SUCCESFULLY MANAGING STRATEGIC ALLIANCES BETWEEN LARGE CORPORATIONS AND START-UP FIRMS

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MASTER THESIS

MASTER OF SCIENCE IN BUSINESS ADMINISTRATION (MScBA)

AT

ROTTERDAM SCHOOL OF MANAGEMENT (RSM)

ROTTERDAM, THE NETHERLANDS

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MANAGEMENT SUMMARY

This research aims to better understand how strategic alliances between startups and corporates can be managed to generate successful outcomes, considering the large differences between both organization types. Here we analyze the role of corporate management within the dynamic alliance process (Das & Teng, 2002) that includes the alliance environment, alliance condition variables, alliance formation, alliance operation and alliance outcomes. Following the literature review, it was concluded that alliances between start-ups and corporates with the aim of Cospecialization have the highest chance of success, because within this alliance type, the organizational differences between the firms are presumed to be less conditional in comparision with other alliance strategies. Within Cospecialization alliances, it is rather the similarity of the resources the alliance partners bring to the table that will determine the outcome of the alliance (Dyer and Singh, 1998; Yang et al., 2014). Through a multi-case study of alliances between a large corporation and start-up firms, one dominant variable was identified to successfully manage alliances between start-ups and corporates. This research identified top management involvement as determinant predicting alliance success. Through the involvement of top management, success limiting factors can be overcome, such as ambiguity related difficulties and the vast differences between both organization types. The empirical findings indicate that alliance success depends largely on a correct management of ambiguity to ensure strategic alignment. In this research, the differences between both organization types became clear in the form of a misalignment of priorities, expectations and speed of operations. In the investigated cases, a direct link was identified between alliance success and the involvement of top management. On the other hand, it was found that when there is no involvement of top management, alliance success was not obtained. The investigated cases show sufficient variance in data to substantiate these proclamations. This research provides relevancy within existing alliance literature by showing how top management involvement determines successful outcomes of alliances between large corporations and start-up firms. To the live management practice, this research adds an identification of a series of ‘mismatches’ between start-ups and corporates that should be managed to generate successful alliance outcomes. These mismatches come in the form of ambiguity through the misalignment of priorities; expectations; and speed of operations. In this research, the difficulties could be overcome through direct involvement of top management. In practice, direct involvement of top management might not always be possible to achieve.

This research provides relevancy within existing alliance literature by showing how top management involvement determines successful outcomes of alliances between large corporations and start-up firms. These insights add to the existing body of alliance process research which concentrates on the dynamic aspects of collaborative arrangements (Ariño & de la Torre, 1998). Therefore, effective alliance management is a significant challenge and a complex, under investigated phenomenon (Bruner & Spekman, 1998; Lam, 1998). Through the direct involvement of top management, learning difficulties can be overcome, originating from the differences between both organization forms (Lane and Lubatkin (1998) Alvarez & Barney, 2001; Yang et al., 2014). Another theoretical implication that adds insights to recent literature is in relation to the vast differences between start-ups and corporates, showing the importance of managing ambiguity in alliance management (Kumar & Patriotta, 2011; Kumar, 2014; Niesten & Jolink, 2015). Specific forms of ambiguity which surfaced during this research in relation to the differences between start-ups and corporates are the misalignment of priorities; expectations; and speed of operations.

5.2 Practical implications

This research has identified a series of 'mismatches' between start-ups and corporates that should be managed to generate successful alliance outcomes. These mismatches come in the form of ambiguity through the misalignment of priorities; expectations; and speed of operations. In this research, the difficulties could be overcome through direct involvement of top management. In practice, direct involvement of top management might not always be possible to achieve. Alternatively, a dedicated start-up program might be of help. This dedicated approach, in which top management's vision and strategy is embedded, could help to overcome time resource restraints. In addition, it might support improving the accessibility and visibility of the corporation, similar how a dedicated alliance function does (Dyer et al., 2001) and can cover both business and technical expertise. Based on the findings that show existence of agency theory related difficulties, companies should consider altering the incentive structure of alliance managers on operational level.

CHAPTER I: INTRODUCTION

1.1 Research topic

This study aims to investigate how large corporations can successfully collaborate with start-up firms through strategic alliances, or interfirm cooperative arrangements aimed at achieving the intended strategic objectives. Strategic alliances (hereafter referred to as 'alliances') between start-ups and large corporations bring high upside opportunities which, if harnessed correctly, can create win–win situations for both parties (Deeds & Hill, 1996; Rothaermel, 2001). These opportunities deserve further investigation in a world where creativity, innovation and flexibility are becoming increasingly important for companies to differentiate from competition and respond to rapid change (Hamel, 2008; Prahalad & Ramaswamy, 2004; Volberda, 1996). When access to new knowledge or resources is essential, the advantages that alliances bring are particularly relevant (Teece, 1992). Within this context, the definition of strategic alliances that was adopted is that '*strategic alliances are voluntary arrangements between firms involving exchange, sharing, or co-development of products, technologies, or services*' (Gulati, 1998). Weiblen and Chesbrough (2015) write about synergies when corporates and start-ups ally and how the growth and increasing viability of start-up firms can create joint value for both parties. They state that large corporations have resources, scale, power and proven business routines that start-ups often lack. The start-ups on the other hand can bring other virtues to the table such as the willingness to take risks, fresh ideas, organizational agility and aspirations of rapid growth. Adding to the potential that start-ups bring is the recently improved environment for start-up firms thanks to increasing resources from start-up incubators that allow start-ups to bring their ideas to market at much lower costs than before (Rasmussen & Tanev, 2015). These type of 'learning alliances' can potentially speed capability development and minimize exposure to technological uncertainties by acquiring and exploiting knowledge developed by others (Grant & Baden-Fuller, 1995), making collaborations between start-ups and corporates a high priority for start-ups to ensure a strong position soon after a firm is established (Teece, 2010; Kask & Linton, 2013).

Although some might argue that merger and acquisition options involving start-ups are the way to go opposed to alliances, other literature is pointing towards the latter as alliances are more suitable to deal with uncertainty and often involve higher risk (Dyer, Kale, & Singh, 2004). Therefore, alternatives where both companies retain their independence and partner based on a synergetic aim seem to be more successful (Kale et al., 2009; Dyer et al., 2001). Traditionally, corporate venturing has been the most common structure for collaboration between corporates and start-ups. However, corporate venturing in start-up firms has its limitations, as it can be costly and it is no guarantee for innovation while the investment should be linked to a short term corporate strategy for stakeholders to buy-in into the spending (Chesbrough, 2002). This perhaps plays a role in the fact that an increasing number of companies is looking towards partnering with start-up firms, instead of acquiring equity stakes (Hansen et al., 2000). Interfirm alliances can especially be more favorable in the face of uncertainty and knowledge dispersion because collaborations increase strategic flexibility and rapid learning (Hoffmann & Schaper-Rinkel, 2001). Based on the research by Weiblen and Chesbrough (2015) concerning partnerships between large corporations and start-up firms, two new models where created for collaboration between start-ups and corporates to increase corporate innovation. The first is the outside-in innovation approach with the aim of making existing technology from start-ups accessible and useful for the sponsoring corporation. The second is the inside-out open innovation approach to promote and establish the use of the corporation's technical platform to the start-up. Central to the success of these new models is the use of a limited scope and more standardized approaches based on clear governance structures. These new models are different from previous models in that corporate ownership is not typically involved. The primary benefit of these models is that its structure allows the corporate to engage with a larger number of start-ups and therefore leverages more resources with lower risks involved.

When considering the large upside between corporate and start-up partnership it is also important to look at possible limitations. Especially since firms rarely actualize the full potential of their alliances and it is reported that almost half of the alliances fail (Dyer et al., 2001; Patzelt & Shepherd, 2008). When considering alliances between start-ups and corporates, it is noted that corporations often are difficult to approach for start-ups as cultural differences often lead to misunderstandings and different organizational clock speeds take their toll during the partnership (Weiblen & Chesbrough, 2015). After studying 128 alliances between startups and corporates, Alvarez and Barney (2001) even found that most startups are unfairly treated by the corporate and that their performance and even long-term survival are at risk as a result. Research by Lavie et al. (2012) shows that operational differences in (internal) organizational routines as well as cultural differences between alliance partners have high impact on the potential success in non-equity alliances. Furthermore, research from Lane & Lubatkin (1998) shows that the ability of a firm to learn from another firm is jointly determined by the relative characteristics of the two firms, particularly the relationship between their knowledge-processing systems. Alvarez and Barney (2001) report that the value from collaborations between start-ups and corporates is often merely beneficial to the corporate and even the survival of the start-up firm can be compromised as a result. Considering this, one might argue that due to the interpartner differences, successful collaboration is not easy to manage and requires attention to make it work.

From the extensive body of work in alliance research it can be learned that inter-organizational competitive advantages can be obtained by means of relational rents from strategic alliances when firm-specific resources are leveraged to form interfirm resources (Dyer & Singh, 1998). Dyer & Singh (1998) define relational rents as *"A supernormal profit jointly generated in an exchange relationship that cannot be generated by either firm in isolation and can only be created through the joint idiosyncratic contributions of the specific alliance partners"*. These relational rents can be difficult to imitate by competitors and are obtained by (1) building relation-specific assets, (2) knowledge-sharing routines, (3) complementary resources and capabilities and (4) effective relational governance mechanisms into relationships. These relational rents are facilitated through a set of sub-processes that allow firms to leverage their relational resources for knowledge acquisition and exploitation purposes. Knowledge is particularly important for technology-based firms as high-technology sectors demand the continuing renewal of knowledge for exploitation purposes (Lane & Lubatkin, 1998). The process of relational rents and how they are created are written down by Dyer & Singh (1998) as the relational view which acts as extension of the resource-based view that states that competitive advantages that result from alliances come through firm-based resources (Barney, 1991; Dierickx & Cool, 1989).

Many scholars have investigated intercompany collaboration and how strategic alliances can be managed successfully (Gulati, 1998; Das & Teng, 1998; Ireland et al., 2002; Wassmer et al., 2010). This area of work can therefor offer valuable insights in how to optimize the synergies between large corporations and start-up firms and define inter-organizational competitive advantages. The available research on corporate and start-up collaboration does not make optimal use of this comprehensive body of work and especially the relational view remains under-utilized. Past researchers have considered the role of corporate incubators, which can be formed by universities, start-ups and/or companies and described their assets (Gassmann & Becker, 2006) but have approached their research from a 'current resource' perspective and have not looked at the synergetic potential that combining resources of start-ups and corporates can create. This is an unutilized opportunity considering that the resources from start-up firms and large corporations are potentially synergetic, but also distinctively different from each due to the vast differences between both organizational types. These differences require specific attention from researchers considering that because of differences between firms it cannot be assumed that 'combining' resources will lead to successful outcomes (Lane & Lubatkin, 1998; Lavie et al., 2012). The alliance development process by Das and Teng (2002) appears to be particularly relevant to investigate considering the dynamic aspects of collaborative arrangements (Ariño & de la Torre, 1998). So far this has not been researched in relation to alliances between start-ups and corporates and both theoretical and practical questions remain. For example, it remains uncertain how knowledge sharing routines should be managed between start-ups and corporates or how to design the alliance process to generate successful outcomes. This research will step into this void by investigating strategic alliances between start-ups and corporates through the scope of the relational view.

1.2 Research objective

After having introduced the topic of the research the following research question was adopted:

'How should strategic alliances between large corporations and start-up firms be managed to create successful outcomes?'

To obtain the necessary insights to answer this question the following sub-questions were chosen:

- What aspects from the alliance environment influences alliances between start-up firms and large corporations?
- Given the alliance process, which alliance conditions are most important during the alliance between large corporations and start-ups firms?
- What are key aspects to manage during the formation of alliances between large corporations and start-up firms?
- How should alliances between large corporation and start-up firms be managed during the operation phase?
- How should the outcomes of alliances between large corporations and start-up firms be measured to further enhance results?
- Where does the management of alliances between large corporations and start-up firms differ from the management of typical alliance between more similar alliance partners?

1.3 Research contribution

To date, researchers have concentrated on theoretical and empirical explanations of alliances. This focus emphasizes why firms form certain alliances, why particular governance structures are chosen over alternative forms and so on (Gulati, 1998). In contrast, far fewer research has investigated the 'how-question' behind alliance management. Understanding how alliances should be successfully managed requires the study of processes, including those designed and used to effectively manage alliances (Barringer & Harrison, 2000; Doz, 1996; Gulati, 1998; Das & Teng, 2002). This lack of research into alliance processes is especially true for alliances between start-ups and corporates. This research aims to contribute to this existing body of alliance literature, by generating new insights how to successfully manage alliances between large corporations and start-up firms. The alliance development process by Das and Teng (2002) suggests that alliances follow a development process consisting of the three stages being formation, operation, and outcome. However, current literature has fallen short to describe what factors influence the success of alliances between start-ups and corporates and how these should be managed. These are relevant insights to obtain since Lane and Lubatkin (1998) have shown that interfirm learning abilities decrease when the relative characteristics of the two firms, particularly the relationship between their knowledge- processing systems, are dissimilar. This is where this research can contribute and will investigate how the constructs of the relational view translate into the real-life business. This research will investigate underlying processes and identify the key factors to successfully harness the opportunities they bring. Another contribution is around performance measurement of alliances. This topic is often not covered into detail in literature because of the obstacles and logistical challenges it brings (Gulati, 1998).

1.3.1 Theoretical relevance

Alliance process research concentrates on the dynamic aspects of collaborative arrangements (Ariño & de la Torre, 1998). Therefore, effective alliance management is a significant challenge and a complex, under investigated phenomenon (Bruner & Spekman, 1998; Lam, 1998). While the literature on strategic alliances has been extensive, the scope of the body of work has been on examining and explaining anticipated alliance outcomes or benefits (McCutcheon & Stuart, 2000). Moreover, the scope of alliance research has typically been on more similar companies, which is not the case for alliances between start-ups and corporates. This is a missed opportunity as previous alliance research has, amongst other insights, helped us to understand how interfirm competitive advantages are created through strategic alliances. Considering the vast differences between start-ups and corporates (e.g. in available resources, organizational culture, organizational design, entrepreneurial type, etc.) there are relevant differences from previous research. These large differences make insights on how to overcome them a valuable contribution to the literature. Another contribution from this research is that by its focus on the alliance process. This can provide a detailed description of the factors that play into the success of alliance management between start-ups and large corporations.

1.3.2 Practical relevance

This research also provides valuable input for managers by drawing attention to the different mechanisms that lead to relational rent generation within a strategic alliance between large corporations and start-up firms. Enhancing our knowledge about the effective management of alliances should direct research and contribute to a reduction in alliance failures through improved managerial practices (Barringer & Harrison, 2000). Considering almost half of the alliances fail (Dyer, Kale & Singh, 2001; Patzelt & Shepherd, 2008) it can be argued that managers from the field can use further guidance on how to manage alliances with more success. There is also no evidence to proof that the success rate of alliances between start-ups and corporates is different. Considering the growing amount of collaborations between start-ups and corporates these become increasingly relevant for managers who want to harness the full synergetic potential of alliances between start-up firms and corporates. For example, it can be helpful for the involved parties to understand which constructs of the relational rent formation require the heaviest attention as the differences between both organizations can limit the creation of inter-organizational competitive advantages. By showing which factors play are role during strategic alliances between start-ups and corporates, this research provides managers insights to what aspects they should pay close(r) to during the evolution of an alliance.

1.4 Thesis outline

This thesis is organized in the following set of chapters. Chapter II, the literature review, will address the main concepts resulting from the alliance literature comprehending the relational view and alliance performance management. Chapter III will describe the research design, study methodology, data collection and case selection approaches. Chapter IV will present the empirical results from the data collection, chapter V the conclusions that can be drawn from these findings. In chapter VI the research will be discussed as well as its limitations and directions for future research are determined.

CHAPTER II: LITERATURE REVIEW

Previous research has left us with a wealth of knowledge involving strategic alliances and how to manage these alliances towards successful outcomes. Following a review of the literature, Das and Teng (2002) define the process of alliances based on five steps, being (1) the environment, (2) the alliance conditions, (3) the formation, (4) the operation and (5) the outcomes of alliances. The following literature will address these three constructs of the alliance process to cover alliances between large corporations and start-up firms. This research investigates how alliances between start-up firms and corporation can successfully be managed. To answer this, the alliance development process and sub-processes of the alliance development process is used as a theoretical frame, to identify the aspects that are important in managing alliances between start-ups and corporates.

2.1 Alliance Environment

2.1.1 Industry Type

Eisenhardt and Schoonhoven (1996) state that the industry a company is active in will influence how it deals with alliances. The authors that that alliance formation is said to be higher in emergent-stage markets and growth-stage markets. This is believed that these environmental parameters lead to higher resource necessity and a need to find external solutions. Also, markets with innovative strategies are said to result into alliance formation. The industry type also influences what companies are looking for in alliance partners. Specifically, executives from emerging market firms place greater emphasis on financial assets of partners, technological capabilities, intangible assets and partner willingness to share expertise than executives from developed market firms (Hitt et al., 2000). The authors also state that executives from developed market firms emphasize more on market knowledge and access more than executives from both emerging and developed market firms emphasize complementary capabilities.

