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RESEARCH

Bernhard Gold

Silicon Valley Start-ups and Corporate Innovation

Approaches to Resolve the Innovator's Dilemma

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Bernhard Gold

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München, Germany

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Executive Summary

In the last two decades, start-ups have emerged as the masters of innovation. Their innovative products and technologies have not only profoundly changed people's lives but also put considerable pressure on established corporate players (Edison 2016). When they reach maturity, most industries slowdown in growth or even stop growing. Start-ups, however, threaten to disrupt these old industries with new innovations, and large corporations more than ever must innovate and create new businesses in order to survive. Especially given the fact that the pace of disruption by start-ups is accelerating. New software-based tech companies such as Amazon, Facebook, Google, Tesla and Uber, who were small start-up companies only several years ago, are threatening established players and their core markets today. Or as venture capitalist Marc Andreessen[1] famously said, "Software is eating the World", and corporations must react quickly if they want to survive.

However, it is still not completely understood how large corporations can benefit from start-up innovativeness while simultaneously leveraging their own capabilities to survive and secure long-term success. Against this background, the purpose of this dissertation is to examine this question by exploring different aspects of corporate innovation. Three interrelated studies are presented that examine the topic from different perspectives. Each of these studies differently explores how to approach and possibly resolve this 'innovator's dilemma'[2] (Christensen 1997). In this regard, this dissertation extends the existing organizational literature in academia. In addition, this dissertation presents valuable practical knowledge for both managers of large corporations and policy decision-makers.

The first study chooses a theoretical approach to address corporate innovation by applying the theory of ambidextrous organizations[3] to corporate venturing, which introduces a completely new perspective on this matter, i.e., a perspective that regards venturing as a tool not only for innovation and exploration but also for exploitation. In this way, the first study concludes with the development of a new theoretical model that is called 'Ambidextrous Corporate

[1] A quote from an essay that Marc Andreessen wrote in The Wall Street Journal in 2011. http://online.wsj.com/article/SB10001424053111903480904576512250915629460.html

[2] According to Christensen (1997), the 'innovator's dilemma' describes the phenomenon that successful companies can do everything 'right', yet may still lose their market leadership or even fail because of 'disruptive innovations' (p. 10) that often come with new technology waves. The dilemma is that for most companies, it becomes difficult to efficiently execute their existing business while simultaneously innovating and developing new businesses.

[3] 'Ambidextrous Organization' describes corporations that can effectively exploit existing businesses and explore new businesses simultaneously (Tushman and O'Reilly 1997). The first study applies this theory to corporate venturing for the first time.

Venturing' or the 'ACV-Model' as a basis for further studies. This first study also introduces the 'Spin-Along Approach'[4] that is explored in greater depth in the second study.

The second study takes a more practical view of corporate innovation. Based on case study evidence, a new concept is created on how to practically realize ambidexterity in organizations and how to implement designs that secure long-term success. The results of this second study show that this concept can be realized through the Spin-Along Approach that combines internal and external venturing activities. Thus, by optimizing the structural-, contextual- and leadership-based antecedents of innovation, the innovator's dilemma can potentially be resolved. Accordingly, organizational ambidexterity can be achieved by increasing exploration and exploitation capabilities while simultaneously balancing them to realize 'the best of both worlds', i.e., leveraging the innovativeness of start-up companies and the effectiveness and capabilities of the parent company.

In the third study, the perspective changes again. The first two studies take an inside-out view of innovation, i.e., starting with a company's internal capabilities on how to successfully foster innovation, whereas the last study takes the opposite (outside-in) view. Here, the Silicon Valley ecosystem as one of the most important regions for technological innovation in the world is analyzed. Based on ten empirical case studies, the question is examined concerning what makes Silicon Valley companies so innovative and successful in internationalizing their businesses. Specifically, what success factors does the Silicon Valley ecosystem provide to these businesses so that they succeed internationally? Based on Porter's Diamond model (Porter 1990), the effects of three hard factors (capital, talent and a large domestic market) and two soft factors (social network and business culture) on entrepreneurial innovation are analyzed. As a result, a comprehensive view on the very specific Silicon Valley ecosystem is provided, and a theoretical framework is developed. In addition, the concept of 'intra-nationalization' is introduced that describes the phenomenon that Silicon Valley companies are going international without even leaving the region.

Although the three studies in this dissertation focus on different aspects of corporate innovation, several general conclusions can be drawn. The 'innovator's dilemma' can be resolved through ambidextrous venturing that is defined by combining the exploration and exploitation of innovations simultaneously. In practice, this combination can be realized by

[4] 'Spin-alongs' are defined as separate organizational units that are kept under the control of the parent company to support the innovation of the parent company and to thus secure the parent's long-term survival and success. The 'Spin-Along Approach' can be defined as a combination of internal and external venturing activities (Gold et al. 2010).

the ‘Spin-Along Approach’ that enables the leveraging of the innovativeness of start-up companies with the capabilities of corporations to obtain ‘the best of both worlds’. Finally, to secure the international success of innovations, an ecosystem like the Silicon Valley enables the concept of ‘intra-nationalization’, where companies innovate and go global but staying local.

General Introduction

Motivation and Research Questions

The discussion concerning entrepreneurial and corporate innovation is more than 100 years old. Since Schumpeter (1911), it has been common sense in organizational literature that innovation is the critical dimension of economic change and that this change revolves around innovation, entrepreneurial activities, and market power (Schumpeter 1911). Accordingly, the innovation process can be best described as 'creative destruction'[5], a process that constantly revolutionizes the economic structure from within by incessantly destroying the old structure and creating a new structure (Schumpeter 1934).

Thus, one recurring topic in the organizational literature is how firms can achieve long-term success by being efficient and exploiting their current business while simultaneously being flexible to environmental changes and adaptive through innovations and the exploration of new opportunities[6]. Although this process of creative destruction is well known, it is still being discussed among scholars, who are also discussing how it can be managed successfully in a corporate context and how the 'innovator's dilemma' (Christensen 1997) can be resolved.

Accordingly, the basic challenge of how to innovate successfully remains unresolved in organizational literature and continues to be highly relevant especially in the modern technological and globalized world. Moreover, it has become increasingly clear that corporate innovation that is merely based on internal corporate research and development (R&D) processes may no longer be sufficient to secure the long-term success that these companies must achieve. Specifically, start-up companies represent a new and very powerful engine of open innovation processes that greatly pressure established players with disruptive innovations (Spender et al. 2017). As a result, to address this challenge, corporations are starting to explore both the possibilities to profit from start-up innovations and the innovativeness of start-up ecosystems such as Silicon Valley.

[5] In the German original: 'Schöpferische Zerstörung'.
[6] Cf. Duncan (1976), March (1991), Tushman and O'Reilly (1997), Adler et al. (2009).

This dissertation addresses this highly relevant topic. Overall, this dissertation is mainly motivated by the following main research question:

How can corporate innovation be managed successfully in the long-term, and to what extent can the environment of a firm contribute to innovation?

In more detail, the three studies that are presented here seek to contribute to the organizational and management literature by investigating the following three different perspectives on corporate innovation: first, through theory and the ambidextrous organization (study 1); second, through the more practical means of venture capital (study 2); and third, on the level of the ecosystem of Silicon Valley and on the matter of successful internationalization (study 3). These three studies are interrelated and build on one another.

The studies in this dissertation are particularly motivated by the individual research questions as follows.

Study 1: How can the theory of ambidextrous organizations be applied to corporate venturing to resolve the 'innovator's dilemma'?
This study is a theoretical approach to corporate innovation. It concludes that the 'innovator's dilemma' in theory can be addressed through ambidextrous corporate venturing that results in the Spin-Along Approach.

Study 2: How should a spin-along be designed and organized to foster innovation and to thus realize a firm's long-term success?
The second study examines the spin-along phenomenon and explores it based on case study evidence that determines how exploration and exploitation capabilities can be combined to achieve 'the best of both worlds', i.e., the leveraging innovativeness of start-up companies and the effectiveness of large corporations.

Study 3: What makes Silicon Valley companies so successful in internationalizing their businesses?
The last study examines the innovative capabilities of the Silicon Valley region by exploring its success factors and the matter of what exactly this unique ecosystem provides to companies that allows them to innovate and internationalize their business successfully.

The following section provides a brief executive summary of the three studies.

Summary of the Studies

Study 1: Ambidextrous Corporate Venturing - A Theoretical Approach to Resolving the Innovator's Dilemma.

The first study[7] approaches the topic of corporate innovation from a theoretical perspective by determining how the theory of ambidextrous organizations can be applied to corporate venturing to realize long-term success, especially in dynamic environments such as the current highly competitive and globalized economy.

Abernathy (1978) suggests that a firm's focus on productivity gains inhibits its ability to innovate and called it the 'productivity dilemma', i.e., realizing short-term efficiency gains at the cost of long-term adaptability to changes in the environment. Duncan (1976) states that organizations must introduce a dual structure to optimize both of these activities, and he first introduced the term of the 'Ambidextrous Organization' in this context. Similarly, March (1991) describes this contradiction in his work on exploitation and exploration and characterized both activities as fundamentally contradictory organizational processes. Since then, an increasing number of scholars have tried to resolve what Christensen later called the 'innovator's dilemma' (Christensen 1997), namely, how to balance exploitation and exploration simultaneously to realize an ambidextrous organization (e.g., Tushman and O'Reilly 1997, Gibson and Birkinshaw 2004, Adler et al. 2009). Christensen is pessimistic about the ability of organizations to both exploit and explore at the same time (Christensen and Bower 1996) and argues that attempts to pursue both strategies simultaneously result in firms strategically being 'stuck in the middle' (Porter 1980) and mediocre at both.

In the academic literature, corporate venturing is primarily regarded as an important way to foster innovation, namely, creating a window of new technologies and supporting entrepreneurial innovation within a corporate context[8].

The first study of this dissertation applies the theory of the ambidextrous organization to venture capital because to date, there has been little to no research on this topic. In so doing, the literature is extended by the development of the new proposed model of 'Ambidextrous Corporate Venturing' (ACV-model).

Accordingly, the ACV-model in the first study advances organizational theory by demonstrating new ways of encouraging entrepreneurial innovation to possibly resolve the

[7] The author of this dissertation published an outline of the Theory of Ambidextrous Corporate Venturing (ACV-Model) earlier; see also Gold et al. (2010).

[8] Burgelman (1985), Roberts and Berry (1985), Zahra (1996), Chesbrough (2000), Christensen (2004), Schildt et al. (2005), Dushnitsky and Lenox (2006).

innovator's dilemma. The model contains several central components, such as the structural elements (the combination of internal and external venturing), contextual elements (different set of strategies), and the role of senior management, to be tested as the independent variables in the model. These components have an influence on the ambidexterity as an interacting variable, which is measured by the intensity of exploitation and exploration and have eventually a positive effect on the overall long-term performance of the company.

The main contribution of the model to literature is the extension of our understanding of corporate venturing not only as a tool for innovation and exploration, but also as a means to achieve various other goals such as exploitation and efficiency to avoid getting 'stuck in the middle'. The first study also conceptualizes the topic and serves as a theoretical background for the examination of the Spin-Along Approach in the second study.

Study 2: Spinning-along Innovations - Case Studies on Corporate Venturing.
To date, not much empirical research has been conducted on how to realize ambidexterity in practice and how to simultaneously exploit existing and explore new capabilities. The second study intends to fill this gap by asking how spin-alongs should be designed to foster corporate innovation and secure a company's long-term success.

A 'spin-along' is defined as a separate organizational unit like a start-up company that is kept under the control of the parent company to support the innovation activities of the parent and thus the parent's long-term survival and success (Gold et al. 2010). In this way, spin-alongs are sufficiently independent to develop new, innovative products while also being sufficiently connected to the parent firm to use its resources and to benefit from its exploitation capabilities. The underlying research logic of the second study is empirical, and due to the fact that there is no academic theory thus far on the spin-along phenomenon, a grounded theory approach (Glaser and Strauss 1967) was chosen. Therefore, to build theory in the second study, two large in-depth case studies[9] (Eisenhardt 1989) of spin-along activities in two large German corporations were conducted[10].

The results of the second study show that ambidexterity can be realized through the Spin-Along Approach and by optimizing structural-, contextual- and leadership-based antecedents,

[9] The two cases under examination were Deutsche Telekom, Europe's largest telecommunications company, and Georg von Holtzbrink, one of Europe's largest publishing houses. Despite being from very different industries, both companies were facing tough competition recently by new software-based tech and internet companies that cannibalize their core business through new and disruptive innovations. However, as it will be demonstrated, both companies were responding very differently to these new challenges.
[10] Some parts of the case studies of these two companies were published earlier. See therefore Michl et al. (2012), a publication where the author of this dissertation was a co-author.

which are strongly interrelated and can also strengthen or weaken one another. The evidence further shows that it is useful to implement a coordinating management layer between the parent company and the spin-along to optimize the antecedents. In this way, an ambidextrous middle management rather than the senior management of the parent handles the conflicting goals of exploitation and exploration and plays a decisive role in realizing ambidexterity. Overall, the Spin-Along Approach could be regarded as a fourth method that unifies the three concepts of "temporal separation", "structural separation" and "parallel structures". Through the Spin-Along Approach, organizational ambidexterity can be achieved by increasing exploration and exploitation capabilities while simultaneously balancing them.

The second study also derives practical implications and recommendations for businesses on how to realize ambidexterity and address the 'innovator's dilemma'. Based on the case study evidence, it could practically be shown that a legal separation and a certain independency of the spin-along is essential. Furthermore, in practice, a management layer between the spin-alongs and the parent company is advantageous where the senior management plays an important role in creating the preconditions that enable ambidexterity. Another practical recommendation is that an external market orientation is important during all stages of the spin-along process. Further, the permeability between the internal and external domain is also of importance. In this respect, a spin-along most resembles a successful start-up company. Finally, the practical spin-along process of planning and coordination should include the entire potential life-cycle of a project, from an early incubation phase to the late venture stage and the re-integration process after a potential acquisition.

The third study changes perspective again and examines how the environment influences a company and its innovation capabilities.

Study 3: Silicon Valley Success Factors - The Concept of Intra-Nationalization.
There are many studies on the Silicon Valley region and its success, and most of them take a historical view or examine only single aspects of the phenomenon[11]. There has hardly been any research thus far however, that regards the Silicon Valley ecosystem as a whole. Only recently, scholars have started to analyze the region more broadly. The most notable work was produced by Ferrary and Granovetter (2009), who analyzed the innovation capability of Silicon Valley as a technological cluster, and Etzkowitz (2012), who examined the sustainability of the region. Despite these works, there is almost no research that attempts to understand Silicon Valley's success by systematically examining the region as an ecosystem

[11] e.g. Saxenian (1990), Markusen (1996), Castilla et al. (2000), Sturgeon (2000), Adams (2005), Lécuyer (2006).

and in its entirety. As a result, academic scholarship has yet to provide an integrated approach in understanding Silicon Valley that analyses the region as a whole, and determines how its configuration provides advantages for the internationalization of start-up companies. The third study intends to fill this gap by determining what the Silicon Valley ecosystem contributes to companies' innovative and international success.

To examine this topic and build a theory on the Silicon Valley ecosystem, the third study collected and analyzed evidence from ten different case studies of internationally successful Silicon Valley start-up companies. Specifically, the factors that the ecosystem provided to the start-ups' international success are elaborated and result in the development of a theoretical framework of the Silicon Valley ecosystem as a whole.

There are five success factors that appear to be important to Silicon Valley companies. These factors include three 'hard factors' – two main factor conditions (capital and talent) and one main demand condition (the United States as a large domestic market). These factors also include two important supporting 'soft factors', specifically a well-developed and dense social network that acts as an underlying web that holds the ecosystem together, and a very specific local business culture that appears to help companies to leverage the other four factors successfully.

This research also demonstrates that the other factors that are traditionally used to explain the dynamics of an economic region (e.g., infrastructure and the role of the government in matters such as taxes or regulations) and the role of supporting industries (Porter 1990) appear to play a rather minor role (if any) for the companies in the Silicon Valley. Furthermore, the evidence indicates that most of these companies expanded internationally early on. They expanded internationally specifically by leveraging the Silicon Valley ecosystem while staying local. Silicon Valley seems to provide all the important factors for successfully going global locally (i.e., within or 'intra' an ecosystem). A phenomenon that is then conceptualized as 'intra-nationalization', a very specific characteristic that the ecosystem provides to foster innovation of Silicon Valley companies and that allows them to be successful internationally. Based on the case study evidence, the third study further provides practical implications and recommendations for governments, policy makers and business managers.

To sum up, this dissertation investigates corporate innovation from three different perspectives with the main motivation to address and possibly resolve the 'innovator's dilemma' and thus guarantee a firm's long-term success in the modern, highly competitive and globalized environment. Each of the three studies contributes to this goal in different

ways. The first study proposes the theoretical model of ambidextrous corporate venturing as one possible way of addressing the ‘innovator’s dilemma’. The second study approaches the core question of successful corporate innovation from a more practical angle through venture capital and proposes the Spin-Along Approach as a possible solution. Lastly, the third study changes perspective by determining to what extent an environment like the Silicon Valley ecosystem can contribute to innovation and a company’s international success.

Study 1:

Ambidextrous Corporate Venturing - A Theoretical Approach to Resolving the Innovator's Dilemma

B. Gold, *Silicon Valley Start-ups and Corporate Innovation*,
Markt- und Unternehmensentwicklung Markets and
Organisations, https://doi.org/10.1007/978-3-658-19886-2_1

Ambidextrous Corporate Venturing - A Theoretical Approach to Resolving the Innovator's Dilemma

Abstract

This study applies the theory of ambidextrous organizations to corporate venturing, thereby introducing a novel perspective on the matter of corporate innovation – one that regards venturing not only as a tool for innovation and exploration but also for exploitation. To achieve this end, the study develops a new model called "Ambidextrous Corporate Venturing".

In addition, this study explores the application of the 'Spin-Along Approach' as a practical phenomenon that combines the activities of internal and external venturing (Rohrbeck et al. 2007, 2009) into a new type of venturing. It combines the idea of spinning in and out at the same time in order to combine the advantages associated with a large corporation with those of a small start-up firm to create the 'best of both worlds'. I suggest that within this new type of venturing lies the possibility of fostering short-term efficiency and long-term adaptability and, thus, of resolving the 'Innovator's Dilemma'. In other words, the Spin-Along Approach appears to be a practical method to achieving ambidexterity.

In sum, this study explores two essential and testable propositions for further studies on this topic: first, that the most effective way to realize long-term success, especially in dynamic environments, is a new form of corporate venturing that I call 'Ambidextrous Corporate Venturing' (ACV-model); second, that the best way of realizing this new form of venturing in practice is the 'Spin-Along Approach'. The main aim of this study is the conceptualization of the topic and preparation of a theoretical background for further empirical research in the second study.

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Introduction

Topic of the Study

More than thirty years ago, Abernathy (1978) suggested that a firm's focus on productivity gains inhibited its ability to innovate. He called this the 'Productivity Dilemma'. How do organizations resolve this dilemma? Underlying this research is a rich debate about whether organizations can succeed in both, that is, realizing short-term efficiency and long-term adaptability simultaneously. Duncan (1976) states that organizations must introduce a dual structure to optimize both activities and introduced the term 'Ambidextrous Organization' in this context. March (1991) described this contradiction in his work on exploitation and exploration and characterized both activities as fundamentally contradictory organizational processes.

Since March (1991), these two terms have increasingly come to dominate organizational analyses of technological innovation, organizational design, organizational adaptation, organizational learning, competitive advantage, and organizational survival (e.g., McGrath 2001, Katila and Ahuja 2002, Burgelman 2002, Sigglekow and Levinthal 2003, Benner and Tushman 2003, Gupta et al. 2006). Accordingly, if an organization is able to do both, it can constructively be described as embodying the metaphor of ambidexterity, which refers to an individual's ability to use both their hands with equal skill. Thus defined, ambidextrous organizations are capable of exploiting existing competencies and exploring new opportunities with equal dexterity.

In the last decade, a great deal of research in organizational literature has been undertaken, and multiple points of view exist on how to solve the 'Productivity Dilemma' by balancing exploitation and exploration (e.g., Tushman and O'Reilly 1997, O'Reilly and Tushman 2004, He and Wong 2004, Gibson and Birkinshaw 2004, Smith and Tushman 2005, Venkatraman et al. 2006, Hill and Birkinshaw 2006, Tushman et al. 2006, Gupta et al. 2006, Güttel and Konlechner 2007, O'Reilly and Tushman 2007, Lubatkin et al. 2009, Adler et al. 2009). Yet, little research has been performed that applies the theory of ambidextrous organizations to the corporate venturing context.

This study intends to combine the theory of ambidextrous organizations with the practice-oriented view of corporate venturing[12]. In the academic literature, corporate venturing is

[12] The author of this dissertation published an outline of the Theory of Ambidextrous Corporate Venturing (ACV-Model) earlier; see Gold et al. (2010).

primarily regarded as an important way of fostering innovation, namely, creating a window on new technologies and supporting entrepreneurship within a corporate context (e.g., Burgelman 1983a, 1983b, 1985, Roberts and Berry 1985, Zahra 1996, Chesbrough 2000, Campbell et al. 2003, Keil 2004, Christensen 2004, Schildt et al. 2005, Dushnitsky and Lenox 2006). Although different definitions exist, corporate venturing is normally used to describe activities involved in entering a new business by expanding operations in existing or new markets. This can be achieved internally (by creating dedicated teams or units) or externally (by founding or investing in start-up companies) (von Hippel 1977, Miles and Covin 2002, Keil 2004). In fact, the combination of internal and external venturing is a phenomenon that can already be observed in practice in some large corporations, such as Deutsche Telekom or Cisco Systems (McJunkin 2000, Rohrbeck et al. 2009). In accordance with Rohrbeck et al. (2009), I call this combination the 'Spin-Along Approach', and I explain how it represents a new way of structuring corporate venturing. The Spin-Along Approach can also be characterized as spinning in and out simultaneously, which leads to the situation in which the boundaries among the different firms increasingly dissolve (Picot et al. 2008).

