms today would be either entirely focused on firm-internal, closed innovation, or fully following the principles of open innovation. However, the reality is certainly not just black or white. When it comes to innovating, building on internal R&D capacities as well as external

innovation sources is crucial for most firms in technology industries in order to stay competitive. This was already a reality, when researchers still discussed the mechanisms and benefits of collaborating for innovation as part of the R&D and innovation literature. The bottom line being that the concept of open innovation helped in pointing broader attention towards the need for sharing knowledge and transferring technology as part of an effective innovation management, however, it is largely building on research that raised the need for correspondent firm practices considerably earlier (Trott & Hartmann, 2009).

On a different note, the impact of this concept and its significance for R&D collaboration today, cannot hide the fact that engaging in open innovation practices comes at some cost as well. Firms that invest in such activities are confronted with certain risks and limitations that impede profiting from the open innovation initiatives. External barriers such as knowledge loss, increasing complexity and higher coordination costs going along with it, encounter the internal barriers of partner discovery and balancing core business and open innovation activities. Accordingly, the reality of collaborations in R&D is not an exclusive pursuit of open innovation. Firms engage in both closed and open innovation initiatives to avoid the potential impact of diminishing control and core competencies in regard to the long-term innovation success (Enkel et al., 2009).

Given this truth for the R&D operations of a firm today, the author assumes for the scope of this work that the opportunities which an engagement in open innovation activities establish for firms, outweigh the inclined risks. Hence, open innovation as one aspect of a firm's innovation process, will be considered as a reasonable form of collaboration that has to be installed with an awareness of the risk-reward-ratio.

As Chesbrough & Crowther (2006) investigated, firms that aim at defending or extending their core business by incorporating new technologies, look to minimize the risk by tapping into proven technologies. In comparison to with what the scholars call "new to the world"-technologies, the investment in a technology that works in existing external application, entails economies of scope. Furthermore, Chesbrough & Crowther (2006) observed the tendency that large firms explicitly seek to engage with startups in order to obtain the own market exclusivity. When deciding to assume such an asymmetric collaboration with a

startup, a large firm has to take into consideration if the provided capabilities meet the desired partner profile for a collaboration. The skillset of young ventures is predominantly focused on the first steps in the innovation process. According to Hogenhuis et al. (2016), the creativity, distinctive know-how on innovative technologies and problem-solving skill of a startup can be particularly beneficial to big companies. These capabilities can be used by firms engaging in startup collaboration as engines of internal innovation. When pursuing such a startup collaboration, however, the large firm has to set aside resources for the screening and identification of the startup and subsequently the joint working process as well as the monitoring of the outcomes. Even more so when following the trend of engaging with an entire startup ecosystem. Besides, the large firm has to be aware of the value proposition that it has to offer to a startup. When engaging in collaboration, startups are equally looking to access value that a large firm can add to their business. Eventually, a large firm needs to have a clear picture of what the engagement with a startup is supposed to deliver for the own strategic goals (Weiblen & Chesbrough, 2015).

Looking at the incentives for the establishment of such a collaboration from a startup point of view of, the main driver is to overcome the structural absence of sufficient resources. The development of the startup's innovation and the corresponding business model is naturally limited by the startups liabilities of newness and smallness. The liability of newness is the higher tendency for young firms to fail in a market than their established counterparts and refers to the competitive disadvantage from lacking experience, relationships and financial and human resources, as well as missing legitimacy. The liability of smallness refers to the connection between firm size and probability of surviving in a market. Small firms face disadvantages in access to equity and the competition for skilled workforce, as well as cost disadvantages in research and production (Singh & Lumsden, 1990). The implementation of open innovation activities is essential for startups in overcoming these liabilities. By engaging in collaborations with large firms and building on a strong partner's complementary resources, the performance of a startup can be significantly improved (Minshall, Mortara, Elia, & Probert, 2008; Spender et al., 2017).

A large firm partnering with a startup with the aim of introducing new technologies to the market, needs to reflect the strategic goal in the choice of the mode of engagement. Various

opportunities for engagement with startups promise the chance to profit from the innovative offering, potential for growth and speed of startups' entrepreneurial activities. Based on these main motives for large firms' the collaboration with startups, Weiblen and Chesbrough (2015) differentiate four different models of engagement (see figure 6).

		Direction of Innovation Flow	
		Outside-In	Inside-Out
Equity Involvement	Yes	Corporate Venturing Participate in the success of external innovation and gain strategic insights into non-core markets.	Corporate Incubation Provide a viable path to market for promising corporate non-core innovations.
	No	Startup Program (Outside-In) Insource external innovation to stimulate and generate corporate innovation.	Startup Program (Platform) Spur complementary external innovation to push an existing corporate innovation (the platform).

Figure 6: Modes of engagement between large firms and startups (Weiblen & Chesbrough, 2015)

Fundamentally, the different forms of engagement described by Weiblen and Chesbrough (2015) are designed to mitigate the vast organizational differences between startups and large firms. Corporate venturing is the approach of engaging by taking equity in a startup that the financing firm deems promising for its strategic goals. Such direct investments allows the firm to keep a close eye on startup technologies and markets, take influence in the operations of the startups within its investment portfolio and potentially internalize a startup's innovation by fully acquiring it. Corporate incubators serve the special case to leverage new technologies that derive from internal innovation but exceed the current core business of the firm. By assigning a team to the task of creating profit from such non-core innovation and providing it with a startup-like setting of a funding budget, co-location, mentoring and relevant contacts, the aim is to grow a spin-off outside the firm's slow and bureaucratic organizational structures and eventually penetrate new markets with a new company are a re-integrated division. The two forms of corporate venturing and corporate incubation represent two approaches that are focused on equity-based collaboration. With the non-equity

based engagement modes of startup programs, on the other side, the focus lies on the facilitation of a standardized environment for startup growth. With inside-out platforms, the goal is to provide startups with the large firm's own technology, for the startups to build new products with it. This approach follows the logic of inside-out open innovation, where the large firm tries to harness the startup ecosystem to expand its market. Finally, the model of outside-in startup programs focuses on making the innovations of startups accessible for the sponsoring firm. By creating a platform for the direct collaboration with promising startups, the large firm gets the chance to directly tap into latest technological developments by getting direct access to external innovations. Hence, a large firm applying this format can simultaneously pursue multiple collaborations by engaging with several startups at once. Corporate accelerator programs are a subdivision of such outside-in programs. Startups with an innovative offering suitable to the sponsoring firm's core business, apply to these time-limited programs and mostly receive financial funding, co-location, mentoring and potential further support, when selected to participate in the corporate accelerator program. Given the generally time-restricted character of outside-in startup programs, the goal of the collaboration between the sponsoring large firm and a participating startup during the program is in most cases the creation of a successful prototype for further development and eventual market launch. However, there are several crucial preconditions for the success of such outside-in innovation programs. The units within a large firm running such programs are the decisive factor in facilitating a collaboration from which both partners can profit. These units serve as gateway between startup and corporate world and need to facilitate the incorporation of the external innovation. Especially in the case of time-restricted collaborations, a joint project needs to be pushed through the slow and bureaucratic organizational structures of a large firm to ensure the efficient use of the created potentials. Hence, as much as the managers of a startup program need to be networked outside the sponsoring firm to connect with promising startups, as critical is a functioning network with the different functions within the firm. For a well-working outside-in program, this means creating a standardized approach for the set-up and communication with the participating startups to efficiently orchestrate the external endeavors internally (Chesbrough & Crowther, 2006; Weiblen & Chesbrough, 2015).

The emergence of the different governance models for large firms' engagement with growing numbers of startups entering the respective markets, mirrors the need to structure the engagement with startups in an environment of dynamic and potentially disruptive developments. The different modes of engagement with startups serve individually different purposes and are, in that sense, not mutually exclusive. It can make sense for a large firm to simultaneously implement different kinds of collaboration modes with startups in order to gain access to entrepreneurial innovation of various sorts. For innovation today, the before-described platforms have become a superior model. In an ideal scenario, the large firm can take a dominant role in the center of a platform and thus leverage on all innovation occurring in the ecosystem of collaborating ventures. Startups are well-aware of the fact that the balance of power between large firms and startups is clearly distributed in favor of the incumbent firms. Hence, to prevent promising startups from looking for alternative partnerships, large firms have to concede relevant efforts to assure the startups that the partnership will be built on eye-level. Especially when it comes the intellectual property, which will most likely be a startup's key asset, large firms might be tempted to misuse their power and copy the idea of a startup to create a firm-own adaption. Given the amount of innovative ideas relevant for a large firm's core technology, this might be an illusory fear for a startup, however, such restraints have to be taken into account. Hence, a large firm has to clearly communicate the unique value proposition of the offered mode of engagement and needs to emphasize the superior complementary resources it has to offer to a partnering startup (Weiblen & Chesbrough, 2015).

As elaborated on in the foregoing chapters, both large firms and startups rely on internal, as well as external, resources for the development of innovations. By engaging in collaborations with external players, firms can gain access to external knowledge that can be integrated into the development of new products. With the general tendency of knowledge landscapes within industries growing more diverse and distributed, even the largest firms are not in the position anymore to develop all the required resources within the boundaries of their organization and have to affiliate with innovation partners (Chesbrough, 2003). As technology innovations shift the competitive environment, sticking to core competences that

are based on unique resources, that become more and more irrelevant, can lead to competence traps for incumbent firms. The concepts of open innovation and absorptive capacity illustrate the necessity of finding a working balance between reverting to internal knowledge and sourcing external knowledge. As Cohen & Levinthal (1990) clarified, the existence of prior related knowledge within a firm is key for the assimilation of external knowledge. In order to comprehend the absorbed knowledge, large firms cannot go without internal R&D capabilities for the identification of new technology developments and the effective exploitation of external know-how. Thus, it is crucial for an incumbent large firm, to hold on to internal R&D activities and find the right balance between in-house activities and external collaboration (Gassmann, 2006; Vanhaverbeke & Cloudth, 2014; Witzeman et al., 2006).

3. Methodology and Research Design

With this chapter, the methodological approach underlying this work will be presented. The framework that will help to illustrate the methodology is the so-called research onion (Saunders, Lewis, & Thornhill, 2008). By outlining how research creates decisions that correspond to a scholar's understandings of this research, the outer layers of the model depict the context and limitations to the data collection methods in the core of the research. Hence, the outer layers provide the necessary frame to facilitate the analyses of the qualitative data (see figure 7). This chapter will describe the chosen methods for the presented work, by building on the relevant layers of the research onion and describing the relevant steps from the outside layers to the core.

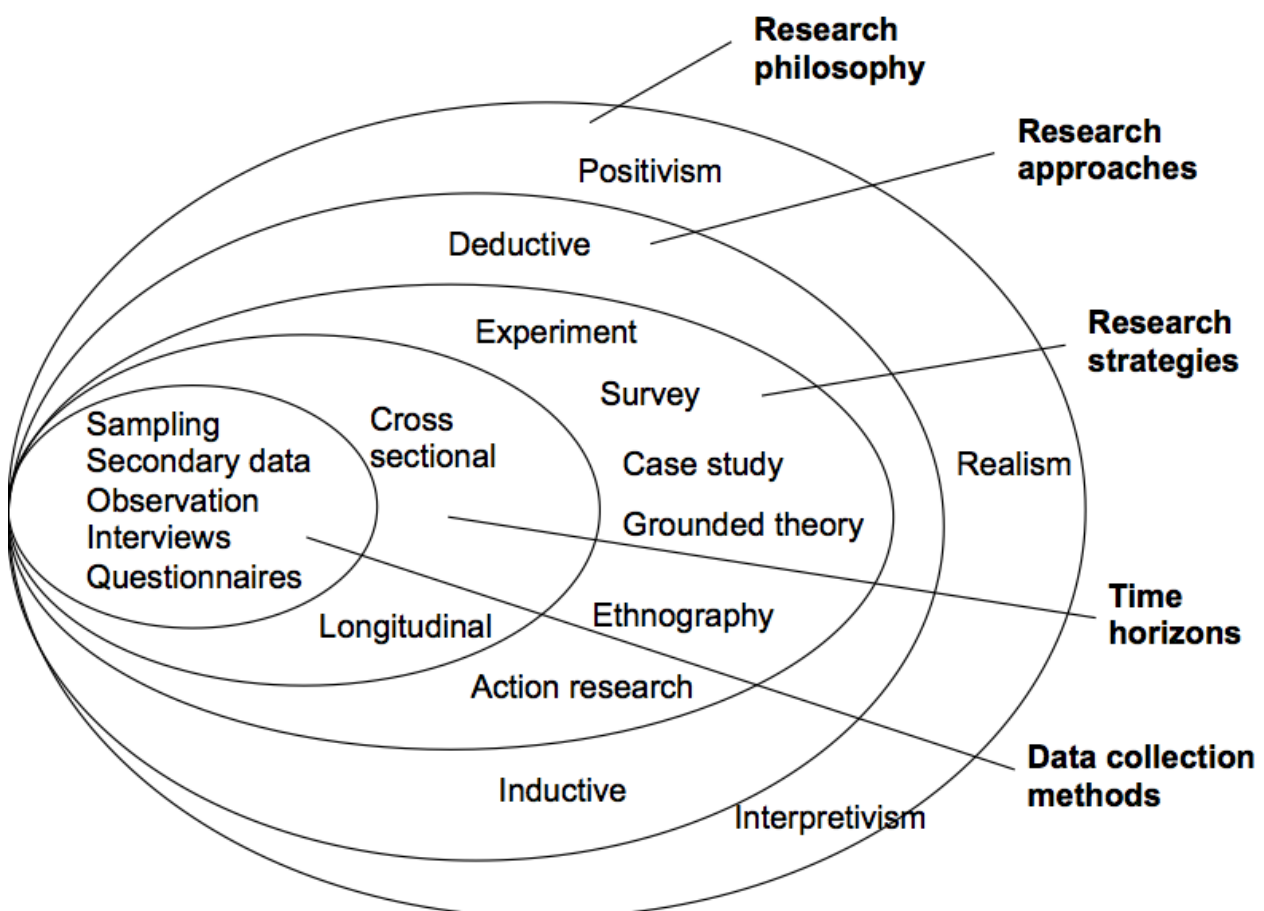


Figure 7: The research onion (Saunders, Lewis & Thornhill 2008)

3.1 Research Philosophy

The way how a researcher understands the world is based on the individual creation of knowledge. Different research philosophies introduce varying ways of approaching a research question in this regard. Building on interpretivism as part of the most common research philosophies, this work will engage the coherent epistemic approach of social constructivism. Based on the assumption that truth and meaning are created on a highly individual basis, rather than simply existing and being received, social constructivism can help to explain the creation of knowledge. Keaton & Bodie (2011) explain this process based on how meaning is brought to objects. The beliefs and ideas, as well as norms and values of a society put objects in a context where their definition depends on the subjective perception of an individual that belongs to the society. However, it is dependent on the individual, in which way meaning is brought to objects, as interconnectedness and interaction with both the world and other individuals make the perception of objects a subject to change. In this regard, communication plays an important role in the eventual creation of meaning (Keaton & Bodie, 2011).

When it comes to research in the field of business, taking the social constructivist approach can most appropriately facilitate the analyses of such aspects as knowledge creation. When in contrary engaging in the positivist approach, such circumstances are examined by testing hypothesis that are derived from theories and then interpreted as universally valid. Following the view that observable occurrences are independent and can thus only depict a portion of the truth and hardly be measured for general validity, a social constructivist approach can be seen as most appropriate in the research context of this work (Saunders et al., 2008).

When it comes to researching the role that knowledge plays in the adaption to phases of fundamental change, it is of great importance to understand that the individuals involved have a differing perception of the occurrences. The observable aspects will thus always be expressed through the subjective lens of the perceived individual reality. The researcher has to be aware of these coherences when aiming to derive implications from such processes. This is especially true for such dynamic processes as organizational knowledge creation that are based on each individual contribution to the whole. Hence, social constructivism is

deemed the most suitable approach to create an epistemic understanding from the observation of relevant factors of an entire phenomenon.

3.2 Research Approach

In the endeavor to generate relevant insights from the collection of data, different approaches exist for the purpose of the creation of the analytical framework. Deduction, in this regard, describes the approach of building on existing theories and testing their validity in a predetermined manner. When a deductive approach is taken, a researcher analyzes the insights generated by comparing them to predetermined hypotheses that are derived from the theories applied to the research (Creswell, 2013).

The inductive approach to research, on the other hand, facilitates a more flexible approach to the generation of insights from the research. Giving priority to the interpretation of new insights that are generated during the process of data collection, this approach is leaving space for the prioritization of aspects that the researcher deems to be of more importance than others. By incorporating this approach, a focus on the context of the generated data shall facilitate the derivation of new theories. The assessment of empirical data that is mostly provided from qualitative research is thus used to unveil connections in observed behavioral and structural patterns with the aim of facilitating novel insights (Creswell, 2013; Saunders et al., 2008).

With this work, the inductive approach is deemed most appropriate for use in connection with the social constructivist research philosophy. By allowing for the discovery of new impulses during the research, the inductive approach leaves the space to adapt the focus during the process of data collection. Hence the approach allows for a deeper understanding of the validity of concepts and ultimately drives the revealing of novel observations (Creswell, 2013)

3.3 Research Strategy and Time Horizon

In order to facilitate an analysis of the research question in focus, the research strategy needs to provide a fitting fundament for the collection of relevant data. The two different

approaches in this regard are qualitative and quantitative methods. Where quantitative methods are used to gather data for facts and numbers, qualitative methods are supposed to produce meaning by collecting data from observing situations rather than facts. Hence, qualitative research methods are generally more suited to examine research fields that lack prior data. Choosing one approach does not entirely exclude the other, however, the chosen strategy has to result in data relevant to the scope of the study (Bryman, 2012).