2.1.2 Network Type

The network a company is in differs from its originating industry because the network can cross-over the boundaries of a specific industry, and is relevant to alliances because the network in which a firm is located also has influence on the level of adaptability of a firm. Organizations in smaller, older and more homogeneous networks are more likely to adapt their core features in response to environmental change and turn this into positive alliance outcomes (Kraatz, 1998; Gulati et al., 2000; Snehota, 2011). This connects to research that claims that the amount of network ties a company has with potential partners, will positively affect alliance outcomes (Dyer & Hatch, 2006; Hoang & Rothaermel, 2005; Powell, Kogut, & Smith-Doerr, 1996). These researchers have collectively defined four explanations for this positive correlation. Firstly, an industry network determines a firm's ability to leave a specific alliance and/or to potentially replace a partner with another. Secondly, an alliance partner with a greater number of partners has more options to source and combine knowledge. Thirdly, alliances facilitate partners to leverage external knowledge internally and externally with other partners. Fourthly, the size of the industry network increases the chance of pre-alliance overlap with the partner and therefore a better fit between both organizations. In addition, Phelps (2010) states that network density amongst a firm's alliance partners strengthens the influence of diversity, suggesting that the benefits of network connectedness and access to diverse information can coexist in an alliance network and that this combination can increase exploratory innovation. Koka and Prescott (2008) propose that a design of an alliance network should be linked to the strategic aim of the organizations. They suggest that firms pursuing an analyze strategy, for example to learn a new market or new technology, should adopt an entrepreneurial alliance network. Interestingly, recent literature proposes that firms looking for explorative learning, it is not important to establish deep relationships with alliance partners and for firms that look to develop transformative learning it is not important to establish broad relationships

(Ferreras-Mendez et al., 2016). It is proposed that managers should assess their alliance portfolio over time and redesign it based on environmental and strategic contingencies.

Inkpen and Tsang (2005) distinguish a set of common network types: intercorporate networks, strategic alliances, and industrial districts. Consecutively, the authors have identified structural, cognitive and relational dimensions for these network types using a social capital framework. Later, they linked these social capital dimensions to the conditions that facilitate knowledge transfer for the different network types. They conclude that for interorganizational knowledge transfer to take place in a network, either or both levels of social capital must be present. Other research has investigated the effects of social capital within young technology-based firms. The researches indicate that the social interaction and network ties dimensions of social capital are indeed associated with greater knowledge acquisition, but that the relationship quality dimension is negatively associated with knowledge acquisition. Knowledge acquisition is positively associated with knowledge exploitation for competitive advantage through new product development, technological distinctiveness, and sales cost efficiency (Yli-Renko et al., 2001).

2.1.3 Firm Type

The need for trust-based relationships as a primary need for alliance success is confirmed by many authors (Das & Teng, 1998; Ireland, Hitt & Vaidyanath, 2002; Meier et al., 2016; Kale et al., 2000). It is said that alliances must be managed to build social capital and knowledge to maximize cooperation among the partners. Hoffmann and Schlosser (2001) state that the need for trust is especially high in alliances involving Small and Medium Sized Enterprises (SME's). In addition, they urge that SME's also need hard facts such as strategic compatibility and appropriate governance mechanisms to stimulate alliance success. It is believed that there is a premium on these values because of resource scarcity that can be more routine for smaller organizations. The size of a firm is said to have influence on how it proceeds in alliances. Yang et al. (2014) have analyzed how small firms manage their relationships with large companies. The authors argue that exploitation alliances with large firms will typically generate more value for small firms than exploration alliances with large firm's due to a heightened risk of appropriation in exploration alliances.

When looking at alliances on firm level, the experience the firm has in doing alliances is said to have great influence on its successes with it. Kale et al. (2002) found that a firm's experience in dealing with alliances will determine their ability to achieve its stated objective in future alliances. Appointing a dedicated alliance function is a well-researched topic and proven way how firms can increase both its alliance experience and alliance capabilities through a series of ways (Dyer et al., 2001; Kale et al., 2002). First, the dedicated function acts as a focal point for capturing and storing alliance management learnings and best practices from the alliance experiences as well as leveraging that knowledge throughout the organization. Second, the dedicated function enhances the visibility and awareness of the alliance strategy of the firm, both with internal as with external stakeholders. Third, a dedicated alliance function provides legitimacy and support for a firm's alliances and helps to free up resources necessary for alliance success. Fourth, the function can act as a mechanism to monitor the performance of the firm's alliances to identify any potential problems before they can escalate.

2.2. Alliance Conditions

2.2.1 Alliance Strategy

Multiple authors have investigated the various alliance forms and have confirmed their contributions to a firm's strategy and improvement of competitiveness (Alvarez & Barney, 2001; Das & Teng, 1996, 2000b; Doz & Hamel, 1998). Within the context of alliances, the creation of value is mentioned as the primary strategic aim and defined as the net rent earning capacity of either tangible or intangible assets (Doz & Hamel, 1998; Eisenhardt & Schoonhoven, 1996). Value is reflected in the rents partners gain through synergy exceeding what could have been generated through alternative organizational configurations (Madhok & Tallman, 1998; Bruner & Spekman, 1998). Value is reflected in the rents partners gain through synergy exceeding what could have been generated through alternative organizational configurations (Madhok & Tallman, 1998; Bruner & Spekman, 1998). Findings from Lin, Yang, and Demirkan (2007) suggest that although an ambidextrous formation of alliances benefits large firms, a focused formation of either exploratory or exploitative alliances benefits small firms. So, where it is suggested that corporates should spread out and widen their alliance portfolio, a startup is better off by focusing its priorities in either exploring new capabilities or growing existing business to be successful.

Dyer and Singh (1998) have identified three types of arrangements for forming alliances, that cluster the strategic intent from the alliance partners: (1) Cooption, (2) Cospecialization and (3) Internalization. Firstly, Cooption or pooling arrangement is an alliance form where two or more organizations combine similar resources. Possible aims for this type of alliance are cost sharing, risk sharing, economies of scale, product and service development, gaining access to foreign market, neutralizing or blocking competitors, collective lobbying, gaining influence over stakeholders (e.g. supply chain). When considering possible alliances between start-ups and corporates an alliance based on Cooption might be suboptimal due to dissimilarities between both firm types. As Alvarez and Barney (2001) have published, small firms may suffer from alliances with large firms because the latter tend to outlearn or exploit the small firm's due to its majority of resources and capabilities which ultimately results in a situation where the corporate takes away the lion's share of the value created in alliances, leaving the startup with sub-optimal outcomes. Yang et al. (2014) report this is due to higher bargaining power of the corporate, which would especially surface during explorational alliances as the dissymmetry of resources is even larger in those cases.

The second strategic aim of strategic alliances is called Cospecialization or the trading arrangement. Here, the alliance partners combine dissimilar (but mutually valued) resources with the aim of new product development, gaining access to foreign markets (knowledge) or co-practice of new skills. In this setup, the startup would obtain access to complementary resources from the corporate such as manufacturing, marketing, financial, and other resources for commercializing its technologies (Rothaermel, 2001; McCutcheon & Stuart, 2000), without the limitations of resources dissymmetry (Yang et al., 2014). Ireland et al. (2005) state that the integration process that is common in this type of partner alliance will open the door for corporates to access the tacit knowledge of startups. For a start-up, partnering with corporates can add viability to their young organization and offers opportunities to resources they cannot easily access on their own (Weiblen & Chesbrough, 2015; Anokhin, 2010). When the resources of the startup and corporate are similar in value, alliances with a corporate partner can leverage a startup's existing capabilities and combine competencies across organizational boundaries (Rothaermel & Deeds, 2004). Corporates and startups often possess complementary innovation-enhancing resources since startups excel at product innovations while corporate typically are good at process innovations (Abernathy & Utterback, 1988; King, Covin, & Hegarty, 2003). It can therefore be concluded that alliances between startups and corporates that play into these strengths have a higher chance of success, primarily because they entail lower uncertainty; it is easier for partner firms to draw responsibilities and benefits because the technology for commercialization is often further developed and better protected (Rothaermel & Deeds, 2004).

The third strategic aim of alliances is described by Dyer and Singh (1998) as Internalization or learning arrangement. During this alliance, one alliance partner that gains resources and/or knowledge from the other. Possible aims that are linked to this form are learning, co-practice of new skills, apprenticeship from partner, calibration and benchmarking of partner. Doz and Hamel (1998) state that when organizations engage in mutual learning experiences, they can learn at a faster rate than as standalone companies. However, this concept suggests all firms are equally adapted to learn from each other which is not likely to be achieved in alliances between start-ups and corporates considering the greater learning potential of the corporate (Alvarez and Barney, 2001). Lane and Lubatkin (1998) have re-conceptualized a firm-level construct absorptive capacity model where one firm's ability to learn from is argued to depend on the similarity of both firm. In detail, the relative absorptive capacity is determined on both firms' (1) knowledge bases, (2) organizational structures and compensation policies and (3) dominant logics. Especially the similarities in 'know-what' (knowledge), 'knowhow' (knowledge-processing systems), and 'know-why' (dominant logics) are said to be most important for interorganizational learning. This can be a limiting factor when considering alliances between startups and corporates, as startups are often stronger developed in answering 'know-what' questions, such as the development of a new product or technology and a corporate is better in answer the knowhow and know-why questions due to its advancements and experience in process innovations (Abernathy & Utterback, 1988; King, Covin, & Hegarty, 2003). This would effectively eliminate several alliance designs with learning purposes. Another aspect that adds uncertainty to this type of alliance is the earlier mentioned dissymmetry between the two firm types. It is believed that the higher bargaining power of the corporate will lead to suboptimal alliance outcomes for the startup as the corporate will outlearn the startup and claim the majority share of the resources coming out of the alliance (Alvarez & Barney, 2001; Yang et al., 2014).

2.2.2 Alliance Condition Variables

Careful strategic planning and good partnership preparation are essential for alliance success, but the full value of an alliance should be developed as it evolves (Hoffmann & Schlosser, 2001). Central to this is management of alliance conditions. Alliance conditions are said to be the characteristics of an alliance at any given moment in the life of the alliance and describe the state an alliance is in (Doz, 1996). Further, it is noted that alliance conditions are measured by a set of variables and will evolve dynamically during an alliance as initial conditions are replaced by revised conditions. Adding to this, Ariño and de la Torre (1998) also found that alliance conditions are dynamic because they govern the interactions between the partners which will vary over time. This hold special truth for alliances involving start-up firms, as their actions are not one-sided and stable but interactive and dynamic (Oukes & Von Raesfeld, 2016). Simonin (1997) stakes the claim for differences between knowledge-specific variables and partner-specific variables. Both are said to have influence on the outcomes of alliances but central to this is the level of ambiguity. This is because ambiguity is negatively related to knowledge transfer and can therefor limit the proceedings of alliances. More specifically, ambiguity is said to be created by higher levels of tacitness, complexity, cultural distance and organizational distance. Acting as a counterpart of ambiguity is experience as this is said to reduce ambiguity and can therefore have a positive effect on alliance outcomes (Simonin, 1997; Dyer et al., 2001). Another condition that is said to have a positive influence on the outcome of alliances is a strong level of commitment from alliance partners as it is said that with commitment it is possible to overcome the natural resistance to risks, to provide the necessary resources for the cooperation and to exchange sufficient information (Ariño & Doz, 2000; Lee, Olson & Trimi, 2012). Conditions that also aid to the success of alliances is a great alliance orientation. This allows firms to manage inter-firm relationships and absorb, integrate, and leverage new knowledge of current and future alliance partners, increasing knowledge management in inter-firm relationships (Meier, 2011). These firms with a greater alliance orientation are constantly driving the search for alliance partners, nurturing existing partners and try to develop processes for alliance management.

For managing successful alliances, complementarity of resources and capabilities is identified as a key condition to align interfirm processes (Barney, 1988; Dyer & Singh, 1998; Grimpe & Hussinger, 2014).

Complementarity increases in importance in case of technology development. Here it can create value when the technological knowledge is sufficient to provide opportunities for learning and overcome organizational and geographical distance (Capaldo, 2014), but different enough to produce new and diverse knowledge (Ahuja & Katila, 2001; Kavusan et al., 2016). In accordance, Dyer and Singh (1998) define complementary resource sharing as a distinctive determinant for alliance success as complementarity of resources and capabilities can determine if the alliance partners can collectively generate greater rents than the sum of those obtained from the individual efforts of each partner. The authors argue that through the exchange, the partners can place leverage on each other's resources and capabilities and through this leverage they can generate supernormal profits that are not reachable by the partners alone. To the notion of partner similarity and dissimilarity, Das and Teng (1998) add by stating the importance of utilization of partner dissimilarities. They emphasize that the dissimilar resources need to be pressed into effective service for them to become complementary, effectively putting a leverage on the dissimilarity instead of noting it as a 'given'. When considering the specific context of alliances between start-ups and corporates, Weiblen and Chesbrough (2015) also identify the importance of complementarity. The authors state the importance for corporates to have a clear value proposition towards start-up firms and how they can create value together. So, to form successful alliances, corporates should have their aims and offerings clear on forehand to attract premium start-up firms and organize the alliances to leverage complementary resources. Previous research tells us that complementary resources between small and large technological firms can come in a variety of areas, such as manufacturing, marketing, financial and other commercialization areas (Rothaermel, 2001), but optimal alliance results should be expected when product innovation takes place at the start-up level and process innovation at the side of the corporate as this is where both organization types typically excel (King et al., 2003). Complementarity also is said to be an important variable to predict the possibility of knowledge spillovers, which can act as a source of inter-company learning (Yang et al., 2014; Phene & Tallman, 2014). A good way to manage alliance conditions is through relational specific time investments which help to transfer intangible factors like managerial skills or technical information (De Clercq & Sapienza, 2001). This connects with the findings from Dyer, Kale and Singh (2001) who performed interviews at large corporations with and without a dedicated alliance function. Based on their findings they concluded that an effective dedicated strategic-alliance function performs four key roles: (1) improvement of knowledge management efforts, (2) increasing external visibility, (3) providing internal coordination, and (4) elimination of both accountability problems and intervention problems. The argument for appointing a dedicated alliance function adds to other research arguing for explicit attention to alliance process management because a lack of experience and ignorance are said to be critical causes for alliance failure (Lei & Slocum, 1992; Meier, 2011). Furthermore, as firms gain experience in managing alliances, their experience and emerging sets of standardized solutions allow them to become more effective at managing processes than less experienced firms (Das & Teng, 2002). Finally, looking at alliance conditions that are specific for startup firms, it can be noted that the support system for start-ups is more diverse and deeper than in the past and that it empowers the start-ups to overcome market and organizational barriers that can limit its growth potential (Hansen et al., 2000; Gassmann & Becker, 2006; Evans, 2009). This perhaps makes start-ups nowadays less dependent than before on obtaining access to resources from corporates and should give them more bargaining power. Research by Hoffmann and Schlosser (2001) towards critical success factors for alliances with startup firms suggests that the strategic rationale of the collaboration, the fit of the partners and the chosen configuration of the alliance together form the foundation for the development of the alliance. If the founding conditions and configuration are not aligned, the success of the alliance effort is endangered from the outset.

2.3 Alliance Formation

2.3.1 Partner Selection

Previous research states that a vigorous partner selection process is a priority to prevent extensive time-investments in undesirable alliance partners. Simply put: a company looking for alliance partners must have something to offer (excess resources) and seek complementary or similar resources for transferring or pooling (Ahuja, 2000). Eisenhardt and Schoonhoven (1996) suggest that the rate of alliance formation is affected by the Top Management Team's (TMT) size and previous industry exposure, and the level of previous positions held by TMT members. The importance of partner selection might be especially true for alliances between start-ups and corporates as the design of this approach encourages corporates to interact with a greater number of start-up firms. According to Weiblen and Chesbrough (2015), a major difference between start-ups and corporates is the level of accessibility. Start-ups often do not know who to approach within the corporate and are forced to wait longer than they can because of fast pace developments that can be happening for start-ups. A dedicated alliance function on the corporate side might act as an important link to compensate for this discrepancy in access, especially concerning the need for a high volume of exchange to generate relational rents. As stated in their article, Dyer and Singh (1998) state that the greater the volume of exchange is between the alliance partners, the greater the potential will be to generate relational rents through relation-specific assets. This perhaps further increases the need at the corporate side of the alliance to pay attention to the organizational design to ensure access to resources and a sufficient level of exchange with the start-up. According to Katila et al. (2008) the alliance formation process between startups and corporates depends on resource needs, defense mechanisms, and alternative partners. These findings also confirm earlier comments on the necessity of resource complementarity.

A firm's ability to find and evaluate alliance partners with the potential to be complementary to their own depends on the extent in which it has access to accurate and timely information involving these partners. It is proposed that a firm's qualities to scout for partners is significantly increased by appointing a dedicated alliance function (Dyer, Kale and Singh, 2001). The dedicated approach is said to result in a higher visibility in the market and an increase of network ties (Bierly & Gallagher, 2007; Gulati & Gargiulo, 1997). Oszan & Eisenhardt (2009) found that executives are more likely to generate successful alliance portfolios when they view their organization within the context of the entire industry as opposed to a series of single ties. The authors also found proof that the ability of a firm to design a successful alliance portfolio is positively influenced by engaging with multiple partners simultaneously to build a higher level of social embeddedness. These findings are in line with research by Gulati (1995) who suggests that firms occupying central network positions with greater network ties have superior access to information and are therefore more likely to create more successful alliances in the future (Gulati, 1995). Having a clear and well formulated organizational strategy has been identified as an aspect to make sure the right partners are identified from the network. As Doz (1996) stated, the clearer alliance partners are about their motives, the better they are understood and the more efforts are undertaken by the partners in maintaining their compatibility. Lavie et al. (2012) stress the importance of alliance partner selection to prevent alliance failure because of differences between alliance partners. The authors state that non-equity alliances can only be effective when partners align their organizational routines to overcome differences resulting from different cultures. Recognizing organizational differences and developing alliance-specific routines are suggested ways to align interpartner-routines (Zollo et al., 2002; Albers et al., 2016).