Research Question and Propositions

With regard to organizational research, this study addresses two gaps in literature: first, the lack of research on the question of if and how the theory of Ambidextrous Organizations can be applied to the theory of corporate venturing; and second, the lack of research in organizational theory on the theoretical background behind the Spin-Along phenomenon.

Consequently, the fundamental research question motivating this study is how the theory of Ambidextrous Organizations may be applied to corporate venturing. Thus, I extend the literature by developing a model of 'Ambidextrous Corporate Venturing' (ACV-model) that also serves as a conceptual background for further studies.

As a result, the study addresses two essential testable propositions:

Proposition 1: The most effective way to solve the 'Innovator's Dilemma' and thereby have long-term success is the application of this new form of corporate venturing, namely, 'Ambidextrous Corporate Venturing'.

Proposition 2: The best way of realizing this new form of venturing in practice is through the application of the 'Spin-Along Approach'.

The study concludes with additional questions pertaining to the effects of this new form of venturing on the innovation outcome of firms.

In sum, the goals of this study are threefold: firstly, to give an overview on the literature on ambidexterity and corporate venturing as the theoretical background of the ACV-model; secondly, to develop the AVC-model, determine the relevant components and apply it to the practice-oriented Spin-Along Approach; and thirdly, to insert these research questions and the two above-mentioned propositions into the academic debate and thus lay the foundation for planned further empirical research in this field within this dissertation project.

Structure of the Study

This study proceeds in four sections. In the next section, the theoretical stage will be set through a review of the literature on the 'Innovator's Dilemma' and the 'Ambidextrous Organization'. This serves as the theoretical background for the further work on the ACV-model. The second section contains a review of the literature on corporate venturing and concludes with an introduction of the 'Spin-Along Approach' as a practical phenomenon, in which internal and external venturing are combined. Moreover, the core elements of a spin-along are specified within the context of corporate venturing research. The third section summarizes the results of the literature review and develops the 'Ambidextrous Corporate Venturing' model (ACV-model). Here, I demonstrate that the theory contains several indicators that suggest that the Spin-Along Approach may be the best means of realizing ambidextrous corporate venturing. In the last section, the results are summarized, and the research question and the propositions against the background of the ACV-model are revisited.

1. The 'Innovator's Dilemma' and the 'Ambidextrous Organization'

Within the context of the discussion in this section, it is important to clarify some key points: firstly, the decision to apply elements of the research on ambidextrous organizations to resolve the 'Innovator's Dilemma'; secondly, the application of the concepts of 'structural ambidexterity' and 'contextual ambidexterity'; thirdly, the choice of the business unit as the level of analysis; fourthly, the emphasis on the important role senior management plays in the performance of the business unit; and finally, the significance the dynamic capability perspective has for the model.

1.1 Research on Ambidextrous Organizations

As mentioned above, it appears to be difficult for organizations to focus on both short-term and long-term success, to be successful in both monetizing existing products and developing new products. Abernathy (1978) describes this as the 'Productivity Dilemma'. Similarly,

Christensen (1997) examines how disruptive technologies undermine an established firm's competitive position by offering a cheaper and often less sophisticated alternative that is 'good enough' for most customers. He calls this the 'Innovator's Dilemma'. Christensen is pessimistic about the ability of organizations to both exploit and explore at the same time (Christensen and Bower 1996), and argues that attempts to pursue both strategies simultaneously result in firms being 'stuck in the middle' (Porter 1980) or being mediocre at both. In the end, Christensen (1997) concludes that it is not possible to resolve this 'Innovator's Dilemma', especially when firms are confronted with disruptive change. Along similar lines, other research suggests that firms are likely to tend to focus on either exploitation or exploration, but not both. Henderson and Clark (1990) refer to this tendency as the 'competence trap', Weick (1982) defines it as a 'key dilemma facing organizations', and Levinthal and March (1993) call it a 'basic unresolved problem'.

In contrast, recent studies in organizational research have discovered that it may be possible to resolve the Innovator's Dilemma (Hill and Birkinshaw 2006, Lubatkin et al. 2006, Gupta et al. 2006, O'Reilly and Tushman 2007). The ideas proposed by these studies can be grouped under the umbrella term 'ambidextrous organization' theory, which represents a new research stream in organizational theory. In these studies, ambidexterity generally refers to an organization's ability to pursue two disparate objectives simultaneously – such as being both efficient and flexible at the same time (Adler et al. 1999). Both of the two different dimensions of ambidexterity – exploitation and exploration – must be examined more thoroughly if a better understanding of ambidexterity is to be achieved.

Alignment of:	Exploitative Business	Exploratory Business
Strategic Intent	cost, profit	Innovation, growth
Critical tasks	operations, efficiency, incremental innovation	adaptability, new products, breakthrough innovation
Competencies	operational	entrepreneurial,
Structure	formal, mechanistic	adaptive, loose
Controls	margins, productivity	milestones, growth
Culture	efficiency, low risk, quality, customers	risk taking, speed, flexibility, experimentation
Leadership role	authorative, top down	visionary, involved

Figure 1: Exploitative and Exploratory Business.[13]

[13] O'Reilly and Tushman (2004).

Figure 1 illustrates the contradictory nature of exploitative and exploratory businesses. Through an examination of issues such as strategic intent, competencies, structure or culture, it becomes quite clear that these contradictions provoke conflicts and create inconsistencies within an organization. In line with this observation, and building on March's initial premise (namely, that organizational "adaptation requires both exploitation and exploration to achieve persistent success" (March 1991, p. 205)), a number of studies assume that these two business models are fundamentally incompatible and that ambidexterity can only refer to the management of this trade-off between the two ends of a continuum (Tushman and O'Reilly 1997, Benner and Tushman 2002 & 2003, He and Wong 2004, Gibson and Birkinshaw 2004). March (1991, 1996, 2006) provides several arguments that support this opinion. First, exploitation and exploration compete for scarce resources. Second, he assumes that both exploitative and explorative businesses are iteratively self-reinforcing; moreover, the mindsets and organizational routines associated with these two extreme types are fundamentally different.

In contrast to March (1991), recent scholarship on this topic indicates that an alternative understanding of the situation may be possible. Katila and Ahuja (2002) find empirical support for their prediction that the interaction between exploitation and exploration can positively impact new product development. Departing from March's notion that exploitation and exploration are essentially competing, they conceptualized these types of business activities as orthogonal, i.e., as independent variables. In other words, Katila and Ahuja (2002) convert the one-dimensional concept of exploitation versus exploration proposed by March (1991) into a two-dimensional framework. As a result, they are able to argue that exploitation is important not just for fine-tuning and economizing the efficiency of existing technology but also for creating new knowledge. Other recent studies (Baum et al. 2000, Beckman et al. 2004) have also chosen to treat exploitation and exploration as simultaneously achievable activities. Within this context, Gupta et al. (2006) suggest that, depending on whether one's focus is on a single or on multiple domains, exploitation and exploration can be treated as extremes in a continuum or as activities that are orthogonal to each other. In other words, the treatment of these variables seems to depend on the level of analysis. This means that ambidexterity can be treated as orthogonal if the research is focused on the group or business unit level and as a continuum when it is focused on the individual level.

To provide a more comprehensive understanding of the research on organizational ambidexterity, Figure 2 summarizes the literature and highlights the ideas of key importance to the further development of this study. It is noteworthy that the amount of academic research on this topic has grown rapidly in the last several years and that the variety of topics

covered by this field are far greater than they had been previously. However, as Figure 2 makes clear, little research on the appliance of the theory of ambidextrous organization in the field of corporate venturing has been conducted up to this point. This is remarkable, because the high degree of flexibility associated with venture activities seems to offer a promising way through which the contradictory dimensions of ambidexterity could be managed.

Author(s)	Topic	Method	Definition of Ambidexterity	Results / Contribution
Duncan (1976)	Designing dual structures for Innovation.	Theoretical, prescriptive study.	Different structures needed for the two different stages of the innovation process (initiation and implementation). → Dependent dimensions.	First application of the term ambidexterity in the organizational context.
March (1991)	Exploitation and Exploration in Organizational Learning.	Theoretical study.	No explicit definition of ambidexterity but rather of exploitation and exploration and an indication that both compete for scarce resources. → Dependent dimensions, balance must be found.	Introduction of exploitation and exploration to the organizational discussion on ambidexterity.
Tushman and O'Reilly (1997)	Ambidextrous Organizations for managing Change.	Theoretical study.	Ability to implement both incremental and revolutionary change. → Exploitation and exploration as dependent dimensions, trade-off between these dimensions.	Proposition of architecture of ambidextrous organizations.
Benner and Tushman (2002, 2003)	Exploitation, Exploration and Process Management.	Theoretical and empirical studies.	Ability to implement both incremental and revolutionary change. → Exploitation and exploration as dependent dimensions, trade-off between these dimensions.	Developing model and testing propositions on how process management influences ambidexterity.
Katila and Ahuja (2002)	Relationship between Exploitation and Exploration and Innovation performance.	Empirical study, sample of 124 firms.	Exploitation and Exploration as two distinct dimensions of knowledge. → Combination of these two knowledge dimensions possible.	First study of Exploitation and exploration with dependence on knowledge and organizational learning.
O'Reilly and Tushman (2004)	Comparison of ambidextrous structures with other alternatives.	Empirical study, 15 business units and 35 innovation projects.	Ambidexterity organized into two independent units (for exploitation and exploration), linked solely by the senior management. → Dependent dimensions, trade-off.	First empirical study that indicates that ambidextrous structures are more successful than others.
Gibson and Birkinshaw (2004)	Investigation of contextual ambidexterity in organizations.	Empirical study, data collected from 4195 individuals in 41 business units.	Contextual ambidexterity refers to the behavioral capacity to simultaneously demonstrate alignment and adaptability across an entire business unit. → Exploitation and exploration as dependent dimensions, trade-off between these dimensions.	Introduction of the idea of contextual ambidexterity as a complement to structural ambidexterity.
He and Wong (2004)	Measuring the effect of ambidexterity on firm performance.	Empirical study, sample of 206 firms.	Ambidexterity reached by simultaneously pursuing exploitation and exploration strategies. → Dependent dimensions that have to be balanced.	First study of the influence of ambidexterity on sales growth (result: positive correlation).

Figure 2: Literature on Ambidextrous Organization Theory.

Author(s)	Topic	Method	Definition of Ambidexterity	Results / Contribution
Hill and Birkinshaw (2006)	Study of ambidexterity in the area of venturing.	Empirical study (questionnaire), data collected from 95 venture units.	Ambidexterity to make use of the existing capabilities (exploitation) and build new capabilities (exploration). → Independent dimensions that can be optimized both.	Venturing units that are ambidextrous have better strategic performance.
Gupta et al. (2006)	Interplay between Exploitation and Exploration.	Theoretical study.	Ambidexterity and the relation between exploitation and exploration seen as two ends of a continuum (dependent variables) or as orthogonal dimensions (independent variables).	First detailed research on the possible interplay of exploitation and exploration.
Venkatraman et al. (2006)	Strategic Ambidexterity and Sales Growth in the Software Sector.	Empirical study, sample of 1005 software companies.	Ambidexterity as capability to drive exploitation and exploration. → Independent dimensions that can be optimized in both.	Introduction of concept of strategic ambidexterity, positive correlation to sales growth.
Lubatkin et al. (2006)	Ambidexterity and Performance in Small- and Medium-Sized Firms.	Theoretical and empirical study, survey data of managers of 139 SMEs.	Ambidexterity defined as combination of exploitative and explorative orientation. → Independent dimensions that can be optimized in both.	Study focusing on SMEs and the effect of ambidexterity on firm performance.
Tushman et al. (2006)	Organizational Designs and Innovation Streams	Case Studies, data on 13 business units.	Ambidexterity as an organizational design that enables exploiting and exploring innovation streams. → Dependent dimensions that have to be balanced.	First study on innovation streams and distinct organizational designs (result: ambidextrous design has best performance).
Güttel and Konlechner (2007)	Dynamic Capabilities in Ambidextrous Organizations.	Case Studies, data on 15 separate subunits.	Ambidexterity defined as a dynamic capability to optimize both exploitation and exploration. → Independent dimensions that can be optimized in both.	Ambidexterity as a dynamic capability to balance contradictions.
O'Reilly and Tushman (2007, 2008)	Bringing together research streams on ambidexterity and dynamic capabilities.	Theoretical study.	Ambidexterity defined as a dynamic capability to optimize both exploitation and exploration. → Independent dimensions that can be optimized in both.	Ambidexterity regarded as a dynamic capability; importance of the role of senior management emphasized.

Figure 2: Literature on Ambidextrous Organization Theory.

An examination of the organizational implementation of ambidexterity distinguishes the two different concepts of structural and contextual ambidexterity.

1.2 Structural vs. Contextual Ambidexterity

Initially, scholars interested in organizational research on ambidexterity typically viewed ambidexterity in structural terms. According to Duncan (1976), who introduced the term ambidexterity in the organization literature, firms manage trade-offs between conflicting demands by putting in place 'dual structures' (p. 167). In his article, he presents a prescriptive model for designing innovative organizations that focus both on structure and on a process that allows the resolution of what he calls the 'design dilemma' (p. 167). According to Gibson and Birkinshaw (2004), this concept can also be described as 'structural ambidexterity'. In line with this view, March (1991) analyses the relation between exploitation and exploration in organizations and focuses on the trade-off between the two. These works by Duncan (1976) and March (1991) have increasingly come to dominate the literature on innovation, organizational design, organizational learning, competitive advantage and organizational survival (McGrath 2001, Katila and Ahuja 2002, Burgelman 2002, Sigglekow and Levinthal 2003, Benner and Tushman 2003, Gupta et al. 2006). The abovementioned scholarship regards ambidexterity as a structural matter, and from the perspective of the organization as a whole. Other studies within this genre of scholarship concentrate on the ability of different sub-units within the organization (Benner and Tushman 2002, Lubatkin et al. 2006) to enable ambidexterity. In their empirical study on ambidexterity, for example, O'Reilly and Tushman (2004) discovered that some companies separate their new, exploratory units from their traditional, exploitative ones in order to allow the development of different processes, structures, and cultures (see Figure 3).

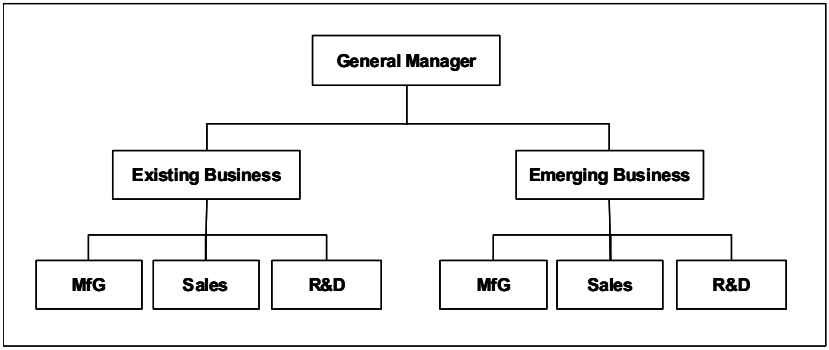

Figure 3: Structural Ambidexterity.[14]

Compared with other organizational designs, O'Reilly and Tushman (2004) found that the innovation performance of companies applying the ambidextrous design delivered better results than traditional forms of organization, such as functional designs, cross-functional teams or independent, unsupported teams. As Figure 3 demonstrates, the implementation of ambidexterity in this model is only connected on the level of the senior management (here called the general manager) of the firm.

In contrast to this view, Gibson and Birkinshaw (2004) propose contextual ambidexterity – a concept that is not primarily dependent on organizational structures. They observe that there is a growing recognition of the role of the processes and systems presented in a given context in the ability of a firm to achieve ambidexterity: "[t]hese processes and systems are important because they provide an alternative way of developing the capacities that architectures or structures are intended to create" (p. 209). From these insights, the authors developed the concept 'Contextual Ambidexterity', which they define as the behavioral capacity to simultaneously demonstrate alignment and adaptability across an entire business unit. In their study of forty-one business units, Gibson and Birkinshaw (2004) found that there is strong evidence that contextual ambidexterity is positively associated with the performance of the business unit. They conclude that different paths to ambidexterity exist, and structural ambidexterity is only one of them (contextual ambidexterity being another). For the purpose of this study, I agree with those scholars who view both dimensions as complementary, since both are necessary tools to build ambidextrous designs.

[14] O'Reilly and Tushman (2004).

1.3 Examining the Levels of Analysis

As has been demonstrated thus far, the level of analysis appears to play an important role in research on ambidexterity. While previous studies on ambidexterity mainly examined the organizational level (Duncan 1976, March 1991, Tushman and O'Reilly 1997, Adler et al. 1999, Benner and Tushman 2002), recent works have switched the focus of analysis to the level of teams or business units (Tushman et al. 2006, Lubatkin et al. 2006, Gupta et al. 2006, Adler et al. 2009).

This development began with a study by O'Reilly and Tushman (2004) on ambidexterity in which they explicitly departed from the organizational level and focused instead on business units. In this study, they compared four different business unit structures (the ambidextrous structure being one) and measured the performance of these structures. Gibson and Birkinshaw (2004) agreed that the appropriate level of analysis for studying ambidexterity at large firms is the business unit rather than the firm. Specifically, they define ambidexterity as the capacity to utilize exploitation and exploration across the entire business unit, arguing that "[t]his is potentially a more sustainable model than structural separation because it facilitates the adaptation of an entire business unit, not just the separate units or functions responsible for new business development" (p. 211).

In their work on the impact of process management on the success of technological innovations, Benner and Tushman (2003) describe ambidexterity as organizational architectures that incorporate both tight and loose coupling simultaneously. According to these authors, "…ambidextrous organizations are composed of multiple tightly coupled subunits that are themselves loosely coupled with each other. Within subunits the tasks, culture, individuals and organizational arrangements are consistent, but across subunits tasks and cultures are inconsistent and loosely coupled" (Benner and Tushman 2003, p. 247). Tushman et al. (2006) examine the effect of different organizational designs of a business unit (functional, cross-functional, spin-out and ambidextrous) on the innovation outcome of these units. Their results show that the ambidextrous design of a business unit is the most successful at ensuring an innovative outcome. In accordance with this line of thinking, Lubatkin et al. (2006) posit that the "competitive pressure to jointly pursue exploitation and exploration, the knowledge processing demands to attain them, and the role played be the TMT (Top Management Team) processes are more proximately associated with the business units […] for there is a limited range of products, technologies, and markets at this level of analysis" (p. 667).

After the organizational and unit levels, the third possible level of analysis when examining the ambidextrous organization is the individual level. In their work on contextual ambidexterity, Gibson and Birkinshaw (2004) argue that ambidexterity is achieved "…by building a set of processes or systems that enable and encourage individuals to make their own judgement about how to divide their time between conflicting demands for alignment and adaptability" (p. 210). In the end, their analysis also focuses on the business unit level, primarily because of the difficulties associated with examining ambidexterity on an individual level. But ambidexterity also appears to be a matter of individuality and credibility at the individual level. As Edmondson (2001) indicates, the more an individual focuses on discipline, the less he or she is able to take risks, and vice versa. Therefore, it appears that ambidexterity on an individual level can only be seen as a continuum, where an individual must decide if he or she wishes to focus on exploitation or exploration. Similarly, Gupta et al. (2006) argue that ambidexterity can only be observed on a unit level, because it is easier for a group or larger system to succeed in exploitation and exploration simultaneously than it is for an individual. According to these authors, it "…would be difficult for an individual to develop routines to excel simultaneously at both exploration and exploitation. Further, given the substantial differences in routines and focus on learning, it may be very difficult for an individual to even switch between routines of exploration and exploitation" (p. 696). Finally, Gupta et al. (2006) conclude that within a single domain (i.e., an individual or a small sub-system), exploitation and exploration will generally be mutually exclusive. This conclusion seems remarkable given that the mainstream of the literature on ambidexterity highlights the important role played by senior management in ambidextrous structures.

1.4 The Role of Senior Management

In their examinations of ambidextrous organizations, many authors (e.g., He and Wong 2004, Gibson and Birkinshaw 2004, O'Reilly and Tushman 2007, 2008) accentuate the special role and importance of senior management in successful ambidextrous structures or designs.

According to O'Reilly and Tushman (2004), "…one of the most important lessons is that ambidextrous organizations need ambidextrous senior teams and managers – executives who have the ability to understand and be sensitive to the needs of very different kinds of businesses. Combining the attributes of rigorous cost cutters and free-thinking entrepreneurs while maintaining the objectivity required to make difficult trade-offs […] managers who can be 'consistently inconsistent'" (p. 81). This seems to contradict the conclusions of Gupta et al. (2006) highlighted in the segment above, namely, that individuals have great difficulty being ambidextrous; therefore, this conclusion needs to be examined more thoroughly.

In their work on the management of strategic contradictions, Smith and Tushman (2005) developed a model to exactly address this complex issue. In their opinion, sustained organizational performance depends on whether top management teams can effectively exploit and explore. This also refers to the ability of management teams to manage different and inconsistent organizational architectures, as well as processes associated with completely contradictory logics – all of which creates fundamental challenges for management. Obviously, these conflicts and inconsistencies cannot be eliminated; rather, they must be regulated by the top management team. This "…requires teams to recognize and use these conflicts, rather than try to resolve it" (p. 525), and to take contradiction and paradox seriously. Apart from this basic model of managing strategic contradiction, Smith and Tushman (2005) admit that there "…is little clarity on how these teams might deal with the challenges associated with strategic contradictions" (p. 533). Tushman et al. (2006) proposed the appointment of a dedicated 'ambidextrous manager' (p. 26) in the senior management team who has the cognitive and behavioral flexibility to support both exploitation and exploration. However, a detailed role description of such a manager is not available, which leads the authors to conclude that future research on the role of senior leadership is necessary.

To sum up, a number of recent studies emphasize the important role played by senior management in ambidextrous organizations. However, the inherent contradiction between these arguments and between findings on the difficulty individuals have in being ambidextrous remains unresolved[15]. For the purposes of this study, it is important to be aware of the decisive role senior management plays in ambidextrous structures and of the difficulties and contradictions associated with this role.