For this work, a qualitative research method was applied to the aim of generating insights on the creation of knowledge from collaboration between large and small firms. As the research field consists of highly complex processes within organizations and between their members and even more so between different organizations, the research strategy has to facilitate some validity of the collected data. Qualitative methods are seen as most suitable to investigate complex patterns. By capturing the meaning that members of the concerned social network give to the context, qualitative methods help to break the complexity down to manageable bites (Saunders et al., 2008).

Following the social constructivist view, the strategy in the present work is building on a case study approach that is substantiated by grounded theory. Case studies can be differentiated between single case studies that engage in the study of one unique case and comparative case studies, that describe a number of different cases. Generally, a single case study approach is applied for the examination of a unique occurrence. Describing a phenomenon from a single case perspective, however, incorporates a certain risk. The findings from the case have to prove a strong point in order to allow for general conclusions. In this regard, the choice of a set of cases can help to identify occurring patterns between different cases and draw on stronger evidence. Furthermore, case study research can potentially lead to biased and generalized results and inflate the research process (Yin, 2009).

For that reason, the author chose to supplement the chosen strategy by the use of grounded theory. As the hybrid form of a case study in the present work builds on single cases as representatives for different organization ages and sizes with a connection in the overall case of a collaboration and innovation platform, the generated insights are potentially subject to the pitfalls of case studies, as described by Yin (2009). Hence, building on the

theoretical framework developed before engaging in the case study, can support the viability of the results. This grounded theory helps putting the observation from the case study into the perspective of the according theories and thus results in more profound insights (Scott & Glaser, 2006). Analyzing the data collected with the cases based on the theoretical framework, facilitates a discussion of the findings in relation to existing concepts.

In regard to the time horizon, research is distinguished into two different approaches. A longitudinal study is designed for the analyses of ongoing developments over a certain period. A cross-sectional study, on the other hand, is the analyses of certain aspects that apply across different sectors at a specific time. For this study, the cross-sectional approach was taken to examine the current situation within the field of interest (Saunders et al., 2008).

3.4 Data Collection

With the process of collecting data on the research field, the foundation for the quality and extent of the present work was created. Building on primary and secondary literature, interviews with representatives from the case companies were conducted to promote greater insights. Generally, the data collection process has to be structured in a way that facilitates a valid analysis and enables the researcher to build on viable findings (Yin, 2009).

The use of in-depth expert interviews for the present work followed the aim of generating insights to specific questions that proved to be of importance during the data analyses from the literature. This part of the qualitative study served the overall aim of driving new insights on the field of interest. In particular, semi-structured interviews were used to facilitate a broad understanding of the different aspects of the research. Such interviews are building on a formal guideline that should be followed during the course of the interview. However, the semi-structured nature of the interview leaves the chance to discover additional aspects with relevance to the overall topic, by allowing for additional questions beyond the interview guide. Hence, the ability to draw on a formal guideline enables the researcher to prepare for the interview situation by delivering clear open-ended questions with importance for the research field, as well as maintaining a clear structure during the interview, while leaving the space to move with new aspects that were not considered before (Bernard, 2006). To that

effect, the application of semi-structured interviews was chosen as relevant column for the generation of insightful and viable data for the present study.

In order to avoid the delusion of data through influences of cultural differences, only interviews within the German market were conducted. Building on the same language and a similar cultural background helped avoiding the potential influence of other dimensions. Besides, German is the native language of both the author and the interviewees and therefore ruled out potential misunderstandings. To that effect, three different in-depth interviews were conducted with participants from three different organizations that represent the main viewpoints within the scope of this work. These interviews are seen to be the most important means for the collection of data with high validity. The interviews were conducted via SKYPE and recorded for the purpose of later transcription. The tape records were transcribed and replies summarized and formatted when the recordings contained interruptions, to allow for end-to-end readability. The outcome was sent to the interviewee with the request for verification of the correctness. Further, the data collection was supported by a large amount of company data on the case companies, retrieved from the respective websites, as well as extensive media coverage on the companies and their operations. What Patton (1999) refers to as the triangulation of sources, describes the process of drawing on different perspectives of the same phenomenon, in order to identify consistent patterns and thus facilitating a better understanding and further supporting the findings (Yin, 2009).

In the progression of the data collection process, the number of connections to various contacts at the case companies successively increased, which Noy (2008) refers to as snowball sampling. This periphrasis means a process in which the establishment of a contact does not only encompass potential access to data, but as well the referral to additional contacts that are potential contributors to the case. Despite being a rather informal approach to data collection, the engaging in this process proved to be especially helpful in the course of data collection for this work. Being in a position outside the organizations of the case companies, it can be difficult to spot the appropriate point of contact for the collection of relevant data for the research field. As the members of the respective organizations are part of the underlying network and know the most suitable points of contact, the snowball sampling method

facilitated the establishment of the most suitable contacts and eventually provided the author with the participants for the in-depth interviews (Yin, 2009).

3.5 Data Analysis

The process of analyzing the attained data is crucial to eventually interpret the results in order to derive new insights. The screening of the collected data makes refers back to grounded theory, where the collected insights are compared to the theoretical framework in order to allow for a consistent and solid interpretation. In this endeavor, the case data was processed by applying the so-called pattern matching technique. Building on the propositions that were derived from the theoretical framework, this technique facilitates the analyses of recurring patterns within the cases. Additionally, the data was analyzed by employing a cross-case synthesis. This approach helps in identifying if the main aspects within the scope of this work find application in all types of organization investigated with the cases, or if significant differences exist. The outcome of this synthesis helps to identify the applicability of the theory or need for further specific research (Yin, 2009).

With the chapter about the applied methodology and research design, the author presented the chosen approach to the conduction of research for this work. The exemplified mode of data collection and analysis is fundamental to the following chapters. With the following chapter, the case studies and the industry relevant to their operations will be presented, in order to facilitate the interpretation of the findings following thereafter.

4. Collaboration in the Automotive Industry

In order to gain relevant new insights on collaboration strategies in innovation, this paper builds on a case study from within the German automotive industry. The subject matter will be presented from the different viewpoints of a large firm, represented by car manufacturer Daimler, a startup, represented by the connected car startup Vimcar, and a platform model, represented by the open innovation and collaboration platform Startup Autobahn. This chapter will begin with an introduction of the automotive industry with a focus on the German market. Hereupon the case companies and their role within the automotive industry will be presented in detail. Elaborating on the collaboration strategies incorporated by these case companies, the author will facilitate an analysis within the scope of this work.

4.1 The Automotive Industry

What began in the late 19th century with the invention of the automobile in Germany, led to one of the most important industries for economic growth on a global scale. The endeavor of producing automobiles on a large scale gave birth to countless innovations over the decades. A lot of them with global impact on various fields far beyond the pure car construction, of which the introduction of the assembly line by Ford and its facilitation of mass production was one of the most important (Bell Rae & Binder, n.d.). Today, the automotive industry is a vast network of countless firms operating at numerous points of a highly complex value chain. With the initial product being the car, the product portfolio of the automotive industry enhanced by a variety of motor vehicles, of which the most important ones developed to be passenger vehicles like cars, motorbikes and light trucks, as well as commercial vehicles like transport trucks and busses. The economic significance is equally high on a global scale. For numerous countries across the world, the automotive industry is one of the largest manufacturing enterprises with national GDP highly depending on the added value. This significance is supported by strong tendencies towards consolidation within the industry over the last decades. Today, a few very large firms control most of the production. This aggregation of power can mostly be ascribed to the cost structures within the industry. The highly complex value chains of the high-tech final goods require economies of scale through mass

production to be operated on a cost-effective level. The necessary infrastructure can only be financed by large firms with the according financial means (Bell Rae & Binder, n.d.).

However, the historical development toward the global impact and economic significance of the automotive industry is not ever-lasting and subject to drastic transformations in recent years. What started with tendencies towards social and environmental challenges deriving from mass ownership and use of cars in the early 2000s, led to collapsing sales in the established markets of the automotive industry during the global economic crises during the late 2000s. For now, the industry has partly recovered from these massive setbacks with new growth in emerging markets and by adapting production towards stricter regulatory interventions. However, latest trends point towards an insecure future, when it comes to the large players maintaining their power (see figure 8).

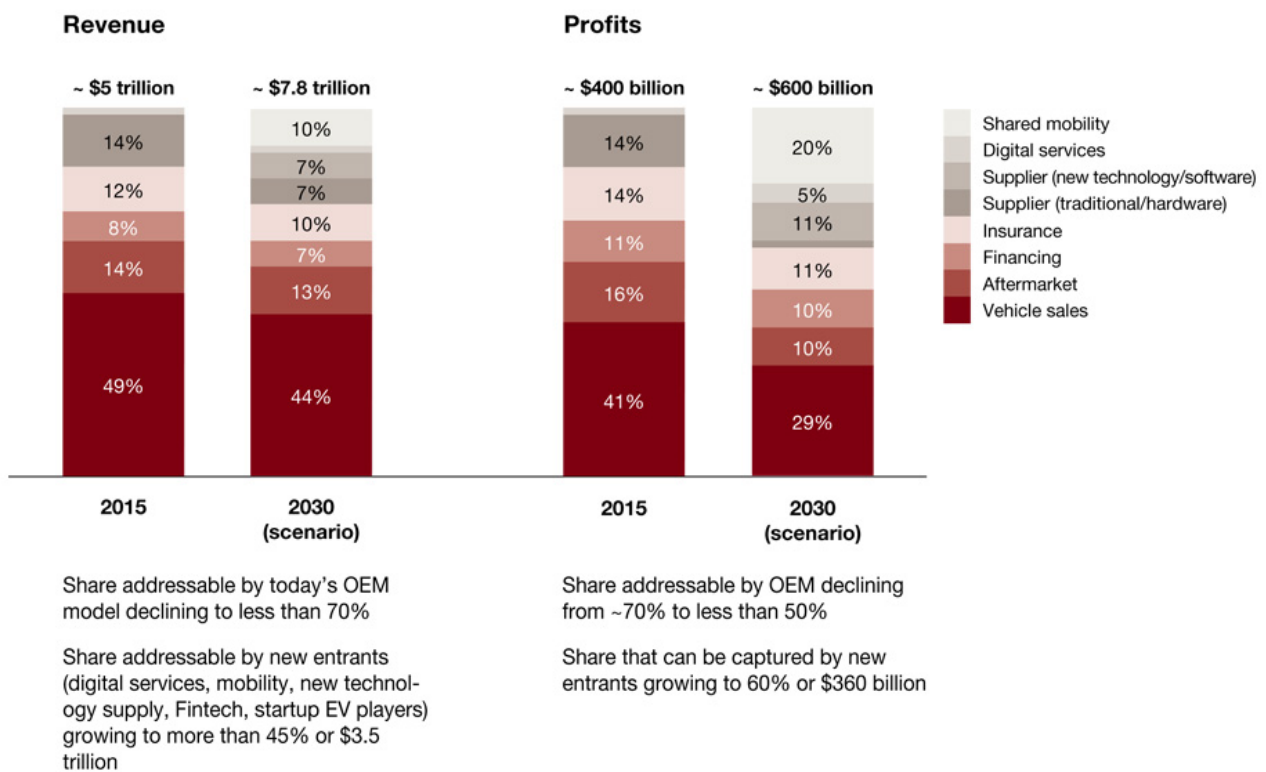


Figure 8: Scenario for value shifts in the auto industry, 2015-30 (pwc, 2017)

With the emergence of electric propulsion technology showing tendencies towards replacing the incumbent combustion engine technology, new approaches to mobility questioning private car purchases and digitization opening up opportunities for new market potentials, numerous new players push into the market. A call for the large incumbent firms to reinvent their business models in the face of such radical changes and follow the current developments, in order to maintain their power, is merely acted upon. Hence, an industry of crucial economic importance for numerous countries around the globe, hangs in the balance between opening up to the change or blocking the novel influences. So far, the incumbent business models and power structures within the automotive industry dominant drivers of success. However, first steps among the incumbent players towards novel solutions and partnerships with new entrants to the market show that a perception of change seems to increase (Nieuwenhuis & Wells, 2015).

Taking a closer look at the European market, the German automotive industry is the most important in size. Both European production volume and sales numbers are led by a nation's industry that is often depicted as global leader in automotive engineering, innovation and design. With an output of 15 million produced vehicles in 2015, of which 5.7 million were passenger cars, German automotive manufacturers account for 19% of the global vehicle and 30% of the European passenger car production. The demand for this output is globally distributed, with 75% of the vehicles being produced for export. A majority of the German export in the automotive sector happens to other European countries, while the demand for vehicles in the premium segment is especially high in the USA and China. With global demand for premium vehicles being covered to almost three quarters by German automotive manufacturers, this segment is an important driver of making the automotive industry the largest sector in Germany. As one of the largest employers, it generated a turnover of above 400 billion Euros and 20% of the total national industry revenue in 2015. On a global scale the contribution accumulates to one in five cars being produced by a German automotive manufacturer. A significant role in this leading position is assigned to the importance that German R&D innovations play for the automotive industry. With as much as 100,000 employees dedicating their workforce to the R&D sector, Germany is the automotive innovation

hub in an international comparison. The total expenditure on R&D within the German automotive industry mirrors this tendency, with automotive manufacturers having spent close to 20 billion Euros on internal R&D projects in 2014 (Germany Trade & Invest, 2016). To better understand these numbers, it makes sense to look at the industry structure of the automotive industry in Germany. The large automotive manufacturers are mostly being referred to as original equipment manufacturers or OEMs. The leading ones in the German market being Daimler, BMW, Volkswagen, Audi, Porsche and Opel. However, a whole network of supplying companies along the value chain of these OEMs delivers the components necessary for the vehicle production. Some important examples for the German automotive industry are Bosch, Continental, ZF, Schaeffler and Hella. The suppliers are differentiated by system and module or tier-1 suppliers, component or tier-2 suppliers and raw material or tier-3 suppliers (Kasperk & Drauz, 2012). The complex network of partnering firms adds up to 70 percent of value to the German automotive industry and ensures the industry's competitiveness. This connectedness exemplifies the significance that collaborations play for the success of large automotive manufacturers (Germany Trade & Invest, 2016).

With a rising complexity along the value-added chain of the OEMs in times of far-reaching developments, the roles along the value chain change. The new technologies and business models emerging in the automotive industry raise the competitive pressure on the OEMs. New concepts from engine technology, to vehicles as a digitized platform within the internet of things (IoT), to new concepts of mobility that may make private car ownership a model of the past, transform the industry. Especially digitization is a crucial factor in the current developments. Frequently referred to as *Industry 4.0*, the digitization drives a reconfiguration process of the existing value chain and thus changes the role of the suppliers as well. The technological advances that used to be dictated by the OEMs are enabling more uncoupled improvements for every player, as the digitization allows for cheaper access to new technologies. With the IoT allowing for integrated production processes and new technologies such as robotics increasing resources, suppliers gain a more important role for the production of new product solutions and hence an increasing value-add to the end-product. Suppliers developing new specialized knowledge and thus enhancing their power vis-à-vis the OEMs, show that solely building on the traditional core competencies in the automotive industry

might not help in maintaining the former power balance (Franz, Bieger, & Herrmann, 2017; Germany Trade & Invest, 2016; Kasperk & Drauz, 2012).

However, it is less the suppliers that threaten to move the industry structure towards an imbalance. These players affect the upstream part of the value chain and therefore largely influence the production process, on the one hand. On the other hand, OEMs possess long lasting experience from collaborating with these players and can assess the resources and capabilities of the suppliers. It is more the new entrants that enter the market with competences which previously didn't play a role in the automotive industry that impose a threat to the OEMs. These former outsiders to the industry compete with digital innovations that are largely targeting the downstream part of the value chain and the interface between customer and vehicle. Such novel solutions beyond the experience and core competence of the OEMs are difficult to assess, yet raise the pressure to innovate the business model (Kasperk & Drauz, 2012).

Generally, the novel competition can be divided in four major groups. *Transformers* like mobility provider Uber bring new services to the customers and thereby create new market potentials. *Data aggregators*, such as Internet giant Google, tap into the vast amounts of data generated by the connectedness established through the IoT and use the generated insights for new product or service development. *Service aggregators* like MyTaxi position their business model between incumbent firms in the service sector and their customer base and introduce additional business models at the interface. *Value chain aggregators*, such as Autolib, pursue the goal of digitizing all established services along the existing value chain (Oliver Wyman, 2017). Besides, there is as well a prominent example that even the automotive manufacturers' core competencies aren't a matter of course and subject to potential disruption by new entrants. What began with a startup in the Silicon Valley, developed to be the leader in manufacturing premium electric vehicles within the last 15 years. Tesla managed to gain substantial impact on the global automotive industry and managed to change the entire market structure with regard to alternative propulsion technologies (Stringham, Miller, & Clark, 2015).