Apart from the more rational objectives why companies should form alliances, researches have also identified that social (Granovetter, 1985) and structural (Gulati & Gargiulo, 1997) embeddedness has significant influence on the formation of relation-specific assets. Where social embeddedness focusses on the concrete, personal relations themselves, the structural embeddedness focusses on the aggregate configuration of those relations in some structural form (Moran, 2005). The level of embeddedness of firms in networks can have a moderating effect on how alliances are formed by organizations. Firstly, the type and scale of the network an organization is in, has an obvious influence on the opportunities of alliances through the access to information and partner selection it provides (Gulati, 1993). Perhaps less obvious is how the level of embeddedness can influence the importance of the status of the organization in the network. Podolny (1994) has investigated this phenomenon and writes how organizations select alliance partners based on the size of their reputation and the width of the access the organization has towards a variety of knowledge-based resources. While the status of a potential alliance partner can enhance a company's own attractiveness, the author states that organization will prefer alliances with 'high-status' partners. Gulati and Gargiulo (1997) add to this by suggesting that the level of uncertainty that surrounds an organization might further increase the importance of organizational status in alliance formation, especially in alliances where new technologies are to be formed and controlled by the high-status firm. Considering the vast differences between start-up firms and large corporations, one might argue that the possible discrepancies in status between start-ups and corporates might play a prominent role in selection processes of alliance partners. Considering the start-up side of the collaboration writers suggest that start-up incubators can increase both the embeddedness and the attractiveness for external partners (Hansen et al., 2000). Weiblen & Chesbrough (2015) state that corporates that are looking to collaborate with start-ups should ready themselves to screen, identify, work with and monitor larger numbers of start-ups. Successfully doing so requires fast decision making by the corporate. Here lies perhaps an important role for the start-up incubator. Their location close to the start-ups allows them to have a close view on what is happening at the affiliated start-up firms and which of them are ready and fitting for a successful corporate alliance. The importance of structural and social embeddedness increases the need for informal safeguards to ensure alliance success. The creation of these safeguards requires substantial time to develop based on a history of joint interactions and personal ties to establish norms and expectations based on trust (Dyer & Singh, 1998). This makes the alliance between start-ups and corporate subject of a paradox as the time that is needed to create these safeguards can be a limited resource.

2.3.2 Governance

Negotiation between alliance partners about alliance conditions often takes place in the form of discussing about a governance model. Effective governance is essential to address potential concerns about important aspects such as the distribution of value flowing out of the alliance and the generation of Intellectual Property (IP) rights. Yang et al. (2014) state the importance that small firms manage their alliances with large firms via proper alliance governance. If they do it will increase their valuations from exploration alliances with large firms. An important result of effective governance is that is enables lower transaction costs of alliances and that it increases the willingness of alliance partners to participate in value creation initiatives as it reduces the risk of opportunistic behavior (Klein, 1980). Scholars often mention a lack of cooperation and the opportunistic behavior of partners as the main reasons why alliances fail. To prevent undesirable outcomes, it is suggested to give preference to (1) self-enforcement mechanisms rather than third-party enforcement and (2) to informal rather than formal self-enforcement governance mechanisms (Dyer & Singh, 1998). Self-enforcing governance is formulated in such a way that no third (e.g. legal) party intervenes to determine whether a violation has taken place (Telser, 1980). Informal self-enforcing governance, also called as safeguards, is most effective for relational rent generation as it most suitable to generate value through inter-organizational relationships (Das & Teng, 1998; Krishan et al., 2016; Dyer & Singh, 1998). The topic of informal self-enforcing governance has been highly researched and come in various ways such as through goodwill, trust, embeddedness or reputation (Das & Teng, 1998; Gulati & Gargiulo, 1997; Granovetter, 1985;

Weigelt & Camerer, 1988). Dyer & Singh (1998) propose that the greater the length of the safeguard is to protect against opportunism, the greater the potential will be to generate relational rents through relation-specific assets. Considering the differences between start-ups and corporates, safeguards are here perhaps even more important than in a 'typical' alliance between two organizations of higher similarity. Especially large differences in power, business and Return on Investment cycles seem to increase the need towards safeguards that protect the relation-specific assets alliance partners make. Krishnan et al. (2016) state that contractual safeguards should be a requirement to alliance success, but the alliance partners main point of emphasize should be towards trust-based safeguards. According to Niesten and Jolink (2015), the communication and contract design capabilities within firms are the main determinants of the impact of alliance management capabilities a given firm may have.

Das & Teng (1998) have introduced a model to clarify how confidence in partner cooperation is generated. The model is based on the notion that control does not undermine trust, but instead both actors can work collaboratively in a complimentary function to determine the level of confidence partners have within the context of the alliance. It is stated that an alliance can work when there is a balanced level between control and trust: when there is less control, more trust is needed and vice versa. Proposed ways to build trust are (1) taking risk because when one partner realizes that the other partner has taken considerable risk in trusting her, she tends to be motivated to behave in a trustworthy manner (Coleman, 1990), (2) equity preservation to make sure that the firm contributing the most resources (both tangible and intangible) to the alliance should get the most from it in return (Korsgaard et al., 1995), (3) communication to interact and discuss proceedings of the alliance, as well as to discuss partners' credibility and trustworthiness (Das & Teng, 1998) and (4) interfirm adaptation of one partners' own behavioral to create a 'fit' with the alliance partner and/or the environment (Hallen et al., 1991). Control mechanisms that are mentioned are (1) goal setting alignment to prevent a 'misfit' between (e.g. short or long term) goals between partners (Merchant, 1984), (2) structural specifications in the form of a possible variety of rules and regulations alliance partners agree upon (Das & Teng, 1998) and (3) cultural blending to unify how alliance partners process information and react to the environment. This facilitates a higher level of behavioral predictability and creation of shared norms that define appropriate attitudes and behaviors (O'Reilly & Chatman, 1996). The importance of trust for alliance success is further described in a meta-analysis by Meier et al. (2016). The authors state that process-based mechanisms are more important for building trust than characteristic- and institutional-based mechanisms. Process-based trust is stated to emerge from the inter-organizational exchange process itself from the past, the ongoing exchange or from the expected future interaction of the alliance partners. It refers to the partner firm's cooperative history, reputation effects, communication and the expected continuity of the relationship. Effectively, the article states that trust must be built through a process of hard work without shortcuts, paired with a genuine interest in the activities of the alliance partner. Although many research has gone into the suitability and importance of various governance forms, other research states that governance forms and task structures are only partial determinants partnership performance. Instead focusing on the knowledge structures and work systems of partner firms. Especially high-technology collaborations require the intense sharing and transfer of knowledge. The level in which alliance partners are able achieve this is said to be of higher importance on determining alliance outcomes (Lam, 1998) and to overcome uncertainties regarding the future outcomes of the alliance (Hoetker & Mellewigt, 2009). This makes the need for sturdy governance even more important in knowledge-ridge alliances.

Looking at governance types within the context of alliances between start-ups and corporates, it can be noted that large corporations have adopted several mechanisms to collaborate with start-ups such as venture capital, internal incubators, joint ventures and strategic alliances (Chesbrough, 2002). Historically, venturing has been the most dominant platform that has been used but the growth and increasing viability of start-up firms have created a need to develop more agile means for large companies to engage with the start-up community. The importance of deciding on the right governance model originates from the high risk of appropriation small firms are often at. The possible appropriation concerns originate from the difficulties of governing exploratory alliances as manifested in contract design, monitoring, and enforcement (Teece, 1992). Katila et al. (2008) add to this by stating that startups will only run the risk of collaborating with the much powerful corporate when appropriate defense mechanisms are in place to protect their own resources. Weiblen and Chesbrough (2015) refer of four different models that corporates can leverage to engage with start-ups successfully, while zooming in on two new models that appear to have benefits: outside-in and inside-out platform start-up programs. Both models offer a lightweight alternative governance structure that lets companies engage with a larger number of start-ups, at a faster pace to deal with a dynamic, turbulent and potentially disruptive environment. The outside-in start-up model puts the focus on making start-up products or technologies available to the corporate by enabling multiple start-ups to elaborate and deliver on their ideas within a pre-determined timeframe. For this approach, a formal governance structure agreement is deemed critical to deal with Intellectual Property (IP) distribution and to agree on activities, milestones and financials. Where the outside-in model puts the start-up in the role of a supplier, the inside-out platform model is aimed to for the start-ups to build their products using technology supplied by the corporate to expand the market for the corporation. This essentially makes the start-up firm a customer of the corporation. A central piece to this governance structure can be how the alliance partners deal with the costs of the corporate technology. Weiblen and Chesbrough (2015) refer to a 'from free to freemium' approach - as used by the Microsoft corporation - that allows the start-ups to make use of the technology for free until it is turned into a profitable business proposition. These novel models are in line with other researchers who propose agile governance structures for alliances between start-ups and corporates, underlining the importance of trust in this form of alliance between two very different partners (Thorgren et al., 2011). More specifically, Yang et al. (2014) suggest the use of more formal, equity based, governance structures for alliances between start-ups and corporates when new technology is developed, while suggesting partners are better off using a non-equity based governance model when existing technology is used.

2.4 Alliance Operation

2.4.1 Interfirm Learning Mechanisms

The ability to learn from an alliance partner is a key determinant of bargaining power and alliance stability (Hamel, 1991; Inkpen & Beamish, 1997). According to Lane and Lubatkin (1998) effective learning by firms starts first with a thorough understanding of its own knowledge, the processes how knowledge is converted to capabilities and the capacity of those capabilities to meet demands of its environment. The authors claim that without this self-awareness firms will be slow to react to market forces and will have difficulty to effectively develop new capabilities. Organizational knowledge transfer has been defined as the process through which organizational actors – teams, units, or organizations – exchange, receive and are influenced by the experience and knowledge of others (Van Wijk et al., 2008). Firms that can learn through alliances at a fast rate are able to acquire partner skills, reducing their dependence and increasing their bargaining power (Hamel, 1991; Doz, 1996). Like how the effect of economies of scale increases the output of production, a greater amount and scope of knowledge exchange activities between alliance partners is likely to increase efficiency associated with interfirm exchanges (Dyer & Singh, 1998). Learning not only motivates alliance collaboration, but can also promote competitive learning between alliance partners (Hamel, 1991). Prior research shows that firms who are more capable in learning can generate greater economic returns out of their alliances (Inkpen & Beamish, 1997). It is said that firms can increase the learning potential through alliances through a greater network of alliance partners (Emden, Yaprak, & Cavusgil, 2005) and internal structures of an alliance orientation (Kandemir et al., 2006). Conditional to the potential to learn from alliance experiences are the knowledge-sharing routines between alliance partners since the transfer of valuable information typically involves a repeating process of exchange and requires extensive face-to-face interactions (Daft & Lengel, 1986; Dyer, Kale & Singh, 2001). As a result, knowledge-sharing routines can create relational rent in the form of productivity advantages (Dyer & Nobeoka, 2000), faster knowledge acquisition (Dyer & Hatch, 2006), or increased innovation. Dyer and Singh (1998) name two sub processes of knowledge-sharing routines: 'partner-specific absorptive capacity' and 'incentives to encourage transparency and discourage free riding.' Partner specific absorptive capacity represents the ability of a firm to recognize the value of and assimilate information from a specific co-operation partner (Dyer & Singh, 1998). It is a development of the more abstract concept of absorptive capacity that refers to the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends (Cohen & Levinthal, 1990). Complementary to partner-specific absorptive capacity, the right incentive structure can support knowledge sharing, as it encourages transparency and discourages free riding behavior and is a critical aspect to relational rent generation (Eisenhardt, 1989a; Reuer & Ragozzino, 2006; Hamel, 1991). When looking at the learning potential in alliances between start-ups and corporates, the concept of relative absorptive capacity seems especially interesting. Here, the similarity of the partners' basic knowledge, lower management formalization, research centralization, compensation practices, and research communities were positively related to interorganizational learning *(*Lane & Lubatkin, 1998). It is therefore proposed that, considering the large differences between start-ups and alliances in these areas, will limit the interfirm learning potential of the alliance partners. It is perhaps because of the higher bargaining power of the corporate (Yang et al., 2014) that these differences lead to suboptimal results. According to Van Wijk et al. (2012), knowledge creation is not fostered by vertical knowledge inflows within the organization or by research centralization, but instead by decentralizing units giving them freedom to learn independently. At the corporate level, it is suggested that the learning potential of firms is improved by developing and balancing distinct types of knowledge stocks at the unit level. What is also interesting in this light are findings from Forés and Camisón (2016) that state that in some cases a greater firm size can have mixed influences on a firms' knowledge accumulation capabilities. They state that on the one hand, a larger firm size increases internal knowledge creation capabilities, but it does not affect the absorption of new external knowledge. They also found that absorptive capability has a positive direct effect on radical innovation performance, whereas size has a negative non-significant effect on it.

Social capital is viewed as a key facilitator of knowledge exchanges, both within and between firms, as it allows actors of organizations to access necessary information (Van Wijk et al, 2008; Yli-Renko et al., 2001; Lane & Lubatkin, 1998, Inkpen & Tsang, 2005). The argument goes that the more firms can build and leverage social capital in their internal and external relationships, the greater will be the potential value creation benefits that firms can expect from interfirm collaborations (Ireland, Hitt & Vaidyanath, 2002). Managing conflicts in an integrative fashion leads to more learning and an enhanced ability to protect core proprietary assets from each other (Kale et al., 2000). To further optimize the knowledge-sharing between alliance partners, Dyer & Nobeoka (2000) suggest that the more tacit the knowledge is that needs to be shared, the smaller the knowledge sharing group of the persons involved should be. This might be an advantage considering the typical small scale of alliances between start-up firms and corporations. Similarly, alliance management capabilities stored within the alliance have a positive effect on alliance attributes, because partners store general and partner-specific knowledge in interfirm alliance structures, processes tools (Niesten & Jolink, 2015). Important in a domestic context, alliance management is perhaps even more critical for international cooperative firms (Lam, 1998).

When looking specifically at literature concerning the learning potential between corporates and startup firms there are some interesting findings to mention. When examining technological startups, Almeida et al. (2003) found that all firms learn from participating in alliances but that external learning possibilities increase with the size of the startup. Another aspect to consider is the power asymmetry between startups and corporates. As this is said to significantly increase the impact of relationship learning in cases of exploitative alliances, but is lower in cases of explorative alliances because of the risk of appropriation by the corporate (Yang et al., 2014). In addition, informal mechanisms of mobility and geographic co-location decrease with the increasing size of the startup. These results suggest that as startups grow, they may have increasing opportunities to access and exploit external knowledge, but their motivation and ability from external sources may decrease over time. Subsequently, authors found different learning potential and learning rates between large firms and small firms (Van Wijk, et al., 2008; Alvarez & Barney, 2001; Forés & Camisón, 2016). It is stated that a larger amount of resources (Gupta & Govindarajan, 2000; Yang et al., 2014) of the larger firm and its more diverse knowledge resources (Cohen & Levithal, 1990) allows them to absorb the information at a faster rate than the startup. This is in line with publications concerning the spill-over of knowledge between alliance partners when the aim of the alliance is to develop new technologies. It is stated that knowledge resources of small firms are more easily appropriated than the resources of large firms because small firms often have a limited product development scope (Deeds and Hill, 1998; Ireland et al., 2005).

2.4.2 Managing Ambiguity

Ambiguity becomes present in situations where there is no clear interpretation available, often the result by insufficient information or a lack of available clear information (Feldman, 1991; Forbes, 2007). Recent literature has shown the damaging role of ambiguity has on alliance success (Kumar & Patriotta, 2011; Kumar, 2014; Niesten & Jolink, 2015. From the work of Forbes (2007) it can be concluded the key distinction between ambiguity and uncertainty lies in the different levels of knowledge that decision makers may possess about a specific situation. Kumar (2014) has identified two types of ambiguity that comes to play during an alliance. Firstly, partner ambiguity which can result from opportunistic behavior from the alliance partner, cultural clashes, inadequate managerial mechanisms, fairness or from a presence (or lack of) prior history between alliance partners. It is suggested that partner ambiguity can be managed through top management support, as it will build strategic consensus, demonstrate commitment and facilitates positive perceptions. Task partitioning, relationship building and the use of external frameworks such as structures, protocols are also suggested as means to manage partner ambiguity. Another form of ambiguity that can come into play during an alliance is interactional ambiguity and can come from information sharing, the presence of a cultural gap, fairness or from governance mechanisms. The result of interactional ambiguity can be unfavorable process discrepancies, such as an ineffective interaction between alliance partners. To manage interactional ambiguity, it is proposed to detect unfavorable process discrepancies in a timely way, through effective management of emotions and through collaborative problem solving through the establishment of routines between alliance partners.

2.5 Alliance Outcome

2.5.1 Outcome Evaluation

In general, the available alliance literature on measuring alliance outcomes is organized in two categories. The first category includes more objective, financial measures such as revenues, costs, profitability and sales growth (Mohr & Spekman, 1994; Contractor & Lorange, 1988). The second category includes the measuring more subjective managerial assessments of alliance performance (Hebert and Beamish, 1997; Mohr and Spekman, 1994). Considering the context of alliances between start-ups and corporates it is decided that focusing on financial or accounting measures alone is to narrow. It is therefore decided to rely on a broader scope for measuring the outcomes of alliances. Kale, Dyer and Singh (2002) propose to measure alliance success through a percentage in which a firm's initial goals were realized. However, considering the dynamic aspect of alliances it can be limited to only include initial goals, as it is argued that alliances can benefit firms in greater but also different ways than it was defined at the start of the alliance. A concrete example of this is described by McCutcheon and Stuart (2000). They note that in the case of alliances between start-ups and corporates, the start-up can still benefit from the alliance because of the higher stature of the corporate, even though the alliance itself did not meet its objectives. It is therefore concluded that the success of alliances will be measured on a percentage of the initial and evolving goals of alliance partners. As these aims can defer between partners, the percentage of success should be measured independently for both alliance partners.

2.5.2 Alliance Modification

During the outcome stage of the alliance, the proceedings become tangible and can therefore be evaluated with some certainty. Das and Teng (2002) have identified four effectual outcomes of alliances, which can be separate or jointly applicable: (1) stabilization, (2) reformation, (3) decline and/or (4) termination. Which of the four effectual outcomes above will depend on the conditions of the alliance. In example in some cases reformation and termination may be most suitable, for instance when the pre-set alliance objectives have been met. Also, at the outcome stage of the alliance, the collective strength of an alliance manifests itself in the ability of the alliance to compete effectively, accumulate financial resources and enhance its managerial and technological capabilities. An alliance that possesses a higher level of complementarity will likely continue to be successful. On the other side, an alliance based on lesser collective strengths may need to be restructured or terminated (Das & Kumar, 2007). Another aspect that has considerable influence on the measurement of alliance outcome is evaluative ambiguity (Kumar, 2014). This type of ambiguity comes to play when the alliance is not meeting the expected results and often originates from unresolved outcome discrepancies, unrealistic expectations for the alliance or environmental volatility. The author suggests three solutions to manage evaluative ambiguity: (1) Adopting multiple and flexible criteria for assessing alliance performance, (2) changing the alliance's time horizon and (3) enhanced effort and/or shift in alliance governance. Finally, a topic that is perhaps especially relevant for alliances between start-ups and corporates is that an alliance can lead to an acquisition. An interesting byproduct of the experience organizations share during the process of an alliance is that it will significantly improve the quality and speed of the post-acquisition process (Al-Laham et al., 2010).