1.5 Ambidexterity as a Dynamic Capability

The basic idea behind the concept of dynamic capabilities is differentiation between first- and second-order capabilities (Winter 2003). The operative core of organizations can be conceptualized as being based on first-order capabilities (Winter 2003, Zahra et al. 2006). These routine-based capabilities are the foundation of a firm's activity. Second-order capabilities govern the development of and change in first-order capabilities (Zollo and Winter 2002, Winter 2003, Zahra et al. 2006) and influence higher-order organizational learning. Teece et al. (1997) add another definition of dynamic capabilities as "…the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (p. 516). In a subsequent study, Teece (2006) defines dynamic capabilities as the distinct skills, processes, procedures, organizational structures,

[15] Here, there appears to be an interesting parallel with the origin of the word 'ambidexterity'. In the original meaning of the term, individuals who are equally skilled with their left and right hands are very rare as well.

decision rules and disciplines that enable senior leaders of a firm to identify threats and opportunities and to reconfigure the assets required to address these challenges.

Güttel and Konlechner (2006) examined how dynamic capabilities are shaped in ambidextrous organizations in order to cope with these inherent contradictions. Subsequently, they conceptualize second-order capabilities as "balancing routines that govern the concurrent performance of antagonistic first order capabilities" (p. 15). Ambidexterity can then be viewed as a special dynamic capability.

Venkatraman et al. (2006) also conceptualize ambidexterity as an "organizational-level dynamic capability" (p. 8), which reflects the routines that drive the simultaneous pursuit of exploitation and exploration. In a similar way, O'Reilly and Tushman (2007) attempt to reconcile the integration of the concept of dynamic capabilities into the theory of ambidextrous organizations. Ambidexterity as a dynamic capability can then be regarded as a set of actions or routines taken by the senior management that facilitate new resource configurations and can therefore offer a firm a competitive advantage. Hence, dynamic capability ambidexterity embodies "…a complex set of routines including decentralization, differentiation, targeted integration, and the ability of senior leadership to orchestrate the complex trade-offs that ambidexterity requires" (p. 41). This study adopts this perspective, namely, the understanding of ambidexterity as a dynamic capability that enables the efficient management of the first-order capabilities of exploration and exploitation.

To conclude, there are several important aspects to ambidexterity. As a possible solution to the 'innovator's dilemma', different paths – both structural and contextual – exist as a means to realize ambidexterity. Different levels of observation also play an important role in examining ambidexterity. According to the recent literature on ambidexterity, the business unit is the most common level of analysis, but other levels have been examined as well. The analysis of the role played by senior management in ambidextrous structures demonstrates that management can be regarded as a central factor in realizing ambidexterity. Lastly, it is important to point out that ambidexterity is also defined as a dynamic capability in the resource-based view.

2. Corporate Venturing and the Spin-Along Approach

This section reviews the research on corporate venturing and introduces the 'Spin-Along Approach' as a new type of venturing.

2.1 Defining Corporate Venturing

Burgelman (1983a & 1983b, 1985) first introduced the term 'New Venture Division' in order to describe a small, new business that is established by a single entrepreneur or a group of entrepreneurs and that forms a link between corporate entrepreneurship and the creation of new businesses. Today, a number of slightly different understandings of the meaning of corporate venturing exist in the literature (Christensen 2004). In their work, Sharma and Chrisman (1999) discuss the existing definitions in this field and try to systematize the use of the associated terminology. According to their classification, corporate venturing can be regarded as a special form of corporate entrepreneurship – in addition to innovation and strategic renewal (see Figure 4).

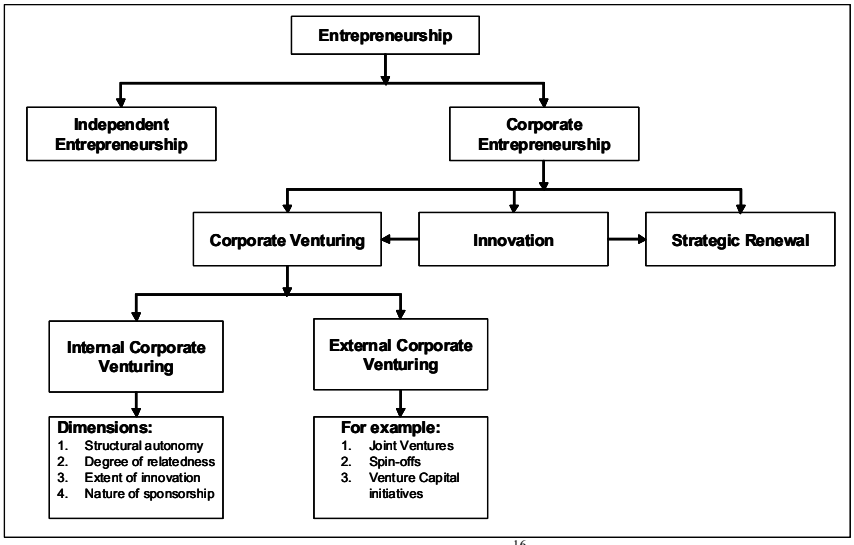

Figure 4: Hierarchy of Terminology in Corporate Entrepreneurship.[16]

These authors define corporate venturing as "…corporate entrepreneurship efforts that lead to the creation of new business organizations within the corporate organization. They may

[16] Sharma and Chrisman (1999).

follow from or lead to innovations that exploit new markets, or new product offerings, or both" (p. 19). As Figure 4 also indicates, Sharma and Chrisman (1999) accept the dominant conceptualization of corporate venturing, which can be divided into internal and external venturing.

2.2 Internal and External Venturing

Von Hippel (1977) first introduced the idea that a corporation could generate new business through the establishment of internal or external corporate ventures, depending on the location (inside or outside the organization) of the venturing team or unit. Since then, a number of authors have incorporated this distinction into their work (Miles and Covin 2002, Zahra and Hayton 2008). In Chesbrough's 'Open Innovation Model' (2003), for example, firms may commercialize external as well as internal ideas by outsourcing or utilizing in-house pathways to the market. Birkinshaw and Hill (2005) draw a similar distinction by differentiating between two types of venture units: "[i]nternal corporate venture units, which focus on opportunities identified within the company; and corporate venture capital units which focus on opportunities external to the company, in the form of independent start-ups" (p. 248).

Roberts and Berry (1985) define internal ventures as a firm's attempts to enter different markets or develop substantially different products from those associated with its existing business through the establishment of a separate entity within the existing body. In a similar way, Sharma and Chrisman (1999) refer to internal corporate venturing as "…corporate venturing activities that result in the creation of organizational entities that reside within the existing organizational domain" (p. 20). Moreover, Zajac et al. (1991) state that internal venturing involves "…the creation of an internally staffed venture unit that is semi-autonomous, with the sponsoring organization maintaining ultimate authority" (p. 171). To conclude, internal venturing is the most-researched form of venturing (e.g., von Hippel 1977, Roberts 1980, Burgelman 1983a, 1983b, 1985, Roberts and Berry 1985, Chesbrough 2000, Chesbrough and Socolof 2000, Rice et al. 2000, Thornhill and Amit 2001), the core concept of which is based on the assumption that venturing activities are organized completely within the domain of the organization.

In contrast, external venturing describes entrepreneurial efforts outside of the firm's boundaries. Sharma and Chrisman (1999), for example, define external corporate venturing as "…activities that result in the creation of semi-autonomous or autonomous organizational entities that reside outside the existing organizational domain" (p. 19). Similarly, Keil (2002, 2004) describes external corporate venturing as the new business creation activity of

established organizations, in which the corporation leverages external partners in the process of creating a venture.

2.3 Different Types of Venturing

In literature on this topic, the terms corporate venture capital (CVC) and corporate venturing are often used interchangeably. However, in line with the work of Dushnitsky and Lenox (2006), this study will distinguish between these two terms because the term corporate venturing is broader in scope and includes other types of venturing (Sharma and Chrisman 1999, Miles and Covin 2002, Keil 2002, Keil 2004, Schildt et al. 2005). In conjunction with external corporate venturing, Sharma and Chrisman (1999) also mention joint ventures, spin-offs and venture capital initiatives. Along similar lines, Keil (2004) develops a model of external venturing that describes how firms develop a capability to create and develop ventures through corporate venture capital, alliances, and acquisitions. Schildt et al. (2005) define four governance modes of external venturing (corporate venture capital (CVC) investments, alliances, joint venture alliances and acquisitions of entrepreneurial ventures) and examine their influence on organizational learning. In other words, a variety of possible types of corporate venturing exist, and CVC should be understood as only one tool of several legitimate alternatives a firm can utilize to reach its corporate innovation goals.

2.4 Goals of and Motives behind Corporate Venturing

Various perspectives on the possible motives behind and goals of corporate venturing activities exist in organizational literature. Fundamentally, financial and strategic goals can be distinguished from one another, and both can be viewed as potential venturing goals (Siegel et al. 1988). Most authors focus on strategic goals and emphasize the importance of exploration and innovation (Zahra 1996, Dushnitsky and Lenox 2006, Schildt et al. 2005, Campbell et al. 2003). Von Hippel (1977) views corporate venturing as an activity that generates new businesses for a corporation. Maula (2001) defines external venturing as equity investments made by non-financial corporations in entrepreneurial companies for strategic reasons. For Christensen (2004), in contrast, the "…main reason for creating corporate ventures is the isolation and nurturing of innovative ideas that cannot survive in the bureaucratic structures and formal procedures of a large company" (p. 307). Campbell et al. (2003) regard the "creation of new businesses and growth" as one common objective of corporate venturing (p. 30). Yet, for Birkinshaw and Hill (2005), corporate venturing is defined as investment in and the development of a new business, while Schildt et al. (2005) indicate that companies are increasingly using corporate venturing as a means of acquiring knowledge from sources outside the traditional boundaries of the firm.

As such, venturing may enhance a firm's value by offering an "…effective means of scanning the environment for novel technologies that either threaten or complement core businesses" (Dushnitsky and Lenox 2006, p. 756). Others regard ventures as a means through which established firms can learn about new technologies and markets by examining knowledge spillovers in all types of firms, from innovative start-up companies to large corporations (Wadhwa and Kotha 2006). It can therefore be concluded that the main goal of corporate venturing in the literature is the ability to become more innovative and to ultimately increase the speed of growth and secure long-time success (Schildt et al. 2005).

2.5 Corporate Venturing and the Resource-Based View

Studies relying on the Resource-Based View (RBV) of corporate venturing focus on the relationship between the spin-off firm and the parent company. Parhankangas and Arenius (2003) have created a schematic for the classification of corporate spin-offs based on the nature of the relationship of the spin-off with the parent company. Through an application of the Resource-Based View principles in a corporate venturing context, they suggest that the availability of the assets of the parent firm for new ventures is an important factor in the success of the spin-off. The spin-off then remains "quasi-externalized" (Parhankangas and Arenius 2003, p. 467), which means it develops an ongoing relationship with the parent firm and maintains collaborative linkages to prevent negative impacts resulting from separation. Consequently, access to complementary resources is highly beneficial for new ventures.

Keil (2002, 2004) examines how firms develop new capabilities through corporate venturing. Based on the Resource-Based View of strategic management, and within the context of corporate venturing activities, Keil analyses the learning process that takes place when a large firm creates new ventures. Here, it is possible to draw a parallel between Keil's and Parhankangas and Arenius' (2003) research and the previous discussion on ambidexterity. In both conceptualizations, the Resource-Based View serves as a background for the examination of the phenomenon, while the context of using corporate resources (financial, knowledge, personal, etc.) plays a patently important role.

For the purpose of this study, I maintain that corporate venturing can be divided into internal and external venturing, that different types of venturing exist, and that the main strategic goal of corporate venturing (according to the literature) is associated with innovation and the exploration of new products or markets. In addition, the resources of the parent company seem to play an important role in the success of the spin-off. Given this background and based on observations in practice, the next segment introduces the Spin-Along Approach as a new type of corporate venturing.

2.6 The Spin-Along Approach

When examining venture practice in large corporations, the distinction between internal and external venturing is not readily apparent. At Cisco Systems, for instance, the sponsored start-ups consist of entrepreneurially motivated employees who are allowed to externalize their technology or business ideas. If the team is successful, Cisco has the option of reacquiring the company and reintegrating it (McJunkin 2000).

The venture unit at Deutsche Telekom is another example of a company pursuing an approach that combines internal and external elements of venturing (Rohrbeck et al. 2009). In line with the work of Rohrbeck et al. (2009), I define the combination of internal and external venturing elements in their practical application as the 'Spin-Along Approach', i.e., the integration of aspects of spin-out and spin-in activities (see Figure 5).

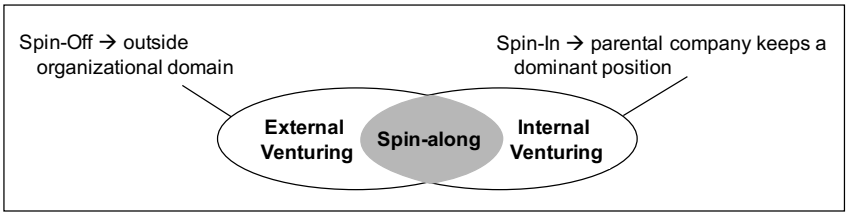

Figure 5: Definition Spin-Along Approach.

As shown in Figure 5, the Spin-Along Approach is based on the principle that after having spun-out the new firm, the parental company will maintain a dominant position and retain the option of reintegrating the spin-off. The recent literature also indicates the relevance of this phenomenon in practice. In their work, Birkinshaw and Hill (2005) discover that a great deal of corporate venture units "…pursue some combination of internal and external opportunities" (p. 248). Miles and Covin (2002) propose a combination of internal and external venturing, where the two types of venturing can function as effective complements – even though the authors are still differentiating between two types of venture units. In their study on the role of Swedish spin-offs in industrial growth and dynamics, Wallin and Dahlstrand (2006) ascertain that in many corporate spin-offs, the parent company is often actively involved in the development of the new firm; the spin-off is therefore not completely separated from the parent company. By preserving links with the parent company, the spin-off firm can utilize some of the assets (e.g., networks, services, knowledge) of the parent while still preserving the advantages associated with being small and flexible. In addition, these "…spin-offs are born with a head start in the competitive race, since they can profit from previous experiences and relations built up while still being part of the parent organization"

(Wallin and Dahlstrand, 2006: p. 613). This often results in the emergence of networks in which the parent firms and their spin-offs engage in varying degrees of resources sharing (Parkahankangas and Arenius 2003). Thus, the spin-off firm may combine the entrepreneurial advantages associated with a small firm while still having access to the assets of a large corporation. Overall, the Spin-Along Approach, as a combination of internal and external venturing activities, appears to be an appropriate means through which the advantages associated with both small start-up companies and large corporations can be preserved – it can, in other words, achieve 'the best of both worlds'.

For the purpose of this study, I define a spin-along as follows:

A spin-along is a separate organizational unit that is kept under the control of the parent company with the goal of supporting the exploration and innovation of the parent company and thus securing a long-term survival of the parent. The Spin-Along Approach can also be defined as a combination of internal and external venturing activities.

In addition to the different types of venturing (Sharma and Chrisman 1999, Miles and Covin 2002, Keil 2002, 2004, Schildt et al. 2005, Dushnitsky and Lenox 2006) discussed above, I propose that the Spin-Along Approach should be considered as a new type of corporate venturing. Thus, the Spin-Along Approach can be seen as a hybrid approach – one that is independent enough to develop new, innovative products while still sufficiently connected with the parent company that it can use its resources and benefit from its first-order capabilities.

To conclude, the core elements of the Spin-Along Approach are: separation from the parent company; close tracking by the parent; a focus on exploration; and the combination of internal and external venturing activities.

At this point, this study will combine the practice-oriented considerations pertaining to corporate venturing with the theory of Ambidextrous Organizations in order to develop a model of Ambidextrous Corporate Venturing (ACV-model). Subsequently, the definition of the Spin-Along Approach will be revisited and extended through the application of the ACV-model as the theoretical background to the Spin-Along Approach.

3. Designing Ambidextrous Corporate Venturing (ACV-model)

As was demonstrated above, corporate venturing is typically viewed as a vehicle for exploration. I argue that corporate venturing could be essentially ambidextrous, i.e., it engages in both exploration and exploitation simultaneously. In this segment, several key concepts found in ambidextrous literature will be identified that can be applied to the venture context and thus contribute to the development of the ACV-model.

Concept 1 - Structure: Tushman and O'Reilly (1997) study factors that lead to success by organizing ambidextrous structures. According to their research, each successful ambidextrous organization utilizes the same architectural principles: first, they have small units (namely autonomous groups) within the organization; second, they give employees a stake in the ownership of and responsibility for their business; third, they use the resources of the parent company in order to benefit from the size and leverage associated with economies of scale; fourth, they facilitate operations, make decisions quickly, and are more likely to accept the risk associated with wrong decisions; and fifth, they engage ambidextrous managers who are able to handle the contradictions inherent in ambidextrous structures. This description seems to fit the structure of corporate venturing units (Hill and Birkinshaw 2006) especially well.

Concept 2 - Independence: Tushman et al. (2006) discover that one of the key success factors in an ambidextrous design is the independence of the unit. Accordingly, the key element associated with success is the separation of the unit from the parent firm under the leadership of a strong general manager and that is only linked to the parent firm through senior management. Adler et al. (2009) state that structural ambidextrous designs are composed of multiple sub-units that are tightly coupled internally but loosely coupled together. This independence (which is most likely only supported by senior management) is typical for many corporate venturing structures in practice. Again, the description of a key element of successful ambidextrous design can be applied to corporate venturing.

Concept 3 - Strategy: According to O'Reilly and Tushman (2007), ambidexterity can be achieved by setting up separate units that are held together by a common strategic intent – in other words, by an overarching set of values. A corporate venture unit, for instance, is typically independent but still led by the senior management of the parent firm. As mentioned above, Adler et al. (2009) regard ambidextrous structures as loosely coupled sub-systems that must also be strategically integrated by the senior team using a common strategy. In this way, the parent firm is assured that the spin-off adheres to a common strategic direction and an

overarching set of values. Corporate venturing could be regarded as an appropriate vehicle and can work as a linking device between the corporation and the venture.

Concept 4 - Time: As demonstrated above, Birkinshaw and Gibson (2004) differentiate between contextual and structural ambidexterity and regard these types of ambidexterity as complements. Interestingly, they suggest that structural separation can only be used for a certain period of time: "[s]tructural separation may at times be essential, but it should also be temporary, a means to give a new initiative the space and resources to get started. The eventual goal should be reintegration with the mainstream organization as quickly as possible" (p. 55). If this is the case, then contextual ambidexterity can enhance both the separation and reintegration process. Similar to this view, corporate venturing, in practice, is normally also planned for a certain period of time before the venture is sold or reintegrated.

Concept 5 - Venturing Context: Hill and Birkinshaw (2006) first proposed the combination of ambidexterity and corporate venture capital as a means through which to develop a model of these units as essentially ambidextrous. From their perspective, corporate venture units have the potential to both exploit (i.e., to use existing capabilities) and explore (i.e., to build new capabilities) simultaneously. They also discover that venture units that manage to do both demonstrate better strategic performance. This serves as a strong indication that the application of the theory of ambidextrous organizations to the corporate venturing context may be favorable. However, in their simple questionnaire, the authors only examined the capabilities of the venture unit in relation to venture performance. Nevertheless, the positive results provide support for the assumption that ambidextrous theory may be very useful in the corporate venturing context.

Given these five concepts, it is safe to say that combining the theory on ambidextrous organizations with that on corporate venturing could prove to be promising. The next section will construct a model of such a combination, which should simultaneously extend the theories of ambidextrous organizations and corporate venturing as well as build up a theoretical background for further studies on the Spin-Along Approach.

As shown in Figure 6, the ACV-model consists of five components, which are described in the next segment. Each component is also linked to the Spin-Along Approach as a practical phenomenon in order to synthesize theoretical and practical considerations.

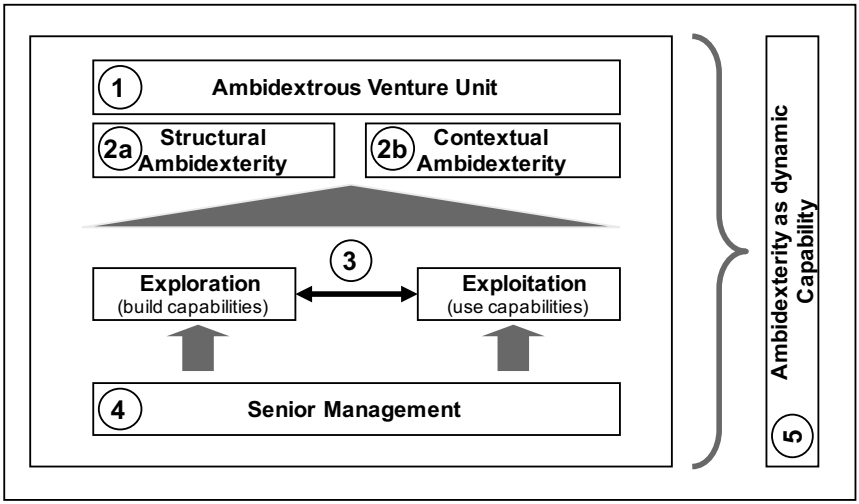

Figure 6: The ACV-model.

3.1 Ambidextrous Venture Unit

As discussed above, there are many reasons to believe that corporate venturing may be successfully used to realize ambidexterity in corporate organizations. This is not self-evident. In organizational literature, it is commonly understood that corporate venturing is one way of enhancing innovation activities of the corporation, thereby fostering exploration. What is new is the idea that corporate venturing can also contain exploitation elements and can thus be regarded as ambidextrous. These exploitation elements can be regarded in two ways: first, it means that the venture unit can make use of the resources and existing capabilities of the parent firm; second, it means that the venture unit will contribute in return to the existing capabilities of the parent firm. The goal of corporate venturing thus evolves from its previous focus on exploration into a multi-faceted, partly conflicting system of goals and strategies that also takes the interests of the existing business of the parent company into account. Within the context of this study, it should be understood that the first component of the ACV-model of ambidextrous corporate venturing is the decision to regard the venture unit and its ventures as fundamentally ambidextrous.