In order to maintain competitive and pursue a leading role, rather than getting in the position of a laggard following the trends, the incumbent players realize the need to adapt. The examples show that the new players entering the automotive industry are not only startups with promising innovations, tapping into the opportunities arising with new technologies. Large firms from previously unrelated industries, such as Apple and Google, are able to leverage resources and capabilities comparable to the ones of automotive manufacturers and equally explore the newly opened opportunities (Oliver Wyman, 2017). Increasing numbers of initiatives of OEMs to engage with external knowledge holders show that the signals are being noticed. A rising part of the large investments in R&D is being allocated to open innovation activities and the establishment of entire innovation ecosystems. By trying to attract new collaboration partners and their ideas, the OEMs seek access to external innovations that go beyond the own core competences. The modes of engagement reach from the establishment of specialized innovation departments to new models outside the internal organizational structures, such as corporate venturing branches, incubators, accelerators and innovation platforms (pwc, 2013).

4.2 The Cases of Daimler, Vimcar and Startup Autobahn

To develop a better picture of the current developments within this complex industry, looking at the situation from the perspective of the main actors can help. The following chapter will draw the case of German automotive manufacturing giant Daimler, the startup Vimcar that plays a growing role as young digital venture in the automotive industry and Startup Autobahn as newly-established platform for collaboration and innovation between the large incumbent firms and various startups. Each actor will be presented with some general background information and the relevant insights in terms of innovation and collaboration structure.

4.2.1 Daimler – The Automotive Manufacturer

What began with Gottlieb Daimler and Carl Benz inventing the automobile in the late 19th century, eventually led to the establishment of one of the biggest automotive manufacturers in the world today. Based in Stuttgart, Germany, Daimler generated a total revenue of 154 Billion Euros with its group of 18 brands in 2016. Under the direction of CEO Dr. Dieter

Zetsche, close to 300,000 employees are involved in facilitating roughly 3 Million vehicle sales per year (Daimler AG, 2017).

Following the company claim "The Best or Nothing", the Daimler group commits itself on the construction of superior cars in the premium segment, as well as shaping the future of mobility by moving innovative and green technologies into the focus. In doing so, Daimler wants to take an active role in developing new mobility concepts and become one of the leading OEMs in the design of connectivity solutions and autonomous driving. To move closer to these objectives, Daimler wants to further strengthen its core business while simultaneously taking over a leadership role in driving digitization and developing new technologies. Especially in connection to digitization, Daimler states to be aware of the radical changes happening in the automotive industry and aims at putting focus on the customer by incorporating an integrated approach (Daimler AG, 2017; Zetsche, 2017).

When Ola Källenius, head of Daimler group research and Mercedes-Benz car development, says "Right now we are pushing ahead of the most fundamental change within our industry since the invention of the automobile.", (Daimler AG, 2017) he forestalls the importance that Daimler gives to digitization. This is mirrored by the very strong activities of the firm when it comes to engaging in investments and collaboration for access to new innovations within the automotive industry. In order to dedicate internal resources and capabilities to this task in a structured form, the company installed a so-called "Think-and-Act-Tank" as own innovation lab with looser ties to the traditional company structures in 2007. Originally introduced under the name Business Innovation, the specialized department is currently being re-branded as internal innovation factory that will go by the new name Lab 1886 (Mercedes me, n.d.). During the first years after its installation, the main motive of the Business Innovation department was the integration of new digital solutions into the network of products and services. One of the biggest success cases in this undertaking was the creation of the company own mobility service provider car2go. The Daimler sub-brand evolved to be the global leader in providing free-floating car-sharing, which allows the customers to hire Mercedes-Benz vehicles via smartphone on the go. By now, the service is available in 26 cities across Europe, North America and Asia and has a customer base of more than 2 million users (MarketWatch, 2017). Thus, car2go is a substantial contribution to Daimler's eager

goal of becoming the leading mobility provider. This endeavor is meanwhile backed up by an even broader approach of which Lab 1886 will only be a part. With the creation of the so-called CASE hub, Daimler invites innovative solution providers of all sorts to collaborate with the automotive manufacturer. "Connected, Autonomous, Shared, Electric: Each of these has the power to turn our entire industry upside down. But the true revolution is in combining them in a comprehensive, seamless package.", explains the CEO Dr. Dieter Zetsche (Daimler AG, 2017). With the four modules of CASE Invest, as the corporate venture capital branch, Lab 1886, with the new function as corporate incubator, Startup Autobahn, as a co-founded open innovation platform and Digital Life@Daimler, as department for internal innovation change management, this holistic approach to tackling the challenges of radical technology innovation is supposed to drive Daimler's strategic objectives (Daimler AG, 2017).

This current is mainly aimed at getting ahold of new innovations that are introduced by startups and internal R&D outputs that go beyond the core business model. However, Daimler equally looks to stay on top of large players' operations among its traditional competitors, as well as the new entrants to the automotive industry. Besides traditionally strong ties with suppliers of all sorts, collaboration models with other OEMs play an important role. These are for instance traditional strategic alliances with BMW for more bargaining power towards large suppliers, as well as co-innovation collaboration with Renault for new vehicle design. Other models include a consortium for vehicle charging stations between Daimler, BMW, Volkswagen and Ford, or plans for a fusion between Daimler's and BMW's car sharing companies car2go and DriveNow (Handelsblatt, 2017; Manager Magazin, 2017). These few of various examples are supplemented with collaborations between Daimler and the large digital firms that were formerly strangers to the market. The most prominent example being the recently announced collaborative endeavors with giant American ride-hailing provider Uber. Daimler wants to deliver autonomous vehicles to Uber in the future, that are supposed to operate the transportation network of the American company. With this collaboration that was announced as being non-exclusive, leaving Daimler the space to potentially deliver autonomous vehicles to similar operators, as well as giving Uber the opportunity to acquire

autonomous cars from other automotive manufacturers, Daimler makes a great leap towards opening up to new developments within the automotive industry (New York Times, 2017).

4.2.2 Vimcar – The Startup

The Berlin-based startup Vimcar is an example for the typical entrepreneurial success story. Founded in late 2013 as advancement of a university project, the startup quickly grew to become an impactful new player in the automotive industry. The business model of the startup is focused on the connected-car sector, where the initial product was introduced. A tracking application in connection with a small device, enables both private and company customers to track their car mileage for the purpose of tax saving on the business-related use of vehicles. The product consists of a small device that can be inserted in the on-board diagnosis (OBD) socket, which is openly accessible in the legroom of every modern vehicle. Upon insertion and activation in the vehicle, this universally applicable plug connects to the digital component of the product. A mobile and desktop application consolidates all mileage data relevant for tax purposes that the vehicle records and sends it to the digital solution via the OBD plug. Customers can access this information via their private profile on the digital platform and eventually retrieve the information relevant for their annual income statement. This way, private customers are enabled to save several thousand Euros per year, due to the consistent documentation of the business-related use of their vehicles. For company customers, the product offers a solution for the management of entire fleets of company cars. The combination of OBD plug and a digital platform solution for the integrated management of vehicles from different manufacturers, offers a convenient tool for fleet managers to plan the allocation of the vehicles within the fleet and keep track of their fleet mileage, individual vehicle utilization with one solution (Vimcar, 2017)

Building on the new technological opportunities, the founding team of Vimcar developed their innovation within one year after formation of the startup and introduced the first to the market in 2014. Their digital solution quickly started to gain traction, after first collaborations with tax advisory institutions and data processing firms affirmed the legal and structural validity of the startup. Today, more than 5,000 companies are using the digital solution of

Vimcar, leading to the connection of more than 30,000 vehicles. Deriving from this growth, the company grew by 300% in 2016 (crunchbase, 2017).

This development is reflected by the collaborations and investments that Vimcar attract until today. Building the early development on an initial seed capitalization, the startup soon entered into sales collaborations with large firms such as Europe's biggest electronics retailer Media Markt. These partnerships with the main purpose of driving the startup's traction had significant influence on facilitating the latest investment round. The Series A investment of 5.5 Million Euros is the biggest startup investment in the German connected-car segment to date. This capitalization is provided by a number of partners that collaborate with the startup by funding its operations through venture capital (VC) investment. Apart from business angel investors, as well as the French investment firm Groupe Arnault that were already engaged in seed investments in the startup, the new partners are VC firm Coparion and Unternehmertum Venture Capital Partners (Wirtschaftswoche, 2017).

With regards to collaborations within the automotive industry, the newly established VC partnership with Unternehmertum Venture Capital is most substantial. The VC firm is the investment branch of Unternehmertum, the leading center for innovation and business creation in Europe. The organization is backed by more than 50 industry partners, as well as public institutions. For the automotive sector, Unternehmertum established the "Digital Hub Mobility" in partnership with large industry partners, such as Daimler, Audi, BMW, IBM and SAP. This innovation platform sets the focus on enabling collaborations between startups with digital solutions for the future of mobility and large industry players that supply their resources for the access to new technology innovations (Unternehmertum, 2017).

4.2.3 Startup Autobahn – The Plattform

Europe's largest innovation platform started in May 2013 in an initiative by automotive manufacturer Daimler to establish a hub for collaboration between industry partners and startups in the Stuttgart area in Germany. The underlying aim is the formation of a startup ecosystem in a region that is rather known for large, global firms and German engineering than significant entrepreneurial activity. With a focus on the topics future of mobility and industry 4.0, Startup Autobahn offers an open platform environment, where startups and large firms can

mutually benefit from the respective others' input. Following the initiative of founding member and first industry partner Daimler, Startup Autobahn was created in collaboration with Plug and Play Tech Center, the university of Stuttgart and Arena2036 (Startup Autobahn, 2017).

Plug and Play Tech Center is a branch of the American company Plug and Play and built Startup Autobahn and operates it today. The company is creating innovation platforms in collaboration with industry partner globally. What started as an independent accelerator program for startups led to the specialization of connecting startups and large firms for joint innovation projects in an open platform environment. In doing so, Plug and Play reviews 5,000 startups annually for the 180 industry partners with which it collaborates on platforms at 22 different locations to date. Thus, Plug and Play provides a global network of industry partners, mentors, business angels, VCs, as well as startups (Plug and Play, 2017). The university of Stuttgart contributes with promoting entrepreneurship and business creation amongst students, as part of its study programs and hosted events. Arena2036 is a research platform, dedicated to facilitating the development of the value chain for the future of mobility. With providing the infrastructure for research projects on highly scientific aspects of the fully digitized vehicle, Arena2036 hosts the Startup Autobahn hub at the location of its research site, provided by the university of Stuttgart (Arena2036, 2017; Universität Stuttgart, 2017).

The platform addresses partner firms with touch points to the focused fields, as well as local and international startups for participation in the hosted programs. The industry partners inquire the screening of startups suitable to their search fields in different innovation areas, upon which Plug and Play invites promising startups and screens startup application to the platform for participation in the program. At a selection day, the invited startups present their ideas to the industry partners of Startup Autobahn, who then decide on the participants on a following 100-day long acceleration program. For the second and latest program, 26 startups were connected by Plug and Play for collaboration on a total of 50 pilot projects with the industry partners during the project phase. Startup Autobahn and Arena2036 provide the resources in terms of co-working space, mentoring and coaching and access to the research facility for the three months that lead up to a so-called EXPO day. At this event, the startups present the outcomes of the pilot projects conducted in collaboration with the

partner firms to a broad panel of industry representatives and investors, for a chance to allocate investments and establish further partnerships, beside a potential continuation of the collaboration with the industry partner from the pilot project phase (Daimler, 2017; Startup Autobahn, 2017).

The establishment of this eco-system not only leads to a rising interest of startups to enter the program, but as well an increasing number of industry partners, collaborating on the platform. With Porsche, ZF Friedrichshafen and BASF, to only name a few representatives of both OEMs and supplier firms from the automotive industry, several strong partners add to the increasing attractiveness of Startup Autobahn for both startups and, in succession, even more partner firms (Startup Autobahn, 2017).

For the following chapter, the presented cases of Daimler, Vimcar and Startup Autobahn will serve as foundation for the analyses and interpretation of the data collection on the three cases. The insights generated from the in-depth interviews with the respective company representatives will help in examining the role that the engagement in collaboration strategies plays in order to create relevant knowledge in the face of radical changes. Drawing on the insights from the forgoing company cases and referring to the theoretical framework, the findings and results will be discussed subsequently.

5. Data Analyses and Interpretation

The following chapter presents the aggregated insights from the three different viewpoints of the case companies. Building on a brief introducing of the respondents and their role and responsibility within the respective organization, a summary of the key aspects mentioned by the representatives in connection to the scope of this work will be delineated.

5.1 The Large Firm Perspective

The respondent representing the case firm Daimler is the responsible point of contact between the automotive manufacturer and the innovation and collaboration platform Startup Autobahn. With a position in the business innovation department, she is responsible for the establishment and administration of all initiatives that concern collaborations for access to external technology innovations. Being the gatekeeper between the internal organizational structures and the external startup environment, it is a large part of her daily business to facilitate an efficient collaboration process between the different partners.

When talking about the developments in terms of digitization, she describes that there is such a high degree of disruption in the market that there is a certain fear of established business models becoming obsolete. Various tendencies, such as the electrification of the engine, fully connected vehicles and autonomous driving are taking over in significance. These trends lead to an establishment of search fields for innovations that internal capabilities do not deliver yet. Additionally, the market entry of large players, such as Google and Uber provoke a need to act. Thus, there is a rising interest in collaborating for access to external know-how. Such collaborations can then lead to the decision to jointly create a program like Startup Autobahn. Not long ago, the collaboration between a startup and Daimler would have been completely illusive. However, the abundance of new ventures entering the automotive market with innovations that lie beyond Daimler's core competences drive the awareness that collaborating is the only way to stay in touch with the current developments.

As part of the dedicated innovation department, she is responsible for the evaluation of new partnerships between Daimler and startups. With the establishment of Startup Autobahn, the fundamental goal is to create an innovation ecosystem and raise the visibility of the region, in order to get the startups to come to Stuttgart. The own engineering skills bear huge potential to be connected with the startups' capabilities and leverage on the connection of know-how. In doing so, Startup Autobahn is a novel approach that exists for only a year. A program with such an underlying structure and number of participating startups did not exist before, according to her.

The respondent states that in partnering with other large firms, the aim is to raise the attractiveness of the platform. Involving partners like Porsche that are frenemies – friends and enemies at the same time – is a trade-off between sharing potentials with competitors and increasing the value-add for the collaboration and innovation platform. She states that the objective of bringing the external knowledge straight to the own firm has priority when considering new partnerships. However, in her experience, it is a slow-moving process to communicate this new approach throughout the entire organization and get employees to engage in the process. The "not-invented-here-syndrome" is a reality that needs to be overcome by engaging in change management. A certain arrogance towards startups and the recognition of the potential in collaborating with them is subject to pressure from the very top of the firm. The top management is committed to drive a cultural change and openly communicates the need to incorporate different practices and implement the new technologies. According to the respondent, the portion of employees that understand the need to change in order stay move with the current developments is constantly rising. As member of the innovation department, it is part of her work description to act as a matchmaker and drive the implementation of new innovations by initiating collaborations with startups.

However, the rising number of problems in view of the technological developments facilitate that cannot be solved autonomously, facilitate the openness to engage in the pilot projects with the startups on the Startup Autobahn platform. The respondent is being approached by the different specialist departments that have existing search fields for technologies and innovations and want to be connected to startups with relevant capabilities. At the point where a promising startup with the right technology and a valid use case participates in the

program, she establishes contact between the specialist department and the startup in order to facilitate the collaboration for the pilot phase. The startup then gets assigned a role as official supplier of Daimler and starts the project work with the respective specialist department. In an ideal case, this phase leads to a relationship as collaboration partners with which both sides benefit from access to the complementary resources.

The respondent states that from the large firm point of view, this process requires a novel skillset of agile project management, design thinking and others, that barely exist within the existing organizational structures. Hence, it would be utopian to aim at accessing external capabilities for all tasks at hand. However, she has the impression that the overall tendency at Daimler points towards more openness towards external know-how.

5.2 The Startup Perspective

In order to engage a startup perspective on the current developments at the interface between large firms and startups in the automotive market, the insights of a highly-successful startup have been included in the data analyses. The respondent is the co-founder and CEO of Vimcar. With his startup, he is in the process of engaging in various collaborations with large firms in the automotive industry and has diverse experiences from trying to establish contact with the automotive manufacturers.

The respondent states that from a startup point of view, an automotive manufacturer is always seen as an attractive partner. For the business model of his startup, the establishment of collaborations with the large firms is essential in the long run. Given that Vimcar sells a service with direct touch points to the vehicle, it is crucial to position the startup close to the automotive manufacturers in order to pursue the objective of being integrated as an add-on service with the next generation of vehicles. As the OEMs sell the core product, they are in the best position to bring the product to market – with all additional services. However, this does not imply that the firm has to produce such services itself. Especially in the case that the issues are beyond the competences of the OEMs. Hence, the main motive in establishing partnerships with automotive manufacturers for Vimcar is being close to the vehicle as core product to benefit from the market potential that such collaborations entail. He states that in

this regard it is secondary which strategy the large firm has. As the startup is the small player, it has to react and cope with all methods.

The respondent states that to these terms it is the biggest challenge for a startup to establish contact with the decision-makers at the large firms at first. The number of specialist departments that could hypothetically be the right touch points for the startup, lead to the situation where both sides have to attune to the challenge that ways of decision making differ significantly. On the one hand, startups encounter more and more open doors. On the other hand, the pace of decision making is mostly consistent. The cultural challenge of coping with these processes and the tendency to be looked upon in an arrogant manner, are some of the biggest difficulties pursuing partnerships with the large firms. According to the respondent, he regularly notices the tendency that automotive manufacturers underestimated the development of seemingly simple frontend-software for a long time. Due to the complexity of their incumbent business model, the large firms approached novel solutions with the attitude that they could easily develop competitive solutions internally. However, the respondent remarks that such an approach is not scalable anymore, when it comes to digitization.