2.6 Conclusions Literature Review

Following the literature review, it is considered that the strategic aim that is chosen for the alliance between start-ups and corporates is a large determinant for the success of the alliance (Alvarez & Barney, 2001; Das & Teng, 1996, 2000b; Doz & Hamel, 1998; Yang et al., 2014). Here, the differences between both organization types become most evident and the chosen strategy will directly influence the proceedings of the alliance its outcomes (Rothaermel and Deeds, 2004; Weiblen & Chesbrough, 2015; Anokhin, 2010; Yang et al., 2014). Especially considering the differences in learning potential and learning rates between large firms and small firms (Van Wijk, et al., 2008; Alvarez & Barney, 2001), It is concluded that alliances between start-ups and corporates with the aim of Cospecialization have the highest chance for success as within this alliance type the organizational differences between the firms are presumed to be less conditional as within Cooption or Internalization alliances. Within Cospecialization alliances, it is rather the similarity of the resources the alliance partners bring to the table that will determine the outcome of the alliance (Dyer and Singh, 1998; Yang et al., 2014). Perhaps by focusing more on the similarity of resources, differences in other areas can be compensated. As described by Lane and Lubatkin (1998), differences between alliance partners negatively relates to interfirm learning. Furthermore, recent literature has showed us the importance of managing ambiguity for alliance success (Kumar & Patriotta, 2011; Kumar, 2014; Niesten & Jolink, 2015). Considering the large differences between start-up firms and large corporations and different levels of experience, ambiguity could play a large role in determining the outcomes of alliances. However, dedicated research on this specific area currently does not exist. Considering the potential relevance of this emerging field in alliance literature, as well as the fact there is not research available involving detailed proceedings of Cospecialization-alliances in practice, this should be the addressed in this research.

CHAPTER III: RESEARCH DESIGN

3.1 Research methodology

Research questions that start with 'how' are often best answered through qualitative research because they investigate the relationships that are proposed between different theory components (Yin, 2009). Any inconsistencies that are found between a preliminary theory and the evidence may lead to theory modification and enhancement (Aneshensel, 2012). For extensive and in-depth descriptions of complex social phenomena such as strategic alliances, qualitative case studies are particularly well-suited. In fact, the depth of analysis is one of the greatest benefits of the case study method. As a research method, case studies are commonly used in business (Eisenhardt & Graebner, 2007).
Critique towards the qualitative case study approach concerning its lack of replication possibilities can be countered according to Yin (2009), who stated that replication may be claimed "if two or more cases are shown to support the same theory". To ensure the possibility to replicate the findings of this research a multi-case approach was chosen, based on qualitative data out of interviews. According to Eisenhardt (1989a) this is a suitable research method to produce relevant findings and creates a more robust result then using a single case study method as its plurality increases the external validity (Yin, 2009). The multi-case approach forces investigators to look beyond initial impressions and see evidence through multiple lenses (Eisenhardt, 1989a). The larger number of cases are said to bolster the support of the emergent propositions, sharpens them at a more exact level of abstraction and makes the emergent theory more generalizable. Considering the researcher is working for the corporate alliance partner who is selected as fixed variable, the effects of prolonged engagement should be minimized as possible. Therefore, it was decided to interview the start-ups and incubator respondents first and the corporate respondents followingly.

3.2 Case selection and variables

This exploratory research examines the coherence of the relational view with the real-life occurrences found during the empirical investigation with the aim to extend the theory from its multiple cases. To detail the many specifics that define the specific context and to identify emerging themes a purposive sampling method is applied (Patton, 1990). Following, a critical case selection technique for a quartet of cases was selected to maximize the application and logical generalization of information to a wider context. Within the individual cases triangulation is used as a method to elicit the various and divergent constructions of occurrences that exist within the context of the specific cases. To achieve this, multiple respondents were selected per case and were interviewed to discover and validate findings (Denzin, 1970). For each case, a combination is made from different respondents to ensure the cases are complete and exemplary (Yin, 2009) by selecting respondents at both the start-up level, the corporate level and the start-up incubator level. Different respondents are selected with technological, governance and relational responsibilities at the start-up and corporate who are involved in the alliance to increase the contextual variance within the specific cases.

Considering that reasons of alliance failure are abundant and well researched (Dyer, Kale & Singh, 2001; Barringer & Harrison, 2000; Patzelt & Shepherd, 2008), this research is focused towards determinants of alliances success. It was decided to select one corporate as a fixed variable to reduce the number of variables on the corporate side of the alliance to one. Considering that there is currently no research available involving detailed proceedings of Cospecialization-alliances in practice, the selected alliance cases for this research all involve high-technology firms that interact in Cospecialization alliances. The strategic aim of Cospecialization is embedded in the similarity of resources the alliance partners bring in the selected cases. Within this context, a series of variables were identified based on the reviewed literature that influence alliance outcomes between large corporations and start-up firms. Firstly, a set of control variables were measured on firm level, being the *firm age* as the number of years from the date of incorporation, *firm size* as the total amount of employees. These variables are measured for the start-up only as it was decided to include just one corporate in this research. Another variable that is measured on firm level are *past alliance experience* as the count of all prior alliances with similar firm types by the respective firm at the start of the alliance (moderate experience: 0-5 past alliances – medium experience: 5-10 past alliances – high experience: 10+ past alliances). Another variable was measured at network level. Here, the *level of connectedness* was measured through the amount of network (small amount: <50 ties – medium amount: 50-150 – large amount 150+) ties the company has. A duo of variables was selected in relation to the industry to put the firm locations into context, Here, l*evel of competition* was measured (high – medium – moderate) as a determinant of the level of uncertainty resting on the firm. Also, *market maturity* was measured (emergent – growth – stable – decline) as it is thought that this influences how alliances are formed. Finally, on alliance level the level of involvement of Top Management was measured during the alliance (low: moderately involved, involved in solitary phase of the alliance such as the formation of the alliance or partner selection – medium: involved during parts of the alliance process – high: involved during the full or major course of the alliance) and the presence of a *dedicated alliance function* was measured based on the time to be spent on the management of the applicable alliance (Full-time: 20-40 hours/week – Part-time: 10-20 hours/week – Mid-time: 5-10 hours/week – Semi-time: 1-5 hours/week – Down-time: >1 hour/week). An overview how the respective control variables stack up for the four selected cases can be found in the table below.

3.3 Data collection

This research uses a semi-structured interview guide during the interviews with the respondents to be more flexible and allow for better understanding of the perspective and context of the interviewees (Lincoln & Guba, 1985). The interview questions should be open to prevent influencing the respondent and to stimulate spontaneous and genuine feedback. Central to constituting the interview guide are the findings from the literature review. These have been transformed into interview questions to determine how the proceedings in the alliance process between the corporate and the start-ups. Subsequently, questions are addressed based on the alliance conditions and development process by Das and Teng (2002) to determine what are dominant factors during the various phase(s) of the alliance development process. A thick description approach is used to ensure transferability of the results and efforts are made to ensure referential adequacy through tape recording the interviews and by asking the respondents to proof-read the interview for verification upon further usage as research data.

3.4 Data analysis

As qualitative research aims towards analytical generalization (Yin, 2009) the empirical findings of the cases are linked to the theoretical foundation to discover applicability to other cases. To achieve this, a two-step pattern matching approach is used based on the coding of the interview data. During the first step, each case goes through a within-case analysis where detailed findings are written down and data points are derived based on the single case only. Hereafter, during the second step a cross-case pattern search is performed where within-group similarities and intergroup differences are analyzed (Eisenhardt, 1989a). During both steps, the predicted patterns that are earlier taken from the literature review are logically compared to the ones that have been empirically observed. Also during these steps any variances or gaps are identified. This matching approach between empirical patterns with predicted patterns has been argued to enhance internal validity of the research (Yin, 2009). For this research the alliance development process (Das & Teng, 2002) is used to identify which construct(s) have the most important role during the various alliance stages. The data analysis and pattern recognition should show what are the variable(s) that determine alliance success, and what variables are, or are not, advantageous for alliance success. Finally, it is determined what makes the specific case successful or not.

CHAPTER IV: EMPIRICAL FINDINGS

During the empirical stage of this research four cases were investigated where a large corporation collaborates with four different start-up firms. Divided over the four cases, a total of twelve respondents were interviewed across various roles. To prevent leaking of alliance partner strategy, protect their privacy and to grant the wish of respondents for unanimity, exact details concerning content of the alliances and the exact names and functions of the respondents have been generalized. An overview of the various respondents and their respective roles can be found in below overview.

	Case 1	Case 2	Case 3	Case 4
Start-up level	CEO	CEO	CEO	CEO
Corporate Operations level	Project Manager	Project Manager	Project Manager	Project Manager
Corp. Management level	Sr. Business Director		Sr. Business Director	
Corp. Technology level	Research & Development Manager			
Incubator level	Startup Incubator Manager			

Table A: Overview of interviews and respondent distribution.

Below a detailed specification of the time spent on collection of the empirical data during the interviews.

	Case 1	Case 2	Case 3	Case 4	Total duration
Start-up level	92m	121m	82m	113m	408m
Corporate Operations level	113m	90m	50m	90m	343m
Corp. Management level	131m		87m		218m
Corp. Technology level	135m				135m
Incubator level	120m				120m
Cumulative	333m	339m	238m	309m	1219m

Table B: Duration of empirical data gathering through qualitative interviews.

4.1 CASE I

4.1.1 Alliance Environment

The start-up in this case is active in an emergent market as the product is new, the technology and their customers. The corporate is already selling established products to the same customer types. Both alliance partners are experiencing heavy competition in their respective markets. The Start-up is trying to beat its competition to be the first established product on the market. Considering all their direct competitors are start-ups as it is an emerging market, they are also experiencing heavy competition for equity investments.

Alliance aspect	Partner	Illustrative Quotes
Industry Type	Start-up	Startup CEO: "We experience heavy competition in the field of research and development. There is still a lot to be developed and companies invest in that to be the first. Then, there is also competition for investment equity and funding." Startup CEO: "Everything we are involved in is very new, it is a new product, based on a new technology, that can be used for applications that need to be defined.
	Corporate	Corporate Director: "Being the type of company that we are and our size, we experience fierce competition in virtually every area we are active in. This also means we should always be on the lookout for 'the next big thing'."
Network Type	Start-up	Startup CEO: "We are connected with other firms through the Start-up Incubator we are located in. We also have our list of customers that is continuing to grow."
	Corporate	Project Manager: "Because we are such a big company we are linked with thousands of companies all over the world. However, we have just recently started to connect with start-ups so our network there is a lot smaller."
Firm Type	Start-up	Start-up CEO: "I started the company nine years ago with an idea. Now we have a total of 9 team members working in R&D, Marketing and Sales. Our customer database is growing and we typically aim at medium to large companies."
	Corporate	R&D Manager: "This is a global company with over 90 thousand employees worldwide, 30 billion in global sales revenue and thousands of patents. The Company's products are sold across several business units and divisions. The division involved is considered the market leader in its industry with a complete product portfolio and offering to its customers."

Table C: Illustrative Quotes Alliance Environment Case I.

4.1.2 Alliance Conditions

In this case, the alliance partners are interacting through an alliance form of Cospecialization. More specific, the start-up gains access to new market as the corporate is sharing a portion of its customer network. The corporate in return is learning about the emerging market and the speed of adoption of the new technology. Also, as the corporate offers products that are not necessarily similar, but are in the same vicinity from the perspective of the customers, the corporate likes to learn how their own products can interact with the new technology and investigate possible overlaps between the existing and emerging technologies. There appears to be a possible misalignment between the alliance partners because the focus of the corporate is on the local market, but the start-up has expressed that the alliance is primarily interesting because it wants to engage with a global player.

The corporate has expressed that financial investments in the current stage would be a limiting factor to proceed. This however, seems to go against the expectations of the start-up, as they hope the corporate will indeed invest in some point and be a large contributor to the business of the start-up. The corporate expresses that it keeps a focus on the long term, but seems to track its performance based on short term results.

Looking at the alliance conditions variables, it can be mentioned that the Start-up has experience in working with corporates and larger companies, however they do not have past alliance experience. For the corporate, partnering with start-ups is something new. Consequently, the alliance with the start-up will be addressed like any typical interfirm collaboration. Although there is not a person fully dedicated on the alliance at the corporate or start-up level, at the high times of the alliance the involved functions are able to spend the necessary time on the alliance. A good example are the pilot cases that have taken place when the product has been tested at the production facilities of the corporate. During those pilots, multiple corporate functions attended to gather the needed feedback and learn the technology and proceedings. The start-up incubator manager indicated they were not directly involved in this alliance.

Alliance aspect	Partner	Illustrative Quotes
Alliance Strategy	Start-up	Start-up: "Through this collaboration we hope get in contact with new customers through the network of the (corporate) partner. When they open doors for us and endorse our product at their contacts this can be an enormous accelerator for us." Start-up CEO: "When you start a company, the beginning is always difficult. You then go and look to build 'certainties'. You will try to engage parties who are interested to invest but not on a purely financial perspective, but preferably someone who has affiliation to what we are doing. This partner is interesting because they have this broad reach. Start-up CEO: "Ultimately, we hope the corporate will invest in our product. Ideally, they would take over the worldwide distribution and commercialization of our product. We could then focus on the development of the product."
	Corporate	Corporate Director: "We will always look out for our local interests because every market is different, every country is different, every customer is different, etc. From my role, I will have to balance the priorities between the short term versus the longer term. But keep in mind that we are a profit-loss type organization, so rather it is short or long term, the return of investment is always important. On a local level, we have quite some room to decide what is best for our markets. But we should always be able to explain what the returns are. Always." Corporate Director: "We are not an investment company. If they are looking for a financial injection they should go to an investor. Our primary focus will always be towards the technology and the fit to our portfolio and/or the markets we are active in."
Alliance Condition Variables	Start-up	Start-up CEO: "This situation where we are not primarily focusing on selling our product but collaborate with the Corporate is new to us but we do have experience working with big companies as we have a couple as our customers. So, we are familiar with their timelines, stakeholder and decision-making patterns." Start-up CEO: "I am the person in charge of the collaboration with our customers and with the (corporate) partner. Depending on the area to discuss I can involve colleagues. For example, the pilot case has been managed by our R&D manager."

	Corporate	Corporate Director: “Considering how new this specific Industry I would say there is a lot to learn for us. On the other side, on a corporation level, we have tons of experience in joint collaborative projects with outside parties.”

Table D: Illustrative Quotes Alliance Conditions Case I.

4.1.3 Alliance Formation

The interactions between the alliance partners started two and a half years ago (measured back from the time of the first interview). Initially, the alliance started when the corporate headquarters engaged with the start-up in discussions around an equity stake. When this did not formalize, the local corporate subsidiary took over the initiative with the aim of learning. The business director was the one who first got in touch with the start-up after its contact at the headquarters. The director then aligned the corporate focus and designed the proceedings of the alliance to start with a pilot case and then, when successful, provide access to the corporate’s customers. Considering that the start-up gains access to the customer base of the corporate and the corporate can learn from the proceedings, the resources that are brought in by both alliance partners are considered equal.

Alliance aspect	Partner	Illustrative Quotes
Partner Selection	Start-up	Startup CEO: “Already during my first interactions with the company I noticed the priority they place on certain assurances, like are we using the correct business model. However, considering this is such a radically new market and product, there are no certainties to be given in this type of start-up. There is no existing business model to compare and no peer close to benchmark. I feel that the need for these assurances has limited us.”
	Corporate	Corporate Director: “Interestingly, the initial contacts with this start-up went through our corporate headquarters. They considered to take a stake in the start-up but decided to work with a similar start-up. They asked us they keep a tab on their progress. We see it also as a great opportunity to learn about this new product-market combination. Our focus is only on the local market.”
Gover-nance	Start-up	Startup CEO: “Apart from the non-disclosure agreement that discusses the confidentiality of the information that is being shared, there is no formal agreement. After the initial tests at the corporate and its customer we are now looking towards a more formal agreement involving commitment from the (corporate) partner. Ideally involving a financial investment.”
	Corporate	R&D Manager: “I believe a more structured approach with this start-up is the way forward. However, my experience is that when we try to do this we run into all kinds of internal structures that involve reviews, regular check-ups and oversight from the corporate headquarters. Based on this I believe we have a long way to go. For some reason openness does not fit in the DNA of the company.”

Table E: Illustrative Quotes Alliance Formation Case I.

4.1.4 Alliance Operation

It was agreed to start with a pilot at a local production facility of the corporate. During this pilot, which took place approximately one year after the first contact was made, the aim was to test the technology, how it works and its relevance for the end-users that use the products of the corporate. During the next stage of the alliance operation, the corporate introduced the start-up to some of its customers who are also potential customers for the start-up. During most of the alliance operation, the corporate top manager was directly involved to oversee the outcomes of the tests and report them back to the headquarters and to corporate research and development.

Currently, the final tests are taking place which are overseen by the project manager of the corporate. According to the involved respondents, the various tests went well and resulted into the expected learnings. The alliance design with the occurrence of the designated pilot tests, appeared to be successful as both alliance partners could build a mutual comfort zone during these stages and build report. From the start-up level, it was not always clear when the next steps or tests would occur as it was reported they felt to be kept waiting in between the pilot stages. This might be due to the different speed both organizations operate in. It could also be because of unclear communication from the corporate. Currently, there might be some ambiguity as the corporate is expressing it has learned what there was to learn. However, the corporate expressed the desire to resume talks and proceed to a more formal type of agreement.