Furthermore, it must be made clear that the focus of the ACV-model is not the organization as a whole, nor is it the individual level of analysis. As has been shown, the business unit level perspective appears to be the most appropriate level of analysis of ambidextrous structures (Benner and Tushman 2003, Gupta et al. 2006, Lubatkin et al. 2006, Tushman et al. 2006,

Adler et al. 2009). In line with this view, ambidexterity in corporate venturing can be seen as a capacity to demonstrate exploitative and explorative capabilities not only across different business units but also within an individual unit or venture.
Conceptual link to the Spin-Along Approach: The level of analysis is the spin-along unit or, alternatively, the spin-along itself. Ambidexterity refers to the deliberate deployment of both exploring and exploiting elements.

3.2 Structural and Contextual Ambidexterity

As demonstrated above, there are different ways to realize ambidexterity. Within the context of corporate venturing, it makes sense to employ instruments of structural ambidexterity at the initial stage (rather than later in the process).

a) Structural Ambidexterity: An ambidextrous design can be realized through a separate business unit that has only limited structural linkages to the organization (e.g., in the form of general manager control and senior management support). The logic behind ambidextrous organizations is the maintenance of units, which are small and autonomous, so that employees feel both a sense of ownership and feel responsible for their own results. This corresponds with the view that, in successful ambidextrous organizations, employees need to have autonomy and must feel direct responsibility for their actions. In a corporate venture or spin-off, independence is a by-product of the fact that the sponsored firm already resides outside the organizational domain. Moreover, the management and employees in start-ups generally have real ownership (shares) or options and thus often feel a strong responsibility for their firm.

Conceptual link to the Spin-Along Approach: In a similar way, this can be stated for the Spin-Along Approach, where the spin-along through means of external venturing also resides outside the organizational domain.

That said, spin-alongs always maintain limited linkages with the parent firm (as the theory of ambidextrous structures would indicate). This is also the case in corporate venturing, where the linkage often is secured by the shares held by the parent firm and through the presence of a member of senior management on the board of the spun-off venture.

Conceptual link to the Spin-Along Approach: In the case of a spin-along, these linkages between the parent firm and spin-off can be secured through additional means, such as internal venturing, close oversight of the spin-along by senior management, and the option of access to the internal resources of the parent firm.

To conclude, a component of the ACV-model is the deliberate and conscious usage of structural elements to realize ambidexterity in corporate venturing. The Spin-Along Approach can therefore be understood as one possible way through which structural ambidexterity could be implemented.

b) Contextual Ambidexterity: In addition to the implementation of structural elements, other means of realizing ambidexterity in organizations are available. Thus, contextual ambidexterity, defined as the behavioral capacity to simultaneously demonstrate alignment (sharing the same goals) and adaptability (the flexibility to quickly react to changing demands in the environment), is another important component of the AVC-model. On the one hand, the business activities of corporate ventures must be in line with the strategic goals of the corporation. On the other hand, these ventures must have the capability to react rapidly to changes in the business environment. Venturing seems to be an appropriate way to attain the desired goal of separation and alignment at the same time.

Conceptual link to the Spin-Along Approach: Within corporate venturing, the Spin-Along Approach again appears to be an appropriate way of securing contextual ambidexterity. Here, adaptability is secured through the independence of the spin-along as a separate business unit. That said, alignment should be realized through a close relationship with and active monitoring by the parent firm.

3.3 Relation between Exploitation and Exploration

As articulated above, the primary goal of ambidextrous structures is the simultaneous pursuit of exploitation and exploration. In principle, the relationship between these two dimensions can be regarded orthogonally or as a continuum. For the development of the ACV-model, this study accepts the insights of the most recent scholarship on this issue (e.g., Beckman et al. 2004, Gupta et al. 2006, Hill and Birkinshaw 2006) and defines the relationship between exploitation and exploration as simultaneously achievable dimensions, in other words, as two orthogonal and independent variables. In the case of corporate venturing, this means that ambidexterity is not still a matter of finding a balance between exploration and exploitation activities; rather, it is matter of trying to optimize both. For the separate venture unit or spin-along, this most likely means the exploration of new products and markets through the simultaneous use of the existing capabilities of the parent company, which eventually will also contribute to the core business of the parent. The crucial element is the way in which the corporate venture is structured as well as the ability to set goals in a way that makes it clear that both exploitation and exploration are intended and achievable activities.

Conceptual link to the Spin-Along Approach: In addition to other types of corporate venturing, the Spin-Along Approach offers a promising way of optimizing both exploration and exploitation. The spin-along must be far enough away from and sufficiently independent of the parent firm to realize innovations (exploration) and at the same time be close enough to profit from and actively use the parent firm's existing capabilities (exploitation).

3.4 Role of Senior Management

The role of senior management in ambidextrous structures is a factor important to their success (Gibson and Birkinshaw 2004, He and Wong 2004, Smith and Tushman 2005, O'Reilly and Tushman 2007 & 2004), and this role may be even more crucial in corporate venture structures. In the ACV-model, senior management has two important functions. First, it must be 'consistently inconsistent' (O'Reilly and Tushman 2004); in other words, it must accept and manage the strategic contradictions of pursing both exploitation and exploration simultaneously. These managers must also be aware that these inconsistencies cannot be resolved, only managed. Second, senior management plays an extremely important role in influencing the attitude of employees of the corporate venture (Gibson and Birkinshaw 2004). More than in other organizational structures, ambidexterity requires a senior manager who serves as a good example and who has the ability to guide the venture through issues arising from these inconsistencies. This also applies in the AVC-model, which emphasizes the role of the senior management of the parent company as well as the management of the spin-along projects or units.

Conceptual link to the Spin-Along Approach: A spin-along should be considered as a special type of corporate venturing, one in which the role of the senior management is managing strategic contradictions and guiding employees is of equal importance.

3.5 Dynamic Capabilities

The relevance of dynamic capabilities to the success of organizations has been demonstrated in numerous studies in the past decade (e.g., Teece et al. 1997, Eisenhardt and Martin 2000, Zollo and Winter 2002, Winter 2003, Teece 2006, Zahra et al. 2006). This concept can also be readily combined with the concept of ambidextrous organizations (e.g., Venkatraman et al. 2006, Güttel and Konlechner 2006, O'Reilly and Tushman 2007). For the construction of the AVC-model, ambidexterity can be viewed as a dynamic capability of a higher level or as a second-order capability (Zollo and Winter 2002, Winter 2003) that governs the first-order capabilities to successfully exploit and explore. Ambidexterity as a second-order capability therefore implies that a firm must have the skill to manage these two conflicting first-order

capabilities. Within the context of corporate venturing, this may mean that the venture profits from and actively uses the assets, resources and capabilities of the parent firm in order to build up new capabilities to produce new products, develop new technologies, or enter new markets. This special dynamic capability is the final and arguably most important component of the AVC-model because it enables senior management to handle and manage all the components of the structural and contextual elements and the contradictory strategies and goals, etc., in order to determine the individual path to optimum performance and lasting success.

Conceptual link to the Spin-Along Approach: This last component of dynamic capability seems of particular importance for the Spin-Along Approach. The propositions for optimizing both dimensions seem to be much better compared to other types of corporate venturing. The spin-along is the only type that, because of its hybrid position between a completely independent spin-off and an internal unit, appears to have the best opportunities to realize exploitation and exploration simultaneously.

In short, the AVC-model contains the following five components:

1) Being fundamentally ambidextrous (able to both exploit and explore) and focused on the venture unit/venture (rather than the organization);

2) Containing structural design elements such as independence, while maintaining linkages to the parent firm; similarly, sharing contextual elements such as similar goals with the parent firm but at the same time acting independently;

3) Viewing exploitation and exploration as independent dimensions that can be optimized and obtained simultaneously;

4) Being aware of the important role played by senior management in handling inconsistencies and providing guidance to the employees;

5) Perceiving ambidexterity as a dynamic capability that can be used to manage first-order capabilities and thus determine the correct avenues to lasting success.

The discussion above demonstrates how the ACV-model engages with each of the five components, which in turn can be linked to the Spin-Along Approach as a new type of corporate venturing. Based on the ACV-model, the definition of the Spin-Along Approach can be altered as follows:

A *spin-along is a separate organizational unit that is kept under the control of and has linkages to the parent company, with the goal of supporting exploration as well as exploitation at the parent company and thus securing the long-term survival of the parent. The Spin-Along Approach can also be defined as a combination of internal and external venturing activities.*

Thus, the definition provided by Rohrbeck et al. (2009) could be expanded in some important aspects. The new definition implies that spin-alongs concentrate not only on innovations but also on exploitation (namely, the active use of the resources and capabilities of the parent firm). The Spin-Along Approach, as a new type of corporate venturing combining internal and external venturing activities, appears to be ideal for this purpose because of its positioning. In other words, it is not too far outside the purview of the parent firm (like normal spin-offs); at the same time, it is not too closely linked to the parent firm (like ordinary internal units or subsidiaries).

Conclusion and Implications for further Studies

This last section summarizes the results of this study, reviews the research question and the associated propositions, evaluates limitations of the ACV-model and suggests a possible model for planned further empirical research within this dissertation project.

To conclude, the goals of the study have been threefold: to give an overview of the literature of ambidexterity and corporate venturing, to combine these two theories, and to develop the AVC-model and apply the Spin-Along Approach and thus lay the theoretical foundation for further studies.

The underlying research question has been how the theory of ambidextrous organizations may be applied to corporate venturing. In the end, this question aims to advance organization theory by demonstrating new ways of fostering corporate entrepreneurship and resolving the ‘innovator’s dilemma’. In the course of this study, the ACV-model was developed. This model contains five central components: ambidextrous venture units, structural and contextual elements, exploitation and exploration as orthogonal dimensions and ambidexterity as a dynamic capability. The main contribution of the model to the literature is the extension of the understanding of corporate venturing as both a tool for exploration and a means of achieving various other goals. These components can also be regarded as potential research fields for further studies. In addition, the study introduced the Spin-Along Approach as a new type of venturing, and it enlarged the standard conception of venturing through the inclusion of exploitative elements. The two basic working propositions of the study have been: (1) the

most effective way to solve the 'innovator's dilemma' and thereby have long-term success is to apply this new form of corporate venturing, namely, 'Ambidextrous Corporate Venturing', and (2) the best way of realizing this new form of venturing in practice is through the 'Spin-Along Approach'.

Before giving an overview of the next steps of the planned empirical research to test ACV, the limitations of the model must be considered. It must be made clear that the ACV-model is constructed as a general organizational framework for considering issues in organizational research on ambidexterity and corporate venturing. Thus, some aspects are not explicitly detailed at this early stage:

First, it should be mentioned that the level of analysis is the venture unit or the venture itself, not the organization as a whole. This view is in line with recent literature on this topic, which considers this level of analysis as most appropriate.

Second, since the purpose of the model is focused on organizational matters, the individual perspective on ambidexterity is not specifically regarded. Nevertheless, as was illustrated, the question of individual ambidexterity of employees as well as senior management remains both important and unresolved.

Lastly, the model does not focus on issues dealing with corporate entrepreneurship itself. For example, the question of whether and how corporations can acquire the necessary entrepreneurial personnel is not addressed here at all.

While acknowledging these limitations, it can be argued that the ACV-model delivers a first foundation for ambidexterity research in the area of corporate venturing. At this point, however, this study lacks the empirical evidence to test the two propositions. The theoretical ACV-model only provides a first attempt to define the potential of the Spin-Along Approach through a multi-faceted analysis of combining ambidexterity and corporate venturing. The five components of the model may also provide direction as to which issues related to the practical implementation of ACV should be explored, as well as some insight into possible key factors for successful corporate venturing and spin-alongs. Nevertheless, additional and detailed empirical research is needed on every component of the model and on the interaction between these components. In addition, we lack empirical evidence that the Spin-Along Approach is really an effective way of realizing ambidextrous corporate venturing.

Therefore, a research agenda for further studies on the ACV-model is proposed: in order to test the propositions empirically, the following empirical model is suggested for testing (see Figure 7).

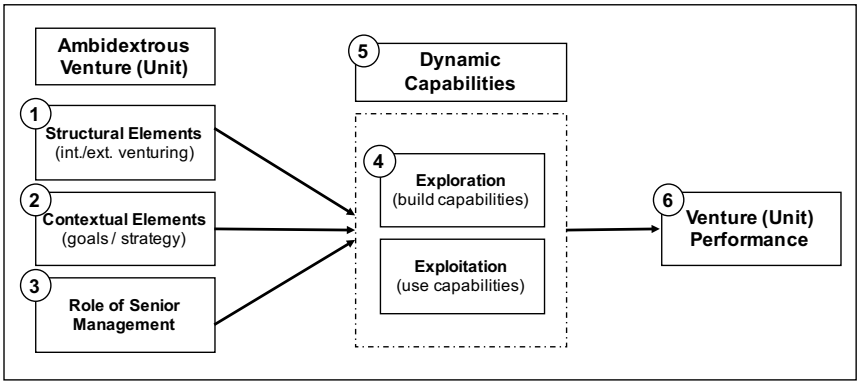

Figure 7: Empirical Model to test ACV.

It should be reiterated here that the object of interest is the (ambidextrous) corporate venture unit and the ventures themselves. Therefore, as the theory suggests, the critical components in the model, such as (1) the structural elements (the combination of internal and external venturing), (2) contextual elements, and (3) the role of senior management, should be tested as independent variables. These components could influence ambidexterity as an interacting variable, measured by the intensity (4) of exploitation and exploration. A high level of intensity in association with both of these components is an expression of ambidexterity as a well-developed dynamic capability (5). In the end, ambidexterity should have a positive effect on the dependent variable i.e., it should positively predict the performance of the venture (6).

To continue with this research and to validate and confirm the different assumptions outlined above, as well as elements and constructs associated with this model, the next step will be to conduct an empirical study. Furthermore, best practice examples and key factors associated with success and performance should be identified. Specifically, questions pertaining to how corporations implement spin-alongs in practice and how they effectively organize processes linking the parent and the venture are of particular interest.

Study 2:

Spinning-along Innovations – Case Studies on Corporate Venturing

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Markt- und Unternehmensentwicklung Markets and
Organisations, https://doi.org/10.1007/978-3-658-19886-2_2

Spinning-along Innovations – Case Studies on Corporate Venturing

Abstract

Organizational ambidexterity is a new research stream in organization theory. Ambidextrous organizations manage to simultaneously exploit existing capabilities and explore new opportunities. Yet, until now, little empirical research has been conducted on how to realize organizational ambidexterity and, more specifically, on the ambidextrous designs that secure the long-term success of innovations. This study intends to fill this gap by developing a theory based on case study evidence. Specifically, the spin-along phenomenon as a special type of ambidextrous corporate venturing is analyzed. The spin-along approach is defined here as a combination of internal and external venturing activities.

The results show that ambidexterity can be realized through the spin-along approach by optimizing structural, contextual and leadership-based antecedents and that these antecedents are strongly interrelated and can strengthen or weaken one another. Evidence shows further that it is useful to implement a coordinating management layer between the parent company and the spin-along in order to optimize the antecedents. In doing so, an ambidextrous middle management, rather than the senior management of the parent, handles the conflicting goals between exploitation and exploration, and plays a decisive role in realizing ambidexterity.
On the whole, the spin-along approach could be regarded as a fourth method that unifies the three concepts of “temporal separation”, “structural separation” and “parallel structures”. Accordingly, organizational ambidexterity can be achieved by increasing exploration and exploitation capabilities while simultaneously balancing them.

This study concludes with propositions that are based on the developed theoretical framework as a foundation for future research on ambidextrous corporate venturing. Additionally, practical advice will be given and critical success factors defined for realizing ambidexterity in corporate practice.

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Introduction

The Ambidextrous Organization

Recently, many industry market leaders have reported that they are encountering major problems in reacting to the dramatic technological changes that threaten their core businesses. Most large corporations find it very difficult to successfully engage exploitation (i.e., making the most of their existing business) and exploration (i.e., being innovative and entering new businesses) simultaneously. They often focus on efficiency and evolutionary change over time but lose the ability to also innovate. March (1991) first analyzes the tension between exploitation and exploration in organizational learning and describes the activities as fundamentally contradictory organizational processes. Successful organizational ambidexterity can only exist if organizations manage these tensions and focus on both short-term success and long-term survival (Duncan 1976, Tushman and O'Reilly 1996). Since March's analysis, the literature has taken for granted that large companies' long-term survival is only achieved when these corporations effectively exploit and explore at the same time. Much work has been done by scholars in this research field on the ambidextrous organization (e.g., Andriopoulos and Lewis 2009, Raisch et al. 2009, Cao et al. 2009, Adler et al. 2009). An extended literature review on the theory of ambidextrous organization can be found in Gold et al. (2010).

Nevertheless, not much research has focused on how ambidexterity can be realized (Raisch and Birkinshaw 2008; Jansen et al. 2009). This study intends to fill this gap. It addresses this question by analyzing the structural, contextual and leadership antecedents that enable ambidexterity. Specifically, by analyzing spin-along cases in the field of corporate venturing, this study explores how these antecedents of ambidexterity interact and relate to one another in order to achieve ambidexterity. In other words, this study investigates what an organizational design should look like in order to achieve ambidexterity in large corporations.

Corporate Venturing and the Spin-Along Approach

This study combines the theory of ambidextrous organizations with the practice-oriented view of corporate venturing. In the academic literature, corporate venturing is primarily regarded as an important method for fostering innovation (e.g., Roberts and Berry 1985, Burgelman 1983a, 1983b, 1985, Zahra 1996, Chesbrough 2000, Campbell et al. 2003, Christensen 2004, Keil 2004, Schildt et al. 2005, Dushnitsky and Lenox 2006). In opposition to this view, this study defines corporate venturing as essentially ambidextrous, in that the venture unit uses existing capabilities and resources (exploitation) but simultaneously explores new opportunities (Hill and Birkinshaw 2006). There is a dearth of research into this new

perspective on venturing and into the issue of combining the theory of ambidextrous organization and corporate venturing to attain ambidextrous corporate venturing (Gold et al. 2010). Although there are many definitions of corporate venturing, it is normally described as the activities associated with developing a new business, either by expanding operations in existing markets or by engaging new markets. This development can be achieved internally or externally (von Hippel 1977, Miles and Covin 2002, Keil 2004). In fact, many large corporations combine internal and external venturing activities, for example, Deutsche Telekom or Cisco Systems (McJunkin 2000, Rohrbeck et al. 2009). This study argues that a new type of venturing, namely, the Spin-Along Approach, which combines internal and external venturing (Rohrbeck et al. 2009), holds promise for realizing ambidextrous corporate venturing in practice.

This study therefore examines the following research question: *How should spin-alongs be designed and organized in order to foster* innovation *in the parent company, thereby realizing ambidextrous corporate venturing and long-term success?*

Grounded Theory Approach

The setting for this study is the telecommunications and media industries. These industries faced radical changes during the last decade due to emerging technologies such as the internet that created a fundamentally new dynamic and thus posed challenges for settled companies. The two selected case studies were the "Deutsche Telekom AG", which is the incumbent carrier in Germany and the largest telecommunications company in Europe, and the "Georg von Holtzbrinck Publishing Group", which is one of the largest publishing houses in Europe[17]. The businesses of these two corporations are directly threatened by new technologies and dynamic players from the tech sector, such as Google, Amazon, Apple, and Facebook. What makes these two cases of special interest is that they are handling the competitive challenges in completely different, partly contradictory ways. Thus, two very different examples were chosen because they are more likely to offer highly theoretical insights (Eisenhardt 1989, Eisenhardt and Graebner 2007). During the study, the researcher attained unusual access to both of the studied companies, as proposed by Yin (2003).

The underlying research logic presented here is the grounded theory approach (Glaser and Strauss 1967, Strauss and Corbin 1990), which includes inductive insights of the two case studies from field-based data (Eisenhardt 1989). Grounded theory building was chosen

[17] Some parts of the case studies of these two companies were published earlier. See therefor Michl et al. (2012), a publication where the author of this dissertation was a co-author.

because the theoretical literature on ambidextrous corporate venturing and the Spin-Along Approach is rather poor.

The study's major results provide theoretical and practical insights into how ambidexterity can be achieved. This study produces evidence that three antecedents (structural, contextual, and leadership-based antecedents) must be regarded as complementary and not separate paths to ambidexterity. Furthermore, they are strongly connected and can therefore strengthen or weaken one another. Moreover, the best way to realize ambidexterity is by implementing a coordinating management layer between the parent company and the spin-alongs. This management layer keeps the spin-alongs independent enough to allow exploration but close enough to the parent to exploit its resources and use its innovation capabilities. Senior management plays a decisive role in realizing ambidexterity, as some researchers have already discovered (e.g., Tushman and O'Reilly 1996, He and Wong 2004, O'Reilly and Tushman 2008). However, and more importantly, the middle management should think and act ambidextrously itself in order to manage the conflicting goals between the parent company and the spin-alongs. Raisch (2008) identifies three balanced concepts in the literature for achieving ambidexterity: temporal separation, structural separation, and parallel structure. The results of this study show that the Spin-Along Approach can be regarded as a fourth method that integrates and takes advantage of Raisch's three concepts. Thus, ambidexterity can be realized by increasing exploitation and exploration capabilities and by simultaneously balancing them.

Outline of the Study

This study proceeds as follows: In the next section, the theoretical background will be laid out, for which a literature analysis is conducted, and a theoretical framework for the case study analysis will be set. In the third section, theory building through case studies will be discussed. The theory building follows an inductive research method. The chosen methodology, the sampling of the cases, the data collection, and the analytical techniques that have been used will be described. In the fourth section, findings from the two cases and their implications will be reviewed. Within-case and cross-case analyses are then conducted in order to refine the theoretical framework and to develop propositions for further studies. The last section concludes with a summary of the results and a description of the limitations of this study, and it gives recommendations for further research.