He argues that digital services are versatile, vertical and fast moving. With the potential to solve thousands of problems around the vehicle, it is becoming increasingly unrealistic that automotive manufacturers can provide outstanding solutions within all these fields. Hence, the large firms benefit from the possibility to allocate specialist knowledge next to the own core competences, when collaborating with startups like Vimcar. According to the perspective of the respondent, the OEMs need to consider the position they want to take up today. Operating in a target-oriented manner is only possible, if the chosen approach fits the internal capabilities.

Generally, he has the impression that there is a general tendency towards more openness. However, an automotive manufacturer has to be able to move alongside the pace of the current developments without the incumbent organizational structures hindering the process of change. The respondent still sees the tendency to cling to short-term benefits and thus delay decisions with disruptive potential. Yet he states it being a fact that certain problems

can only be solved by collaborating across manufacturers together with providers of new solutions.

5.3 The Platform Solution

Startup Autobahn represents a novel approach to facilitate the openness in collaborating and thus accessing the technologies and innovations that lie beyond the internal capabilities of the large firms. At the same time, it enables startups to get easy access to the automotive manufacturers and potentially capitalize on the own innovation with the support of a large firm's resources. The respondent representative of Startup Autobahn works in a project managing function on the platform and is involved in facilitating the efficient collaboration of industry partners and startups on a daily basis. Hence, she can draw on numerous insights from the encounters of representatives from both sides and has a good perception of the opportunities and challenges of the open platform approach to collaboration.

According to the respondent, Startup Autobahn is exceptional in gathering several large firms as potential collaboration partners on one platform and making them accessible to the startups through a single point of contact. In her eyes, a perception grows both on the side of the industry partners, as well as on the part of the startups that most promising approach to solving the current challenges is partnering up. This tendency increases the interest in collaborating on both sides. She admits that such collaborations could as well be established autonomously by the large firms, however, the independently organized and moderated platform suspends the administrative efforts for both sides.

The respondent describes that the vision in founding Startup Autobahn was to provide an independent platform right from the start. However, for the large firms it is a far-reaching challenge to open up to such an approach. The integration of the internal departments and promotion of a culture of openness has the character of change management. According to the correspondent, the platform process of providing the access the new ideas and facilitating a fast collaboration processes is often first met unassertive. It is mostly the management level that first has to be convinced of the opportunities, before the enthusiasm spreads into

the different departments. Startup Autobahn commits itself to this process by facilitating collaborations between industry partners and startups that happen on eye-level.

She describes that on the part of the large firms, the matchmaking contact persons that operate on the interface between industry partner and Startup Autobahn, or startups respectively, play the crucial role in facilitating the partnerships. These functions, which are called champions on the platform, bring together the responsible employees in the R&D department of the large firm and, for example, an employee in the department for engine development, with the suitable startup. For such projects, the contact person needs to be able to drive enthusiasm internally. After some first successful projects the internal word-of-mouth is supporting these processes, but in the beginning, it is all about a first proof of function. The respondent stresses the importance of the contact person for the success of the platform model. As the communication between the departments within the large firm is not ascertained, a matchmaker is needed that is in touch with the right points of contact, provides needed answers in time and knows how to speed up internal processes. Without such a person that coordinates the collaboration with Startup Autobahn internally and has an overview of the various stakeholders, the whole concept would be diluted.

In this regard, she states, Startup Autobahn is one approach to preparing the large firm for the future and adapting the internal mentality with change management. The prospect of collaborating faster and at less cost while gaining access to innovations and new technologies is significantly supporting the process. When it comes to the startup perspective, the knowledge that the platform provides the relevant contact at the large firms in order to quickly engage in joint pilot projects is key. A participation in such a program and the proof of successful pilot projects with industry leaders helps the startups to gain traction and drive growth. However, the respondent states that many startups still remark that collaborations with large firms are partly very slow, despite the platform.

In her eyes, it is crucial for the industry partners to further open up and engage in smaller trial and error projects. The technological transformation of the industry brings an ever-growing number of novel competitors in the market that put the large firms' market shares at stake. This demands the incumbent firms to rethink their approach and collaborate with new

players that are further in the digital field. She states that this could even mean engaging in collaborations with players like Google. The internal assets to cope with all trends autonomously, while the core business still remains in focus, are simply not existing. In order to facilitate the collaboration with digital players that are able to compensate for the lacking internal resources, the main issue will be a cultural change within the large firms, she observes. As a large part of the existing organizations still ignores the current developments, despite the successful approaches like Startup Autobahn, the internal education remains one of the biggest tasks.

6. Conclusion

The far-reaching impact of technology innovation on organizations within all industries imposes the need to adapt for incumbent firms. Where established business models led to the development of leadership roles within the industry, new technologies impose the threat of obsolete. It is especially digitization and its transforming impact on all part of the value chain that results in countless new possibilities for the creation of innovations. With both the many new entrants to established markets and customers growing familiar of the new possibilities, incumbent firms have to adapt in order to maintain their position. Especially the agility and creativity of startups in reacting to the current developments, results in large disruptive potentials that affect leading industry players. In slowly realizing the tendencies, many large firms find themselves in the situation that the resources and capabilities required to compete at the cutting-edge of technology lie far beyond their organizational capabilities. The myriad of new innovations that build on the existing business models of the incumbent firms, are impossible to cope with internally. Even with large R&D departments and traditionally strong innovation cultures, large firms have to realize that it is hardly possible to develop own solutions in every possible field, while maintaining their core business. The resolution promises to be collaboration for the access to external knowledge. By engaging in partnerships with innovative startups that drive the new technologies, incumbent firms get the chance to tap into resources and capabilities that they are lacking internally. But not only the large firms profit from such arrangements. While the incumbent players seek access to the innovativeness and entrepreneurial capabilities of the startups, the other side is lacking access to the marketing and distribution channels that allow them to capitalize on their innovations. Combining their complementary resources can benefit both the startups and the large firms in profiting from joint innovation and keeping up with competition.

In investigating this issue, the author pursued the aim of creating new insights on the latest advancements in regard to collaboration strategies in innovation. The fundamental question in this endeavor, was how large firms in the automotive industry react to the current developments and how startup knowledge can be accessed by engaging in novel forms of collaboration. The insights gathered to this effect will be discussed in the following chapter.

6.1 Discussion and Implications

Building on the insights from the theories analyzed with the theoretical framework of this work, the author wants to discuss the findings of the company cases. This will help to make assumptions on the validity of the consulted theory and thus derive practical implications for application in managerial practices.

In succession of disruptive technology innovation, many new players enter the market in a pursuit to claim their stake in the commercialization of the new technology (Rothaermel, 2001). This process can be observed when looking at the German automotive industry. While the new technology emerges, a variety of startups leaps on the existing value chain of the automotive manufacturers and creates new solutions that incorporate on the growing opportunities. By building on the existing infrastructure with a novel combination of attributes, these startups follow the performance trajectory (Bower & Christensen, 1995). Vimcar bases its innovation on the existing base of manufactured vehicles that Daimler and other incumbent firms within the automotive industry produce. While the startup solution is improving rapidly in gaining market share, Daimler does not benefit from the innovative offering. However, many large firms seem to be at the point of realizing that the internal organizational knowledge base will not suffice the new challenges. Efforts to explore new knowledge are incorporated by engaging with promising startups right after their entry to the market. In seeking collaborations with startups via a variety of different approaches, Daimler pursue the aim of tapping into early-mover advantages over other large firms. The analyzed approach of driving an open collaboration and innovation initiative with focus on innovation fields that are crucial to the future core business model of the firm, helps Daimler in the fast identification of new knowledge combinations among the startups. By creating the environment, in which the members of the own organization are enabled to create and share tacit knowledge in collaboration with a variety of different startups, Daimler ensures access to the knowledge combinations and thus the chance to profit from the technological change (Grant & Baden-Fuller, 2004; Nonaka & Takeuchi, 1995).

Startups like Vimcar that engage in collaborations, perform as innovation partners for the automotive manufacturers. By contributing their specialist knowledge, they enable the incumbent firm to exploit a new innovation. However, the large firms need to open up their internal innovation process, in order to profit from the access to the complementary assets that are not available internally. In connecting employees of the own R&D department with startups for the joint exploitation of innovations in pilot projects, Daimler increases both the exploitation of internal and external knowledge (H. Chesbrough, 2006; Hogenhuis et al., 2016).

Such approaches to open innovation require a structured approach to facilitate an effective process of leveraging the external innovation. As West & Bogers (2013) suggest with their four phase model, Daimler attempts to integrate the obtained innovations into its own R&D, by connecting the employees with the startups in an simplified process outside the own organizational structures. In a process of weekly meetups and iterative feedback loops during the pilot projects at Startup Autobahn, the joint innovation process is under constant development. With the appointment of gatekeeping functions, or champions, as they're called in the case of Startup Autobahn, Daimler pursues to ensure an efficient use of the created potentials. In holding this function as employee of Daimler, the respondent that was interviewed during the qualitative data collection, affirmed the significance of her role. Orchestrating the external endeavors internally in connecting to Startup Autobahn and the startups participating in the program respectively, as well as to the relevant internal stakeholders, the role of the gatekeeper is crucial for the eventual aim of commercializing an innovation (Weiblen & Chesbrough, 2015).

For the startups, the implementation of open innovation practices is an important factor in overcoming the liabilities of smallness and newness. With Vimcar engaging in collaborations with VC investors and allocating a Series A investment round of 5.5 Million Euros, an important step towards growing to a significant size and enhancing the probability of survival in the market is taken (Minshall et al., 2008; Singh & Lumsden, 1990).

However, there are as well some significant barriers to the successful engagement of open innovation activities. The "not-invented-here-syndrome" imposes a significant threat to effective collaboration with startups. When Vimcar tries to facilitate contact with an automotive manufacturer in the pursuit of leveraging the own innovation by collaborating with a large firm, this pitfall can hinder the success of the entire process. For the employees of Daimler, previously engaged with the integration of very successful own innovations with relation to the core business, it can be a difficult process to open up to the new collaborators in the Startup Autobahn programs. With completely different organizational cultures and communication barriers in place, such threats can impede the entire process (Witzeman et al., 2006). Further, both startups and large firms are faced with external barriers, such as potential knowledge loss, increasing complexity and higher coordination cost on the one hand. On the other hand, profiting from open innovation can be internally limited by difficulties in partner discover and finding the right balance between the core business and open innovation. In the structured approach of an independent collaboration and innovation platform like Startup Autobahn, the purpose is to centralize these issues and establish an ecosystem in which both large firms like Daimler and startups like Vimcar can focus on profiting from their complementary capabilities for the successful commercialization of new technology innovations (Enkel et al., 2009; Weiblen & Chesbrough, 2015).

With large firms being under pressure to act upon the developments initiated by radical technological change and the emergence of various modes of coping with these threats, more incumbent firms need to take the approach chosen by Daimler. While trying to reinvent its business model, the firm tries to effectively balance open innovation activities with maintaining the traditionally strong position in its core business. However, from a startup point of view, the current developments are still far beyond satisfying. Communication barriers remain high and the new entrants are certainly faced with an unjustifiable arrogance from many angles. In order to create an environment of prospect where all sides can profit from the gradually developing technology innovations, there is a significant need for more cultural openness. Approaches to solving the existing barriers, such as independent collaboration and innovation platforms like Startup Autobahn are in need across all industries. Driving

change within the organization, however, remains the largest task for the incumbent companies.

To close with the promising example of Daimler, most of the current endeavors of the firm are aimed at grasping the opportunities that technological change and new innovations bring all across the automotive industry. The car manufacturer shows that it is aware of these opportunities, as well as the threads that new entrants to the industry impose with their superior knowledge about the new technologies. To let Daimler's CEO Dr. Dieter Zetsche conclude with his own optimistic view, "The examples show that the German premium manufacturers are by no means on the receiving end of "Car Industry 4.0," but are massively driving the process of change themselves. [...] More than ever before, the car has the potential to be a motor for social change—not least thanks to a combination of the automotive and digital worlds." (Zetsche, 2017, p. 218f).

6.2 Limitations of the Study and Directions for Further Research

The coherence of the constructed theoretical framework and the data collected with the qualitative research for the case study of this work, imply a high relevance to the research question in focus. However, the subject matter of this work will likely develop far beyond the current state of research and is therefore far from a point of completion.

This research was essentially designed to drive a more profound understanding of the latest approaches to collaborating for the access to external knowledge in view of technological change. The selected qualitative research design cannot be assumed to cover the topic to a fully viable extent. By applying the research topic to a novel phenomenon, it can be assumed that the development of the field is still subject to ongoing change and adaptations.

In terms of the chosen case, the selection and variety of case companies is certainly a limiting factor as well. Despite the author being provided with contacts and data to gain a sufficient overview of the ongoing events, the study of the research field remains limited to the insights on the case companies. There is a fair chance that the outcomes would be significantly differing from the ones generated with this work, when choosing to engage with a different sample of case companies.

Besides, the author could only conduct three expert interviews with one representative per chosen case company. This limited sample size can be attributed to limited access to the companies and long-lasting set-up arrangements, which ultimately led to the situation that two potential interview partners could not be included in the sample anymore. In connection to the interviews, an additional limitation might be the data collection in German. While this might have facilitated more comprehensible insights on the one hand side, the translation of the data for the purpose of analyses and incorporation in the presented work might have suffered from a certain loss of context during the translation.

When it comes to the observation of knowledge creation in the scope of the observed case, it was not possible to come to substantial conclusions. The data indicated a positive relation between collaboration in the presented frame and knowledge creation, however the author had to reach back to inductive implications in order to bring sufficient meaning to the data. This might have limited the analyzed data, as it was subjectively interpreted by the author.

Future research should mainly focus on the two main aspects that constantly recurred during data collection. The first aspect is the cultural variable in its reference to open innovation activities. Each interview partner stressed the importance of this aspect for the collaboration endeavors. A culture of openness towards change within the own organization, especially with an emphasis on external influences, poses a promising research field to drive a further understanding on how to foster such developments. It seems to a highly difficult task for an organization to encourage the openness of its members and drive on overarching organizational change. Implications from future research on this field might thus be highly applicable.

The second aspect is the extreme importance of the gatekeeper, or matchmaker, at the intersection between large firm and startup. The significance of this role for the establishment of successful collaborations has been emphasized continuously during the conducted interviews. Existing research is not quite paying the same importance to this function within large firms. Given the impact of the sphere of responsibility on the ability of a large firm to benefit from its open innovation activities, it seems a promising task to further examine this aspect.

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Appendix

Interview Transcripts

Transcript #1 – Andreas Schneider, Vimcar (Co-Founder und CEO) – 01.09.2017

Philipp Götz: Welche Herausforderungen bringt die Digitale Transformation aus deiner Sicht für etablierte Unternehmen im Automobilbereich?

Andreas Schneider: Verschiedenste Unternehmensbereiche unterliegen digitalen Herausforderungen. Sei es der Vertriebsprozess, bei dem die komplette Fahrzeugkonfiguration mittlerweile vom Kunden digital ausgeführt werden kann, oder tatsächlich die gesamte Produktion – Industrie 4.0 ist das Stichwort. So gesehen sind die Herausforderungen eine Matrix aus Unternehmensprofil – Hersteller und Zulieferer, näher am Kunden oder ohne direkten Kontakt – und dem Bereich der Digitalisierung – interne und externe Prozesse oder Services für den Kunden.

Philipp Götz: Wo siehst du die Herausforderungen der Digitalisierung aus OEM-Sicht konkret im Innovationsbereich?

Andreas Schneider: Hier steht für mich die Frage im Fokus, welche Services dem Kunden angeboten werden sollen - und dabei insbesondere, ob diese Angebote selbst produziert werden sollen, oder ob ein offenes Ökosystem nach Vorbild von Apple und Google geschaffen werden soll, in dem externe Dienstleister ihre Services anbieten können. Ich glaube ein OEM muss sich heute überlegen, welche Position er hier einnehmen will. Denn nur dann kann er operativ zielgerichtet vorgehen.

Philipp Götz: Wie versuchen etablierte Unternehmen deiner Erfahrung nach Kompetenzen aufzubauen, um mit diesen Herausforderungen umzugehen?