Alliance aspect	Partner	Illustrative Quotes
Interfirm Learning Mech-anisms	Start-up	Startup CEO: "We have been waiting for quite some time to start the tests. Then when the tests are underway, we have a lot of contact, but then in between the tests we have not heard a lot back. This was sometimes not easy for us as we would like to move faster." Startup CEO: "What was also particularly interesting for me where the discussions we had about our business model. They challenged us quite a bit, but then also were very open how they would approach things in our situation. This has open my eyes in some extent."
	Corporate	Corporate Director: "At the time of the tests there was almost daily contact. It was interesting to see the technology in real life. You then really experience the adoption curve at the customer and can predict if the market is ready or not for it."
Managing Ambiguity	Start-up	Startup CEO: "Now the planned pilot tests are coming to an end the time comes again for us to put ourselves on the map, to show what has happened at our company and the developments we have made on the technology side. I'm hopeful we can turn the positive test results into something concrete soon."
	Corporate	Project Manager: "To be honest, this is an assignment that was appointed to me. There might be a fit to the company's strategy but it is all very much in the investigation stage. I would not be surprised if we take a step back soon."

Table F: Illustrative Quotes Alliance Operation Case I.

4.1.5 Alliance Outcome

Based on the positive outcomes of the tests that are part of this alliance, the start-up aims for reformation of the alliance (Das & Teng, 2002). The corporate did not directly express its aims for the future of the alliance but based on the quotes by the top manager it appears they lean towards declining (Das & Teng, 2002) the alliance. Both alliance partners claim that the initial goals of the alliance have been met. However, the expectations from the start-up to start the discussions about an expansion of the collaboration seem to be one-sided.

Alliance aspect	Partner	Illustrative Quotes
Outcome Evaluation	Start-up	Start-up CEO: "Thanks to the tests, we were able to sell and make new customers. That is always welcome and needed in our situation." Startup CEO: "We showed them our product is working, of course there is always room for improvement and some customers will always want something that is not yet available. But in my opinion, I have held my part of the agreement."

	Corporate	Corporate Director: "I am certainly happy with what we have learned so far and I think it makes sense to stay in touch with them. I have asked the project manager to check up with them every once and a while to see their progress and find out the adoption of the technology. Based on these experiences I will certainly look for replication."
Alliance Modi-fication	Start-up	Startup CEO: "You know, the longer you wait, the more doors close. Chances dry up, perhaps our times will end being a start-up. It is time someone shows some guts and speed to make a decision."
	Corporate	Corporate Director: "It is definitely an interesting technology and I believe we have a future there. However, it remains to be seen into wat extent exactly and what our role exactly will be. I should also check-in again with my colleagues at the headquarters to find out their progress."

Table G: Illustrative Quotes Alliance Outcome Case I.

4.1.6 Case I Timeline

Based on the 'alliance conditions and alliance development model' (Das & Teng, 1998), the dominant alliance condition variables that are identified during the within-case analysis are displayed in below case timeline per alliance stage.

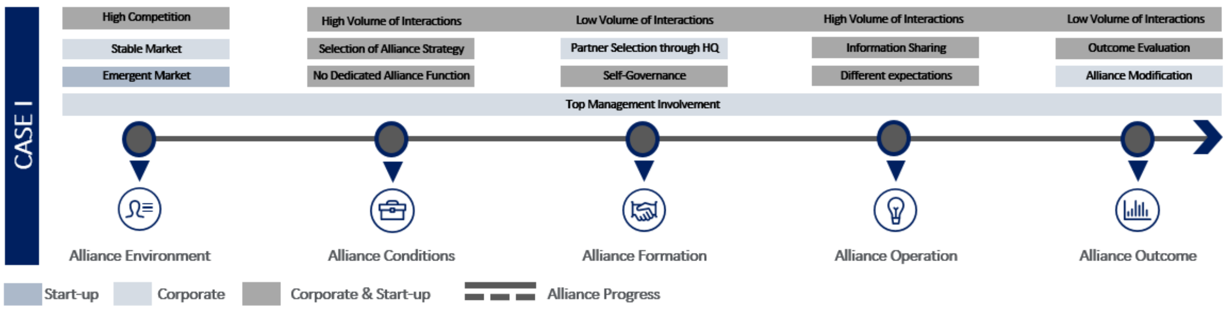

Figure I: Timeline Case II.

4.1.7 Case I: Within Case Conclusions

In this specific case, it can be noted that the corporate director had a significant hand in the success of the alliance. His commitment to the events, from start to finish, helped to generate learnings about the market and help define the place of the priority of the opportunity within better definition of a larger scale. For the start-up, the alliance was a success as it was reported they met the goals they set out at the start. It appears that the lack of past alliance experience in dealing with similar types of alliances did not have a negative influence on the success of the alliance. Also, as both respondents indicate they have experience sufficient access to each other, especially during the operation stages, the absence of a dedicated alliance function did not limit the outcomes.

Another aspect that helped to generate successful outcomes was due to the staged design of the alliance with the implementation of framed pilot phases. First, at a local production facility of the corporate, both alliance partners could build a report with each other and a mutual comfort zone. Secondly, the tests at the customers of the corporate helped the start-up to sell and implement their product at a new install base.

It can be concluded that management of ambiguity played a significant role in this alliance. Especially, considering the management of variation in expectations. The start-up clearly was aiming for a larger scale collaboration, including a global distribution agreement. The corporate reports that it was clear for them that the aim of the alliance was to learn and not go against global strategy from the headquarters.

It is unclear if this was because of unclear communication, the different speeds both organizations operate in or a combination of factors.

A final aspect that appeared to play a role in the success of this alliance was the involvement of the corporate headquarters. Firstly, they initiated the first contact with the start-up. After these talks did not result into a formal agreement, the global team transferred the contacts to local management. Perhaps due to the involvement of the global organization, the assignment to learn the identified market and technology was placed on a higher priority because of this. In this case the role of the start-up incubator was only to facilitate the start-up, but was not directly involved in any of the proceedings of the alliance or in the selection of the partners.

4.2 CASE II

4.2.1 Alliance Environment

The start-up involved in this case is active in the same emergent market as in the previous case with a similar product for different purposes. However, the technology is even newer. At the time of the interview, the product was approximately six months away from the market launch and the company is currently in the phase of testing it for selected applications with prioritized customers. The corporate is selling established products to customers who are also potential users of the start-up product. The start-up indicates it is the first on the market with its specific technological features and with that aiming to reach the market before competitors can launch similar technology. They are trying to find their way-to-market model, including distribution and in the process of identifying the target audiences to focus on first. The start-up has indicated they do not have any alliance experience. They do have tested their product at approximately five different corporations. Both organizations did not appoint a dedicated alliance function for this project.

Alliance aspect	Partner	Illustrative Quotes
Industry Type	Start-up	Start-up CEO: "We want to target large scale manufacturing companies or companies with a large workforce. We want to work in partnerships with customers." Start-up CEO: "We are not really in the market yet. But as soon as we launch, we expect to see a similar trend happening in our area. Many mechanical engineers are working on this, but so far, we are best in class. We haven't seen anything yet that is better than ours. That gives us a bit of advantage, but that will change soon when we actually launch." Start-up CEO: "This market has not developed to it's potential. There is so much to win still."
	Corporate	Corporate Director: "Being the type of company that we are and our size, we experience fierce competition in virtually every area we are active in. This also means we should always be on the lookout for 'the next big thing'."
Network Type	Start-up	Start-up CEO: "Over one hundred workers have tested our product, some of them for extended periods of time. The (corporate) partner also tested our product, with positive results." Start-up CEO: "Getting in contact with potential customers is a struggle for us because nobody knows our company. We get most of our contacts here via the start-up incubator."
	Corporate	R&D Manager: "We would like to get in touch with these start-ups as soon as possible, preferably during their ideation stage. Then, they are further away from product launch, meaning there is more 'room' for us to influence the design and operations."

Firm Type	Start-up	Start-up CEO: “As a company, we are small with 4 employees and 2 in management, including myself. The company was founded in 2016 but I had the initial idea in 2013 as part of a project back at school”. Start-up CEO: “We are at TRL6, which is the last step before completion. We are almost ready for launch currently. Right now, our main focus is R&D.”
	Corporate	R&D Manager: “This is a global company with over 90 thousand employees worldwide, 30 billion in global sales revenue and thousands of patents. The Company’s products are sold across several business units and divisions. The division involved is considered the market leader in its industry with a complete product portfolio and offering to its customers.”

Table H: Illustrative Quotes Alliance Environment Case II.

4.2.2 Alliance Conditions

In this case of Cospecialization, the aim of the corporate is to learn about the technology of the start-up and the market it is active in. As the technology is different from the product in the first case, the corporate is interested to learn more about its specific nuances and its differentiating factors. The aim for the start-up is plural. Firstly, they hope to generate sales. Secondly, the start-up is looking to partner with the corporate to collaborate in a product evaluation program with the corporate’s customers to expand their network. Thirdly, the start-up wants to use the recognizable name of the corporate as an acknowledgement of its product as the corporate brand is considered a good way to open doors at potential customers and other stakeholders.

From a responsibilities perspective, it can be noted that the initial contacts of the alliance were made through top management involvement. After the schematics for the alliance were discussed on a high level and the specifics for the pilot case were drawn out, the manager transferred the responsibilities to an operational manager and then he took some distance.

Based on the feedback from the start-up, it can be noted that the proceedings from the corporate appear to be lacking a structured approach. The start-up CEO indicates that the commitment from the corporate is person dependent, which appears to be slowing the progress the alliance is making. Perhaps this is due to the limited time the corporate project manager can spend on the project.

Alliance aspect	Partner	Illustrative Quotes
Alliance Strategy	Start-up	Start-up CEO: “The corporate manager said they could speak to their customers or introduced us to their customers and see if it fits. He also introduced me to one of their application engineers. They were testing on of their new products so we signed an agreement that they used our products during their labor activities. In the agreement, we said that if the evaluation was successful, we would enter a product evaluation program with the corporate’s customers. In this we combine our products with their testing protocol.” Startup CEO: “When I started, I didn’t think deep enough. I proposed that the corporate should sell our product because they have access to the market. But the corporate is looking for money and we are not able to generate X billion in additional revenue in this stage. Also, the corporate is currently a profitable company.” Start-up CEO: “But currently, everyone is looking for a disruption that positions them. That’s why you see a lot happening in which companies want to be innovative. This is what we can offer: we are disruptive and offer a new market. Our goal is to disrupt the existing markets, but we don’t have enough weight yet. We need to find distribution.” Startup CEO: “In the end, it is business. So, I want to get sales to customers of the corporate

		partner. I have the same metric, because I also need to show my stakeholders how much we are going to sell." Start-up CEO: "The use of a pilot is actually something that was advised to us by our contact at the Incubator. They say this is common to do and helps to build a connection."
	Incubator	Incubator Manager: "Yes, we typically advise our technological start-up to engage in pilot testings. Based on experience this is a good way for both companies to get to know each other. We do however advise that the other company should buy the services or products from the start-up. That way, they get return for their time, learn how to work with a customer and get firsthand experience how their products are used in real life."
	Corporate	Corporate Director: "Initially, we thought the market was moving a lot faster than it is, so our primary idea was a take-over. Now, we are looking to keep the connection, learn how this new market is working before we make any significant investments. This would also go against the global strategy. I feel the initial talks of acquisitions set some incorrect expectations with the start-up, I had to correct this." Corporate Director: "Our aim is now to facilitate them and to show something new to our customers, without investing a lot of time and resources from R&D. I call this approach: *facilitating, branding, expanding customer relevancy.*" Corporate Director: "I believe in the concept of 'paying learn-money' by means of a semi-finished product and see how the market/industry is developing. After that a discussion could follow if the company could be interesting for us to acquire. At this moment, we are still looking." Corporate Director: "You should know this company has a culture that is like a bank. We want to avoid extreme risks. When you start talking with start-ups about high investments, the returns should also be high and fairly certain. We have concrete directions for this. The same goes for example for our factories. When we invest in a new site we expect an X% of return from this. We communicate this also back to our shareholders."
Alliance Condition Variables	Start-up	Startup CEO: "It would help when the company would have more of a structured process. The current strategy is more ad hoc and dependent on who you talk to. The commitment of the management seemed higher to proceed when we started our talks. I now talk to one of his employees. He is a nice guy, don't get me wrong, but I am not 100% sure where are on his list of priorities." Startup CEO: "another aspect we have asked ourselves is the trust in the loyalty of the company. What will they do once competition increases? Will they move to a competitor of ours or stay with us?"
	Corporate	Corporate Director: "After the initial talks I asked one of my business managers to step in and take over the contacts with the start-up. The learnings with the other start-up have laid a foundation from our side how we want to execute these types of partnerships." Project Manager: "I am able to spend a couple of hours per month on this project. After the initial test at our facility the next step would be to roll it out to our customers." Project Manager: "Really I should spend more time on this project to make it a success. But the same thing applies to my other projects also. I have to make tough decisions on what goes first."

Table I: Illustrative Quotes Alliance Conditions Case II.

4.2.3 Alliance Formation

From the aspect of partner selection, it can be noted that the start-up incubator played a part in connecting both organization to each other. During a meeting with the incubator manager, the start-up was mentioned to the top manager who expressed positive feedback on the start-up from the first case. The start-up has mentioned on multiple accounts that they see a great potential fit between both organizations. Especially because of the reach and relevance of the product portfolio of the corporate.

From a governance perspective, the partners are not working with a formal agreement. The contract in place is there to cover the non-disclosure of confidential information.

Alliance aspect	Partner	Illustrative Quotes
Partner Selection	Start-up	Startup CEO: "There should be a fit between the portfolio of the company we want to partner with and us, not necessarily a company that has a big wallet. We are a bit further now in that we are more looking ahead than merely surviving. I'm looking for a partner who really gets this and goes all the way."
	Corporate	Corporate Director: "This start-up was brought to my attention during a meeting with my contact at the incubator. We were discussing the case with the other start-up (Case I) and he mentioned they also host this one. He asked me if we would be interested in an introduction and so it happened."
Gover-nance	Start-up	Startup CEO: "We have signed an agreement for pilot testing with the Managing Director. At the time when we signed the agreement, there was a lot going on in our market. During our last meeting, however, their interest seemed to have cooled off a bit. This is disappointing for us."
	Corporate	Corporate Director: "We prefer not to have a formal contract in place."

Table J: Illustrative Quotes Alliance Formation Case II.

4.2.4 Alliance Operation

After making the initial contact with the start-up the top manager took a step away from the alliance during the operation stage and handed responsibilities to the project manager. After the top manager assigned the project, interview respondents indicate there has been a loss of momentum. The research and development manager indicates there have not been enough interaction between both alliance partner and makes a claim for a more focused approach to prevent this in the future and to create a better alignment between the business and his own department. Following these events, the interfirm learning has diminished together with the loss of momentum of the alliance.

Interestingly, despite the positive outcomes of the pilot tests for both alliance partners, the operation of the alliance has stagnated afterwards nonetheless. This is relevant on the account of managing ambiguity, as the project manager reports he experiences a misalignment between the management of the alliance and his personal career interests. He also sees a disconnect between the company's strategy and the goals of the alliance. The project manager has indicated that it is because of these reasons, together with his filled agenda, that he is reluctant to move the alliance onto the next phase that involves providing access for the start-up to the customers of the corporate.

Alliance aspect	Partner	Illustrative Quotes
Interfirm Learning Mech-anisms	Start-up	Startup CEO: "We set the initial talks and after that the pilot case. That was successful. This is the latest status of our relationship. Now we are waiting for a list of customers that we can approach together. We are also in the status of looking for the ideal win-win situation." Startup CEO: "Dealing with different persons at one company is something we often see at larger firms. At first, I was disappointed to not be involved with management, but I understand he is very busy." Startup CEO: "We see timing as a crucial aspect. We know we have a good product, customers have agreed. Once we sell to a large company, news spreads like fire. Not only within their

		industry but also in the media. At that moment, if must already have a partnership to speed things up before competitor's step in." Startup CEO: "There was never an issue in sharing information. But in the current phase, it is not up to him (the project manager) but the entire organization to determine what the goals are. But so far, so good."
	Incubator	Incubator Manager: "We try to learn our start-ups they should not be afraid of the corporate companies. Because often they fear their ideas will be stolen, especially in the early stage of their product development. What we then try to convince them of is that they should engage with the corporate as it can bring them a lot, but they should make sure to not talk about the technology in any detail."
	Corporate	R&D Manager: "These start-ups really should be learned how to deal with a multi-national. This is typically way out of their comfort zone." R&D Manager: "The best thing that could happen is to combine insights from the business side with insights from R&D. This could then be a specialized team of some sorts. Now we often forget to combine these insights and what you have then is that the business guy is looking to the short-term goals. When it's a project ran by R&D the focus is too much on learning and acquiring knowledge. I believe it would be better to combine the best of these worlds through a team approach or an intermediary." R&D Manager: "From my perspective, there has not been enough interaction between the (corporate) business unit and the start-up. The business guys are so drawn into their daily routines and targets. Really stuck in their silo's. Often you see an initial meeting coming along but then the follow-up is where the ships runs into the ground. Our organization is not really adopted to dealing these types of things."
Managing Ambiguity	Start-up	Startup CEO: "For us it was interesting to note the differences in the view of the various persons we talked to. The senior manager seemed ready to move ahead with us on an accelerated path, but after he introduced us to his colleague the promptness disappeared. Although everyone was very kind to us we sensed the second person did not share the same interest as his superiors Startup CEO: " The agreement leads to the next phase, which is on site testing at the corporate's customers. We don't need this, but they need it for their own management. This is to convince all the stakeholders in their organization that it is successful." Startup CEO: "Now there has been a change and I hear that the partner is looking to investigate what to do next. The vision in the company is not unanimous and they discuss this. My current contact is responsible for business development."
	Corporate	Project manager: "The difficult thing is that we make end-products and are used to develop this entirely ourselves. I am not able to change this." Project Manager: "I really need to be able to focus on tomorrow instead of the here and now. There is room needed for this." Project Manager: "For my personal career it is not sustainable to work with start-ups. These projects do not quickly result in sales and are therefore not seen a success stories. I therefor focus on projects on a short term." R&D Manager: "What I have noticed within the company is that people believe that working with start-ups is something for Research and Development. The business people are stuck in their silo's and focused on this month's sales targets. This is really a shame because a healthy business can be helpful for all parties in this context. Of course, there are always exemptions. Thankfully."