1. Theoretical Background

1.1 The Ambidextrous Organization

March (1991) was the first scholar to identify the contradictory nature of exploiting and exploring simultaneously in the context of organizational learning. A recurring topic in organizational literature is how firms can achieve success by being aligned and efficient to meet business demands while at the same time being flexible and adaptive to environmental changes (Duncan 1976, Tushman and O'Reilly 1996, Adler et al. 1999). However, recent studies in organizational research have found that it might be possible to resolve what Christensen (1997) described as the 'innovator's dilemma' (Gupta et al. 2006, Hill and Birkinshaw 2006, Lubatkin et al. 2006, O'Reilly and Tushman 2007). These studies' ideas align with the ambidextrous organization theory, which is a new research stream in organization theory that provides a theoretical background for this analysis. Ambidexterity refers to an organization's ability to pursue two disparate objectives simultaneously, such as incremental and radical innovation (Tushman and O'Reilly 1996), and can be defined as a firm's ability to operate complex organizational designs in order to provide short-term efficiency and long-term innovation.

This study defines ambidextrous organizations as simultaneously capable of efficiency (exploiting existing capabilities) and innovativeness (exploring new opportunities and building up new capabilities). It agrees with several authors who recently pointed out that it is important to balance contradictory tensions (Adler et al. 1999, Katila and Ahuja 2002). They plead for paradoxical thinking in this context (Eisenhardt 2000, Gavetti and Levinthal 2000) and acknowledge the need for firms to balance exploitative and explorative activities (Tushman and O'Reilly 1996, Eisenhardt & Martin 2000, Benner and Tushman 2003). Thus, this study affirms that the primary goal of ambidextrous structures is the simultaneous pursuit of exploitation and exploration. Subsequently, these dimensions can be regarded as two orthogonal (Gupta et al. 2006) and independent variables (Beckmann et al. 2004, Hill and Birkinshaw 2006, Cao et al. 2009).

In the next section, this study describes three approaches to organizational ambidexterity, namely, the structural approach, the contextual approach, and the leadership-based approach (Raisch and Birkinshaw 2008), in greater depth. These approaches will serve as the basic antecedents for the theoretical framework presented at the end of this section.

Structural Ambidexterity

Duncan (1976) was the first scholar to use the term ambidextrous organization in the organization literature. He observed that firms often put in place a dual structure in order to manage the conflicting demands of being concurrently efficient and innovative. Duncan's (1976) and March's (1991) works have increasingly begun to dominate the literature on innovation, organizational design, organizational learning, competitive advantage and organizational survival (McGrath 2001, Burgelman 2002, Katila and Ahuja 2002, Benner and Tushman 2003, Sigglekow and Levinthal 2003, Gupta et al. 2006). According to Gibson and Birkinshaw (2004), this concept can also be described as structural ambidexterity, highlighting that organizations can succeed by "developing structural mechanisms to cope with the competing demands faced by the organization for alignment and adaptability" (p. 211). Gibson and Birkinshaw (2004) regard ambidexterity as a structural matter from the perspective of the entire organization. Other studies within this genre of scholarship concentrate on different sub-units' abilities within the organization (Benner and Tushman 2002, Lubatkin et al. 2006) to enable ambidexterity. In their empirical study on ambidexterity, for example, O'Reilly and Tushman (2004) discover that some companies separate their new, exploratory units from their traditional, exploitative units, in order to allow the development of different processes, structures, and cultures. Similarly, Jansen et al. (2005) study ambidextrous organizational units and investigate how organizations can compete in dynamic environments.

Contextual Ambidexterity

In contrast and as an alternative to the structural view, Gibson and Birkinshaw (2004) propose contextual ambidexterity, which is not primarily dependent on organizational structures. They observe a growing recognition of the roles of processes and systems, presented in the context of a firm's ability to achieve ambidexterity: "[t]hese processes and systems are important because they provide an alternative way of developing the capacities that architectures or structures are intended to create" (p. 209). Contextual ambidexterity is defined as the behavioral capacity to simultaneously demonstrate alignment and adaptability across an entire business unit. Rather than setting up dual structures, the leaders are then expected to enable and encourage all individuals to judge for themselves how to best divide their time between exploitation and exploration activities. In their study of forty-one business units, Gibson and Birkinshaw (2004) find strong evidence for contextual ambidexterity's positive association with the business unit's performance. They conclude, that different paths to ambidexterity exist: structural ambidexterity is one, and contextual ambidexterity is another.

Leadership: Role of Senior Management

While examining ambidextrous organizations, many authors (e.g., Tushman and O'Reilly 1996, He and Wong 2004, O'Reilly and Tushman 2008) accentuate senior management's special role in successful ambidextrous structures or designs. Lubatkin et al. (2006) even conceptualize leadership processes as an independent antecedent of organizational ambidexterity. Furthermore, according to O'Reilly and Tushman (2004), "…one of the most important lessons is that ambidextrous organizations need ambidextrous senior teams and managers – executives who have the ability to understand and be sensitive to the needs of very different kinds of businesses […] managers who can be 'consistently inconsistent'" (p. 81).

In their work on strategic contradiction management, Smith and Tushman (2005) develop a model to deal with this complex issue. In their opinion, sustained organizational performance depends on whether the top management teams can effectively exploit and explore. Smith (2009) describes how senior management teams shift their resources between existing products and new innovations, supporting both simultaneously. This also refers to management teams' ability to manage different and inconsistent organizational architectures as well as the processes associated with completely contradictory logics – all of which creates fundamental management challenges. Tushman et al. (2006) propose appointing a dedicated ambidextrous manager in the senior management team who has the cognitive and behavioral flexibility to support exploitation and exploration.

1.2 Corporate Venturing

Internal and External Venturing

Von Hippel (1977) introduced the idea that a firm can generate new business by establishing internal or external corporate ventures, depending on the location (inside or outside the organization) of the venturing team or unit. Since then, a number of authors have incorporated this distinction into their work (Miles and Covin 2002, Zahra and Hayton 2008). In Chesbrough's 'Open Innovation Model' (2003), for example, firms can commercialize external and internal ideas by outsourcing or by using in-house pathways to the market. Birkinshaw and Hill (2005) draw a similar distinction by differentiating between two types of venture units: "[i]nternal corporate venture units, which focus on opportunities identified within the company; and corporate venture capital units which focus on opportunities external to the company, in the form of independent start-ups" (p. 248). Similarly, Sharma and Chrisman (1999) refer to internal corporate venturing as "…corporate venturing activities that result in the creation of organizational entities that reside within the existing organizational domain" (p. 20).

Internal venturing is the most researched form of venturing (e.g., Roberts 1980, Burgelman 1983a, 1983b, 1985, Roberts and Berry 1985, Chesbrough 2000, Chesbrough and Socolof 2000, Rice et al. 2000, Thornhill and Amit 2001). The core concept of internal venturing is the assumption that venturing activities are organized completely within the organization's domain.

External venturing describes entrepreneurial efforts outside the firm's boundaries. Sharma and Chrisman (1999), for example, define external corporate venturing as "…activities that result in the creation of semi-autonomous or autonomous organizational entities that reside outside the existing organizational domain," (p. 19). Similarly, Keil (2002, 2004) describes external corporate venturing as a new business creation activity of established organizations in which the corporation leverages external partners in order to create a venture.

The Spin-Along Approach

When examining corporations' venturing practices, the distinction between internal and external venturing is not immediately apparent. The venture unit at Deutsche Telekom is an example of a company that combines internal and external venturing elements (Rohrbeck et al. 2009).

According to Rohrbeck et al.'s (2009) work, the practical application of combined internal and external venturing elements results in 'spin-alongs', which are the combination of aspects of spinning-out and spinning-in activities. Thus, the spun-out firm may enjoy the entrepreneurial advantages associated with a small company while still having access to a large corporation's assets.

This study defines a 'spin-along' as follows (Gold et al. 2010):
A 'spin-along' is a separate organizational unit that is kept under the control of the parent company, with the goal of supporting the exploration and innovation of the parent company and thereby securing the parent's long-term survival. The Spin-Along Approach can also be defined as a combination of internal and external venturing activities.

This study regards spin-alongs as a hybrid approach – one that is independent enough to develop new, innovative products while still sufficiently connected with the parent firm to use its resources and benefit from its capabilities.

1.3 Theoretical Framework

Owing to the foregoing considerations, this study describes a theoretical framework as the background model for the case study research. The theory of the ambidextrous organization, the corporate venturing theory, and the spin-along approach serve as the theoretical basis for the framework. Figure 1 shows the elements and the assumed interrelations as elaborated in the first study of this dissertation.

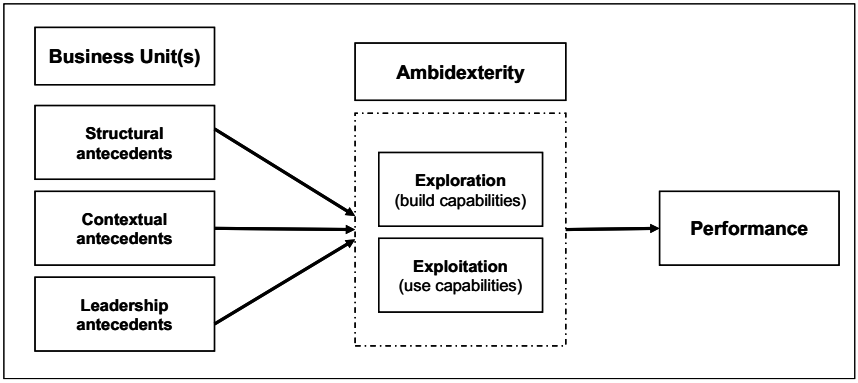

Figure 1: Theoretical Framework for the Case Study Research.

Similarly to Gibson and Birkinshaw (2004) and Jansen et al. (2005), this study relies on the strategic business unit(s) as the main level of analysis. As mentioned earlier, structural and contextual ambidexterity exist, and senior management and leadership factors seem to play a role in reaching organizational ambidexterity. In line with Raisch and Birkinshaw (2008), this study defines these three factors (structure, context and leadership) as potential antecedents for ambidexterity and independent variables that affect performance. Ambidexterity is furthermore defined as exploiting existent capabilities and simultaneously exploring and building new ones. This study disagrees with Gibson and Birkinshaw's (2004) view that the three antecedents are different and alternative paths to ambidexterity; rather, it regards them as complementary and will examine the interrelations between them. Tushman and O'Reilly (1996) assume that contextual and leadership components, such as a common culture and vision, supportive leaders, and flexible managers, are important requirements that enable structural ambidexterity. Thus, in line with Raisch and Birkinshaw (2008), this study follows the notion that "future research could formally develop and test propositions on how different antecedents interact and complement one another in a firm's pursuit of organizational ambidexterity" (p. 399).

Another basic assumption of the framework is what Raisch and Birkinshaw (2008) called the "ambidexterity premise" (p. 392), namely, that there seems to be an interrelation between ambidexterity and performance. Tushman and O'Reilly (1996) are the first to suggest that ambidextrous organizations are more likely to achieve a higher performance than firms that concentrate on exploitation or exploration only. Consequently, some scholars argue that ambidexterity is a key driver of the company's long-term performance. He and Wong (2004) are the first to test this hypothesis. Empirical data of the ambidexterity-performance relationship is, however, scarce (Raisch and Birkinshaw 2008). In summary, in the theoretical framework, ambidexterity serves as a mediator between the independent variables (ambidexterity antecedents) and the dependent variable, namely, the performance (Figure 1).

2. Empirical Method

2.1 Grounded Theory Approach

The grounded theory approach (Glaser and Strauss 1967) was chosen for this study because the spin-along phenomenon has not been examined thoroughly yet, and a plausible existing theory does not appear to be useful. The research design is based on a field study at two German corporations: a telecommunications company, Deutsche Telekom AG, and a media firm, the Georg von Holtzbrinck Publishing Group. These two cases are used as the basis from which to inductively develop spin-along theory (Eisenhardt and Graebner 2007).

The two cases were chosen for three reasons: First, the companies are in comparable situations because new technology threatens their traditional businesses, resulting in an unknown dynamic in the telecommunications and media market. The interesting difference between these two cases lies in their completely different, partly contradictory way of handling the challenges. Thus, the cases were primarily chosen for the likelihood that they will offer highly theoretical insights (Brown and Eisenhardt 1997). Second, the cases provide a successful (Holtzbrinck) and an unsuccessful (Deutsche Telekom) example of spin-along efforts and can thus be seen as polar types (Yin 1993). Accordingly, these polar types enable comparison and contrast of the spin-along activities, which should provide important insights. Therefore, this study follows Eisenhardt and Graebner's (2007) sampling approach in which the researcher samples extreme (e.g., very well performing and very badly performing) cases in order to observe more-contrasting patterns in the data. Third, as a result of the researcher's professional background as an investment director in the German and US Venture Capital market, he has unusual access to the companies' management and data (Yin 2003).

In both cases, the researcher looked at several individual spin-along examples at each company and used them in order to test the emerging theoretical insights (Yin 1993, 2003) to sharpen the theoretical framework described in the section above. The conducted method enables a close relation between theory and data, a process whereby the emergent theory is grounded in the data (Glaser and Strauss 1967, Eisenhardt 1989).

2.2 Case Study Research

The case study research was conducted following these six steps (Eisenhardt 1989):

1) The research question was defined earlier, as this forms an important part of theory building from case studies (Eisenhardt 1989). As described in the previous section, the main objective is to examine the spin-along phenomenon as a combination of internal and external venturing elements in practice.

2) The second step comprised a profound literature analysis in order to set the theoretical stage for this study (see section 2 above). A priori specification of constructs was chosen, and the theoretical framework described above was used as a guideline during the research phase. The researcher was aware that this framework and the research question are not fixed and that they could subsequently change during the study's execution due to its open theory building research approach (Eisenhardt 1989).

3) The theoretical framework was checked in a pre-study. Thirteen semi-structured interviews with corporate venture and innovation managers were conducted in order to determine whether the spin-alongs' theoretical understanding and the underlying constructs reflect managerial challenges and to check their relevance for practitioners. This pre-study was conducted between January and April 2009. One important result was that practical spin-along examples and ambidextrous venturing types were found to appear rather often. Of the 13 interviewed managers, six described spin-alongs as an important tool in their management practice.

4) The case selection occurred in line with the grounded-based theory approach and on the basis of the three reasons mentioned in the previous section.

5) After the selection of the cases, field work was done to collect data from the two researched companies.

6) The analysis results were used to shape the hypotheses behind the model, thus constantly enhancing the constructs (Eisenhardt 1989).

The last two steps, data collection and data analysis, are described in greater depth in the next two sections.

2.3 Data Collection

Multiple data sources were used, including semi-structured interviews; follow-up phone calls; observations; archival data comprising internal documents, financial reports, company websites, and business publications; and other material provided by the companies. During the data collection, information gathered during the interviews was combined with information gained using the other collection methods. This multiple data collection method has the advantage of a stronger substantiation of constructs and hypotheses by a triangulation of the different sources (Yin 1983, Eisenhardt 1989, Eisenhardt 1991).

The primary source was the interview data. After theoretical preliminary work was performed, an interview guide[18] with 18 semi-structured questions was developed using the results of the pre-study interviews. This interview guide was developed in line with the theoretical framework.

The interview process itself followed the literature's suggestions (Eisenhardt 1991, Yin 2003). In both companies, managers on all hierarchical levels were interviewed, from the top management down to the level of the responsible investment manager, as well as separate spin-along managers. To confirm that these persons were the key participants to interview, each informant was asked to name other central individuals in the spin-along process.

In total, 30 interviews (15 per case) were conducted. Table 1 contains a list of the interview partners, including their job titles and the department or subsidiary they work in[19].

[18] For the complete interview guide, see Appendix I.
[19] For the protection of privacy and to ensure openness during answering, the interview partners' names were made anonymous.

Deutsche Telekom AG			
No.	**Position/Job Title**	**Company Name**	**Entity/Business Unit**
1	VP Innovation Management	Deutsche Telekom AG	T-Labs
2	SVP Innovation Management	Deutsche Telekom AG	T-Labs
3	Project Manager	Deutsche Telekom AG	T-Labs
4	SVP Business Development	Deutsche Telekom AG	Financial Department
5	Innovation Manager	Deutsche Telekom AG	Products & Innovation
6	Innovation Manager	Deutsche Telekom AG	Products & Innovation
7	VP Strategy	Deutsche Telekom AG	Corporate Office
8	Managing Director	T-Venture Holding GmbH	T-Venture
9	Managing Director	T-Venture Holding GmbH	T-Venture
10	Fund Manager	Deutsche Telekom AG	T-Venture
11	Managing Director	Spin-along A	Spin-along A
12	Managing Director	Spin-along B	Spin-along B
13	Managing Director	Spin-along C	Spin-along C
Georg von Holtzbrinck			
No.	**Position/Job Title**	**Company Name**	**Entity/Business Unit**
1	Managing Director	Holtzbrinck publishing group	Holtzbrinck Digital GmbH
2	VP Business Development	Holtzbrinck publishing group	Holtzbrinck Digital GmbH
3	Assistent to the MD	Holtzbrinck publishing group	Handelsblatt publishing group
4	CTO	Holtzbrinck Digital GmbH	Holtzbrinck Digital GmbH
5	CFO	Holtzbrinck Digital GmbH	Holtzbrinck Digital GmbH
6	Managing Director	Holtzbrinck Digital GmbH	Holtzbrinck Networks
7	Managing Director	Holtzbrinck Digital GmbH	Holtzbrinck eLab
8	Director	Holtzbrinck Digital GmbH	Holtzbrinck eLab
9	Investment Manager	Holtzbrinck Digital GmbH	Holtzbrinck Ventures
10	Investment Manager	Holtzbrinck Digital GmbH	Holtzbrinck Ventures
11	Senior Investment Manager	Holtzbrinck Digital GmbH	Holtzbrinck Ventures
12	Managing Director	Spin-along A	Spin-along A
13	Managing Director	Spin-along B	Spin-along B
14	COO	Spin-along C	Spin-along C

Table 1: Interview Partners (anonymized) at Deutsche Telekom and Holtzbrinck.

The interviews typically lasted 60 minutes, although a few ran shorter (minimum 25 minutes) and a few longer (up to 90 minutes). The interviews were conducted mostly during personal visits to the companies over a period of six months, between September 2009 and March 2010. During the visits, a record was kept of impressions and informal observations.

In preparing for each interview, the notes from prior interviews were reviewed. The topic and purpose of the research was first described to each participant prior to the interview. Additionally, each participant was given the spin-along definition and was asked to think of a spin-along example in his or her company before answering the questions. The respondents were encouraged to describe the whole spin-along process on the basis of one concrete example, in detail. The unguided descriptions were then followed by deeper questions in order to validate the given information and cross-check the theoretical framework. The same questions were posed to the parent company's managers and the individual spin-alongs' managers, and they had to describe the process from their individual perspectives.

The interviews were tape-recorded and transcribed. In some cases, follow-up interviews were conducted by phone in order to double check the results with the other participants' answers and to exclude misunderstandings. Each transcribed interview was between 8 and 20 pages in length. The transcriptions were used to summarize each interview's main results on one page. Data gathering continued as long as it resulted in large gains (Eisenhardt 1989).

2.4 Data Analysis

After the data collection for both case studies was completed, the interview summaries and archival data were synthesized into individual case histories on two levels. The corporate level summarized the perspectives of the two main cases: Deutsche Telekom and Holtzbrinck. The spin-along level summarized the spin-along examples' perspectives and histories. Two types of analysis were conducted simultaneously: within-case and cross-case analysis (Miles and Huberman 1984, Eisenhardt 1989). Within-case analysis mainly described the spin-along process across the business units as a whole, as well as the relevant structural, contextual and leadership elements in both companies. The cross-case analysis compared important aspects of both companies and described the consequences for the theoretical framework, in order to develop propositions.

The cases were used as separate experiments. Similarities and differences were found across these examples. Emerging relationships and patterns were refined through replication logic, and the data were revisited to determine whether each separate spin-along example demonstrated the same pattern.

A set of new insights into the theoretical framework emerged from this process, including the antecedents' interrelationships in the spin-along process, as well as propositions for further studies, important success factors and practical implications, which will be described in the next section.

3. Results

In line with Eisenhardt and Graebner (2007), the case studies were treated as two separate experiments chosen to offer the most theoretical insights.

The two specific companies were chosen as cases for few reasons. First, despite the fact that Deutsche Telekom and Holtzbrink were originally involved in different markets, they are both in a similar situation of being attacked and disrupted in their core businesses. Their traditional markets are being challenged by new and very innovative tech players out of the internet industry.

In the telecommunications industry for instance, where companies like Deutsche Telekom historically used to have the monopoly, the liberalization opened up these markets to new competitors (Rohrbeck et. al 2009). Since then, this industry has faced dramatic changes. Carriers worldwide are getting squeezed by aggressive, dynamic and innovative tech companies that cannibalize their traditional business. These new players, such as Google, Apple or Facebook, as well as many start-ups, especially out of Silicon Valley, are using the carrier network through new over-the-top (OTT) services delivered on the carrier's infrastructure without paying for it.

Subsequently, carriers have to find new ways to deal with this disruption. Yet, they are usually of themselves not agile enough to innovate and to do what is necessary in order to avoid becoming nothing more than a dumb pipe utility company. To compete and add more value for customers, carriers face the pressure of being more innovative without being able or having the capability to develop disruptive services on their own terms and within the organization. Thus, being forced to deal with this new dynamic, they have to innovate by actively looking for new products outside of their own organizational domain.

Similarly, media companies and publishing houses such as Holtzbrinck have faced new challenges during the last two decades, also due to the rise of new technology like the internet. Their traditional business is increasingly threatened by the media industry's digitalization and new tech companies such as Amazon, Apple, Google and Netflix, as well as many smaller start-up companies. The traditional media business of producing and then selling content is not really working anymore the way it used to, mainly because the internet made most content available for free and users are less willing to pay for it anymore. This means that like the carriers, media companies are being disrupted as well and are under great

pressure to innovate in order to survive long-term. Thus, Holtzbrinck has to react to these developments in order to survive in an increasingly dynamic market environment (Bernhardt 2009).