Andreas Schneider: Wir erkennen bei unseren Gesprächen mit der Automobilindustrie verschiedene Ansätze. Einer davon ist schlichtweg ohne spezielle Herangehensweise vorzugehen und wie bisher zu versuchen, die existierenden Fachabteilungen auf neue Herausforderungen vorzubereiten. Für die Frage, ob man neue Services selbst entwickelt, oder

dafür mit Startups wie Vimcar kooperiert, muss das in diesem Fall dann die zuständige Fachabteilung entscheiden. Ein Beispiel ist Audi Connect. Diese Fachabteilung ist für die Bereitstellung von digitalen Diensten für den Kunden im Auto verantwortlich. Insgesamt werden bei dieser Herangehensweise also einzelne Fachabteilungen so entwickelt und gecoacht, dass sie mit den Herausforderungen durch die Digitalisierung eigenständig umgehen können. Der andere Ansatz ist, spezielle Teams oder Projektmaßnahmen zu schaffen. Ein Beispiel hierfür ist der sog. „Fast Track“, den die Volkswagen AG auf Gruppenebene für junge Unternehmen präsentiert hat, die mit Volkswagen kooperieren möchten. Das Ziel ist es, innerhalb von wenigen Wochen entscheiden zu können, ob mit einem Startup kooperiert wird und ein neues, digitales Projekt umgesetzt werden soll. Eine Task Force mit Unterstützung von Spezialisten aus den betroffenen Abteilungen trifft dabei in enger Abstimmung mit dem Top Management innerhalb kürzester Zeit die entsprechenden Entscheidungen. Mit diesem Ansatz soll verhindert werden, dass Entscheidungen in Unternehmenshierarchien versanden. Es geht also vor allem um Geschwindigkeit. Diese ist auch für uns eine der größten Herausforderungen. Einerseits stößt man zwar auf offene Ohren, andererseits ist aber die Entscheidungsgeschwindigkeit oft nicht gegeben. Hier kann der erwähnte Task Force-Ansatz helfen. Ein zusätzlicher Ansatz ist das Schaffen eigener Gesellschaften oder spezialisierter Teams. Beispiele hierfür sind BMW mit der BMW Startup Garage, Audi mit der Audi Business Innovation und der Audi Denkfabrik, oder Volkswagen mit Volkswagen Digital Labs und Volkswagen Data Labs. OEMs folgen diesem Ansatz momentan mehr und mehr und schaffen Innovationsabteilungen und -gesellschaften, die außerhalb der eigentlichen Organisationsstruktur angesiedelt werden. Diese verfolgen das hauptsächliche Ziel, Projekte mit hoher Geschwindigkeit zu pilotieren, bevor sie an die jeweiligen Fachabteilungen übergeben werden. Daneben ist ein weiteres Modell, in Konzepte zu investieren. Mit Venture Capital-Initiativen von OEMs, wie beispielsweise BMW i Ventures, wird der Ansatz klassischer Risikokapitalgeber verfolgt. Dabei wird in Startups investiert, die einen engen Bezug zum eigenen Geschäftsmodell haben und ein Konzept verfolgen, das zu einem späteren Zeitpunkt eventuell übernommen werden soll. Dieses Modell ist insofern die Extremvariante, als dass innovative, junge Unternehmen nicht mit den Organisationsprozessen der OEMs aufgehalten werden sollen. Der Hauptgedanke hinter diesem VC-Ansatz ist einerseits, früh zu kooperieren, während andererseits sichergestellt

wird, dass sich die Startups unabhängig weiterentwickeln können. Wenn die Startups anders als bei diesem Ansatz direkt aufgekauft oder mit der internen Innovationsabteilung connected werden, verlangsamen sich die Entscheidungen wieder und der Startup-Effekt verfliegt.

Philipp Götz: Welche Rolle spielen Kollaborationen mit etablierten Unternehmen für Vimcar?

Andreas Schneider: Für uns ist das Ziel Kooperationen mit Automobilherstellern abzuschließen zentral, da es für unser Geschäftsmodell langfristig notwendig ist, nah an den Automobilherstellern dran zu sein. Das liegt vor allem auch daran, dass jeder Automobilhersteller gerade unterschiedliche Strategien entwickelt, wie mit Fahrzeugdaten umgegangen werden soll und wer darauf zugreifen darf. In dieser Hinsicht müssen wir uns als Startup richtig positionieren, um unser Ziel verfolgen zu können, dass jeder Automobilhersteller Vimcar als Zusatzservice in die neue Generation von Fahrzeugen integriert. Dabei ist für uns nachgelagert, welche Strategie der einzelne Hersteller verfolgt. Letztendlich sind wir der kleine Player, der reagieren und sich mit allen Methoden anfreunden muss. Ein Beispiel ist die Zusammenarbeit mit dem Volkswagen-Konzern. Hier versuchen wir auf diversen Seiten ins Gespräch zu kommen, gehen auf die einzelnen Fachabteilungen zu und sprechen mit einzelnen Innovationsabteilungen auf Gruppen- und Marken-Ebene. Als Startup muss man schlichtweg alle möglichen Ansätze versuchen - nach dem Motto „viel hilft viel“.

Philipp Götz: Um welche Arten von Kollaborationen handelt es sich konkret?

Andreas Schneider: Wir haben gerade eine Vertriebs-Kooperation mit einer Tochter der Volkswagen-Gruppe gestartet, bei der kein spezielles Startup-Konstrukt involviert war. Über einen Kontakt mit der zuständigen Fachabteilung, die auf uns zugekommen ist, hat ein ganz normaler Kooperationsprozess stattgefunden. Grundsätzlich war der Prozess nicht sonderlich innovativ, hat aber trotzdem sehr gut funktioniert. Das ist allerdings nicht immer der Fall. Bei einem anderen Automobilhersteller ist der Versuch eine Kooperation abzuschließen, sowohl über die Fachabteilung, als auch den hauseigenen Startup-Inkubator und den VC-Arm, nicht gelungen. Grundsätzlich läuft der Prozess bei den Startup-Inkubatoren oder Innovation-Abteilungen mehrerer Hersteller erfahrungsgemäß sehr ähnlich ab. Als Startup,

bzw. junges, digitales Unternehmen, sucht man den Kontakt und pitcht die eigene Idee. Die entsprechenden Abteilungen sind erstmal sehr offen für neue Ideen – da es ihr Auftrag ist, offen zu sein. Sie kennen meistens die Konzernstrukturen sehr gut und platzieren das jeweilige Thema dann bei den unterschiedlichen Fachabteilungen. Wenn das Thema Potenzial für eine Fachabteilung hat, wird das Startup direkt mit dieser Abteilung connected. Wenn auch dort Interesse besteht, hilft die Innovation-Abteilung, die Idee außerhalb der normalen Konzernstrukturen schnell zu pilotieren und achtet darauf, dass das Thema schneller als sonst üblich behandelt wird und nicht versandet. Das liegt vor allem auch daran, dass man bei OEMs merkt, dass es bei digitalen Themen vor allem um Geschwindigkeit geht und die normalen Organisationsstrukturen hierfür nicht greifen, weil sie zu langsam und schwerfällig sind.

Philipp Götz: Welche Motive verfolgt Vimcar bei der Zusammenarbeit mit etablierten Unternehmen?

Andreas Schneider: Wir verkaufen einen Service im Umfeld des Autos – daher ist unsere Motivation letztendlich das Absatzpotential. Für uns und die meisten Startups in unserem Bereich, gibt es keinen prädestinierteren Partner, um einen solchen Service zu bewerben, als den Automobilhersteller selbst. Der OEM verkauft das Kernprodukt und ist daher auch in der besten Position, um Services um das Produkt herum zu vermarkten. Das bedeutet allerdings nicht, dass der Automobilhersteller diese selbst entwickeln muss – gerade wenn die Themen zu speziell sind und das firmeninterne Tempo zu langsam ist. Für uns heißt das, dass VW, Audi, BMW, etc. letztlich unseren Service am besten verkaufen können. Dementsprechend ist unsere Motivation, nah am Auto als Kernprodukt dran zu sein und zusammen mit dem Auto verkauft zu werden.

Philipp Götz: Welchen Mehrwert bringen Startups wie Vimcar den Automobilherstellern?

Andreas Schneider: Digitale Services sind sehr vielfältig, vertikal und schnelllebig. Tausende von Problemen können rund um das Auto gelöst werden. Aber es ist schlichtweg unrealistisch, dass ein Automobilhersteller in all diesen Bereichen zusätzlich zu seinen

Kernkompetenzen exzellente Arbeit leistet. Es wäre vermessen zu erwarten, dass ein Automobilhersteller neben dem Fokus auf das Kernprodukt zusätzlich die beste Navigations-App, die beste Nachrichten-App oder das beste digitale Fahrtenbuch entwickelt. Wir helfen den Automobilherstellern als Spezialist die beste Lösung für ein spezifisches Problem außerhalb des eigenen Fokusgebiets anbieten zu können. Bei Vimcar beispielsweise machen 60 Leute nichts anderes, als die Lösung des Fahrtenbuch-Problems mit einer tollen Customer-Experience zu verbinden. Der Mehrwert für die Automobilhersteller ist dabei letztendlich, durch die Zusammenarbeit mit Startups wie Vimcar für eine Vielzahl von Problemen den entsprechenden Spezialisten mit an Bord holen zu können.

Philipp Götz: Wie sehen OEMs deiner Meinung nach die neuen großen Player wie Google, Uber und Co., die sich aktuell stark auf das Thema Mobilität fokussieren?

Andreas Schneider: Das Mobilitätsproblem – im Sinne von „wie komme ich von A nach B“ – konnte bisher durch den Kauf, bzw. das Leasing eines Autos gut gelöst werden. Aktuell entwickelt sich das Thema weg vom reinen Fokus auf das Auto. Player wie Uber - deren Ansatz grundsätzlich auch der Transport von A nach B ist - leisten dabei mehr, als nur das Auto bereit zu stellen. Uber kauft das Auto, bzw. die Dienstleistung eines Fahrers, und konzentriert sich auf die Allokation von Mobilität zwischen denjenigen, die sie in einem gegebenen Moment suchen und denjenigen die sie bereitstellen können. In der klassischen Automobilindustrie muss auf Herstellerseite entschieden werden, mit welcher Strategie man auf diesen Trend reagiert. Das kann einerseits bedeuten, dass man die Entscheidung trifft, selbst ein umfassender Mobilitätsdienstleister zu werden – indem man in Zukunft nicht mehr nur Autos baut und verkauft, sondern sich auf angrenzende Mobilitätsangebote neben dem Auto fokussiert. Daimler versucht beispielsweise das Mobilitätsproblem so ganzheitlich zu lösen, dass Themen verfolgt werden, die mit der Produktion oder der Distributionsform des Autos nicht mehr viel zu tun haben. Dabei steht die Gesamt-Experience für den Kunden bei den Themen Mobilität und Reise im Fokus. Ein Teilbereich ist hier der Übergang zwischen Auto und öffentlichem Nahverkehr oder auch das Roller-Sharing. Andersrum können Automobilhersteller dieses Feld natürlich auch anderen Playern überlassen und sich bewusst voll und ganz darauf konzentrieren, gute Autos zu bauen. Diese werden immer gebraucht, ganz egal, wie sie am Ende beim Kunden landen. Das kann bedeuten, die Autos weiter wie

bisher eigenständig oder über Händler direkt an den Endkunden zu verkaufen, oder sie in Zukunft zu vermieten – egal ob Monats-, Wochen- oder Minutenweise – oder sie vielleicht auch direkt an Uber zu verkaufen. Ganz nach dem Motto „Wir können Autos bauen, aber das können wir sehr gut“. Ich denke das sind die beiden Extreme, in deren Spektrum eine Antwort auf die aktuellen Herausforderungen gefunden werden muss.

Philipp Götz: Wie wird vor Zustandekommen einer Kollaboration bewertet, ob die Ressourcen und Fähigkeiten der potenziellen Partner zusammenpassen?

Andreas Schneider: Aus Startup-Perspektive wird ein Automobilhersteller per se als attraktiver Partner eingestuft. In der Rolle des Kleineren in irgendeiner Form eine Kooperation mit einem der großen Hersteller auf die Beine zu stellen, ist in jedem Fall Grund zur Freude. Es gibt meines Erachtens nach wenig kleine Unternehmen, die den großen Automobilhersteller vorab als Partner in Frage stellen und überlegen, ob eine Kooperation für das eigene Unternehmen attraktiv ist. So gesehen wird aus Startup-Sicht zu Beginn von Kooperationsgesprächen relativ schlampig evaluiert. Wenn es dann letztendlich um harte Zahlen geht und die Aufteilung von Umsatzpotentialen diskutiert wird, muss natürlich dennoch objektiv bewertet werden, ob ein Deal aus der Perspektive des Startups tatsächlich sinnvoll ist. Aus OEM-Perspektive werden Startups zu Beginn sehr genau unter die Lupe genommen. Dabei spielt vor allem die Frage eine Rolle, ob ein Startup ein stabiler Partner sein kann. Wenn BMW beispielsweise beschließt, Vimcar in alle zukünftigen Fahrzeuge zu integrieren, muss natürlich sichergestellt werden, dass das Startup in drei Jahren noch existiert - alleine diese Vorlaufzeit wird benötigt, um die nächste Fahrzeuggeneration auf die Straße zu bringen. Ganz generell gilt unabhängig von der Industrie, dass Kooperationen zwischen Startups und großen Unternehmen aus Hersteller-Perspektive meistens erstmal ein Vertrauensproblem überwinden müssen. Was beiden Seiten bei der Evaluation zudem bewusst sein muss, sind die großen Zeit- und Upfront-Investments, die solche Kooperationen bedeuten. Wenn beispielsweise ein gemeinsames Entwicklungsprojekt auf zwei Jahre angelegt ist und viel Geld ausgegeben werden muss, bis der erste Umsatz-Euro fließen kann, muss ein Startup es sich erstmal leisten können, in Vorleistung zu gehen. Daher steht am Anfang vor allem die Frage im Vordergrund, ob ein Startup das überhaupt alleine stemmen kann, oder ob man einen Modus findet, in dem der Automobilhersteller hilft, die

Finanzierung zu überbrücken und akzeptiert, dass ein Startup ein Startup ist. Dafür sind spezielle Startup-Einheiten meiner Meinung nach sehr hilfreich, da Fachabteilungen im Automobilbereich sonst dazu tendieren, einfach auf gewohnte Zulieferer wie Bosch und Continental zurückzugreifen, gegen die kleine Startups naturgemäß keine Chance haben. Das bremst Innovation allerdings aus. Als Startup sind Ressourcen immer sehr begrenzt und man muss sich gut überlegen, wofür man sie einsetzt. Im Vergleich zu einem Automobilhersteller kann sich ein Startup wenige Fehlschläge leisten. Wenn ich beispielsweise von meinen 15 Entwicklern für das nächste Jahr 10 Entwickler auf ein Kooperationsprojekt mit einem Automobilhersteller setze und das Projekt am Ende scheitert, weil in der letzten Instanz der zuständige Vorstand ablehnt, dann ist im Zweifel meine Firma pleite, während es aus OEM-Perspektive nur eines von vielen Forschungsprojekten war. Wenn es wirklich darum geht in eine Pilot-Entwicklung zu starten, Ressourcen zu bündeln und zu investieren, muss ein Startup sich gut überlegen, wie hoch die Erfolgsaussichten eines Projekts tatsächlich sind. Aus Sicht eines großen Automobilkonzerns ist es vielleicht nicht notwendig, aber es wäre zumindest fair, anders als bei klassischen Kooperationsprojekten, die Top-Management-Entscheidung nach vorne zu ziehen.

Philipp Götz: Inwieweit wird vor Zustandekommen einer Kollaboration über den Organizational Fit nachgedacht?

Andreas Schneider: Die erste Challenge ist aus Startup-Sicht überhaupt erstmal mit den passenden Personen und Entscheidern in Kontakt zu kommen. Bei einem großen Konzern gibt es eine Vielzahl von Abteilungen, die theoretisch zuständig sein können oder sich zuständig fühlen. Ob man tatsächlich mit den richtigen Personen in Kontakt ist, erfährt man daher meistens erst relativ spät. Dementsprechend machen wir uns darüber erst Gedanken, wenn tatsächlich Ressourcen gebunden werden sollen. Denn in dem Moment steht die Frage im Fokus, ob man wirklich an das Projekt glaubt, oder nicht. An diesem Punkt muss man im Zweifel dann auch mutig genug sein, sich dagegen zu entscheiden, wenn man in der gegebenen Situation nicht an das Projekt glaubt. Bei Vimcar gab es beispielsweise mal eine Kooperation mit einem großen Telekommunikationsanbieter, bei der das Projekt von der zuständigen Innovation-Abteilung initiiert wurde. Die Kooperation wurde gemeinsam durchgezogen und ist nach Plan verlaufen, letztendlich war das Projekt allerdings auf dem

Markt nicht erfolgreich und wurde nach einigen Monaten eingestellt. Das lag daran, dass das Unternehmen bizarrerweise so innovativ und pragmatisch war, dass solche Projekte einfach mal ausprobiert wurden. Eigentlich also eine gute Herangehensweise. Einem Startup muss aber auch bewusst sein, dass ein solches Projekt genauso schnell auch wieder beendet werden kann. Genau das war in unserem Beispiel der Fall, bei dem das Projekt nach einem halben Jahr wieder eingestellt wurde, weil die Marktzahlen nicht gestimmt haben. Rückblickend kann man sagen, dass die damals für diese Kooperation investierten Ressourcen besser an anderer Stelle investiert worden wären - nämlich nicht in die Kooperation, sondern in eigenes Wachstum. Das war für Vimcar ein bedeutender Lernfaktor. Wenn es also darum geht, wirklich Ressourcen und Entwicklungsarbeit in ein Projekt zu stecken, dann muss wirklich daran geglaubt werden und andernfalls abgelehnt werden.

Philipp Götz: Wo liegen bei einer Kollaboration die Herausforderungen in Bezug auf den Cultural Fit zwischen den verschiedenen Organisationsformen?