Table K: Illustrative Quotes Alliance Operation Case II.

4.2.5 Alliance Outcome

At the time of the interviews, the stage of the alliance was located at the operation stage, sometime after results of the pilot tests were gathered. These results altered strategy for both the corporate and the startup. However, as the second part of the operation stage, being the tests at the corporate's customer, did not (yet) materialize, there are no results that can be considered as outcomes within the context of this research.

4.2.6 Case II Timeline

Based on the 'alliance conditions and alliance development model' (Das & Teng, 1998), the dominant alliance condition variables that are identified during the within-case analysis are displayed in below case timeline per alliance stage.

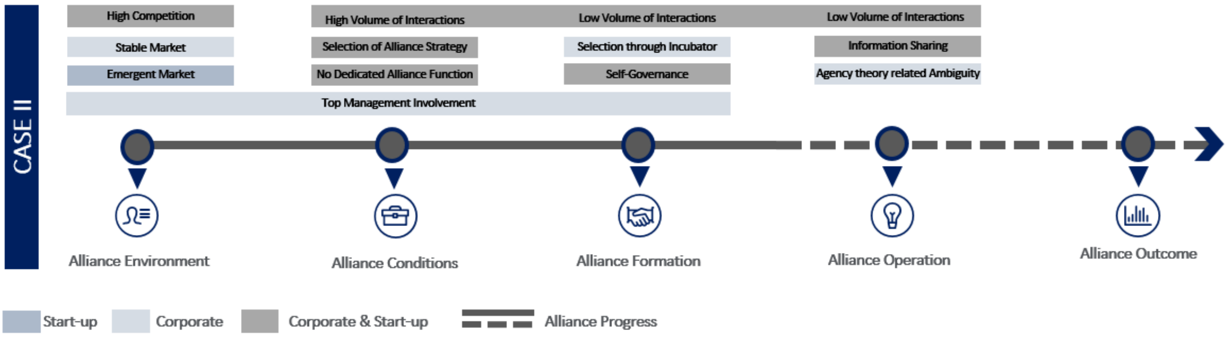

Figure II: Timeline Case II.

4.2.6 Case II: Within Case Conclusions

Considering this case, it can be noted that the transfer of responsibilities between the top manager and the operational manager appears to be a defining moment in this alliance. Looking at a high level, the proceedings of the alliance were constructive and positive when the top manager was primary responsible for the alliance. After the outline of the alliance has been laid out by the top manager and the responsibilities of the alliance were transferred to the operational manager, the proceedings of the alliance stagnated and the momentum was lost.

Following this high-level analysis, the close-up of the alliance confirms this and provides further context. The start-up CEO indicated he questions the commitment of the operational manager to make the alliance a success. The operational manager indicates the responsibilities for the alliance come 'on top' of his regular responsibilities and therefore he struggles to spend appropriate time and effort to the alliance. The operational manager has clearly expressed he experiences a higher urge to deal with exploitational responsibilities than the exploratory alliance. These reported conflicting interests and priorities from the operational manager can possibly be contributed to the broad range of principal-agent issues facing firms that are categorized within the agency theory (Eisenhardt, 1989b). The agency theory related difficulties between the principal (top manager) and the agent (operational manager) manifestates itself in the form of ambiguity related to explorational and exploitational activities, career goals and strategic alignment.

4.3 CASE III

4.3.1 Alliance Environment

In this case, the involved products, services and the way to market by the start-up and the corporate business unit differ significantly from the previous cases. The start-up claims differentiation through a unique offering of services. This uniqueness makes them to develop their offering as if it is an emerging market. In the proximity of the start-up already many competitors are active the market. On the other side, the corporate is in a mature and stable market where the government plays a significant role as a lead ordering party or by facilitating projects. As the corporate's core business is supplying hard good products and the end-customer requires finished solutions, the corporate has extensive experience collaborating with other businesses in this market to deliver requested level of service. The typical group of customers the start-up services is considerably different than that of the business unit of the corporate that is involved in the alliance. However, in other business unit's the corporate offers to similar companies the start-up is targeting and can therefor share its network. Working with a start-up and on this type of alliance is new to the involved persons at the corporate. The start-up has experience working with one other corporate, but that was on a strict pilot and product offering level.

Alliance aspect	Partner	Illustrative Quotes
Industry Type	Start-up	Start-up CEO on market maturity: "How we position ourselves there is truly no other company involved in this. So, although we are in a market with a lot of players, we have to develop our position and how people perceive their need for it". Start-up CEO on level of competition: "That depends where you place us. There is a multitude of similar technologies and companies that offer them. But within our specific niche, we are unique.
	Corporate	Corporate Director: "We are in a very mature, very stable market that is heavily regulated by the government. It is a project based business where the government is the end-customer in many instances." Corporate Director: "There are not a lot of competitors but as the market is not growing a lot the competition is fierce to gain share."
Network Type	Start-up	Start-up CEO: "When we started in 2016 we had 3 pilot cases running with users. Currently, we are at 3 accounts serving 150 users. One of them is a very large and well-known Dutch corporation."
	Corporate	Corporate Director: "We are in this market for many years and know all the relevant players involved. A crucial factor in this segment is collaborating with governmental institutions."
Firm Type	Start-up	Start-up CEO: "Our first customer was a very large organization, we got to them through our incubator contact. We feel that experience is helping us here. However, this approach with the data model and them (the corporate partner) supplying us contacts is new to us."
	Corporate	Corporate Director: "In this project business, we constantly work with outside partners on virtually every assignment. Our product offering is always at the core of what we do, together with our years of experience in the market and our insights." Corporate Director: "I am informed about the work with start-ups in other businesses and other countries, but for us this is the first experiment. Potentially, this can be interesting."

Table L: Illustrative Quotes Alliance Environment Case III.

4.3.2 Alliance Conditions

The type of alliance is in this case is one of Cospecialization, where both alliance partners supply similar resources to the alliance. This should support two aims. First, the corporate provides network resources to the start-up from its customer base so the start-up can find new customers. The corporate benefits here from providing added value to the customer through new ways of being relevant. The second aim is that the data captured by the start-up could provide valuable new insights on the usage of the corporate's products. As this is new to both partners, it was agreed to test this way first to consider its feasibility moving forward. For the start-up, this data model can potentially be a new revenue stream and way of operating. The latter aim has the most interest from both alliance partners but can only be leveraged optimally when the install base of users is expanded. This is where the corporate has offered to open its network to help the start-up find new customers. Both alliance partners operate here without a dedicated alliance function but indicate necessary resources will be made available where needed during the alliance.

Alliance aspect	Partner	Illustrative Quotes
Alliance Strategy	Start-up	Startup CEO: "For us this is more of a research project where we do not provide our service like we typically do, but instead perform data analysis' that's generated using the product. This would in fact be a secondary business model for us." Startup CEO: "Our primary focus should still be on selling our service because we need volume there to be of relevance with the data analysis. No users, no data. However, as we are still bootstrapping, we have to look hard at everything that could generate a return." Startup CEO: "The first part for this partnership is that they help us by introducing us to their customers. The other project comes from our expertise and data. Then things started to click faster. But I get the feeling the influence from the headquarters abroad should not be underestimated here. Maybe we can somehow collaborate with them or with another branch in Europe. Then things become more concrete for us. This must be figured out still."
	Incubator	Incubator manager: "An important reason the corporate wants to collaborate with the start-up is that they can innovate at a higher rate than them. The reason why this is, is because when you work with a corporate, there is no scarcity. On the other side, working at a start-up means that if a project fails, you have no money. That is significantly different when your monthly pay check is being paid, rather or not your project is a success."
	Corporate	Corporate Director: "My focus went to this start-up because with their technology, they can help us with important questions in our market and how it will develop in the next twenty years or so. This was the starting point for further investigation, where the operational responsible should take over from me. Organizational wise, it is interesting for them because through us they can find new customers." Corporate Director: "Another interesting aspect to this project is that is plays to one of our corporate strategies, being expanding our customer relevancy. By offering our network we can help customers solve problems, without significant costs or responsibility from our side. Through this community approach I see real added value. I can bring something to our customers that they haven't thought of before. He is not thinking of me in a cashflow perspective but if I help him I will be top-of-mind for him later."
	Start-up	Start-up CEO: "One of our engineers will be work fulltime on this project when we start implementation."

Alliance Condition Variables	Corporate	Project Manager: “When the organization decides this is a priority I will make myself available.”

Table M: Illustrative Quotes Alliance Conditions Case III.

4.3.3 Alliance Formation

In this case, the start-up incubator played a role in partner selection, as they introduced both parties to each other through the corporate R&D manager. After a first meeting with the R&D manager, he introduced the top manager to the start-up CEO. Subsequently, the top manager discussed the high-level objectives from the side of the corporate and agreed on the outline and design of the alliance together with the start-up. After this, the top manager handed over the responsibilities to the project manager to take care of the further stages of the alliance. For this alliance, a self-governance approach was selected, without the use of a formal agreement. Corporate procedures and the limitations it would place on the alliance are mentioned as the primary reasons for this approach.

Alliance aspect	Partner	Illustrative Quotes
Partner Selection	Start-up	Start-up CEO: “We got in contact with the partner through the incubator. I then talked first to the R&D director, I think he wants to meet with all new start-ups in the incubator. Then we heard nothing for some time and then we were invited for a meeting with management.”
	Corporate	R&D Manager: “To facilitate our role in the eco-system, I have taken the responsibility to get to know the start-ups in our close network and identify potential fits to our objectives. If that is the case I can introduce them to the business team.” Corporate Director: “This selection protocol can be a bit wayward. We need to check constantly if the collaboration with this party makes sense. When we try to fit this into a formal structure you would reduce the freedom by setting operational plans and targets. I prefer to stay away from this in this type of experiments. Exploration means trying different things without knowing where it will end.”
Gover-nance	Start-up	Start-up CEO: “No. We don’t have a contract yet. Only the standard NDA.”
	Incubator	Incubator Manager: “We attend to startups with Intellectual Property topics and point them to the importance of this. A non-disclosure agreement is standard in this sense. Here, we offer standards that the start-up can use.”
	Corporate	Corporate Director: “There is no partnership agreement in place and I don’t believe there should be. Financially I don’t want to earn anything from the start-up. This would make things a lot more difficult because of corporate procedures like integrity assessments, contracts, etc. They invest their time and we facilitate in this.” Project Manager: “With this collaboration we see the process developing as we go. There is no structure. I think this is the right way to go because we need to switch constantly between expectations. We are not ready for a real contract yet.”

Table N: Illustrative Quotes Alliance Formation Case III.

4.3.4 Alliance Operation

Assessing the operational side of this alliance, the staged alliance design should be considered. The corporate will first provide access to the network to find new customers to increase its installed base in the first stage before investigating the possibilities data analytics can provide in the second stage. At the time of the interviews, the corporate has started to introduce the concept to its customers as part of the first alliance stage. After initiating the contact between the corporate's customer and the start-up, the corporate project manager leaves it to the respective parties to find a suitable approach. Because of this limited involvement by the corporate, the learnings between the alliance partners that have been shared, are limitedly to this point. Adding to this are possible differences in priorities between the operational and managerial levels of the corporate. Here, the project manager seems to be focusing primarily on the interest of the customer and is careful to not 'push' the project to prevent negative associations with the customer. The top manager is looking at the bigger picturing considering the potential of the new data model, but he is not directly involved in the proceedings of the alliance. At the time of the interviews, the corporate had introduced the start-up to the first customers. The sales process of the start-up was in progress.

Alliance aspect	Partner	Illustrative Quotes
Interfirm Learning Mech-anisms	Start-up	Start-up CEO: "After we met and had our first brainstorm, it seemed to us that after the initial enthusiasm was gone. It took them a lot of time to transfer their interest to collaborate with us internally to colleagues. We met with the guy in charge and he had to free up time with his colleague to move ahead with us. We are just with the three of us so we can decide within a couple of minutes if something is of interest to us."
	Corporate	Corporate Director: "I have transferred this project to our technical expert. He can act as project manager and determine how the future of the market will look like and what the place is of this start-up within it. He should follow it up and I get out. The only thing I will do is check how the tests with our customers are going. I will only do this superficially to not get mixed in the proceedings and to avoid mixed interests. The transactions, they should figure it out by themselves." Project Manager: "On paper there is no plan. Of course, we do have certain goals. Some qualitative and some quantitative. If I would make them to concrete my supervisor would turn them into targets and then it will impact how I go forward. I prefer to keep things more open and find things out while we do it."
Managing Ambiguity	Start-up	Start-up CEO: "After the initial contact we had to wait for nine months. Although we understand the need to get everyone on board, this long wait was difficult for us. We thought they had given up on us. Until we were approached again for another meeting. We figured it was because this project for them is less important than it was for us."
	Incubator	Incubator Manager: "I am not entirely sure about the reasons why the corporate wants to collaborate. Sometimes, it is because it is in their innovation targets. Then they start a pilot but nothing comes out of it. The innovation manager is than super excited, has the budget to proceed but no people on the floor to manage it. Then the project dies a silent death."
	Corporate	Corporate Director: "During the execution of the projects multiple things are important: A win-win situation based on a business model, commitment to manage expectations and the ability to communicate openly and to do what you have promised to do." Project Manager: "If our customers would not find this interesting we will stop approaching them with this. Trust should be the basis here. When one partner does not think the project is interesting anymore, they should be able to say this and the other partner has to accept it." Project Manager: "In the end, the customer decides. If the market is not ready for you, you can't make any progress. There must be a reason for it and you should ask yourself if it is every going to work."

Table O: Illustrative Quotes Alliance Operation Case III.

4.3.5 Alliance Outcome

At the time of the interviews, this alliance was in operation stage. Therefore, no results that can be considered as outcomes within the context of this research.

4.3.6 Case III Timeline

Based on the 'alliance conditions and alliance development model' (Das & Teng, 1998), the dominant alliance condition variables that are identified during the within-case analysis are displayed in below case timeline per alliance stage.

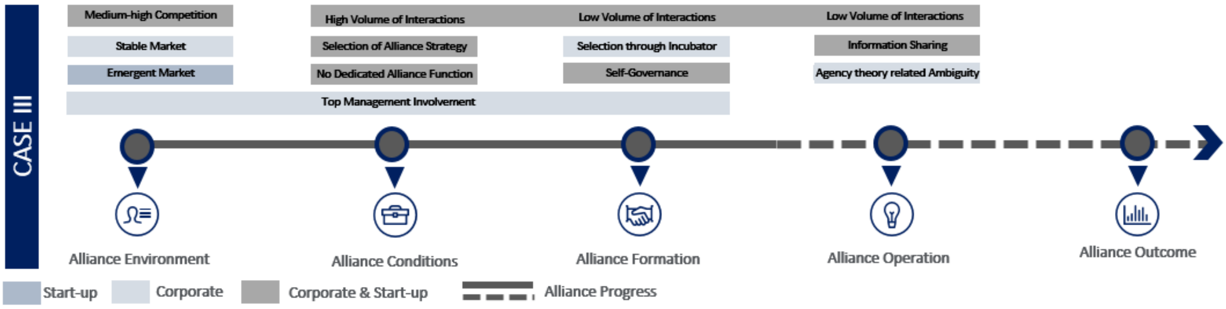

Figure III: Timeline Case III.

4.3.6 Case III: Within Case Conclusions

When investigating this case, it is important to note two aspects. Firstly, exploring the potential benefits of the alliance to the corporate was done at top manager level. After the parameters of the alliance were set, top management transferred the responsibilities of managing the alliance to the project manager. After interviewing both, it can be concluded that the top manager and the project manager both have different priorities to focus on. Where the top manager is actively looking for new ways to advance the business and proves the corporate product offering is different from its competitors, the project managers' focus is towards their current customers and making sure their current needs are met. The alliance is a 'secondary priority' for the project manager which limits the proceedings of the alliance.

The second aspect of the alliance to note here is the open approach of the corporate towards to operation of the alliance. While it has been identified as an opportunity to have the start-up technology connected to the products of the corporate, the optional approach to let customers decide how and if they want to participate is showing to be a stalling factor to the progress of the alliance. At least, a more straightforward recommendation from the corporate side would help to convince the acceptance of the project at the customer level, and show conviction from the corporate in the success of the alliance. Perhaps the primary focus of on exploitational processes from the corporate operational level plays a role here as well.

These examples of reported conflicting interests between the top management and operational level can be linked to the broad range of principal-agent issues facing firms that are categorized within the agency theory (Eisenhardt, 1989b).

4.4 CASE IV

4.4.1 Alliance Environment

In this case, it is important to note that between the formation of this alliance some years ago and the moment of the interview, the start-up has evolved significantly. When the alliance partners met for the first time, the start-up had funding and a certain business model in mind that is different from the current time. At the time of the start of the alliance the start-up was far less connected and was working on the design of their product offering. The start-up was there for mostly competing with itself to find a winning business proposition. From the corporate side, it can be noted that the involved technology was the result of a research and development process and is scientifically innovative. As a result, the corporate is finding out in which markets the product could be relevant and in which exact applications. From the corporate side, the lead of this project is in the hand of the R&D team. Their primary role is to connect customers to corporate technology. Considering the aim of the alliance this can be defined as past alliance experience, even though the collaboration in such a way with a start-up is new to the corporate.