The fact that both companies are in a comparably challenging situation, i.e., that both are being attacked by but also have to compete in the internet sector, makes the case comparison even more interesting and promising for new insights, especially because both companies show very different reactions to these similar challenges.

The second reason for choosing these two examples is the excellent access the researcher had to the companies because of his professional background as an investment director at T-Venture, Deutsche Telekom's venture unit. This gave him access to the necessary data sources in both companies and enabled him to conduct interviews with all of the responsible managers on all levels of the organizations. This unusual research access (Yin 1993) to both companies allowed the researcher to study the cases in great detail and depth.

3.1 Overview Cases

This section introduces the cases by providing basic information on Deutsche Telekom AG and Georg von Holtzbrinck Publishing Group. Table 2 compares the two companies.

	Deutsche Telekom	**Holtzbrinck**
Market	Telecommunication	Publishing
Main products	Fixed line, mobile, internet and IPTV products and services	Publishing, education and science, newspapers and business information, electronic media and services
Geography	Germany, Eastern Europe, USA	Germany, North America, 80 foreign countries
Revenue 2009	EUR 64.6 billion	EUR 2.2 billion
EBITDA 2009	EUR 20.7 billion	EUR 0.2 billion
No. of employees	260.000	17.000

Table 2: Fundamental Data on Deutsche Telekom and Holtzbrinck.

Deutsche Telekom AG (DT, hereafter) has its headquarters in Bonn, Germany, revenue of 64.6 billion EUR, an EBITDA of 20.7 billion EUR and 260,000 employees (in 2009). DT is Europe's largest telecommunications company and, as such, is running as a traditional carrier business, offering fixed line, mobile, internet, and triple-play/IPTV products and services. It is mainly active in Germany, Eastern Europe and the United States of America. Its innovative drive derives from new and dynamic tech companies such as Apple, Google and Facebook

that are increasingly using the carrier infrastructure for their add-on services[20] without paying for it. Thus, the telecommunication company's core competence, in this case Deutsche Telekom's delivery of telecommunication services (fixed line, mobile, and internet), is becoming increasingly commodified.

The Georg von Holtzbrinck Publishing Group (HB, hereafter) has its headquarters in Stuttgart, Germany, and was founded in 1948 as a book publishing company. Today, the Holtzbrinck group generates revenue of 2.2 billion EUR, has an EBITDA of 0.2 billion EUR, and has 17,000 employees (in 2009). It is one of Europe's largest media companies. Overall, the company does business in over 80 foreign countries. The group's activities can be divided into four different business areas: publishing, education and science, newspapers and business information, and electronic media and services. Like other media companies, Holtzbrinck now faces the challenge of adapting its traditional publishing business in line with the emergence of the internet and the fast-moving digitalization of the media industry. Thus, as for DT, HB's main competition today also arises from the internet, with new and aggressive players such as Amazon, Apple, and Google.

3.2 Within-Case Analysis

The within-case analysis follows the theoretical framework's logic by first analyzing the structural, contextual and leadership antecedents of ambidexterity. Then, the effects on ambidexterity and on the business unit performance are examined.

3.2.1 Structural Antecedents

Deutsche Telekom

The spin-along process within DT is structured along three different business units, as shown in Figure 2 below.

[20] Also called over-the-top (OTT) services.

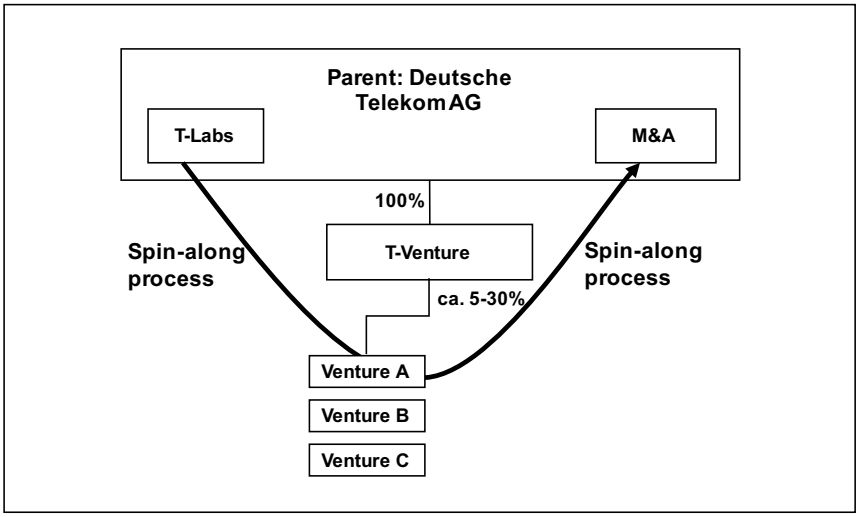

Figure 2: Structural Elements of the Spin-along Process at DT.

Within the structure of DT innovation, projects are driven internally and within the corporate context by the R&D department "Telekom Laboratories" (in short, T-Labs) until a certain stage at which they are handed over to the responsible product management department within the organization. Besides T-Labs, a typical corporate venture unit exists with T-Venture, which is a separate legal entity that resides completely outside DT's organizational domain, only being tied to the parent by DT's top-management. T-Venture itself mainly manages minority investments in external start-up companies that very rarely come from the organization. Only two of the 70 portfolio companies that T-Venture is managing were spun-out of DT and can be regarded as spin-along cases. Within DT, the internal M&A department is responsible for acquisition activities, mainly focused on the core business, such as buying other foreign telecommunications companies that directly contribute to DT's revenue and earnings goals. Only one company so far has been acquired by DT from the T-Venture portfolio in the last ten years[21].

[21] Status as of the end of 2009 for all information.

Holtzbrinck

In the HB case, the spin-along process is structured differently, as Figure 3 shows below.

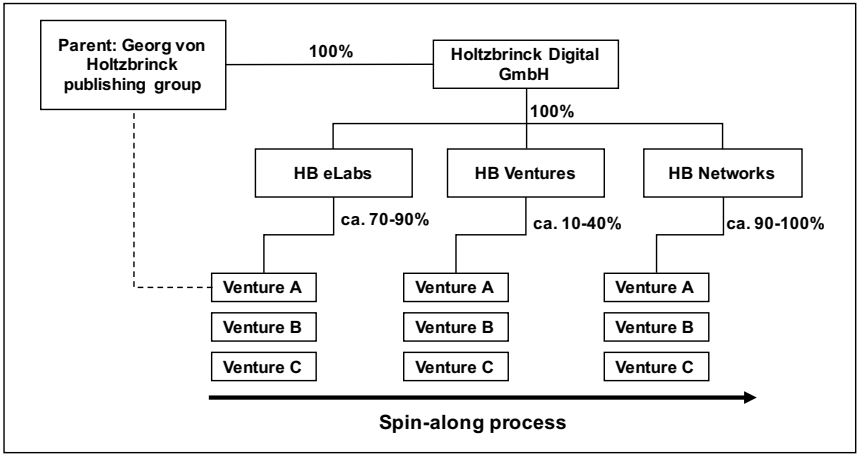

Figure 3: Structural Elements of the Spin-along Process at HB.

In this case, the parent company HB outsourced the whole process by structurally establishing a separate legal entity, 'Holtzbrinck Digital GmbH', which is owned 100% by the parent company (see Figure 3), but it can act as an independent unit outside the organizational domain. HB Digital is linked only by the top management team to the parent; therefore, the parental management also sits on HB Digital Holding's supervisory board. HB Digital Holding, in turn, consists of three subsidiaries over the whole spin-along process, from an early incubation phase during which ventures can be externalized to a later stage during which new innovative companies can be acquired (see Figure 3). Three subsidiaries are being steered by HB Digital's management, and they play an important role in this process: HB eLabs functions as an incubator in which innovation projects in an early phase can be spun-out and receive funding, even though eLabs still holds the majority of the spin-along. In a second step, at HB Ventures, spin-alongs can be externalized and funded through means of traditional venture capital financing. In this case, the majority is usually given away as a significant equity stake to management and external investors. Nevertheless, the parent's option to buy is always negotiated. Finally, in a third step, the objective of the HB Networks subsidiary is to strategically (re-)acquire innovative companies in the digital sector. These companies can be found externally in the market or internally in HB eLabs or HB Ventures. In either case (internal or external), HB Networks pays market prices when it acquires the company. At the senior management level, a single team coordinates HB Digital's three

subsidiaries. All three subsidiaries' managing directors also serve on HB Digital's management as the controlling management unit.

3.2.2 Contextual Antecedents

According to Gibson and Birkinshaw (2004), contextual ambidexterity is defined as the "capacity to simultaneously achieve alignment and adaptability at a business unit level" (p. 209). Contextual ambidexterity is achieved by building a set of systems and processes that collectively define a context that leads to ambidexterity. Consequently, these contextual antecedents were defined in this study by looking at the following factors: motivation, main goals and the involved business units' internal or external orientation. Table 3 gives an overview of these factors and their specificity at DT and HB, as well as their subsidiaries along the spin-along process.

Deutsche Telekom	**T-Labs**	**T-Venture**	**M&A**
Motivation	science driven	finance driven	corporate driven
Main goals	fostering innovation	successful exits (ROI)	revenue/profit
Orientation	internal	external	internal
Holtzbrinck	**HB eLabs**	**HB Ventures**	**HB Networks**
Motivation	entrepreneurial	entrepreneurial	entrepreneurial
Main goals	successful incubation	successful exits (ROI)	revenue/profit
Orientation	external	external	external

Table 3: Contextual Elements at DT and HB.

Deutsche Telekom

DT's subsidiaries have differing cultural motivations. Whereas T-Labs, as the R&D department, sees itself as one of the innovation drivers within DT and is rather science driven, T-Venture's main motivation is to make money with investments and it disregards whether the parent is profiting as a result of its innovation work. Conversely, the M&A department is mainly motivated to help the parent manage the core business's declining revenues. Accordingly, the separate units' main goals differ vastly. T-Labs' main interest is to push successful innovation projects to the prototype level (and then hand them over to the product management departments); T-Venture's main interest as a venture capital unit is to maximize the returns of their investments; and the M&A department's main goal is to directly contribute to DT's financial goals, mainly by buying competitors in the core telecommunications business. Consequently, the units' orientation can be described as very diverse: T-Labs and M&A are mainly internally focused, following corporate processes and rules, whereas T-Venture is more externally focused by picking the best potential investments in the market outside of the DT organization. In summary, none of the DT business units can be described as ambidextrous because they do not simultaneously realize alignment and adaptability. The

T-Labs unit, for instance, concentrates mainly on exploration, whereas the M&A unit buys companies in the core business to exploit.

Holtzbrinck

At HB, most respondents mentioned their subsidiary's entrepreneurial spirit (see Table 3). The main goals differ and depend on the stage of the spin-alongs that the units are dealing with. HB's eLabs unit mainly focuses on successfully incubating new innovative companies (spin-offs out of the parent and external teams), as long as the business holds long-term potential for HB. HB Ventures focuses on successful investment exits (from eLabs or external markets), regardless of whether the buyer is the parent itself (e.g., HB Networks) or an external company. HB Networks mainly invests and buys later-stage companies that run new, innovative, and sometimes disruptive businesses and that are already large enough to significantly contribute to the parents' balance sheet. It is notable that the three involved business units are externally oriented in a way that market success is the predominant criterion for business decisions at all business levels, even if some businesses compete with or even disrupt the parental products. Furthermore, HB Digital holding controls the three business units (see Figure 3). Management consists of the three subunits' separate managing directors. Long-term strategic decisions to develop companies over the whole spin-along process, from incubation to successful exit, are made at this level, but they remain independent of the parent. Accordingly, it is possible to simultaneously reach alignment and to adapt, and daily decisions are made by a flexible management.

3.2.3 Leadership-based antecedents

As shown in the previous section, in the literature on organizational ambidexterity, senior management's role in handling often conflicting and contradictory demands of exploitation and exploration is broadly discussed (O'Reilly and Tushman 2004, Smith and Tushman 2005, Lubatkin et al. 2006). In the next segment, this study will specifically examine senior management's role in the spin-along process, describing its effect on ambidexterity in both cases.

Deutsche Telekom

At DT, the senior management at the corporate level consists of the parent's (Deutsche Telekom AG) board of management[22]. In the context of this study, it is called the top management. Lower-level management, which leads the business units and manages the companies, is called middle management.

[22] In German: Vorstand.

DT's top management is hardly involved in the spin-along process at any time. There is only an influence on strategic decision making in the case of T-Venture because three of DT's top executives also serve on T-Venture's board of directors, among whom is the CEO of the parent, DT. Nevertheless, the influence on this top management level is restricted to general strategic decisions and only concerns T-Venture as a business unit. It does not consider individual spin-alongs. The separate business units' middle management, however, often becomes deeply involved in business decisions regarding the separate spin-alongs. Nevertheless, this influence mostly focuses on the business unit achieving its individual goals and rarely considers the whole spin-along process and, thus, the parent's long-term success. There does not seem to be an overarching management of the spin-alongs across the whole process, and exploitative and explorative elements are used very differently and mostly not simultaneously.

Holtzbrinck

As shown in Figure 3, HB has a completely different structure for managing spin-alongs to DT. Senior management can also be divided in two groups: The top management team consists of the parent's (HB publishing group) management. As with DT, the top management has minimal influence on the spin-along process. HB Digital holding's lower-positioned management group, which this study refers to as middle management, serves an interesting dual function. These managers serve on the separate business units' management as well as on HB Digital's overarching management holding. The individual manager often plays a very active role in managing separate spin-alongs while simultaneously serving on HB Digital holdings' management, which steers the three business units and the whole spin-along process. In this dual function, middle management must always think of the separate spin-along's short-term success as well as the holding's long-term success. These managers must frequently decide between the conflicting goals of alignment and adaptability.

3.2.4 Effects on Performance

Following the theoretical framework (Figure 1), after this examination of the structural, contextual and leadership antecedents (independent variable), this study will describe the effects on both companies' strategic and financial performance (dependent variable). It will then focus on ambidexterity as a potentially mediating variable between the antecedents and the performance.

Deutsche Telekom

The spin-along activities within DT have limited strategic impact. In recent years, only two spin-offs were successfully realized and funded by T-Venture and other external venture

capitalists. Considering that T-Labs is running approximately 50 innovation projects, and given that within the operational product departments, even more innovation and development projects are going on, this appears to be a very small number. Financially, the spin-along activities contributed nothing to DT's financial goals in 2009. Even if T-Venture's returns from their external investment activities were included, the financial contribution to the parent's balance sheet is insignificant. Overall, the spin-along activities' performance can be described as very poor.

Holtzbrinck

With regard to the spin-along activities' strategic performance within HB, it can be noted that in 2009, HB eLabs managed 17 investments, HB Ventures invested in 35 companies, and HB networks managed 10 portfolio companies. The activities within HB Digital holding grew significantly in the last 10 years and are today an important part of all of HB publishing group's businesses. This is apparent when looking at HB Digital holding's financial performance. In 2009, the innovation entity was already contributing 250 million EUR in digital business to the group's total revenue. This means that 12% of the total revenue is derived from the new business activities. The management intends to further grow the digital business and increase the contribution to the HB group revenue to 20% by 2011. In summary, the spin-along activities' strategic and financial performance is high.

3.2.5 Ambidexterity as a Mediator

In a next step, this study looks closely at the antecedents and how they relate to each other as well as how they lead to ambidexterity as a meta-capability for exploiting existing capabilities and exploring new opportunities (Hill and Birkinshaw 2006), thus demonstrating alignment and adaptability (Gibson Birkinshaw 2004) across the whole spin-along process. This study follows the definitions provided earlier and applies them in the context of this case study. On the one hand, it examines in each case the magnitude to which existing (parental) capabilities are used and the degree to which the goals and behavior of the business units are aligned. On the other hand, the magnitude of the exploration of new opportunities and the build-up of new capabilities are investigated, thus demonstrating adaptability to the dynamic changes in the markets. The higher the balanced and combined magnitude of both elements, the higher the ambidexterity across the spin-along process.

Deutsche Telekom

The structural antecedents for ambidexterity at DT seem to be only partly given, because certain business units lack independence over the whole process. T-Labs and the M&A department are closely related to the parent and mainly provide for DT's needs, whereas T-Venture is organized and acts as an independent venture capital firm in the market. There is

no overarching management to coordinate the activities over the whole spin-along process. Similarly, the contextual antecedents mirrored in the separate business units' different goals do not elicit ambidextrous capabilities. The units either focus on exploration (T-Labs), exploitation (M&A), or neither (i.e., T-Venture, with the main objective of earning money from financial investments). Owing to the absence of a shared culture and common goals, the missing structural elements for ambidexterity cannot be counterbalanced by the contextual antecedents. Furthermore, instead of top management exerting incidental influence on the process (sitting on the board of T-Venture), the leadership antecedent to steer the whole process and to manage conflicting demands between alignment and adaptability is absent. Accordingly, there is a low degree of ambidexterity in DT's spin-along process. Existing capabilities are not used much in the spin-along process, and new capabilities have not been built up to truly leverage DT in opening up new markets and having financial success with new products.

Holtzbrinck

As mentioned above, HB has developed a dedicated structure over the whole spin-along process by setting up an overarching management layer (HB Digital holding; see Figure 3) over the parent and the business units that manage the separate spin-alongs. Thus, the structural independence to explore new business, separate from the parent, seems to be realized, although the business units are still close enough to the parent to leverage and exploit the parent's existing capabilities. Especially in the early phase of a spin-along project at HB eLabs, a very intense usage of the parent's capabilities and resources takes place. While the contextual antecedents at HB were considered, it was notable that all business units have a very strong entrepreneurial culture and an external (market) orientation. It seems to be a common perception that without having external market success and while developing new innovative products in the digital segment (even if they compete with the parent's traditional business), HB Digital holding cannot financially contribute to the parent's long-term goals. Senior management, who have two functions in HB Digital holding and in the business units, pursues a mixture of short-term goals for the separate spin-along and long-term goals for the whole group. Thereby, they build up new businesses and contribute long-term revenue and profit to the parent. Therefore, the contextual elements seem to establish the structural antecedents for ambidexterity by providing guidelines and functioning as an integrative mechanism that increases both exploitative and explorative capabilities. The leadership antecedent consequently plays a vital role. Middle management is often deeply involved in the individual spin-along project, using the structural antecedents and following the contextual guidance, always choosing between alignment and adaptability. There seems to be no need for the top management team to be involved as long as the structural and contextual

antecedents are in place. There is a high degree of ambidexterity at HB because existing capabilities are intensively used and new opportunities are always being explored.

3.3 Cross-Case Analysis

After the within-case analysis described above, this study combines the results and compares the two cases that directly follow Eisenhardt's (1989) cross-case study approach in order to refine the theoretical framework. This will lead to the formulation of several propositions based on the framework and the derivation of practical implications.
Evidence was found that the ambidextrous antecedents (structure, context and leadership) play a crucial role in realizing ambidextrous corporate venturing through the spin-along approach. During comparison of the two cases, it became evident that DT is an unsuccessful example and HB a successful example, considering the degree of ambidexterity as a mediator of the resulting strategic and financial performance. This comparison provided new theoretical insights that can be derived to refine the theoretical framework (see Figure 4).

- *Structural antecedents:* It seems to be important to design the structure through separation along the whole spin-along process, as was done in the HB example. In addition, a management layer should be implemented between the parent and the spin-alongs. At HB, the Digital holding group serves the function of a management layer; in the case of DT, such a layer is absent.

- *Contextual antecedents:* Additionally, contextual antecedents, such as motivation, orientation and goals, play an important role and can function as an integrative mechanism that allows management to handle conflicting or even contradictory activities between the parent and the spin-alongs. In DT, the contextual antecedents in the business units are quite diverse. It is therefore difficult to integratively manage the separate business units over the whole spin-along process. HB, conversely, has an entrepreneurial culture and external orientation over all of the participating business units, which helps integrate conflicting activities.

- *Leadership-based antecedents:* It seems to be important to have ambidextrous management in order to achieve ambidexterity. This is not the case at DT. The management at HB, however, constantly shifts among the business units' goals, the individual spin-long companies, and the parents' long-term success, thus trying to increase exploitation and exploration capabilities simultaneously. In doing so, middle management seems to play a crucial role in making use of the structural and contextual antecedents in order to achieve higher performance.

To conclude, the results show that the three antecedents are important for realizing ambidexterity. Furthermore, they are obviously interrelated and can thus strengthen or weaken one another's effect on ambidexterity.

Finally, as the cross-case analysis reveals, it is crucial to regard the entire spin-along process from the spin-out and early incubation phase to the spin-in and re-integration phase. In the DT case, the spin-along process was not designed according to these phases (see Figure 2). This is one of the main reasons for the small number of successful spin-along projects at DT. However, at HB, a consistent process orientation and success in realizing ambidexterity, as described above (see Figure 3), was achieved.

3.4 Refined Theoretical Framework

Figure 4 shows the refined theoretical framework as a result of the cross-case analysis. The basic interrelation between the antecedents, ambidexterity as a mediator and the performance as an outcome, has been confirmed. Additionally, the framework shows how an ambidextrous corporate venturing endeavor could be designed in order to enhance exploitative and explorative capabilities and to maximize performance through ambidexterity.

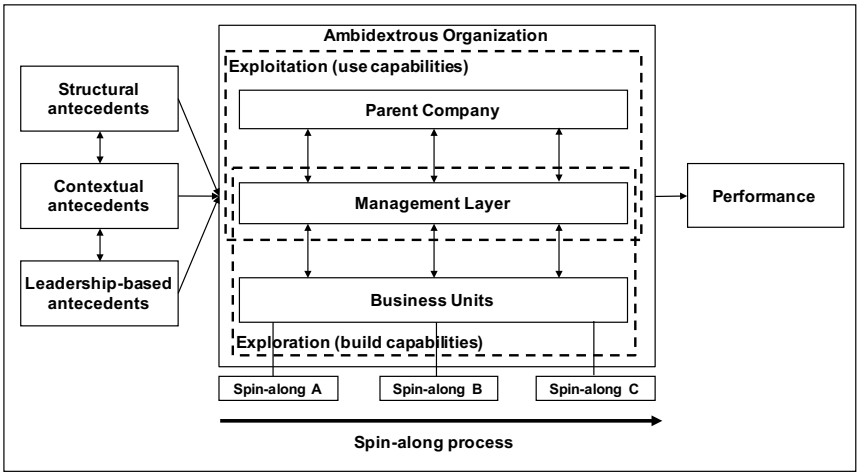

Figure 4: Refined Theoretical Framework.