Andreas Schneider: Eine kulturelle Herausforderung ist, dass beide Seiten sich daran gewöhnen müssen, dass die Entscheidungsmuster sich unterscheiden. Bei Unternehmen mit digitalen Produkten und insbesondere Startups, werden Entscheidungen oft schnell und pragmatisch getroffen, Dinge einfach ausprobiert und Hierarchien existieren kaum. Wenn ich als Geschäftsführer die Kooperationsgespräche mit einem Partner aus der Corporate-Welt leite, kann ich Entscheidungen direkt am Verhandlungstisch treffen. Das gilt für die Gegenseite meistens nicht. Selbst wenn dort ranghohe Manager sitzen, existieren immer noch interne Freigabe-Prozesse, die so vielschichtig sind, dass der Pragmatismus erstmal ausgebremst wird. Das Startup muss sich daran gewöhnen und akzeptieren, dass es gewisse Freigabe-Prozesse gibt, die notwendig sind und die man nicht komplett umschiffen kann, während die Corporate-Seite sich daran gewöhnen und akzeptieren muss, dass ein Startup oft schneller verfahren will, als man es gewohnt ist. Die kulturelle Herausforderung ist meiner Meinung nach vor allem, einen guten Kompromiss zu finden. Eine zweite kulturelle Herausforderung ist, die Neigung zu einer gewissen Arroganz in der Automobilindustrie. Man erkennt immer wieder an verschiedenen Stellen, dass Automobilhersteller aufgrund der Komplexität ihres eigenen Geschäftsmodells die Entwicklung von

vermeintlich einfachen Produkten wie Frontend-Software lange Zeit belächelt und unterschätzt haben. Im Einzelfall mag es zutreffen, dass OEMs solche Produkte auch eigenständig entwickeln könnten - indem sie 50 Leute einstellen, ganz andere Gehälter zahlen und beispielsweise ein digitales Fahrtenbuch selbst umsetzen -, nur ist diese Denkweise in der digitalen Welt nicht skalierbar. Es gibt hier nicht nur das Thema Fahrtenbuch, sondern hunderte von Themen, die sehr schnell kommen und sich sehr schnell verändern. Die Rechnung, zu sagen, man entwickelt alle Lösungen selber, weil man das am besten kann, geht hier nicht mehr auf - auch wenn sie im Einzelfall zutreffen mag. Da ist die kulturelle Herausforderung, dass die Automobilindustrie von ihrem hohen Ross herunterkommen und akzeptieren muss, dass solche Denkmuster im digitalen Kontext nicht mehr funktionieren.

Philipp Götz: Siehst du einen Trend, dass diese Erkenntnis in den Köpfen auf Seiten der etablierten Unternehmen ankommt?

Andreas Schneider: Das ist abhängig von den einzelnen Herstellern. Es gibt Hersteller, die Probleme mehrheitlich eigenständig angehen und es gibt offenere Unternehmen, die in diesem Bereich weiter sind und denen bewusst ist, dass nicht alles eigenständig bewerkstelligt werden kann. Die amerikanischen Hersteller sind beispielsweise viel offener als die deutschen Premium-Automobilhersteller.

Insgesamt gibt es meines Erachtens nach aber grundsätzlich bei allen Herstellern eine positive Tendenz zu mehr Offenheit. Beweis dafür sind die ganzen Anstrengungen eigene Innovation-Abteilungen oder Startup-Kooperationsabteilungen zu implementieren, die oft direkt vom Top-Management ausgehen, weil man weiß, dass man einen zweiten Strang parallel zu den Serien-Abteilungen schaffen muss.

Philipp Götz: Inwieweit wird bei einer Kollaboration tatsächlich Know-How geteilt?

Andreas Schneider: Als Startup ist man meiner Meinung nach oft in der Bringschuld. Man sehnt sich so sehr nach einer Kooperation mit einem großen Automobilhersteller, dass man erstmal sehr offen ist, aber auch zeigen muss, was man kann und was man hat. Andernfalls ist man für den Automobilhersteller nur das kleine Unternehmen, von dem unklar ist, was

es eigentlich kann. Daher ist es sowohl nachvollziehbar, als auch notwendig, dass ein Startup die eigenen Fähigkeiten erstmal unter Beweis stellen muss. Was Know-How-Austausch und Kompetenz-Beweis anbelangt, muss ein Startup daher meiner Ansicht nach erstmal in Vorleistung gehen. Idealerweise pendelt sich das dann im Laufe einer Kooperation wieder ein. Welches genaue Know-How kleine Unternehmen, bzw. Digitalunternehmen, oder der Automobilhersteller dann einbringen, hängt vom jeweiligen Anwendungsfall ab. Vimcar bringt beispielsweise ganz spezifisches Fahrtenbuch-Know-How mit, kennt alle Produktdetails und weiß genau, wo die operativen Fallstricke im Alltag liegen. Der Automobilhersteller kennt auf der anderen Seite sein Kernprodukt am besten und weiß wie man dieses richtig vermarktet. Darüber hinaus weiß man auf Herstellerseite auch, was intern getan werden muss, um auch Zusatzservices wie ein digitales Fahrtenbuch am besten technisch zu integrieren und in die eigene Vermarktung mit einzubinden.

Philipp Götz: Inwieweit wird vor Zustandekommen einer solchen Kollaboration geregelt, wie mit der IP aus dem gemeinsamen Projekt umgegangen werden soll?

Andreas Schneider: Idealerweise schwebt beiden Seiten zu Anfang eines Kooperationsgesprächs ein betriebswirtschaftliches Kooperationsmodell vor. Wie die Erwartungen ausfallen, kann vorab grob geprüft werden, damit die Vorstellungen nicht zu weit auseinanderliegen. Am Ende müssen dann natürlich die Details verhandelt werden. Im Automobilbereich gibt es aber natürlich viele Projekte zwischen Digitalunternehmen und Automobilherstellern, die lange Zeit einen Forschungscharakter haben. Ein Startup, das Sensoren für das autonome Fahren entwickelt, die letztendlich nur ein Automobilhersteller kaufen kann, sieht sich zum Beispiel vor der Herausforderung, dass bis zur Marktreife 10 Jahre gemeinsame Forschung vergehen können. In einem solchen Fall müssen faire Methoden gefunden werden, wie ein solches Startup auch schon während dem Entwicklungsprozess entlohnt werden kann. Denn über Jahre hinweg in Vorleistung zu gehen, geht aus Sicht des kleinen Unternehmens natürlich nicht.

Philipp Götz: Inwieweit konnten Kollaborationen nach der bisherigen Erfahrung den Unternehmenswert von Vimcar steigern?

Andreas Schneider: Das ist sehr unterschiedlich. Wie erwähnt, mündet das Beispiel der Volkswagen-Tochter jetzt in einer Kooperation. Wie diese auf dem Markt funktioniert, wird sich zeigen müssen, aber aus unserer Sicht ist der Prozess insgesamt bisher sehr positiv abgelaufen. Es wurde immer transparent kommuniziert und war immer klar, was das gemeinsame Zielangebot für den Kunden ist und welcher Partner welche Leistung zu diesem Thema beitragen wird, weil die Kompetenzen klar verteilt sind. Auf der anderen Seite war aber auch bei negativen Ergebnissen die Erfahrung oft positiv. Ein schnelles, klares und begründetes Nein hilft einem Startup immer auch weiter. Bei Kooperationen bei denen die Entscheidung noch aussteht, stoßen wir auch auf ganz unterschiedliche Konstrukte. Positiv-Beispiel ist Porsche Digital, als Innovation-Abteilung außerhalb der Konzernstrukturen von Porsche, die unglaublich schnell agieren und schnell entscheiden und gleichzeitig gut mit dem Mutter-Konzern verdrahtet sind. Das erlaubt einen sehr effizienten Prozess der Zusammenarbeit. Andererseits haben wir auch enttäuschende Erfahrungen gemacht, bei denen unsere Themen versandet sind, weil es keine klaren Zuständigkeiten gab. Ehrlicherweise muss man allerdings dazu sagen, dass man sich als Startup oft auch nicht traut, solche Situationen objektiv zu bewerten - wenn von Konzernseite keine Rückmeldung kommt, ist das Thema des Startups womöglich einfach nicht spannend genug. In vielen Fällen ist das oft die ehrliche Antwort. Sehr gute Themen und große Innovationen stoßen immer auf Begeisterung und werden auch über die schlechteste Organisationsstruktur getragen, weil sie einfach so wichtig und gut sind. Auf der anderen Seite scheitern schlechte Ideen in jedem Fall. Die entscheidende Frage ist, was mit mittleren und guten Ideen passiert. Aus Automobilindustrie-Perspektive wird hier eine Organisationsstruktur und Methodik benötigt, mit der sehr gute Ideen sehr schnell auf den Markt kommen können, während gute Ideen auch durch das Konzerngeflecht getragen werden. Wenn hier kein wirksamer Ansatz gefunden wird, drohen gute Ideen liegen zu bleiben, während selbst sehr gute Ideen erst sehr spät auf den Markt kommen und Umsatz- und Marktpotenziale vertan werden.

Philipp Götz: Was sollten etablierte Automobilunternehmen deiner Ansicht nach in Zukunft anders und besser machen, um die Potenziale voll auszunutzen?

Andreas Schneider: Ich würde darauf achten, dass unabhängig der gewählten Organisationsformen und Methoden mindestens zwei Dinge sichergestellt sind. Zum einen muss man

schnell handeln können, ohne dass die bisherigen Organisationsstrukturen zum Problem werden. Zum anderen muss ein Modus gefunden werden, der zu einer gesamtunternehmerischen Ehrlichkeit führt. Beim Management eines Großkonzerns spielt eine Vielzahl von unterschiedlichen internen Interessen eine Rolle und oftmals steht man vor der Entscheidung zwischen einer Lösung mit der intern zuständigen Abteilung, die sich dazu prädestiniert fühlt, oder dem Eingeständnis, dass in gewissen Bereichen Kompetenzen eher extern gefunden werden können. Wenn die Tendenz dazu geht, den Auftrag immer eher den internen Fach-Abteilungen zukommen zu lassen, festigt sich die Ansicht, dass diese für die Lösung am besten geeignet sind. Daher muss die erwähnte gesamtunternehmerische Ehrlichkeit auf Top-Management-Level vorhanden sein, um auch unpopuläre Entscheidungen zu ermöglichen, wenn eine Kooperation mit einem Startup sinnvoller ist, als intern nach Lösungen zu suchen. Es ist öfter der Fall, dass wir mit unseren Bestrebungen nicht weiterkommen, weil es bei Automobilherstellern Abteilungen gibt, die sich für die entsprechende Thematik schon zuständig fühlen und keine externen Einflüsse zulassen wollen - auch wenn anderen Instanzen im Unternehmen letztlich klar ist, dass es in der entsprechenden Situation sinnvoller wäre, mit dem externen Partner zu kooperieren. Dieses Problem ist natürlich schwer aufzulösen, aber grundsätzlich mehr Konkurrenz und auch Projekte zuzulassen, bei denen sowohl eine interne, als auch eine externe Lösung getestet wird und am Ende mit der besseren gearbeitet wird, ist meiner Meinung nach zentral für den zukünftigen Erfolg. Daneben fehlt vielen Automobilherstellern der Mut, das unausweichliche Endszenario in Bezug auf digitale Lösungen zu akzeptieren. Meiner Meinung nach ist es unumgänglich, dass jeder Automobilhersteller AppStore-ähnliche Plattformen launcht und externe Spezialdienste in seine Autos integriert - für Musik beispielsweise Spotify, für Navigation GoogleMaps, für das Thema Fahrtenbuch vielleicht Vimcar, usw. Ich denke, grundsätzlich ist den Automobilherstellern bewusst, dass es langfristig keinen anderen Weg geben wird. Momentan wird sich aber weiter an kurzfristige Vorteile geklammert. Noch herrscht eine Denkweise, à la „Wieso sollten wir GoogleMaps integrieren? Damit lässt sich kein Geld verdienen und die Wertschöpfungstiefe ist zudem kleiner. Dann preisen wir lieber weiterhin das eigene Navigationssystem für 2.500 Euro ein.“ So entsteht die Neigung, wichtige Entscheidungen, die disruptives Potential haben, hinauszuzögern. Das zu akzeptieren und damit umzugehen ist schwierig. Dazu kommt, dass viele digitale Themen aus Perspektive der

Kunden sehr viel Sinn machen, aber nicht als Insellösung funktionieren. Unser Modell von digitalen Diensten für Flottenkunden macht aus Kundenperspektive tatsächlich nur Sinn, wenn es markenübergreifend funktioniert. Ein Kunde der beispielsweise einen Fuhrpark mit 15 Fahrzeugen betreibt, hat in den allermeisten Fällen eine Flotte aus Fahrzeugen verschiedener Hersteller. Wenn dann zum Beispiel Audi eine eigene Fuhrpark-Lösung zum Management von Firmenfahrzeugen anbietet, ist das aus Kundensicht zwar ein netter Ansatz, aber keine Lösung für die anderen fünf Fahrzeugmarken, die er in seinem Bestand hat. So macht die Lösung dann keinen Sinn mehr. Ein anderer Fall sind Modelle, bei denen es um die kritische Masse geht. Wenn ein Automobilhersteller beispielsweise eine Lösung zur Parkplatzsuche bereitstellt, bei dem Fahrzeuge der eigenen Marke erkennen, wenn ein Parkplatz frei wird und diese Information mit anderen Fahrzeugen des Herstellers teilen, funktioniert die effektive Umsetzung der Idee nur sehr eingeschränkt, wenn die Fahrzeuge anderer Hersteller nicht in das System miteingebunden werden. Wenn sich aber alle Automarken zusammenschließen, entsteht auf einmal ein positiver Gesamteffekt für den Kunden. Dieser ist allerdings nur gemeinsam realisierbar. Der Fakt, dass man bestimmte Probleme nur herstellerübergreifend lösen kann und sich dafür zusammenschließen sollte, wird von Automobilherstellern häufig ignoriert.

Transcript #2 – Marike Jensen, Daimler (Business Innovation; Connected, Autonomous, Shared & Services, Electric / Electric Vehicle Architecture) – 05.09.2017

Philipp Götz: Welche Herausforderung birgt die digitale Transformation für etablierte Automobilkonzerne?

Marike Jensen: Grundsätzlich umfasst gerade kaum jemand, wie weit Digitalisierung eigentlich reicht. Es herrscht Unsicherheit, wie weit Digitalisierung geht – bedeutet Digitalisierung, eine App aufzurollen, oder das gesamte Business Modell umzustellen und digitale Geschäftsmodelle zu entwickeln? So gesehen kann man gerade kaum beantworten, was Digitalisierung alles umfasst. Im Endeffekt geht es darum, dass derzeit so viel Disruption im Markt herrscht, dass die Angst besteht, dass etablierte Geschäftsmodelle im Zuge der Digitalisierung nicht mehr funktionieren.

Philipp Götz: Was verändert sich durch die Potenziale, die die Digitalisierung bringt, aus Sicht der Automobilkonzerne an der Schnittstelle zum Kunden?

Marike Jensen: Das Auto tritt insgesamt in den Hintergrund. Möglicherweise werden in Zukunft gar keine Autos mehr verkauft, sondern nur noch genutzte Minuten. Allgemein gibt es verschiedene Tendenzen im Markt. Das autonome Fahren, die Elektrifizierung des Automobils und die Vernetzung der Autos im Zuge der Connectivity sind dabei die wichtigsten Säulen.

Philipp Götz: Welche Rolle spielen Kollaboration im Umgang mit den neuen Herausforderungen?

Marike Jensen: Grundsätzlich kommen verschiedene Arten von Kollaborationen in Betracht. Es gibt solche, bei denen Unternehmen aufgekauft werden, es gibt Kollaborationen bei denen Joint Ventures geschlossen werden, oder Kollaborationen bei denen man sich einfach zusammenschließt, um beispielsweise ein Programm wie Startup Autobahn partnerschaftlich strategisch und operativ auszusteuern.

Philipp Götz: Was ist das Hauptmotiv für die Zusammenarbeit auf einer Plattform wie Startup Autobahn?

Marike Jensen: Die Plattform Startup Autobahn ermöglicht, in einer Region, in der Startups sonst eine zweitrangige Rolle spielen, ein Ökosystem bilden zu können. Hier gibt es das weltbeste Ingenieurwissen, aber Stuttgart ist nicht als Startup-Hub bekannt. Indem man sich für diese Plattform zusammenschließt, soll die Sichtbarkeit der Region erhöht werden und im Endeffekt Startups aus der ganzen Welt mit ihren Fähigkeiten nach Stuttgart gelockt werden, um das Ingenieurwissen zu leveragen. Ein Partner wie Porsche ist dabei Frenemy - man steht zwar in direktem Wettbewerb, aber der Value-add für die Kooperations- und Innovationsplattform hat Priorität. Allerdings würde es keinen Sinn machen, zusätzlich noch weitere Automobilhersteller wie Audi oder BMW dazu zu holen. Zu viel Wettbewerb würde zu einer Kompetenz-Untergrabung führen. Idealer Partner wäre in Stuttgart noch Bosch, um die Wertschöpfungskette noch breiter abzubilden. Letztendlich soll das Startup-Ökosystem vor allem dazu führen, die Expertise für den Wandel direkt zum eigenen Unternehmen zu holen. Startup Autobahn ist allerdings weder ein Inkubator, noch ein Startup Accelerator. Die Plattform ist letztlich ein Kooperationsmodell, mit dem Pilotprojekte zwischen Startups und Automobilkonzernen ermöglicht werden. Um die Attraktivität zu steigern, wird nicht alleine agiert, sondern Partner aus der Industrie mit an Bord geholt. Für Startups ist der Benefit, die eigenen Produkte mit potentiellen zukünftigen Kunden zu pilotieren. Für die Partner ist der Benefit der Zugang zu Startups und neuen Technologien und dadurch an neue und externe Ideen zu kommen.