Alliance aspect	Partner	Illustrative Quotes
Industry Type	Start-up	Start-up CEO: "We are in a very exciting market. Not only our customers but the entire world is asking for a solution to this problem. It gives us a lot of energy to do this work." Start-up CEO: "At the time when we started our collaboration some years ago, we were in a very different situation. Our product was not working quite how we wanted and we really need external 'smart guys' to find a solution. Back then we were not really competing with anyone but ourselves. Right now, this is a different story as we have had more success and are selling our product in the market."
	Corporate	R&D Manager: "Although this is a product that is available on the market for quite some time, we are still finding out new ways on how to implement the technology into commercial offerings." R&D Manager: "The technology is fully patented and registered to us."
Network Type	Start-up	Start-up CEO: "At this moment our network is growing fast. We are also getting more and more attention around us through the incubator, our partners and the university. Also, the media attention is helping us a lot." Start-up CEO: "At the start of the alliance this was not the case. We always found who we wanted to talk to. They never found us because they haven't heard of us haha."
	Corporate	Corporate Director: "Unless I am mistaken, but this was the first kind of collaboration we did with a start-up in our region in such a way."
Firm Type	Start-up	Start-up CEO: "In the period we got in contact with the corporate we had some funding in place and were in the phase of improving our offering." Start-up CEO: "We did bring a lot of external experts to look at our technology. Mostly, through the start-up incubator and the University. They (the corporate) was the first other party we included." Start-up CEO: "When we started in 2013 it was just the two of us. Now, we are with 21."
	Corporate	R&D Manager: "It is the role of our application engineers to go to customers, analyze their process and figure out how our technology fit into that. When needed, they can transfer the necessary changes that are needed into a New Product or New Technology project. They are considered experts in the field but when they need support, it is possible to include R&D experts from the corporate laboratory. There are certain conditions for this to work, including an X amount of sales."

Table P: Illustrative Quotes Alliance Environment Case IV.

4.4.2 Alliance Conditions

The alliance strategy of both alliance partners shows similarities. Both have a specific product they want to learn more about. Although the corporate has developed the technology some time before, their interest was more towards the applicational side. The primary interest of the start-up is to find a way to include the corporate technology into their offering and use it to make their business model work. Through the Cospecialization alliance set-up the start-up gains access to the brainpower of the corporate. In return, the corporate learns about their own product and its possible new way of application.

On the corporate side, the R&D Manager acts as the alliance lead on the corporate side of the alliance. The R&D Manager, who is on director level, oversees the proceedings of the alliance and makes sure the corporate resources were at the disposal of the alliance. The project manager that is involved, who is a direct report to the R&D Manager, is responsible to aligning the corporate technology to the proposition of the start-up. For the start-up, the primary focus is to develop the product offering. It is indicated this was a full-time exercise during the alliance.

Alliance aspect	Partner	Illustrative Quotes
Alliance Strategy	Start-up	Start-up CEO: "At first, we wanted to learn more about a specific technology from the company we had heard about. We thought it was interesting to investigate the possibility to implement the technology into our own offerings. Of course, we hoped that through the collaboration we could also target new customers, but this was not our priority."
	Corporate	R&D Manager: "For this start-up it was important for us to learn about the use of our own product. It is already on the market for some time but the possible applications are still developing." R&D Manager: "Above all, this was an R&D project. We wanted to learn what the possibilities are with the technology. That's why I was in the lead myself." Project Manager: "I believe that when you give them confidence and the resources they need to be successful, they will grow faster. This confidence will then be paid back later in tenfold."
Alliance Condition Variables	Start-up	Start-up CEO: "Developing our product at that time was our main priority."
	Corporate	R&D Manager: "There has been a very significant time investment from our side from various persons and functions, both nationally and internationally. I was constantly overseeing the project to make sure we could move forward." Project Manager: "I have noticed that investments are a lot more difficult to get approved when the idea or project is not in the same country as our headquarters. Also in the past, I have been involved with projects that were great but did not work because we were not a geographic priority."

Table Q: Illustrative Quotes Alliance Conditions Case IV.

4.4.3 Alliance Formation

The start-up incubator played an indirect role in bringing together the alliance partners. When the corporate became partner to the incubator, the start-up took notice and found the corporate technology of interest on the company website. After this they contacted the corporate directly to set up a meeting. During the alliance, the incubator occasionally checked in with the start-up CEO to check on the progress.

For this alliance, there is a transactional agreement to cover the supply of the corporate product. Another contract covers the confidentiality of the project, the information about the technology that is involved and the business model.

Alliance aspect	Partner	Illustrative Quotes
Partner Selection	Start-up	Start-up CEO: "We received a newsletter from the incubator that they (the corporate) had become a partner. We then googled their website and found out all the technology they have. We then contacted them to find out possibilities to use it."
	Corporate	R&D Manager: "I was forwarded a message through our front desk. I guess they asked the right questions because these types of calls sometimes can get lost in the company."
Gover-nance	Start-up	Start-up CEO: "From the start we have wanted to arrange some things on a contract base to be certain that our assets are safe. My contact at the incubator advised us very strongly about that."
	Incubator	Incubator Manager: "Sometimes a non-disclosure agreement is especially crucial, when an engineer is looking at patented technology. Even though it is protected, a trained eye can see things you have not thought of yourself."
	Corporate	R&D Manager: "Purely from a contract perspective, we have a collaboration with them (the Start-up). We give them our product and they share information about it the use of it." R&D Manager: "We typically do not like non-disclosure agreements because it limits you in what you can do. In a big organization, it is very difficult to account for all the moving parts and what they are working on. In this project, we needed to make sure we had the proper alignment to move ahead."

Table R: Illustrative Quotes Alliance Formation Case IV.

4.4.4 Alliance Operation

In this case, the R&D manager, who is at director level, is responsible for managing the alliance from the corporate side. During the operational side, the R&D Manager transferred these responsibilities briefly to the project manager on operational level. During this phase, the respondents indicate that the alliance stalled and the corporate kept the start-up waiting. The delay in the alliance fell together with involvement of the experts of the international corporate laboratory. These contacts are handled by the project manager. Ultimately, the delay from the corporate side was lifted when the top manager got involved again when he made the case to the laboratory team that the alliance is a priority and resources should be made available to visit the start-up and investigate the opportunity. It was indicated that laboratory resources are only made available when the local team can present a business case as the international team should be careful to not spend time and resources on projects that will not generate a return. During this stage also doubts surfaced about the business model of the start-up. These doubts were discussed with the start-up who thereafter changed their business model. However, these changes took place after finalization of the alliance. When the necessary resources were available, the corporate technology was applied in the product of the start-up and tested during a pilot case at a selected end-user.

Alliance aspect	Partner	Illustrative Quotes
Interfirm Learning	Start-up	Start-up CEO: "For us the execution of the tests was both highly motivating and unsatisfying. The positive was that we were able show that our concept was working. Less positive was the waiting

Mech-anisms		part and the hesitance to invest in scaling up the concept. They kept doubting if our business model would work.”
	Incubator	Incubator Manager: “In the beginning the collaboration with this start-up and corporate was the most relevant. Then the feedback is gathered with the customers and everybody is focused on learning. This is something you should be open to do if you want to be successful. This can be early phase for everyone.”
	Corporate	Project Manager: “I notice that despite all the efforts, we are still very much internally focused. Because of this, it can happen that the contacts with certain stakeholders not optimally managed. This focus, often towards existing products in existing markets, limits opportunities with partners.” Project Manager: “During this project, measuring progress and new information is something I often did based on a gut feeling. I asked myself, can we win? I then estimated volumes, how far we are from delivering, etc. When they are close to production, decisions are already made, so you need to be there before. It is like a funnel, what comes out cannot always be judged before.”
Managing Ambiguity	Start-up	Start-up CEO: “At the time we had experts coming over from their headquarters who knew everything about their technology. It was only until later we found out through the local guy that it was quite special to get access to these types of resources. After we had the contact and shared the information the contact also went away fast. Now we only are in contact with the local team when we need their products.” Start-up CEO: “We were happy with the international colleagues. They were able to provide more and faster information than the local team.”
	Corporate	R&D Manager: “We also had a financial target for this project. The managing director had asked me to reach an X amount of sales by year Y. I understand why this was done but it is not part of my role to manage company sales.” R&D Manager: “They had our support through knowledge en we went on from there. After some time, nobody at our company believed in the concept because of the business model they chose. Then the attention from the headquarters regressed. They now have changed their business model and are picking up speed. But the focus from the global team has moved.” R&D Manager: “The alignment with people within our network and the business is extremely important. I dare to state that managing a network in many situations does not make any sense without the commitment from the business teams. When my organization offers the possibility to run collaborative projects with outside parties and there is no business follow-up it can be a waste. In my experience, I really should cut it down into bitesize pieces for them to see the opportunities. It is only when the business can judge the effort that is needed to get a return it is that appointments are scheduled for next steps.” Project Manager: “Risk avoiding behavior at management level is something I see very often. In my opinion, this is by far the most important aspect that limits these types of projects.” R&D Manager: “Many times, a decision goes through many boxes and a deadline is missed. We can then not participate in the project. Our role in this business could have been a lot bigger if we had pulled the trigger sooner and take a chance on the potential it offered. Everyone was excited about the project and saw the chances on the table. But in the end, there was not enough time to make a decision.” Project Manager: “Myself, I try to look at the real win-worth in every situation. Meaning, what is this project going to deliver in the end. And does that amount correspond to the amount of time and effort I must put in. Through the involvement of management, this was already determined on forehand.”

Table S: Illustrative Quotes Alliance Operation Case IV.

4.4.5 Alliance Outcome

Looking back at the results of the alliance, both alliance partners indicate that the collaboration was a success. The corporate brainpower from the research and development team helped the start-up to alter its product and ultimately its value proposition and corresponding business model. The corporate has learned new insights on its technology and gained a customer in the start-up as they will continue to purchase the corporate product and implement into their offering.

After the initial alliance strategy was met, the alliance was modified into a customer-supplier type arrangement, where the corporate will continue to check in on the start-up to see that the start-up's needs are met.

During the alliance operation, it was noted that from the corporate side there were some doubts about the business model of the start-up. These doubts were also reason for the corporate to not take an equity stake in the start-up. This was initially a disappointment for the start-up, but soon after they found another corporate to take an equity stake and help them to find new customers through their customer network.

Alliance aspect	Partner	Illustrative Quotes
Outcome Evaluation	Start-up	Start-up CEO: "We are happy that we can use the technology of the partner and that they have shared information and expertise to improve our offerings and processes. In that perspective, this project was a success." Start-up CEO: "Thanks to the insights we have found another large partner to help us with distribution and to increase scale. They have invested in us and we can take steps."
	Corporate	R&D Manager: "We see this now as a collaboration where we supply a product that the start-up incorporates into their offering. We have learned quite a bit about our product in this concept." R&D Manager: "I don't want to be negative but I am disappointed that we did not participate in a bigger part of their business. Project Manager: "They mention us in all of their publications, this is also a kind of branding for our product." R&D Manager: "There is a mutual respect and gratitude between us. This is also a good way to work together." Project manager: "In general, we measure the success of these projects based on its financial returns. Typically, within three years it should generate X million in sales annually. In this case we will not generate this, but I still think it is a success because of what we learned."
Alliance Modi-fication	Start-up	Startup CEO: "In the end their doubt in our business model was valid. We changed it and are now accelerating again with our new corporate partner. Their insights to and comments where a little frustrating while we heard it first, it ultimately triggered us to rethink our approach and bring it closer to the real world."
	Corporate	R&D Manager: "It is good how the partnership is proceeding. I see it as a missed opportunity that we did not took a share in the company. Now another company is reaping the rewards of it. It would have been better if we were on that more. Apart from that, I think we can continue to go forward and supply our product as it is."

Table T: Illustrative Quotes Alliance Outcome Case IV.

4.4.6 Case IV Timeline

Based on the 'alliance conditions and alliance development model' (Das & Teng, 1998), the dominant alliance condition variables that are identified during the within-case analysis are displayed in below case timeline per alliance stage.

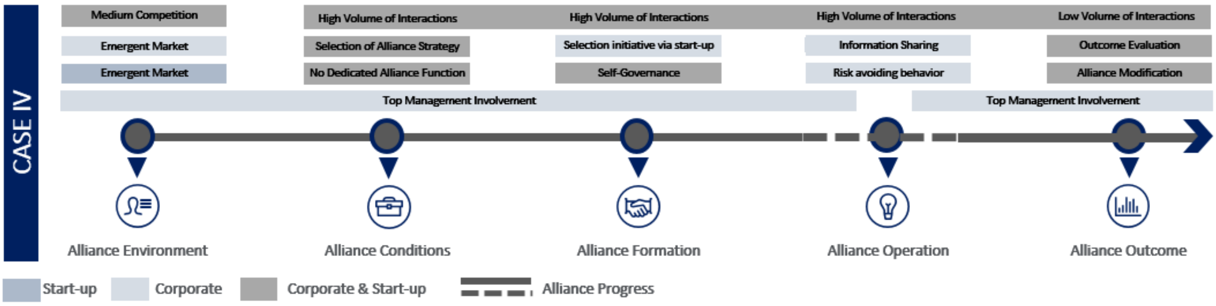

Figure IV: Timeline Case IV.

4.4.6 Case IV: Within Case Conclusions

By analyzing this case, the intensive involvement of research and development can be noted. Here, the R&D manager, who is on director level, takes the role of top manager and was directly involved during the largest part of the alliance. The only exemption being the operation stage. During this stage, the R&D manager handed over the initiative to the project manager as he is the primary contact of the laboratory contacts who were flown in to address the technical challenges resulting from the application of the corporate technology in the start-up's business. It was also during the stage where the corporate R&D manager was not directly involved, that the alliance stalled. It is believed that the stalling originated from inconsistent priorities between the R&D manager and the project manager.

The involvement of the corporate laboratory experts offers another dynamic to this case. Through their initial lack of interest in the project, as reported by the project manager, it is believed that their focus is mostly on projects that are more directly sourced to the lab. These findings link to the Not-Invented-Here Syndrome, which is reported to be quite frequent with researchers (Katz & Allen, 1982; Grigoriou & Rothaermel, 2017). In the end, these difficulties also were overcome through the involvement of the top manager. Followingly, the corporate technology was applied in the start-up product and tested during a pilot case.

An aspect that appears to have played a role during this case is risk avoiding behavior at the corporate side. Respondents claim this was part of the reason for the delay during the operation stage and that the corporate renounced the opportunity to take an equity stake in the start-up. Something, the corporate now seems to regret.

4.5 Cross Case Analysis

Following the separate within-case analysis, the empirical findings of the cases will be analyzed in unity. Firstly, an overview of the various case variables can be found in the overview below (table U).

Variable level	Variable description	Alliance partner	CASE 1	CASE 2	CASE 3	CASE 4
Firm level	Founding year	Startup	2009	2014	2015	2013
	Firm Size	Startup	9 FTE	4 FTE	3 FTE	21 FTE
	Past Alliance Experience	Startup	Medium	Moderate	Moderate	Moderate
		Corporate	Moderate	Medium	Medium	Moderate
Network level	Level of Connectedness	Startup	Medium	Small	Small	Medium
		Corporate	High	High	High	High
Industry level	Level of Competition	Startup	High	High	Moderate	Medium
		Corporate	High	High	High	Medium
	Market Maturity	Startup	Emergent	Emergent	Emergent	Emergent
		Corporate	Stable	Stable	Stable	Emergent
Alliance level	Top Management Involvement	Startup	High	High	High	High
		Corporate	High	Medium	Medium	High
	Dedicated Alliance Function	Startup	Part-time (10-20 hours/week)	Part-time (10-20 hours/week)	Mid-time (5-10 hours/week)	Full-time (20-40 hours/week)
		Corporate	Mid-time (5-10 hours/week)	Semi-time (1-5 hours/week)	Down-time (>1 hour/week)	Mid-time (5-10 hours/week)
	Scope of Contract	Both	Resource sharing, confidentiality	Resource sharing, confidentiality	No contract in place	Transactional, confidentiality

Table U: Research Variables Multi-Case Study.

4.5.1 Alliance Environment

The four start-up firms that have been interviewed for this research are linked to the same start-up incubator. The start-ups in cases I, II and III are currently still accommodated at the location of the incubator. The start-up in case IV was accommodated during the time of the alliance, but has moved out after the alliance is concluded and in relation to its scale-up that followed. The corporate is linked to the respective start-up incubator as a business partner. All four start-ups are technologically orientated. The start-ups in cases I, II and III have less than 10 full time employees. The start-up in case IV has expanded to 21 employees at the present day. At the time of the alliance they were with 5 employees.

The start-up firms in all four cases are active in emergent markets. Perhaps it is due to the emergent state of these markets that the start-up firms are more eager to aim for alliances due to a resource necessity (Eisenhardt &Schoonhoven, 1996). For the corporate, the relevant divisions in cases I, II and III are active in stable markets with established products. Case IV is the exception here as the market for the technology and its possible applications that is in scope for that alliance is still emerging.

The level of competition is experienced high by the start-up firms in cases I and II. They indicate to experience competition for funding and to be the first with an established market. Both firms are active in the same industry with similar products, though different in applicational purpose. The start-ups in cases III and IV are experiencing lesser degrees of competition for resources and customers. For the corporate, the level of competition is in all cases related to customers, not for resources. The level of competition in case I, II and III is experienced as high and medium in case IV. Perhaps this can be attributed to the stability of the market which increases the need for market players to fight for market share.

The level of connectedness is high for the corporate. The firm has vast experience in working with outside partners, in a multitude of alliance types. However, the corporate subsidiary in scope has only limited experience in partnering with start-up firms. The start-up firms in cases II and III are limited externally connected. Perhaps this is because their product offerings are still at the early stage of launch (case III) or before launch (case II). The start-ups in cases I and IV have more connections outside the organization. The start-up firms in cases I and II target large firms for their product offerings and are therefore more experienced in dealing with large corporations. This experience might be of aid in overcoming the differences between the start-up and corporate. However, when looking at the success of the alliance, this experience seems to not contribute to the success of the start-up in case II.

4.5.2 Alliance Conditions

When analyzing the chosen strategies of the four alliance cases, it is concluded that all cases are classified as Cospecialization alliances because the resources that are brought into the alliance are similar among alliance partners. In cases I, II and III the corporate shares its (customer) network with the start-ups. In case IV the corporate shares its technology and technological expertise to improve the technology of the start-up. From the start-up side of the alliance it can be noted that the start-ups in cases I and II share market information with the corporate. The start-ups in cases III and IV share information about the applicational usage of the corporate products / technology.