3.5 Propositions

In the next segment, the underlying propositions for Figure 4's refined framework are formulated and discussed in order to lay the foundation for future research.

Scholars have recently argued that corporate venturing can involve both exploitative and explorative learning (Hill and Birkinshaw 2008). As was shown in the HB case, organizational ambidexterity can be achieved by means of ambidextrous corporate venturing and practically by using the spin-along approach. This study supports Rohrbeck et al.'s (2009) thesis that the mixture of internal and external venturing activities leads to a higher degree of ambidexterity and, thus, to more-strategic and better financial performance (Tushman and O'Reilly 1996, He and Wong 2004). Thus, the first part of the first proposition is:

Proposition 1a: Organizational ambidexterity can be realized by means of ambidextrous corporate venturing and the spin-along approach as a combination of internal and external venturing activities.

Burgers et al. (2009) argue that structural separation and integration mechanisms are important for establishing autonomous yet integrated designs that will facilitate corporate venturing. Furthermore, Jansen et al. (2009) find that because of the structural separation, a coordinating and integrating mechanism is necessary. These authors therefore propose management teams as cross-functional interfaces. In line with these views, this study reveals that a management layer between the parent and the spin-alongs is one possible method of achieving independence in order to explore new opportunities and adapt to the external market while simultaneously ensuring sufficient closeness to the parent to exploit the parental capabilities and to reach a certain alignment.

Proposition 1b: Spin-along structures can be realized by implementing a coordinating management layer between the parent and the spin-alongs.

The analysis' results revealed the framework's basic interrelation of the ambidextrous antecedents as independent variables, ambidexterity as a mediator and performance as the dependent variable. These were confirmed in both of the analyzed cases. It was possible to demonstrate that ambidexterity can be realized by implementing the structural, contextual and leadership-based antecedents. These should, however, not be seen as alternative ways to reach ambidexterity, as some researchers have suggested (e.g., Gibson and Birkinshaw 2004).

Rather, they should be regarded as interrelated and complementary (Raisch and Birkinshaw 2008). Furthermore, as the conducted case studies reveal, they can weaken one another, as was apparent in the DT case, where they appeared to be contradictory; or they can strengthen one another, as was the case at HB, where the three antecedents were complementary along the entire spin-along process. In summary, the second proposition is:

Proposition 2: Structural, contextual and leadership-based antecedents are mutually interdependent and can strengthen or weaken one another by realizing ambidexterity.

This study also aligns with many scholars who accentuate senior management's special role and importance in successful ambidextrous structures (e.g., He and Wong 2004, Gibson and Birkinshaw 2004, O'Reilly and Tushman 2008). As stated earlier, senior management, as one of the three antecedents (also in the analyzed cases), plays a decisive role by influencing ambidexterity and performance. For a better understanding of this interrelation, this study provided a more precise definition of the term senior management in this context. For greater clarity in further investigations, this study recommends dividing senior management into top management (team), which manages the parent company, and middle management, which offers an additional management layer that plays a senior role in the separate spin-alongs but reports to the top management of the parent. This distinction reflects the idea of a management layer between the parent and the spin-along. Having made this distinction, the results of this study show that the top management team has only an indirect influence on ambidexterity by setting the antecedents and thus preconditions for ambidexterity. Top management's influence on the spin-along process itself seems to be insignificant. Middle management, however, resides between the parent and the spin-alongs and has a decisive influence on the spin-alongs' success and, thus, on overall performance. Accordingly, propositions 3a and 3b can be formulated as follows:

Proposition 3a: Top management is important for the spin-along design, thus creating the preconditions for ambidexterity.

Proposition 3b: Middle management is important for the spin-along process's management and, thus, for overall performance.

Siggelkow and Levinthal (2003) sustain the basic idea of the spin-along approach as a dynamic process. They recommend temporary decentralization, in which firms use differentiated business units to explore and then possibly re-integrate later on. An important capability is to be able to switch between tasks over time. In line with this view, Raisch et al. (2009) argue that managing ambidexterity is a task of dynamic rather than static alignment

and that in order to sustain ambidexterity, different solutions may be required over time. The cross-case analysis revealed that the spin-along approach consequently must be seen as a dynamic process, from the early spin-out phase to the possible re-integration of the spin-along. Thus, proposition 4 is:

Proposition 4: The process perspective is essential for realizing ambidextrous designs such as spin-along structures.

Raisch (2008) identifies three balanced structural concepts, including cycling through different structures (temporal separation), creating different units (structural separation) and moving back and forth between different structures (parallel structures). Evidence also shows that organizations use these three designs in a complementary way and deploy them in different contexts, contributing to different learning outcomes (Raisch 2008). Accordingly, as this study reveals, instead of switching between different structures, companies create separate business units for specific initiatives at a lower organizational level. In doing so, they obtain the flexibility to facilitate necessary changes while maintaining their core business stability and, thus, high level of stability. Thus, the spin-along approach can be regarded as a fourth method for a company to benefit from the advantages of the earlier-mentioned three concepts by realizing organizational ambidexterity.

Proposition 5: The spin-along approach presents a fourth method for simultaneously using the advantages of temporal and structural separation as well as those of parallel structures.

In the literature, a number of studies assume that the two exploitative and explorative capabilities are fundamentally incompatible and that ambidexterity can only refer to the management of this trade-off between the two ends of a continuum (e.g., March 1991, Tushman and O'Reilly 1996, Benner and Tushman 2002, Gibson and Birkinshaw 2004). Accordingly, a balance between these two capabilities must be found in order to achieve ambidexterity. Recent studies show, however, an alternative understanding in which they are regarded as simultaneously achievable capabilities (Baum et al. 2000, Beckman et al. 2004). Katila and Ahuja (2002) gather empirical evidence that the interaction between exploitation and exploration can positively impact new product development. Contrary to the notion that exploitation and exploration compete with each other, they conceptualize these types of business activities as orthogonal; in other words, they are independent variables (ibid.). As shown earlier, this study's results support the idea that exploitative and explorative capabilities do not necessarily compete with one another. Rather, this study agrees with recent literature that regards exploitation and exploration as independent variables that can be developed simultaneously (Beckman et al. 2004, Gupta et al. 2006, Hill and Birkinshaw

2006). In line with this notion, Cao et al. (2009) find evidence that the combined dimension of ambidexterity leads to higher performance and that the simultaneous pursuit of exploitation and exploration is both possible and desirable. In line with this, the results of this study show that ambidexterity can be regarded as an organizational capability that can be pursued to a greater degree by enforcing and building up the two capabilities and by simultaneously balancing them. In other words, the higher the combined (multiplied) magnitude of exploitative and explorative capabilities and the more balanced they are, the higher the level of organizational ambidexterity will be. Consequently, the last proposition is:

Proposition 6: Organizational ambidexterity is realized by increasing exploitative and explorative capabilities and by simultaneously obeying the required balance between them.

3.6 Practical Implications

Besides this study's contribution to organizational ambidexterity's academic discussion, there are several implications for managerial practices. In the following, this study will outline some success factors that seem to be important for realizing ambidexterity in practice. Specifically, the question will be answered regarding how spin-alongs can be realized in practice.

1) As mentioned in the theoretical context above, it appears that in order for spin-alongs to be implemented successfully, they must be managed independently from the parent throughout the whole spin-along process. A separate legal entity's implementation as a coordinating management layer between the parental organization and the spin-alongs can be useful to keep the activities close enough to the parent to use its resources and capabilities and at the same time far enough away for the spin-along company to independently innovate new products and technologies.

2) Second, as a counterbalance to the structural separation, a certain amount of shared cultural orientation and common goals between parent and spin-along, as an integrative mechanism, seems to be important. Thus, even if the operative short-term goals of the parent and spin-along are different or partly contradictory, the long-term goal, namely, the parent's long-term success, must be a shared goal.

3) In this context, senior management plays an important role in dealing with all the conflicting and even partly contradictory interests and goals of the parent and the spin-along. In practice, it is a relevant success factor for senior management to be aware of the complexity of simultaneously realizing exploitation and exploration. Senior

management often has to decide on a daily case-by-case basis how to maximize both activities.

4) Considering senior management's role in practice in greater depth, it is important to specify top management's role for the business unit's parent and middle management separately. It is top management's function to create the preconditions that enable ambidexterity. Furthermore, it is middle management's function to use these tools to successfully run spin-alongs over time. In doing so, middle management must think and act ambidextrously itself.

5) In practice, middle managements' mediating role can be realized by managers' dual function in the management layer, as well as the separate business units and their spin-along companies. In his or her dual role, a manager must constantly switch between the parent's goals the separate spin-along company's goals to make both of them successful.

6) The sixth practical success factor is the external market orientation during all stages of the spin-along process. If the spin-along company's product or technology is not competitive in the external market, it will consequently not be valuable for internal purposes in the long run. Thus, the external market works as a criterion for a spin-along's success. This might seem trivial, but too often, an innovation unit's internal orientation disobeys this basic rule, and then internal innovation projects develop unsuccessfully for a long time before they are stopped.

7) Another success factor is the permeability between the internal and external domains, shown at HB. More precisely, the success rate is higher when the parent is not only spinning-out internal innovation projects but also looking at the external market for potential opportunities.

8) The last success factor is a consistent process orientation over the whole spin-along process. Therefore, planning and coordination should include the early incubation phase, the later venture stage, and the re-integration process. The DT case shows that if the process is not regarded in its entirety and only single stages such as venturing are used for realizing spin-alongs, the process will get stuck.

Conclusion and Implications for Further Studies

This last section summarizes the study's results, evaluates limitations of the theoretical framework and the applied method, and suggests further research on this topic. To conclude, the study's goal was threefold: first, to conduct an in-depth analysis in the ambidextrous corporate venturing field and the spin-along approach in order to, second, further develop the theoretical framework and to propose future research and, third, define critical success factors and give concrete advice for management in corporate practice.

The study's primary contribution is theory building in order to fill the gap in the literature by answering the question regarding realizing organizational ambidexterity in theory and practice. Thus, the interplay of proven complementary ambidexterity antecedents was explored. This perspective contrasts with existing literature that regards structural, contextual and leadership-based antecedents as alternative ways to ambidexterity. Furthermore, senior management's role was explored and the results show that, contrary to existing literature, it is not top or senior management but an ambidextrous middle management that plays the decisive role in managing the conflicting demands of exploitation and exploration. This study introduced the spin-along approach as a new fourth method of realizing ambidexterity, combining the concepts of temporal and structural separation and setting up parallel structures. Therefore, the traditional way of defining exploration and exploration as contradictory activities is revised by regarding them as complementary. Moreover, organizational ambidexterity can be achieved by increasing exploration and exploitation capabilities while simultaneously balancing them.

This study expands the theory of ambidextrous corporate venturing and provides several hints for further research. Nevertheless, the study has some limitations. Due to the rather short data collection time frame of only half a year, a longitudinal examination of the individual spin-alongs could not be conducted. In favor of a better understanding of the spin-along process's dynamics, a long-term study of whole spin-along life cycles could deliver further interesting insights. Furthermore, a quantitative research approach to validate the theoretical framework's constructs and relationships would be helpful. While the case study approach is very useful for building theory, a quantitative analysis on the relationship between ambidexterity and performance might deliver important insights on this topic. Additionally, the conducted study did not explicitly regard external effects and market influences on the spin-along process. Accordingly, the analyzed market orientation as a success factor for spin-along activities should be analyzed in greater depth. Furthermore, only corporate performance was examined. A deeper analysis of separate spin-along cases might deliver more useful insights. The examined cases come from the same country and thus share a cultural background.

Comparing the European perspective with other cultural backgrounds, for example, the US market, especially in the highly competitive Silicon Valley region, might be useful as well.

Study 3:

Silicon Valley Success Factors – The Concept of Intra-Nationalization

B. Gold, *Silicon Valley Start-ups and Corporate Innovation*,
Markt- und Unternehmensentwicklung Markets and
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1. Introduction

For decades, Silicon Valley has been the most important region for technological growth and innovation in the world. Since the 1950s, numerous innovative high-tech companies located in Silicon Valley – including HP, Intel, AMD, Oracle, Apple, Cisco, Yahoo!, eBay, Google and Facebook – have achieved renowned success.

All of the Silicon Valley companies noted above have three characteristics in common: first, they experienced rapid growth and international success; second, they established a high technical standard for others in their field; and, third, they are acknowledged global leaders in their markets. Silicon Valley has historically fostered unusually high growth rates in new start-ups, particularly in the tech, internet and software industries. Between 2009 and 2014 alone, Silicon Valley witnessed the establishment of over 3,500 new start-ups, and more than 80% of these are in the tech space (SVB 2015). Overall, it has been estimated that there are approximately 20,000 tech companies in Silicon Valley today (Joint Venture 2016).

Yet, the factors that have contributed to the success of Silicon Valley remain unclear. Despite numerous and extensive studies, books and journalistic coverage of the region, we still do not really understand why Silicon Valley has generated such a high number of disruptive innovations and internationally successful companies.

This begs the question: why does this geographic region continue to produce one internationally successful tech company after another? In other words, what is the secret to Silicon Valley's success?

Theoretical Background

From an academic perspective, only a few theoretical studies provide a scientific analysis of the Silicon Valley phenomenon, and most of these works are focused on the history of the region (cf. Markusen (1996), Saxenian (1990, 1991, 2000, 2002), Sturgeon (2000), Castilla et al. (2000), Lécuyer (2000, 2006) and Adams (2005)). Only recently have authors begun to address the question of why the region is so successful – specifically, exploring what factors allow Silicon Valley to provide a sustainable ecosystem for innovation and keep this ecosystem vibrant. Among this scholarship, the most notable work was produced by Ferrary and Granovetter (2009), who analyzed the innovation capabilities of Silicon Valley as a technological cluster, and Etzkowitz (2012), who examined the sustainability of Silicon Valley as an ecosystem.

This study is linked to this recent scholarship, as it also regards Silicon Valley as an innovation cluster and ecosystem, but it goes further by offering a comprehensive approach to

understanding Silicon Valley's success and by focusing on completely different aspects of this ecosystem.

Academic Void

As noted above, empirical studies on Silicon Valley have traditionally been conducted from a historical perspective, and they predominantly focus on how Silicon Valley developed into its present-day form. The small amount of scholarship focused on the factors that contribute to Silicon Valley's success generally concentrate on individual factors. There is almost no research that attempts to understand Silicon Valley's success by systematically examining the region as an entire ecosystem. As a result, academic scholarship to date has not provided an integrated approach to understanding Silicon Valley that analyzes the region as an ecosystem and determines how its configuration provides advantages for the internationalization of start-up companies.

Research Question

This study will fill this academic void by addressing the following research question: What makes Silicon Valley companies so successful in internationalizing their businesses?

The overall goal of this study is to develop a deeper scientific understanding of Silicon Valley. The study will present a theoretical framework that explains how this ecosystem impacts individual companies. By examining the various factors that make Silicon Valley successful, the concept of 'intra-nationalization' will be introduced. In addition to its contribution to academia and theory building, this study will also include practical recommendations that can be utilized by governments and businesses.

Research Method

As mentioned above, there is very little scientific research that examines Silicon Valley by treating it as an ecosystem. For that reason, grounded theory approach (Glaser and Strauss 1967) has been chosen as the foundation for the theoretical framework that will be developed. In order to achieve that this study uses the case study approach to provide a robust and detailed empirical analysis and to develop theory (Eisenhardt 1989).

In line with Eisenhardt (1989), the case study research was conducted in six steps: (1) definition of the research question, (2) analysis of the existing literature, (3) construction of a conceptual framework[23], (4) selection of cases, (5) collection of data in the field, and (6) analysis of the cases and building theory. This study is organized accordingly, using a combined approach to theory building, insofar as theoretical insights from the literature are combined with empirical data derived from the case study analysis.

[23] Porter's Diamond model (1990) is used to provide a framework for the study.

For the main study, ten internationally successful start-up companies based in Silicon Valley were chosen for an in-depth analysis. In accordance with the segmentation suggested by Picot et al. (2014), the case studies were selected to ensure the representation of four different technological areas: gaming, software, security and the internet. Other selection criteria included successful internationalization and comparability with the other cases in the study (in terms of size, age, revenue, etc.).

Results

Anecdotal evidence indicates that many of the founders of the selected Silicon Valley start-up companies moved to the region specifically to found their companies in this unique ecosystem. For most of them, access to local networks, talent and capital were the most important factors in this decision (Picot et al. 2014). Moreover, all of the case study companies pursued internationalization strategies early on and did so very successfully.

This study demonstrates that the factors that contribute to the success of these start-up companies are provided by the Silicon Valley ecosystem rather than by factors internal to the company. Figure 1 depicts the theoretical framework used to describe this ecosystem, as a result of this study (section 5); it focuses on five factors that appear to determine the success of these companies. These include three 'hard factors' – two main factor conditions (capital and talent) and one main demand condition (a large domestic market). These also include two supporting 'soft factors' that are important to the ecosystem, specifically, a well-developed social network, which acts as an underlying web holding the ecosystem together, and a very specific local business culture, which appears to help leverage the other four factors.

Theoretical Framework

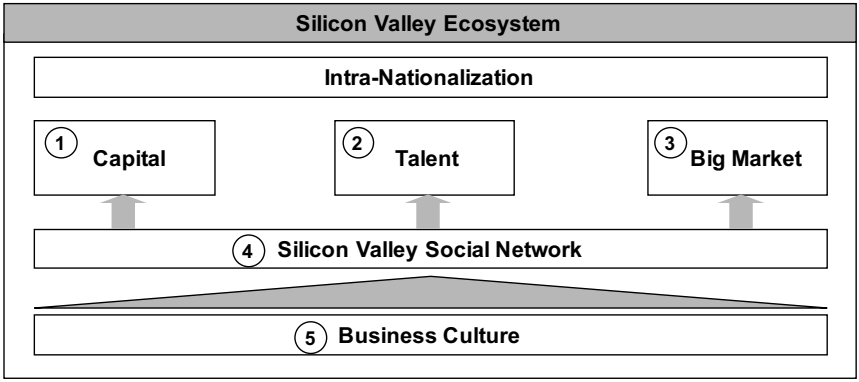

Figure 1: The Theoretical Framework of the Silicon Valley Ecosystem.

This research will also demonstrate that other factors that are traditionally relevant to explaining the dynamics of an economic region or ecosystem (e.g., infrastructure, the role of the government (taxes, regulations) and the role of supporting industries (Porter 1990)) appear to play a minor role (if any) in the Silicon Valley ecosystem, at least for the cases examined.

Importantly, the case study analysis indicates that most of these companies expanded internationally early on. They did so specifically by leveraging the Silicon Valley ecosystem but staying local. In other words, the Silicon Valley ecosystem appears to provide all of the important factors needed to successfully go global locally. This phenomenon is conceptualized at the end of section 5 as 'intra-nationalization.'

Outline of the Study

The study is organized as follows: the next section provides the theoretical background for the study and a comprehensive overview of the literature on Silicon Valley. Specifically, this section identifies the academic void in the current literature and outlines the research question that will be addressed in this study. The third section introduces a conceptual framework for the study and outlines some specific aspects of the business ecosystem approach. Both of these conceptual frames provide the context for the subsequent case study analysis. The fourth section outlines the empirical methodology used in this study. This includes a description of how cases were selected and examined, as well as an overview of the case study companies examined in this research. The fifth section presents the results of the empirical analysis and develops the theoretical framework to describe the Silicon Valley ecosystem. Here, the five determining success factors will be explored in greater detail. The study concludes by discussing the main results, describing the limitations of this study, and highlighting some implications for further studies. In addition, practical implications will be outlined.

2. Theoretical Background

2.1 The Definition of Silicon Valley

'Silicon Valley' is a geographical region; the name describes the southern part of the San Francisco Bay Area in California.[24] The term originally referred to the region's large number of silicon chip innovators and manufacturers (Piscione 2013) but eventually came to refer to all of the high-tech businesses located in the area. The term today is generally used as a metonym for the high-tech sector. Despite the development of other high-tech economic centers throughout the United States, Silicon Valley has maintained its pre-eminence, in part because of its high number of engineers, venture capitalists and tech companies.

While geographically small in size (encompassing 50 miles in length), its population and economic impact are quite substantial. As of 2016, about 3 million people were living in Silicon Valley, representing approximately 1% of the overall population of the United States (SV Index 2016). Today, more than 350,000 people are working in the high-tech sector in the Silicon Valley region, meaning that this region is ranked as having the highest number of tech employees in the United States (SV Index 2016). Moreover, the Silicon Valley economy is so strong that in 2015, it generated a Gross Domestic Product (GDP) of US$ 375 billion. More importantly, Silicon Valley start-up companies consistently attract the large majority of venture capital in the United States. In 2015, 77% of the venture capital invested in California and 40% of the overall venture capital in the US was invested in companies located in Silicon Valley (SV Index 2016).

The following Table 1 lists the ten largest publicly listed tech companies in the Silicon Valley region ranked by their market capitalization. The net worth (market capitalization) of just these ten companies alone is over US $ 2 trillion, with a combined annual revenue of US$ 500 billion in 2016.

[24] Geographically, Silicon Valley encompasses the northern part of the Santa Clara Valley and adjacent communities, all the way up to the city of San Francisco (SV Index 2016).

	Company	Description	Market Cap	Revenue
			in bn USD	in bn USD
1	Apple	Consumer Electronics	604	235
2	Alphabet (Google)	Websearch Advertising	518	75
3	Facebook	Social Network	325	18
4	Oracle	IT Services	170	37
5	Intel	Semicoductors	153	55
6	Cisco	IT Networking Services	143	50
7	Salesforce	CRM Software	50	7
8	PayPal	Payment Services	47	9
9	Adobe	Publishing Services	47	5
10	Netflix	Entertainment	44	7
			2101	**498**

Table 1: The top ten largest Silicon Valley Tech Companies.[25]

Numerous scholars have studied the Silicon Valley phenomenon, particularly the dynamics of its success and growth over the last several decades. Most of this work has focused on aspects of the region's history (Rogers and Larsen 1984, Saxenian 1990, 1991, Kaplan 1999, Kenny 2000, Lécuyer 2000, 2006, Henton 2000, Sturgeon 2000, Adams 2005, Klepper 2009, 2011, Etzkowitz 2012, Rao and Scaruffi 2013).