Philipp Götz: Wie werden von Daimler die Startups auf der Plattform für Partnerschaften ausgewählt?

Marike Jensen: Bei Startup Autobahn gibt es jährlich zwei Programme, zu denen Startups auf die Plattform kommen und dort zusammen mit den Partnerunternehmen Pilotprojekte durchführen können. Die Suchfelder, nach denen Startups und Technologien gescreent werden, werden von den Partnern gemeinsam festgelegt. Das kann User Experience, Augmented Reality, Blockchain oder ähnliches sein. Das sind Suchfelder, die die Corporates

allgemein schon haben. Die Startups werden für das Programm dann ganz spezifisch nach diesen Suchfeldern gescoutet.

Philipp Götz: Wie kann man sich aus der Sicht von Daimler die Kollaboration auf einer solchen Plattform vorstellen – auch vor dem Hintergrund, dass auch Wettbewerber, wie beispielsweise Porsche, auf der gleichen Plattform agieren?

Marike Jensen: Jedes Startup, das in das Programm gewählt wird kann Pilotprojekte mit den Partnern eingehen. Ein Startup kommt zunächst mit einer Technologie und einem Use Case auf die Plattform – das sind allerdings keine fertigen Lösungen. Die Partner melden Interesse an und treffen sich dann mit den Startups und definieren ein Projekt. Das muss dann in verschiedenen Workshops verifiziert werden. Manchmal funktioniert das, manchmal auch nicht. Wenn es nicht funktioniert, muss von vorne angefangen werden und in Ideation- und Design-Workshops ein neuer Use Case gefunden werden. Dabei gibt es viele Abstimmungsrunden und Loops, um den besten Use Case zu definieren und zu entwickeln. Aus Konzernsicht wird dafür ein ganz neuartiges Skillset benötigt – agiles Projektmanagement, Design Thinking und Co existiert bei den großen Unternehmen noch nicht. Bei Startup Autobahn dürfen die Startups grundsätzlich Pilotprojekte mit mehreren Partnern durchführen. Es gibt allerdings keine Pilotprojekte zwischen den Partnerunternehmen. Die direkte Kollaboration entsteht zwischen den Startups und den Partnern. Startup Autobahn ist in diesem Sinn eine offene, nicht-exklusive Plattform, bei der Startups die Möglichkeit haben, auch mit mehreren Partnern gleichzeitig ein Pilotprojekt durchzuführen.

Philipp Götz: Welche Ressourcen werden dafür von Daimler bereitgestellt?

Marike Jensen: Grundsätzlich müssen Ressourcen im Sinne von Ansprechpartnern für die Koordination und Durchführung bereitgestellt werden. Bei Daimler ist dafür eine eigene Innovationsabteilung zuständig.

Philipp Götz: Wie ist die Zusammenarbeit mit einer solchen externen Plattform in die Organisationsstruktur von Daimler eingegliedert?

Marike Jensen: Das Startup wird als Lieferant angelegt und dann werden Pilotprojekte direkt mit der Fachabteilung durchgeführt. Wenn beispielsweise eine Fachabteilung Anwendungsbeispiele zu Blockchain hat und auf der Plattform ein vielversprechendes Startup eine potentielle Lösung bietet, arbeitet die Fachabteilung direkt mit dem Startup zusammen. Die interne Innovationsabteilung fungiert als Matchmaker, um die Zusammenarbeit zu initiieren.

Philipp Götz: Wie wird die Zusammenarbeit mit Startups im Vergleich zur Zusammenarbeit mit klassischen Zulieferunternehmen bewertet?

Marike Jensen: Die verschiedenen Unternehmen unterscheiden sich kulturell ganz grundsätzlich – quasi alte Welt vs. neue Welt. Bei jedem Change-Projekt gibt es Befürworter und Mitarbeiter, die sich wesentlich schwerer tun. Die größte Herausforderung an die Startup-Kollaborationen sind die Soft Skills. Da treffen Ingenieure mit jahrzehntelanger Berufserfahrung in einem hochtechnisierten Bereich auf 23-jährige Querdenker, die ein Startup gegründet haben. Solche Newcomer werden schnell arrogant abgetan – die Mitarbeiter im Konzern müssen erst überzeugt werden, dass auch ein Startup eine gewisse Reife hat. Abgesehen davon ist das "not-invented-here-Syndrom" ein Thema und die externe Anerkennung oft schwierig. In gewisser Hinsicht hilft es allerdings, dass gerade eine gewisse Angst umgeht, dass alte Player in Zukunft eine ganz andere Rolle spielen und Konzepte verschwinden. Diese Angst, dass man den Status quo nicht unbegrenzt erhalten kann ist da und hilft, da sie Veränderungsprozesse in Gang setzt. Jede Änderung ist aber natürlich erstmal schwierig.

Philipp Götz: Wie wird im Unternehmen vermittelt, dass der Wandel notwendig ist?

Marike Jensen: Es ist ein Bestreben da, etwas anders zu machen und neue Technologien zu implementieren. Dass man dabei darauf angewiesen ist, auch externe Innovationen zu implementieren, wissen die Mitarbeiter in den Fachabteilungen mittlerweile.

Philipp Götz: Wie ist die Einstellung zu solchen externen Einflüssen in den Fachabteilungen?

Marike Jensen: Durch den Druck zum Wandel, der von oben kommt, herrscht in gewisser Hinsicht ein Grundrauschen. Grundsätzlich entstehen die Pilotprojekte mit den Startups aber in Freiwilligkeit und die Zusammenarbeit ist allgemein eher ein Pull als ein Push. Es gibt gewisse Problemstellungen in den Fachabteilungen, die sie nicht alleine lösen können. Damit kommen diese dann auf die Innovation-Abteilung zu und fragen, ob es dazu bei Startup Autobahn ein geeignetes Startup gibt.

Philipp Götz: Gibt es neben Startup Autobahn auch andere Konstrukte, über die mit Startups zusammengearbeitet wird?

Marike Jensen: Startup Autobahn ist wirklich neuartig und existiert seit knapp über einem Jahr. Es gibt natürlich Mitarbeiter in den entsprechenden Abteilungen, die unabhängig nach einer Technologie scouten und dann auf einzelne Startups zugehen. Ein so strukturiertes Programm, mit einer solchen Fülle an Startups gab es aber bislang nicht.

Philipp Götz: Inwiefern funktioniert Startup Autobahn besser als andere Kollaborations-Modelle?

Marike Jensen: Das Modell von Startup Autobahn ist so neuartig, dass es sich zu anderen Modellen großer MNCs, wie Innovation Labs, eigenen Inkubatoren und Accelerator-Programmen, kaum vergleichen lässt.

Philipp Götz: Lässt sich sagen, inwieweit bisherige Kollaborationen auf der Plattform den Unternehmenswert von Daimler steigern konnten?

Marike Jensen: Darüber darf ich keine Aussage treffen, das ist intern. Was aber definitiv der Fall ist, ist, dass Daimler durch die Kollaborationen mit den Startups lernen kann.

Philipp Götz: Wie wird mit den Ergebnissen aus der Zusammenarbeit umgegangen?

Marike Jensen: Es gibt unterschiedliche Modelle. Einerseits gibt es die Möglichkeit ein Startup zu akquirieren. Eine andere Option ist einen Kooperationsvertrag abzuschließen und weiterhin gemeinsame Projekte durchzuführen. Der dritte Weg, ist eine Lieferantenbeziehung einzugehen.

Philipp Götz: Wie offen wird aus Konzernsicht mit dem Thema IP umgegangen?

Marike Jensen: Die Nutzungsrechte für das Produkt oder den Service liegen im Endeffekt beim Startup. Idealerweise hat das Startup seine Innovation bereits patentieren lassen. Daimler hat letztlich nicht im Sinn, die Ideen zu klauen. Abgesehen davon sind die Startups, mit denen auf der Plattform kollaboriert wird über die Ideenfindungsphase hinaus. Für Startup Autobahn werden ganz bewusst Startups gescoutet, die eine gewisse Reifephase erreicht haben. Diese Startups arbeiten im Normalfall mit patentierten Technologien oder Produkten.

Philipp Götz: Wie werden aus Konzernsicht die großen digitalen Player wie Uber, Google und Co gesehen, die plötzlich auch den Automobilmarkt im Blick haben?

Marike Jensen: Diese werden auf jeden Fall wahrgenommen. Wir hatten vorhin über die Angst gesprochen, dass zukünftig andere Unternehmen das eigene Geschäft streitig machen. Uber, Apple und Google sind alles neue Player im Mobilitätsfeld, die den Kreis erweitern. Die Kooperationen, die Daimler mit solchen Unternehmen bisher eingegangen ist, liegen häufig in Themenfeldern, die das Unternehmen nicht mit eigenen Ressourcen bedienen kann. Die Angst vor den großen neuen Playern ist dabei definitiv da und treibt Daimler dazu, zwangsläufig entsprechende Kollaborationen einzugehen – nicht weil das gerade modern und im Trend ist, sondern weil man sich einen konkreten Benefit davon verspricht.

Philipp Götz: Kann man also sagen, dass grundsätzlich eher versucht wird zu kollaborieren, als abgeschottet eigene Lösungen zu entwickeln?

Marike Jensen: Sowohl als auch, beides ist der Fall. Daimler hat hunderte Themen, an denen gearbeitet wird. Das sind eigene, hoch-geheime Projekte, aber auch diverse andere Projekte, wie M&A-Aktivitäten.

Philipp Götz: Worauf laufen die aktuellen Trends in Zukunft in Hinblick auf das interne Innovationsverhalten hinaus?

Marike Jensen: Der Trend geht definitiv dahin, dass vermehrt auf externe Kooperationen Wert gelegt wird – wie eben auch Startup Autobahn. Man möchte ganz gezielt Inspirationen aus der Zusammenarbeit mit externen Partnern ziehen. Vor zehn Jahren wäre es noch undenkbar gewesen, dass ein kleines Startup eine Kooperation mit Daimler eingeht. Das sind ganz neue Symbiosen – das ist auf jeden Fall ein Trend. Zum anderen sind neue Player im Markt, so dass Verbindungen mit ganz anderen Partnern eingegangen werden – Dinge, die nicht in der Kernkompetenz von Daimler liegen.

Philipp Götz: Wie werden diese Trends im Unternehmen kommuniziert?

Marike Jensen: Es ist auf jeden Fall zu fühlen, dass aktuell etwas im Wandel ist. Dieser Kulturwandel wird von der Konzernspitze offen kommuniziert und vorangetrieben.

Philipp Götz: Was bedeutet in diesem Zusammenhang Open Innovation für Daimler?

Marike Jensen: Im Startup-Ökosystem gibt es verschiedene Player, von Universitäten, über Startups und Investoren bis hin zu Business Angels, die mit ihrer Expertise helfen, Startups zu skalieren. Um dieses Ökosystem voranzutreiben, müssen die verschiedenen Player zusammenarbeiten. Was Daimler angeht, ist man daran zum Teil beteiligt. Dass man jetzt alles gemeinsam macht, ist aus Konzernsicht utopisch. Neu ist jedoch, dass man ein Unternehmen wie Porsche mit ins Programm holt. Das hätte es so vor einigen Jahren noch nicht gegeben. Insgesamt spricht das dafür, dass man jetzt vermehrt darauf bedacht ist, externe Expertise ins eigene Haus zu bekommen.

Transcript #3 – Hannah Boomgarden, Startup Autobahn (Project Manager) – 08.09.2017

Philipp Götz: Woher ergibt sich die Notwendigkeit für eine Innovations- und Kollaborationsplattform Startup Autobahn?

Hannah Boomgarden: Es ist eine Notwendigkeit da, nicht nur ein Startup mit einem Unternehmen zusammenzubringen, sondern die Möglichkeit zu kreieren, mehrere Konzerne als potentielle Partner für Startups an einem Ort zu versammeln und über einen Ansprechpartner zugänglich zu machen. Momentan merkt man sowohl auf Konzern- als auch auf Startup-Seite, dass die vielen aktuellen Herausforderungen am besten gemeinsam gemeistert werden können. Das steigert das Interesse an einer möglichen Zusammenarbeit auf beiden Seiten. Das Spannende an Startup Autobahn ist, dass es hier nicht nur darum geht, sich mit Startups auszutauschen, sondern tatsächlich gemeinsame Projekte zu starten. Grundsätzlich könnte das zwar von Konzernseite aus auch eigenständig bewerkstelligt werden, aber durch die unabhängig organisierte und moderierte Plattform fällt für beide Seiten der administrative Aufwand einer unabhängigen Zusammenarbeit weg. Startup Autobahn agiert als Moderator, der Startups und Konzerne zusammenbringt und eine Zusammenarbeit ermöglicht, ohne dass diese Research anstellen oder das Zusammentreffen organisieren müssen. Das macht es für beide Seiten sehr viel einfacher.

Philipp Götz: Wie ist Startup Autobahn entstanden?

Hannah Boomgarden: Die Initiative zur Gründung kam vor zwei Jahren von Daimler. Das Hauptmotiv war der Aufbau einer Plattform nahe am eigenen Hauptgeschäft – und nicht in den typischen Startup-Regionen wie Berlin, Tel Aviv oder dem Silicon Valley. Mit diesem Ziel ist Daimler auf Plug & Play – ursprünglich ein Accelerator und Investor aus Amerika – zugegangen und hat gefragt, ob es nicht auch möglich wäre, ein entsprechendes Programm in Stuttgart aufzubauen. Die Gründerväter der Plattform sind Daimler als Konzern mit dem Forschungszentrum Arena2036, Plug & Play Silicon-Valley als Experte aus dem Startup-Accelerator und –Investment Bereich und weil Forschung auch eine sehr große Rolle spielt, zusätzlich die Universität Stuttgart. Die Vision für die Gründung von Startup Autobahn war

von Anfang an eine neutrale Plattform zu bieten – also gerade nicht einfach nur eine Daimler-Plattform. Startup Autobahn dient dem Zweck, dass verschiedene Konzerne mit einem Fokus auf Mobilität der Zukunft und Industrie 4.0 auf einer Plattform zusammenarbeiten können.

Philipp Götz: Was ist die Motivation für einen Konzern wie Daimler eine solche Plattform zu starten und dort mit Konkurrenten wie Porsche zusammenzuarbeiten?

Hannah Boomgaarden: Für einen Konzern ist es natürlich grundsätzlich eine große Herausforderung sich zu öffnen. Eine neutrale Plattform ermöglicht eine Zusammenarbeit auf Augenhöhe, bei der verschiedene Konzerne an einem Tisch zusammenkommen können. Dabei ist es für den Konzern spannend, die internen Abteilungen in diesen Prozess miteinzubinden und eine Kultur der Offenheit voranzutreiben. Die verschiedenen Veranstaltungen und Meet-Ups von Startup Autobahn werden sowohl bei uns, als auch bei Porsche, der deutschen Post und den anderen Partnern abgehalten. Zu diesen Veranstaltungen kommen dann also zum Beispiel auch die Mitarbeiter von Daimler in die jeweiligen anderen Unternehmen. Das hat ein Stück weit Change-Management-Charakter.

Philipp Götz: Woher kam im Daimler-Konzern anfänglich die Initiative für die Gründung von Startup Autobahn?

Hannah Boomgaarden: Letztendlich müssen solche Initiativen von ganz oben abgesegnet werden. Das Budget muss freigegeben werden und die Mitarbeiter müssen vom Management den Auftrag bekommen, ihre Arbeit auf das Projekt zu fokussieren. Abgesehen davon muss es aber auch Personen geben, die als Intrapreneure fungieren, also einen Hintergrund als Entrepreneur haben und die Vision vorantreiben wollen. Bei Daimler kam diese Person direkt aus der Forschungsabteilung. Diese Abteilungen investiert auch in Startups und baut mehrere Plattformen auf. Beispiele sind Startup Autobahn in Singapur, oder auch andere Projekte wie Hackathons in Südafrika. Startup Autobahn ist also ein Projekt von vielen, aber trotzdem ist das Top-Management voll involviert. Zuerst muss die Führungsebene abgeholt werden, um die Offenheit zur Zusammenarbeit mit den Startups letztendlich in die einzelnen Abteilungen zu tragen.

Philipp Götz: Ist deiner Erfahrung nach eine allgemeine Offenheit vorhanden, oder wird diesen Entwicklungen eher zögerlich begegnet?

Hannah Boomgaarden: Ich würde sagen, es ist solange ein zögerlicher Vorgang, bis die Begeisterung geweckt ist. Das geht ganz schnell, wenn die Mitarbeiter merken, dass andere Arbeitsmethoden als sonst zum Einsatz kommen, die noch dazu funktionieren. Dabei hilft Plug & Play als Partner aus dem Silicon Valley zusätzlich. Der Name Silicon Valley in Verbindung mit Startups und der lockeren Kultur mit großem, offenem Büro schindet Eindruck. Das ist die eine Seite. Auf der anderen Seite muss es aber natürlich auch funktionieren. Die Zahlen müssen messbar sein und zeigen, dass die Plattform funktioniert. Das ist aber auch der Fall.

Philipp Götz: Was macht Startup Autobahn im Vergleich zu anderen Initiativen und Plattformen besonders?