The mutual variable in all four cases is the implementation of a pilot phase into the alliance design. In cases I, II and IV it is reported that the outcome of the pilot has been successful. The alliance in case III is experiencing difficulties in effectuating the pilot phase in the operational stage of the alliance. For all three cases in which the pilot has been finished (case I, II and IV) the results of the pilots have been positive. For cases I and IV the use of a pilot phase seems to contribute to a positive alliance outcome. Despite that the outcome of the pilot in case II is reported as positive outcome, this specific alliance is not resulting into positive outcomes for both alliance partners. Therefore, the use of a pilot phase cannot be denoted as conditional for alliance success.

In none of the four cases there has been an appointed dedicated alliance function, as within the context described by Dyer, Kale and Singh (2001). In extension to this, the availability of the alliance partners was investigated in the form of resources and time. There is a distinct difference between the amount of time that is invested in the cases with successful outcomes (case I and IV) and the cases with no (successful) outcome (case II and III).

4.5.3 Alliance Formation

In relation to the topic of partner selection it can be reported that there is a high degree of variance in between the four cases. In case I, the initiative for partner selection came from the corporate’s international headquarters. Opposed to cases II and III, where the initiative of partner selection came from the start-up incubator. Finally, in case IV the initiative came from the start-up, who was informed by the incubator about a new partnership between the corporate and the incubator, but decided to contact the corporate directly and individually. No evidence was found that suggests a direct influence on alliance outcome. However, it is still worth to note that the initiative of partner selection in the cases with positive alliance outcomes (cases I and IV) came from the alliance partners themselves, whereas in the cases without positive alliance outcomes (cases II and III), the alliance partners where introduced to each other by the start-up incubator.

In none of the four investigated cases the corporate made an equity investment in the start-up. Therefore, all four cases are examples of self-governance. Cases I, II and IV have contracts in place to cover non-disclosure of confidential information. In addition to this non-disclosure agreement, case IV has a contract to cover the transaction of information and the use of corporate technology.

Considering the roles and responsibilities at the corporate side of the alliance, it can be noted that in all four investigated cases there was top management involvement in the alliance formation. In cases II and IV there was also involvement at operational level in the formation of the alliance.

4.5.4 Alliance Operation

The management of ambiguity appears to be especially relevant within the context of alliance management between start-ups and corporates. In both cases that did not result in successful outcomes (case II and III), it was reported by the start-up that the various contacts at the corporate were not aligned on the strategy of the alliance. The commitment of the corporate contacts also differed within these cases which made it for the start-up more difficult to gain access to the resources that were agreed to share. In cases I and IV there is also evidence that ambiguity plays a role in the alliance, however these cases where still brought to a successful outcome for both alliance partners.

Based on the empirical findings of this research, it can be noted that successful outcomes of alliances between start-ups and corporates is possible when there is top management involvement. In the cases where there was direct involvement of top management during the various stages of the alliance (cases I and IV), a successful outcome was achieved. In the cases where the top manager was not directly involved during the operational stage of the alliance (cases II and III) not positive outcome was achieved. Based on this a direct correlation can be noted between the involvement of the top manager and a successful outcome of the alliance.

One of the reasons why the top manager involvement is contributed to alliance success, is to overcome negative aspects which are associated to the agency theory (Eisenhardt, 1989b). Ambiguity in objectives between corporate operational and corporate director level has contributed in undesirable alliance outcomes in cases II and III. In case IV there is also evidence found of agency theory related aspects. In this specific case, these difficulties did not lead to failure of the alliance as direct top manager involvement was (re)established during the operational stage of the alliance.

In all four of the investigated alliance cases there is evidence found in the direction that interfirm learning mechanisms contribute to alliance success, if there is commitment to participate in the alliance from the corporate side of the alliance. More specifically, in cases I and IV the interfirm learning mechanisms lead to new insights for both alliance partners. In cases II and III the knowledge transfer is considerably less, but still both alliance partners report an open line of communication to support interfirm learning.

It can be reported that the start-up incubator was not involved during the operational stage of any of the investigated alliance.

4.5.5 Alliance Outcome

When analyzing the outcomes of the alliance it is important to consider that cases II and III did not pass operational stage, meaning there are no true alliance outcomes to report. The alliances in cases I and IV did result in outcomes that can be reported. Based on the learnings that are reported by the respondents from the alliance partners, these alliances can be called successful in these alliances both alliance partners achieved the goals that where set on forehand. Based on the definition by Kale, Dyer and Singh (2002), these alliances can therefore be called successful.

After the goals of the alliance in case I have been met, this alliance was concluded. After finalization of case IV it has been modified into a more supplier, customer relationship.

4.5.6 Cross-Case Timeline

Based on the empirical findings within the four alliance cases it can be concluded that the progress of the alliance is significantly influenced by the alliance conditions. This is in line with researches who note that initial alliance conditions and revised conditions critically affect the way alliances proceed, and various condition variables can be used to describe the developmental process (Doz, 1996). The dominant alliance condition variables that are identified during the four within-case analyses are displayed in below case timelines.

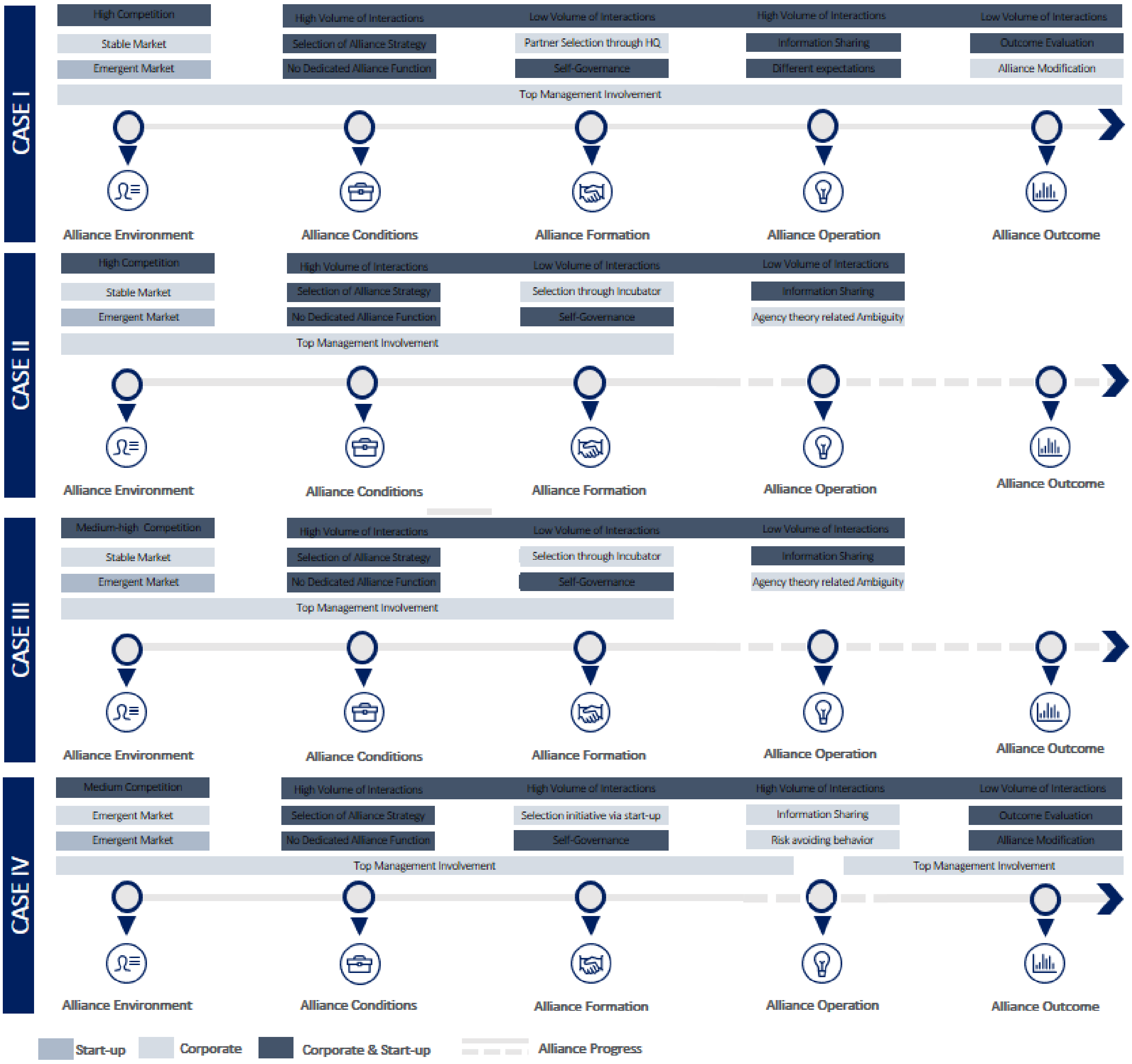

Figure V: Timeline Cases I-II-III-IV.

Analyzing above timelines show the variance in the volume in interactions across the various alliance stages. During these four alliances, the volume of interactions was high before and during the alliance formation. During cases I and IV the volume remained high during the operational phase. In cases II and III the volume of interaction declined. Also, the above timelines clearly show per alliance the top management involvement during the alliance stages. Based on the analyzed data and patterns displayed in above timelines, it can be concluded that top management involvement during the entire course of the alliance is advantageous for alliance success.

4.5.6 Cross-Case Conclusions

Based on the empirical data and after the data analysis and pattern recognition is concluded, the variable that is identified to have direct positive influence on alliance success between start-up firms and large corporations, is top management involvement at the corporate side of the alliance. In the four cases that have been investigated, the top manager was directly involved during the early stages of the alliance. The cases where top management was not directly involved in the operational stage of the alliance (case II and III), did not generate the outcomes that were aspired on forehand. Not for the start-up alliance partner and not for the corporate alliance partner. The cases (case I and IV) where the top manager was involved in the alliance operations, resulted in successful outcomes for both alliance partners. In the four cases that have been investigated, corporate top management was responsible for explorational activities that resulted in alliance formation. In the cases that did not generate successful outcomes (cases II and III), the alliance lead was handed over to a project manager on operational level. The empirical findings in these cases suggest that the project managers do not feel connected to the alliance sufficiently, and choose to prioritize other responsibilities as a result.

Ambiguity in objectives between corporate operational and corporate director level has contributed in undesirable alliance outcomes in cases II and III. In case IV there is also evidence found of agency theory related aspects. In this specific case, these difficulties did not lead to failure of the alliance as direct top manager involvement was (re)established during the operational stage of the alliance. Based on these findings it is concluded that this research shows evidence that management of ambiguity of paramount importance to obtain alliance success. The data shows a distinct difference between the amount of time that is invested in the cases with successful outcomes (case I and IV) and the cases with no (successful) outcome (case II and III). The lack of corporate time investments might be attributed to the higher level of ambiguity in cases II and III.

In cases I and IV there was involvement of the international organization of the corporate. In case I the corporate headquarters played a role in the partner selection. In case IV the corporate laboratory came into play when the technical experts provided their expertise to incorporate the corporate technology into the product offering of the respective start-up firm. Considerable differences are in relation to the initiative of the international involvement. In case I the initiative came from the corporate headquarters who found the start-up and later involved the local organization. In case IV, the initiative came from the local organization who involved the corporate laboratory. Another difference between both cases is that in case I the international involvement was on business level, where in case IV the involvement was on technological level. Because of this variance in variables there can be no definitive conclusion on the influence of the international corporate involvement on the success of the alliance.

A mutual variable that was found present in all four investigated cases was the implementation of a pilot phase into the alliance design. In cases I, II and IV, the result of the pilot has been positive. The alliance in case III is experiencing difficulties in effectuating the pilot phase in the operational stage of the alliance, due to a lack of priority by the responsible corporate project manager. For cases I and IV the use of a pilot phase seems to contribute to a positive alliance outcome. Despite that the outcome of the pilot in case II is reported as positive, this specific alliance is not resulting into positive outcomes for both alliance partners. Therefore, the use of a pilot phase cannot be denoted as conditional for alliance success, as the negative influence of agency theory related difficulties and ambiguity undo the positive influence the pilot phase brings.

CHAPTER V: DISCUSSION & CONCLUSION

The overarching aim of this research is to investigate variables that determine success in alliances between large corporations and start-up firms. Having discussed various theoretical perspectives, the alliance development process by Das and Teng (2002) was adopted that suggests that alliances follow a development process consisting of the three stages being formation, operation, and outcome. The attention was furthermore directed to the determinants of alliance success between start-ups and corporates.

In particular, this dissertation was dedicated to answer the following research question:

'How should strategic alliances between large corporations and start-up firms be managed to create successful outcomes?'

By answering this question, two research gaps were addressed in existing alliance literature:

- An in-depth description of factors determining the success of alliance management between large corporations and start-up firms.
- The study of alliance processes between large corporations and start-up firms in consideration of the vast differences between both organization types.

Following the literature review, it was concluded that alliances between start-ups and corporates with the aim of Cospecialization have the highest chance of success, because within this alliance type, the organizational differences between the firms are presumed to be less conditional in comparision with other alliance strategies. Within Cospecialization alliances, it is rather the similarity of the resources the alliance partners bring to the table that will determine the outcome of the alliance (Dyer and Singh, 1998; Yang et al., 2014). Through a multi-case study of alliances between a large corporation and start-up firms, one dominant variable was identified to successfully manage alliances between start-ups and corporates. This research identified top management involvement as determinant predicting alliance success. Through the involvement of top management, success limiting factors can be overcome, such as ambiguity related difficulties and the vast differences between both organization types. In this research, the differences between both organization types became clear in the form of a misalignment of priorities, expectations and speed of operations. In the investigated cases, a direct link was identified between alliance success and the involvement of top management. On the other hand, it was found that when there is no involvement of top management, alliance success was not obtained. The investigated cases show sufficient variance in data to substantiate these proclamations.

Based on the findings of this research, the following propositions are formulated:

- Strategic alliances between large corporations and start-up firms can only be successful through the involvement of top management.
- The management of ambiguity is an important aspect in the management of alliances between large corporations and start-up firms to overcome agency theory related difficulties.
- Considering the vast differences between the organizational forms of large corporations and start-up firms, alliances will be most successful when the strategic design of the alliances is based on the concept of Cospecialization.

5.1 Theoretical implications

This research provides relevancy within existing alliance literature by showing how top management involvement determines successful outcomes of alliances between large corporations and start-up firms. These insights add to the existing body of alliance process research which concentrates on the dynamic aspects of collaborative arrangements (Ariño & de la Torre, 1998). Therefore, effective alliance management is a significant challenge and a complex, under investigated phenomenon (Bruner & Spekman, 1998; Lam, 1998). Through the direct involvement of top management, learning difficulties can be overcome, originating from the differences between both organization forms (Lane and Lubatkin (1998) Alvarez & Barney, 2001; Yang et al., 2014). Another theoretical implication that adds insights to recent literature is in relation to the vast differences between start-ups and corporates, showing the importance of managing ambiguity in alliance management (Kumar & Patriotta, 2011; Kumar, 2014; Niesten & Jolink, 2015). Specific forms of ambiguity which surfaced during this research in relation to the differences between start-ups and corporates are the misalignment of priorities; expectations; and speed of operations.

5.2 Practical implications

This research has identified a series of 'mismatches' between start-ups and corporates that should be managed to generate successful alliance outcomes. These mismatches come in the form of ambiguity through the misalignment of priorities; expectations; and speed of operations. In this research, the difficulties could be overcome through direct involvement of top management. In practice, direct involvement of top management might not always be possible to achieve. Alternatively, a dedicated start-up program might be of help. This dedicated approach, in which top management's vision and strategy is embedded, could help to overcome time resource restraints. In addition, it might support improving the accessibility and visibility of the corporation, similar how a dedicated alliance function does (Dyer et al., 2001) and can cover both business and technical expertise. Based on the findings that show existence of agency theory related difficulties, companies should consider altering the incentive structure of alliance managers on operational level.

5.3 Limitations

This research has investigated factors of alliance research. Following the literature review, a definition of alliance success was adopted that measures the success of alliances in a percentage in which the goals of the alliance are met (Kale, Dyer and Singh, 2002). During the empirical data capturing respondents indicated that they experience difficulties in placing a percentage on this. Especially respondents from the start-up side of the alliance declined to do so. A possible reason for this is that the researcher is an employee of the corporate and respondents are therefore hesitant to be negative out of fear this information would reach their corporate contact. To prevent this, anonymity of respondents has been made a priority. Protection of company information was a second reason for making the respondents, company names, products and technology anonymous. Another possible reason why start-up and corporate respondent express difficulties to discuss alliance success percentage is ambiguity resulting from misalignment or misinterpretation of alliance objectives and strategy.

During the empirical data capturing phase of this research, one person was interviewed per start-up firm. However, most start-up firms are flat organizations and the interviewed CEO's are all directly involved with the alliance. It can't be excluded data findings were missed because of this. Because of time constraints, start-up CEO's declined to include any of their colleagues as respondents. To prevent unilateral data and to increase variance in respondents, the number of respondents at corporate side of the alliance was increased to include the various management levels.

It should be considered that the interviews were conducted in the Dutch language, except for one start-up CEO, who was interviewed in English. Afterwards, the researcher translated the interviews into English before incorporation in this thesis. Special attention was made to make sure the context of the wording was transferred correctly into the translations. Despite these efforts and careful consideration, it can't be excluded that some aspects are 'lost in translation'.

There is prolonged engagement because the researcher is working for the corporation that was included in the case selection. It can therefore be assumed that the researcher understands the concept of the corporate side of the alliance. However, as this means the researcher is not part of the start-up context, references of interviews were checked with the interview respondents to make sure the inclusion of bias was limited.

This research did not generate direct evidence that international corporate involvement contributes directly to the success of the alliance. It might be argued that the involvement of the international teams is an indicator of strategic alignment between the local and international organizations and therefore a limitation of ambiguity. Further research might be needed to investigate how corporate head office involvement influences alliance success at subsidiary level. Other directions for further research could include the incorporation of other industry types to investigate possible differences for non-technological related context. Also, other further research may include a different corporation as it can not be excluded that research with different corporations will lead to other insights. Finally, further research would be beneficial to investigate the influence of a dedicated start-up program and/or dedicated alliance function in related to strategic alliances between large corporations and start-up firms, to investigate if such an organizational design could limit the occurance of amibiguity and promote alliance success.

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