Hannah Boomgaarden: Einmal, dass die Plattform in Stuttgart ist, wo die Abteilungen der Konzerne sind. Wenn die R&D-Abteilungen jedes Mal nach Berlin oder an andere Orten fahren müssten, würde das Konzept nicht funktionieren. Dafür ist das Budget in den Abteilungen nicht da. Dass die Plattform greifbar ist und hier Meetings abgehalten werden können, ist ein wichtiger Punkt. Daneben zieht der Fakt, dass wir nicht nur einen, sondern mittlerweile zehn Partner für potentielle Pilotprojekte bieten können, die Startups an. Man sieht an vielen Accelerator-Programmen, dass mittlerweile um die Startups gekämpft werden muss, weil der Hype momentan so groß ist, dass überall ähnliche Programme aufgebaut werden und investiert wird, um das eigene Management mit den Startups in Kontakt zu bringen. Das heißt, je mehr Partner man bietet, desto bessere Startups kommen letztendlich auf die Plattform.

Philipp Götz: Was bietet Startup Autobahn den Konzernen, das intern nicht verfügbar ist?

Hannah Boomgaarden: Bei Startup Autobahn gibt es weder Investments, noch die Voraussetzung in Stuttgart ansässig zu sein. Die einzige Voraussetzung ist die Bereitschaft für gemeinsame Pilotprojekte. Die internen Abteilungen der Konzerne haben Suchfelder, die von den Startups auf der Plattform abgedeckt werden. Daraufhin haben beide Seiten 100

Tage Zeit gemeinsam ein Projekt durchzuführen. Normalerweise müsste ein Startup dafür beim Konzern erstmal als Lieferant angemeldet werden und einen langen internen Prozess durchlaufen. Neben dem Zugang zu neuen Ideen, ist diese Schnelligkeit bei Startup Autobahn ein wichtiger Vorteil. Zudem ist die Chance für einen direkten, wöchentlichen Austausch mit Konzernen, die sonst keine Anlaufstelle für einen solchen, regelmäßigen Kontakt bieten, aus Startup-Sicht besonders.

Philipp Götz: Welche Geschäftsfelder und Technologien suchen die Konzerne auf der Plattform?

Hannah Boomgaarden: Grundsätzlich ist Startup Autobahn *stage agnostic*. Das heißt, dass Startups aus allen Altersgruppen auf die Plattform kommen können. Die Tendenz geht aber eher zu later stage. Bei uns wird im Allgemeinen auch nicht von Startups, sondern von jungen Tech-Companies gesprochen, weil deren Produkte funktionieren müssen. Die Startups können auf der Plattform zwar einen Use Case suchen, allerdings müssen die Abteilungen der Partner-Unternehmen das Produkt des Startups in irgendeiner Form einbauen und damit experimentieren können. Die Suchrichtung bei Startup Autobahn ist Mobilität und Industrie 4.0. Also verschiedene Bereiche von IoT, über Manufacturing bis zu Customer Experience rund um die Fokusbereiche. Daneben kommen die verschiedenen Abteilungen der Konzerne mit eigenen Themen auf uns zu. Beispielsweise eine Finanzabteilung, die Blockchain interessant findet und fragt, ob zu diesem Thema Startups auf die Plattform geholt werden können. Die Suchrichtungen werden also von den einzelnen Abteilungen über die Kontaktperson im Konzern zu Start Autobahn gebracht und wir suchen letztendlich die passenden Startups. Die Startups sind weltweit angesiedelt und müssen nicht in Stuttgart sitzen. Sie sollen allerdings zu den gemeinsamen Meetings von Startup Autobahn und mit den Partner-Unternehmen und für den abschließenden Expo Day nach Stuttgart kommen.

Philipp Götz: Was sind die Faktoren, die die Startups letztendlich zu Startup Autobahn nach Stuttgart ziehen?

Hannah Boomgaarden: Die Möglichkeit, nicht nur mit einem, sondern mit zehn Konzernen in Kontakt zu kommen und mit diesen konkrete Pilotprojekte durchzuführen, ohne Anteile

am eigenen Unternehmen abgeben zu müssen, machen einen großen Unterschied zu anderen Modellen und Plattformen aus. Bei Startup Autobahn verdienen die Startups von Anfang an Geld mit der Durchführung von Pilotprojekten und haben die Chance, die Konzerne über die Projektzeit hinaus als Kunden zu gewinnen. Daneben ist das Wissen entscheidend, über die Plattform mit der richtigen Kontaktperson beim Konzern in Kontakt gebracht zu werden und schnell gemeinsam in Pilotprojekte gehen zu können. Zudem spielt die Möglichkeit für die Startups, sich vor einem großen Netzwerk aus Investoren und Mentoren präsentieren zu können eine wichtige Rolle. Sowohl Plug & Play, als auch die Konzerne investieren auch in Startups und dazu werden die Startups bei den großen Rahmenveranstaltungen des Plattform-Programms mit dem Investoren-Netzwerk von Plug & Play in Kontakt gebracht.

Philipp Götz: Wie funktioniert auf der Plattform die Zuteilung zwischen Startups und Konzernen für die gemeinsamen Pilotprojekte?

Hannah Boomgaarden: Der Prozess beginnt ganz am Anfang mit einer Scouting-Phase von circa einem halben Jahr, in der wir die Startups einladen, bzw. Startups sich bei uns bewerben. Darauf folgt der Selection Day, bei dem sich circa 50 Startups vor den verantwortlichen Kontaktpersonen und den zugehörigen Abteilungen der Partnerunternehmen präsentieren. Im Anschluss werden dann die Startups für das tatsächliche Programm ausgewählt – im letzten Programm waren das 26 Startups, während es im aktuellen, zweiten Programm schon 33 Startups sind. Die Konzerne suchen sich aus diesen Startups diejenigen aus, mit denen sie ein Pilotprojekt durchführen wollen. Daneben haben die Startups aber auch die Chance, eigene Vorschläge für Use Cases mit unterschiedlichen Partnerunternehmen einzureichen, die dann von Startup Autobahn in die entsprechenden Abteilungen getragen werden. Und daraufhin setzen sich die Unternehmen dann mit den Startups zusammen und beginnen mit der gemeinsamen Arbeit am Pilotprojekt.

Philipp Götz: Finden auf der Plattform auch gleichzeitig Pilotprojekte zwischen einem Startup und mehreren Konzernen statt?

Hannah Boomgaarden: Grundsätzlich gibt es je nach Ressourcen der Startups die Möglichkeit Pilotprojekte mit mehreren Konzern gleichzeitig durchzuführen. Allerdings unterliegen die Insights aus gemeinsamen Projekten mit Forschungscharakter in jedem Fall einer Geheimhaltungspflicht. Solange die Informationen aus der Zusammenarbeit mit einzelnen Konzernen nicht weitergegeben werden, spricht aber nichts dagegen, mit mehreren Partnerunternehmen gleichzeitig Pilotprojekte durchzuführen.

Philipp Götz: Wie werden die Kollaborationen zwischen Startups und Konzernen auf der Plattform strukturiert?

Hannah Boomgaarden: Auf Konzernseite sind die sog. Champions, also Matchmaker, bzw. Kontaktpersonen zwischen Konzern und Startup Autobahn, dafür verantwortlich, die Pilotprojekte intern zu koordinieren. Diese Champions bringen die zuständigen Personen aus der R&D-Abteilung und beispielsweise der Motorenentwicklung mit den Startups an einen Tisch und sind dabei, wenn das gemeinsame Vorgehen für das Pilotprojekt besprochen wird. Danach ist es auf Konzernseite klassische Projektarbeit in Zusammenarbeit mit den jeweiligen Startups. Nach 100 Tagen wird dann beim Expo Day präsentiert, was gemeinsam entwickelt und erarbeitet wurde. Wenn das funktioniert hat und während der Kollaboration über den Projektzeitraum eine erfolgreiche Zusammenarbeit entstanden ist, geht es im Anschluss um eine richtige Partnerschaft. Aus einem Pilotprojekt auf der Plattform folgt also im Erfolgsfall zum Beispiel eine Produktpartnerschaft oder ein Investment in das Startup.

Philipp Götz: Wie funktioniert die Kommunikation zwischen den Startups und den Personen von Konzernseite?

Hannah Boomgaarden: Die Champions als Mittelsmänner zwischen Startup Autobahn und Konzern spielen dabei eine entscheidende Rolle. Die Champions kennen ihre Leute und müssen intern Begeisterung für die Zusammenarbeit mit den Startups schaffen. Das ist definitiv ein Prozess. Im ersten Programm von Startup Autobahn war es schwieriger, weil die Leute auf Konzernseite Startup Autobahn noch nicht kannten und vorher noch nie mit Startups zusammengearbeitet haben. Deswegen wird allgemein auch sehr viel Wert auf die Veranstaltungen bei Startup Autobahn gelegt, weil diese Begeisterung schaffen. Wenn dann

beispielsweise bemerkt wird, dass ein Startup ein gutes Pilotprojekt mit Porsche gemacht hat, fragt man plötzlich bei Daimler, wieso man selbst nicht daran beteiligt war. Dadurch entsteht eine gewisse Bewegung. Mit jedem Programm werden auf Konzernseite andere Leute angesprochen und in die Zusammenarbeit mit den Startups eingebunden und erzählen intern davon. So entsteht Begeisterung und Anziehungskraft bei anderen Abteilungen, dem ganzen auch eine Chance zu geben. Am Anfang steht aber immer erstmal der Beweis, dass es funktioniert. Das heißt man kann nicht garantieren, dass die Kommunikation zwischen den Abteilungen im Konzern und den Startups von Anfang an funktioniert. Deswegen muss im Konzern eine verantwortliche Person sitzen, die die Zusammenarbeit mit Startup Autobahn intern koordiniert und den Überblick hat. Zum Beispiel, wenn es darum geht, für das Startup eine Geheimhaltungsvereinbarung bei der Legal-Abteilung zu erstellen, oder dem Startup einen Lieferantenstatus zu verschaffen. Ohne die Kontaktperson, die die richtigen Ansprechpartner kennt, dafür sorgt, dass die benötigten Antworten geliefert werden und weiß, wie die Prozesse beschleunigt werden können und das entsprechende Budget beschafft werden kann, würde das alles nicht funktionieren.

Philipp Götz: Kannst du bewerten, welche Auswirkungen die Zusammenarbeit auf der Plattform auf Konzernseite zeigt?

Hannah Boomgaarden: Ich merke, dass immer mehr Leute und Abteilungen auf Konzernseite Startup Autobahn kennen und mittlerweile Bescheid wissen, dass sie über die Plattform die Möglichkeit haben, mit Startups zusammenzuarbeiten. Bei Daimler gibt es gerade ein großes Leadership-Programm, mit dem die Leute intern dazu abgeholt werden sollen, was sich auf globaler Ebene durch die Digitalisierung verändert. Startup Autobahn ist dabei eine Methode, das Unternehmen auf die Zukunft vorzubereiten und mit Change Management die interne Mentalität anzupassen. Daneben soll Startup Autobahn dabei helfen, die Innovationszyklen zu beschleunigen. Normalerweise braucht ein Auto sechs Jahre bis zur Marktreife. Mit Innovationen und neuen Technologien gibt es jetzt die Möglichkeit schneller und günstiger zu arbeiten und den Prozess grundlegend zu beschleunigen.

Philipp Götz: Welches Feedback kommt zu diesem Prozess von Startup-Seite?

Hannah Boomgaarden: Im letzten Programm gab es 26 Startups, die insgesamt 50 Pilotprojekte durchgeführt haben. Das heißt, dass die Startups jetzt zwei neue Cases haben, die sie vorweisen können und beispielsweise auf ihrer Webseite integrieren können. Wenn ein Startup sagen kann, dass es ein erfolgreiches Pilotprojekt mit Porsche und der Deutschen Post durchgeführt hat, kann es seine Produkte beweisen und damit neue Kunden anziehen. Das Feedback über den Prozess bei Startup Autobahn ist, dass man schneller mit den gefragten Personen auf Konzernseite in Kontakt kommt. Daneben wird es positiv bewertet, dass man sein komplettes eigenes Geschäft nebenher weiterhin führen kann und nicht für den Projektzeitraum nach Stuttgart ziehen muss. Auf der anderen Seite gibt es aber auch Feedback, dass die Zusammenarbeit mit dem Konzern trotz der Plattform teilweise relativ langsam ist.

Philipp Götz: Kannst du ein konkretes Beispiel für die erfolgreiche Zusammenarbeit zwischen Partnerunternehmen und Startup auf der Plattform?

Hannah Boomgaarden: what3words aus England ist ein gutes Beispiel. Das Startup hat an unserem Partnerprogramm in Berlin teilgenommen und dort ein Investment von der Deutschen Bahn bekommen und konnten dadurch sehr viel Aufmerksamkeit generieren und wurden durch die Teilnahme am Partnerprogramm auf der Plattform extrem gepusht. Bei unserem ersten Programm waren sehr viele Startups dabei, die nach dem Expo Day Investments bekommen haben und auch weiter an den Projekten mit den Partnerunternehmen arbeiten.

Philipp Götz: Wie geht es in Zukunft mit Startup Autobahn weiter?

Hannah Boomgaarden: Demnächst wird das dritte Programm mit 33 Startups gestartet. Gestartet haben wir mit 14 Startups im ersten Programm und 26 Startups im zweiten Programm. Das ganze hat mit Daimler, Arena, der Universität und Plug & Play als Partnerunternehmen begonnen. Im zweiten Programm kamen dann Porsche, DHL, BASF, ZF und weitere Partner dazu. Und im dritten Programm kommen weitere Partner von Konzernseite dazu und zusätzliche Universitäten steigen mit ein. Dementsprechend wächst die Plattform

und letztendlich sind mehr Pilotprojekte möglich. Langfristig ist das Ziel bei Startup Autobahn, dass zwei Konzerne zusammen mit zwei Startups einen Use Case auf unserer neutralen Innovationsplattform erstellen können. Das heißt, dass die Technologien von zwei Startups zusammengetragen werden und beispielsweise für einen Use Case bei Daimler und Porsche dienen kann. Dadurch eröffnet sich die Möglichkeit, noch schneller neue Technologien voranzutreiben. Bei Plug & Play allgemein entwickeln sich momentan neben den bestehenden Programmen weltweit sehr viele neue Plattformen. Das Programm in Berlin wurde zusammen mit der Deutschen Bahn gegründet und umfasst mittlerweile unter anderem auch Siemens als Partner. Dort geht es inhaltlich um alles rund um das Thema Mobilität und Logistik. Daneben ist in Planung, noch weitere neutrale Plattformen in Europa aufzubauen.

Philipp Götz: Was könnten etablierte Automobilunternehmen deiner Meinung nach in Zukunft besser machen, um die entstehenden Potentiale voll auszunutzen?

Hannah Boomgaarden: Ich denke grundsätzlich wäre es wichtig, mehr auszuprobieren und mehr Projekte zu testen. Durch die Menge an aktuellen Veränderungen drängen immer mehr neue Konkurrenten auf den Markt, die die Marktanteile der großen Unternehmen verkleinern. Daher denke ich, dass die etablierten Unternehmen mehr riskieren müssen. Ein Ansatz ist, nicht immer so groß zu denken, sondern auch kleine Projekte auszuprobieren und in den Markt zu bringen. Abgesehen davon ist es extrem wichtig, sich für die Zusammenarbeit mit verschiedenen Akteuren zu öffnen. Ansonsten werden die großen Unternehmen meiner Meinung nach irgendwann überholt.

Philipp Götz: Wie wird deiner Meinung nach die Konkurrenz durch große digitale Player wie Google, Uber und Co. von den etablierten Unternehmen gesehen?

Hannah Boomgaarden: Daimler und viele andere haben ihre Vision geändert. Weg vom reinen Automobilhersteller hin zum Anbieter für eine komplette Customer Experience im Auto. Bei Daimler ist aktuell die Entwicklung, das Auto eher als Hardware zu sehen und darauf aufzubauen. Allerdings ist Daimler immernoch ein sehr klassisches Unternehmen und muss noch viel an den alten Strukturen arbeiten, damit das funktionieren kann. Die

große Generation an Arbeitnehmern im Konzern, die ihr ganzes Leben lang bei Daimler gearbeitet hat, hat in diesem Bezug eine gewisse Automobil-Arroganz und sieht die Gefahren der aktuellen Veränderungen nicht wirklich. Da ist glaube ich intern sehr viel Aufklärung nötig. Daneben ist die Zusammenarbeit mit Unternehmen die im Digitalbereich weiter sind sehr wichtig. Auch wenn das im Endeffekt womöglich eine Kooperation mit Google bedeutet. Alleine kann ein Konzern wie Daimler es nicht stemmen, den aktuellen Entwicklungen zu begegnen. Dazu fehlen schlichtweg die Mitarbeiter mit den entsprechenden Kompetenzen. Und gleichzeitig muss natürlich das Kerngeschäft weiterhin funktionieren. Auch wenn Unternehmen wie car2go, Moovel und MyTaxi zu Daimler gehören, wird aktuell immernoch mehr Geld mit dem Kerngeschäft verdient. Hauptsächlich muss sich aber kulturell bei den Konzernen einiges verändern, damit man sich in die richtige Richtung entwickeln kann, um die Zusammenarbeit mit Digitalunternehmen zu ermöglichen, die das liefern können, was dem Konzern intern fehlt.