2.2 Silicon Valley History

In recent years, it has become popular to examine today's Silicon Valley with an eye to determining how its success can be replicated elsewhere in the world. Countries aspiring to develop high-tech regions in their own part of the world have expended some effort analyzing the elements that appear to contribute to the success of Silicon Valley, with the hope that by copying these elements, they may be able to create the next Silicon Valley (Adams 2005). As a result, most studies on Silicon Valley examine it from a historical angle, honing in on certain aspects or periods in its history in order to identify the crucial factors that account for its success.

1850 (Telegraphy Industry): For instance, Etzkowitz (2012) points out that a deeper examination of the historic development of Silicon Valley provides key insights into understanding it today because it reveals the secret of the region's growth as illustrated through its origin and development. Taking a longer-term historical perspective, the origin of Silicon Valley can be dated as far back as the mid-19th century. Etzkowitz (2012) argues that the early networks of the telegraphy industry produced a unique regional innovation culture, long before large corporations gained ascendance in the region in the middle of the 20th century.

[25] As of September 2016.

1909 (Federal Telegraph): Other authors trace the beginning of Silicon Valley as a tech region to the beginning of the 20th century. For example, Sturgeon (2000) examines the history of the region between 1910 and 1948; he argues that the roots of the region's success appeared back in the days of the radio industry and small, pre-bureaucratic firms such as Federal Telegraph (founded in 1909), which became the organizational model for subsequent start-ups such as Hewlett-Packard (which was founded as a partnership in 1939).

1930s (Stanford University): Other studies emphasize the historic link between Silicon Valley's success and Stanford University. Adams (2005) asks what role an academic anchor such as Stanford University can play in the development of a high-tech region. To answer that question, Adams examines the relationship between the tech region and Stanford in depth. He dates the birth of Silicon Valley to the early 20th Century and points out that during the early years of its formation, Stanford University lacked any type of administrative infrastructure for cooperation with industry. This changed in the 1930s, when Frederick Terman stepped up as "the principal agent in building the relationship between Stanford and local high-tech industry" (Adams 2005, p. 33). As a result, Terman is regarded by many as 'the father of Silicon Valley.'[26]

1940s (Role of the Military): In analyzing Silicon Valley as a regional network, Saxenian (1990) concludes that after World War II, three factors led to the success of the region. In addition to the significance of university research and the general willingness to engage in entrepreneurial risk-taking, she also observes that military spending played a very important role. Supporting this observation, Leslie (2000) emphasizes the special role that military spending historically played in the development of Silicon Valley. Particularly during the two decades after the war, Stanford and the local tech industry worked closely with the government on state-of-the-art defense systems. This was, as Leslie (2000) points out, long before private companies grew so significantly in size and private money emerged as a factor. As a result, Leslie (2000) argues that the US military was "the biggest angel of them all" (p. 45). She points out that many of those who have attempted to imitate Silicon Valley critically failed to recognize the important role that the military played for such a long time. Stanford University continues to be one of the top universities in terms of receiving defense contracts. Yet, while it remains popular to isolate the key factors that led to Silicon Valley's success, the identification of these elements in isolation is not enough. In the formative decades, it was the close relationship between Stanford University, governmental research (mainly by the

[26] Gibbons (2000) comes to a similar conclusion, highlighting Terman's prominent role in fostering Silicon Valley entrepreneurship by encouraging students to found their own businesses. The most famous spin-off was Hewlett Packard, founded in 1939 with Terman's help and support as a business angel (Saxenian 1991).

military) and large corporations such as Fairchild Semiconductors (rather than small start-ups) that appears to have played a crucial role in the success of Silicon Valley (Leslie 2000).
1950s (Fairchild Semiconductors): In contrast, scholars such as Lécuyer (2000) are interested in the history and meaning of corporate spin-offs in Silicon Valley, considering it as an industrial district. This research highlights another milestone in Silicon Valley's history, namely the founding of Fairchild Semiconductors in the late 1950s, which defined a whole new industry (Klepper 2009). Unsurprisingly, Fairchild has had an inordinate influence on Silicon Valley as a tech region, particularly in terms of exploring new methods of innovation, new industrial practices, and new types of entrepreneurship (Lécuyer 2006). In addition to the numerous new start-up firms that were spun out of Fairchild's success, Silicon Valley benefitted from the decision of the Fairchild founders to begin to independently finance tech firms in the region. One result of this activity was the partnership known as Kleiner Perkins, Caufield and Byers (KPCB), which emerged as one of the first privately held venture capital firms in Silicon Valley. KPCB was very successful from the get-go, and the concept was copied many times in subsequent years (Lécuyer 2000). In this way, Silicon Valley became the largest global center for venture capital in the 1970s, and it has maintained this preeminent position through to the present day. Scholarship from numerous sources confirm this observation – namely, that Silicon Valley can be credited for the rise of the modern venture capital industry and that the presence of this industry in the region is a prerequisite for the success of the tech sector (Hellmann and Puri 2000, Kenney and Florida 2000).

1940s-today (Silicon Valley Tech Waves): Henton (2000) examines the evolution of Silicon Valley as a history of technological waves. The first wave started with military research during World War II. The second wave started in the 1950s with the invention of integrated circuits and the semiconductor industry, leading to the establishment of companies such as Fairchild, Intel and AMD. The third wave started in the 1970s with the rise of the personal computer and companies including Apple and SUN Microsystems. The fourth wave was characterized by the establishment of the Internet and Silicon Valley-based companies such as Netscape, Cisco, 3Com and Yahoo. Henton (2000) concludes his historical review with the statement that the "…lesson to be learned about Silicon Valley, the innovation region, is that new events will drive entrepreneurs toward opportunities in a ceaseless cycle of Schumpeterian creative destruction" (p. 58).

1980s (Most Recent History): Gibson (2000) focuses on the region's more recent history, particularly the period between 1984 and 1996, and the special role that Stanford University

played during this time frame. It was only recently, a century after its early beginning as a tech region, that Silicon Valley reached the worldwide significance that it has today.[27]

The following table summarizes the most important milestones in Silicon Valley history (Rao and Scaruffi 2013, abbreviated).

1891: Leland and Jane Stanford establish Stanford University near Palo Alto.
1909: The Federal Telegraph Corporation (FTC) is established in Palo Alto to create the world's first global radio communication system.
1925: Frederick Terman joins Stanford University and begins to encourage students to start businesses.
1939: Frederick Terman's students William Hewlett and David Packard start a company to produce their audio-oscillator.
1939: The US government establishes the Ames Aeronautical Laboratory (Ames Research Center) at Moffett Field.
1946: The Stanford Research Institute is established.
1951: Stanford Industrial Park is conceived.
1957: Fairchild Semiconductors is established in Mountain View. The Rockefeller brothers invest in Fairchild, the first venture-funded start-up in the Bay Area.
1968: Intel is established by former Fairchild employees.
1969: Advanced Micro Devices (AMD) is founded by engineers from Fairchild Semiconductors. In the next four years (though 1972), at least sixty semiconductor companies are established, most of them by former Fairchild engineers and managers.
1972: Eugene Kleiner (Fairchild) and Tom Perkins (HP) establish the venture capital firm Kleiner Perkins.
1976: Steve Wozniak and Steve Jobs establish Apple Computer and build one of the first microcomputers in Jobs' garage in Cupertino.
1977: Oracle – based on a database system developed for the CIA – is established.
1982: Andy von Bechtholsheim, Vinod Khosla and Scott McNealy establish SUN Microsystems
1984: Cisco is established as a Stanford spin-off.

[27] Kaplan (1999) also examines the late 1980s and 1990s by recounting the personal histories of the most successful entrepreneurs and investors in Silicon Valley during this period.

1997: Reed Hastings establishes Netflix to rent videos via the internet.
1998: Two Stanford students, Larry Page and Sergey Brin, launch the Google search engine.
2004: Mark Zuckerberg sets up the social network Facebook at Harvard University but soon relocates to Palo Alto.

This literature review demonstrates that the numerous studies on Silicon Valley predominantly focus on certain time frames or aspects of the region's history. This historical background provides a strong understanding of how Silicon Valley became what it is today, which is fundamental for a robust analysis of the region. While this study builds on the theoretical background provided by the aforementioned research work, few of these works consider Silicon Valley as a whole or include an analysis of all of its various aspects, as it currently exists.

2.3 Silicon Valley in Academic Literature

As Schumpeter (1911) so eloquently points out, the starting point of any innovation is the individual entrepreneur. While this observation still holds true today, successful innovation in the modern era appears to also require a complex network or an 'innovation cluster'. Most scholars have recognized that from the beginning, Silicon Valley represented far more than just a region that accidentally accumulated a large number of successful tech companies. Saxenian (1990, 1991), who has conducted extensive research on the Silicon Valley region, has described the area as a unique regional network, particularly with regard to its development during the 1970s and 1980s.

New Industrial District (NID): Markusen (1996), known for conducting some of the first studies on different types of industrial districts, has long been interested in why some places appear to be more 'sticky' for businesses (i.e., for capital and work) than others. 'Stickiness' connotes both the ability to attract and the ability to keep businesses in a certain region, 'like fly paper' (p. 294). Markusen recognized Silicon Valley as a unique type of industrial district – a new industrial district (NID) – where classic firms 'consciously network' (p. 308). In addition, Markusen notes that Silicon Valley is a "complex product of multiple forces: corporate strategies, industrial structures, profit cycles, state priorities, local and national politics" (p. 309).

Silicon Valley as a Cluster: On the basis of Markusen's (1996) work, Adams (2005) conceptualizes Silicon Valley as a cluster of high-tech firms; Klepper (2009) compares the tech clusters of Detroit and Silicon Valley and analyzes the factors behind the historical

clustering of industries in these areas. He concludes that in case of Silicon Valley, the main driver was the spin-offs that founded the regional cluster. This driver acted in combination with a certain entrepreneurial spirit, but the venture capital activities that are more characteristic today did not characterize Silicon Valley earlier in its history. More recently, Ferrary and Granovetter (2009) examined Silicon Valley as an innovation cluster by exploring the sustainability of this cluster to the role played by different actors in the social network of the region.

2.4 Academic Void and Research Question

Many of the previous studies addressing the Silicon Valley region as an industrial district or technology cluster have hinted at the complexity of the phenomenon associated with this region without developing a robust theoretical explanation of how the various factors interact to contribute to this region's success. Taken as a whole, it could be argued that current research on Silicon Valley resembles the parable of the four blind men who are trying to describe an elephant. Each perspective may be useful for considering different parts of the Silicon Valley phenomenon; each provides numerous valid explanations for aspects of the phenomenon; but none describe it in all of its complexity.

This study attempts to fill this gap in the literature by conceptualizing Silicon Valley as an ecosystem. This approach combines various different aspects discussed by other authors into one cohesive theoretical framework. The next section introduces the concept of a business ecosystem and lays out the conceptual framework for this study.

3. Conceptual Framework

3.1 A Definition of Business Ecosystems

This study pursues a holistic approach to construct a theoretical framework that describes Silicon Valley as an ecosystem – with all of the relevant aspects associated with that term. The literature review demonstrated that traditional studies of innovation systems have mainly focused on the financial and (infra)structural aspects that support and develop innovation activity in a particular geographic or sectoral setting. In so doing, most studies define Silicon Valley rather narrowly, as either a regional network (Saxenian 1990, 1991), an industrial district (Markusen 1996), or a technology and innovation cluster (Adams 2005, Ferrary and Granovetter 2009).

According to Weil (2009), however, these past attempts to describe and analyze the region fall short of explaining the Silicon Valley phenomenon as a whole – as what he calls the 'ultimate cluster.' To change that, scholars including Weil (2009) and Etzkowitz (2012) have applied the term 'ecosystem' to better describe the Silicon Valley region. This approach will also be adopted for this study.

In this context, the term 'ecosystem' is used as a biological metaphor to highlight the interdependence of all actors in the business environment whose capabilities and roles coevolve. Moore (1996) was one of the first authors to introduce the term 'ecosystem' to the business world. According to Moore (1996), a business ecosystem can be understood as an economic community supported by a foundation of interacting organizations and individuals – namely, the organisms of the business world. The economic community produces goods and services of value to customers, who are themselves members of the ecosystem. Over time, the capabilities and roles of these actors coevolve and tend to align with a direction set by one or more central companies. The companies holding leadership roles may change over time; regardless, the function of the ecosystem leaders is valued by the community because it enables members to move toward a shared vision of the future, to align their investments, and to identify mutually supportive roles.

In this context, it is important to emphasize that the ecosystem is not static but rather provides a permanent dynamic of co-evolution. With regard to Silicon Valley, DeLong (2000) describes a business ecosystem that emerged from Silicon Valley and displays a pattern of launching new technologies. As Kenny (2000) points out, the rapid development of high-tech

companies in Silicon Valley fosters a system of institutions that encourages the emergence of new companies, often in different technological domains. This co-evolution may explain the success and sustainability of the region through the various tech cycles over the past decades.[28] It is arguably this particular co-evolution of technology, institutions, professional communities and markets over time that makes the Silicon Valley ecosystem so difficult to imitate. In other words, Silicon Valley cannot be explained without considering a century of co-evolution for an ecosystem of technologies, institutions, professional communities and domestic markets.

For the purpose of this study, the term 'innovation ecosystem' is used to describe the large and diverse array of actors and resources that contribute to and are necessary for ongoing innovation in Silicon Valley. This includes a dense and varied network of private (entrepreneurs, venture capitalists, etc.) and public (universities, research centers, and government) actors and institutions pursuing a common goal of supporting the development of new technologies and innovations within this ecosystem.

Additionally, yet more intangibly, qualitative and subtle interactions and relationships that affect innovation (human and relational capital) play a critical role in the ecosystem and will also be identified and examined as part of this research project. The social networks in Silicon Valley are of particular interest. Over time, successful innovation ecosystems develop a specific culture of innovation that is based on interaction and openness to international opportunities and change; this is a critical aspect of Silicon Valley business culture.

3.2 The Internationalization of Tech Companies

The primary research question addressed in this study deals with internationalization: what makes Silicon Valley companies so successful in internationalizing their businesses? In recent years, scholars have produced a variety of studies addressing the internationalization of tech companies and specifically identifying the conditions that are conducive to internationalization.

Autio et al. (2000), for example, argue that the international growth of companies is dependent on the age of the company. These scholars note that internationalization occurs

[28] Similarly, Weil posits that "…the wave of industrial prosperity that successively sprung from radiotelegraphy, then microwave technologies, followed by integrated circuits (silicon chips) and magnetic storages, micro-computing, multimedia, then internet software and biotechnologies, contributed to building or consolidating the institutions in this 'second economy' that made it easier to surf the next technological wave" (2009, p. 18).

more rapidly in younger companies and in companies that face international competition earlier in their institutional history. In their analysis of the internationalization strategies of knowledge-based companies, Bell et al. (2004) additionally found that firms that represent more knowledge-based enterprises internationalize their businesses more quickly than other types of companies.

Sharma and Blomsterno (2003) conducted a similar study on what they call 'born globals' – namely, companies that from inception seek to derive competitive advantage from the use of resources and the sale of outputs in multiple countries. Their findings show that born globals possess international market knowledge before their first foreign market entry; by utilizing that knowledge, they typically pursue a strategy of international expansion very early on in their institutional development.

Based on the current literature discussed above, internationalization in the context of this study is defined as the act of entering new non-domestic markets with the goal of generating additional growth through engagement in foreign countries. More specifically, this study defines international success as the generation of 20% or more of a company's revenue from commerce in foreign countries. This measure allows those start-up companies that are truly 'international ventures' to be distinguished from those that are 'domestic ventures' engaging in little or no international commercial activity. Since this study includes a number of web-based companies associated with the so-called 'freemium' model[29], international firms are also defined in terms of user base; in other words, rather than measuring revenue, an international firm has at least 20% of its user base located outside of the United States (Picot et al. 2014). This addendum allows the number of users in foreign markets to be taken into account as another measure of international success.

3.3 Porter's Diamond Model

This study uses Porter's Diamond model (1990) as its structural basis and conceptual framework for examining the Silicon Valley ecosystem. Figure 2 provides a visual conceptualization of this model (Porter 1990, p. 127).

[29] The freemium model is a pricing strategy in which a product or service (typically a digital offering or application such as software, media, games or web services) is provided free of charge, but money (premium) is charged for proprietary features, functionality, or virtual goods. Source: https://en.wikipedia.org/wiki/Freemium

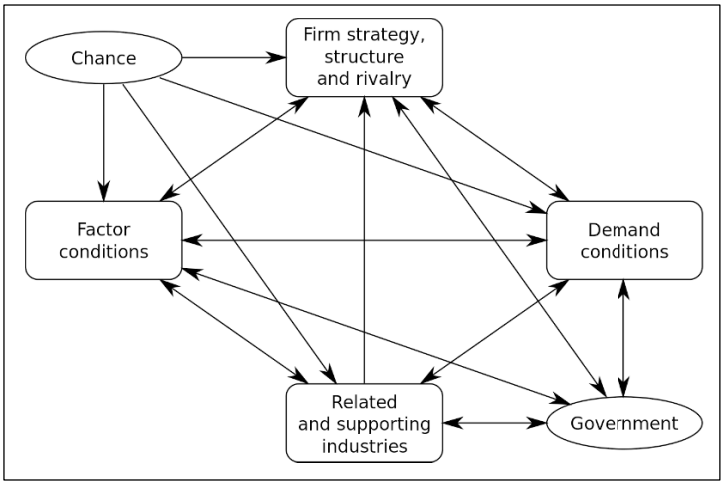

Figure 2: Porter's Diamond Model.

The Diamond model was originally developed to analyze and improve a nation's role in globally competitive fields. To clarify the dynamic processes through which competitive advantage is created, scholars have researched the history of competition in particular industries. Porter's model attempts to classify these dynamic processes. The model divides the phenomena under analysis into six broad factors (see Figure 2) and has become a key tool for the analysis of international competitiveness. This study applies the Diamond model as the basis of its analysis of Silicon Valley as a tech region that is highly competitive and successful both domestically and internationally.

The theoretical framework developed later in this study consists of two types of 'hard factors.' The first consists of what Porter calls factor conditions (Porter 1990) and includes human resources, physical resources, knowledge resources, capital resources and infrastructure. Two of these factor conditions – talent (human resources from universities and immigration) and capital (especially smart money from venture capitalists) – are particularly dominant in the Silicon Valley ecosystem.

The second set of hard factors in Porter's model are demand conditions and related and supporting industries (1990) in the home market that can help companies create a competitive advantage. As will be discussed in more detail later, a large domestic market appears to be the third important success factor for Silicon Valley-based tech companies, especially in terms of leveraging economies of scale and setting new standards.

In addition to these three hard factors, Porter's model also identifies several soft factors – namely, firm strategy, structure and rivalry – that constitute the fourth determinant of competitiveness. The ways in which companies are created, set goals, and are managed influence international success to a significant degree. With regard to Silicon Valley, these factors are captured in the important role of the dense social network and the special role that the business culture plays in the region.

Porter (1990) also notes that governmental influence on each of the four determinants of competitiveness is another important factor. According to Porter (1990), governments influence the supply conditions of key production factors, demand conditions in the home market, and competition among firms. As the analysis of the examined cases shows, however, governmental influence does not appear to play a significant role in the Silicon Valley ecosystem.

The next section of this study introduces the empirical case study method used here and provides an overview of the cases examined. On the basis of the empirical evidence, the theoretical model of the Silicon Valley ecosystem will then be developed and described in greater detail in section 5.

4. Empirical Method

4.1 Case Study Approach

As the literature review has demonstrated, there is currently no suitable theory examining the Silicon Valley ecosystem as a whole. In line with Eisenhardt (1989), the research presented here utilizes the case study method to build a Silicon Valley ecosystem theory.

According to Glaser and Strauss (1967), the grounded theory approach facilitates a close relationship between the empirical data and the theoretical explanation of the phenomenon; this approach results in an emergent theory that is grounded in the data. In line with that view, the case studies conducted for this study provide the basis for the theoretical framework (Eisenhardt and Graebner 2007) that will be used to explain the Silicon Valley ecosystem. In the next section, the study will develop the theoretical framework by combining the empirical data from the case studies with the theoretical data provided by the literature analysis (Eisenhardt 1989).

4.2 Pre-Study

As a preliminary step, a pre-study was conducted consisting of expert interviews with fifteen (15) individuals with expertise in different areas of the Silicon Valley ecosystem. Table 2 provides an overview of the experts who participated in the pre-study[30].

[30] The individual names of the interviewed experts are not provided to maintain anonymity, and job descriptions were intentionally left vague to preclude identification of the individuals who participated in the study.

	Company	Job Title	Category
1	Silicon Valley Accelerator	VP Operations	Accelerator
2	Plug & Play Center	VP Investments	Incubator
3	Corporate Finance Partners	Manager	Financial Advisor
4	Deutsche Telekom USA	VP Innovations	Corporate
5	Silicon Valley Bank	Manager	Bank
6	Wilmer Hale	Partner	Law Firm
7	Swisscom Ventures	Innovation Manager	Corporate
8	Detecon USA	CEO	Consultancy
9	Wellington Partners	Investment Manager	Venture Capital
10	Zanox	Founder & Ex-CEO	Business Angel
11	Stanford University	Manager	University
12	Blackbox Mansion	Founder	Accelerator
13	Andreessen Horowitz	Partner	Venture Capital
14	Techcrunch	Journalist	Press
15	Apple	Senior Manager	Corporate

Table 2: Interviewed Silicon Valley Experts.

According to Ferrary and Granovetter (2009), actors in Silicon Valley play many different roles in the ecosystem. For this reason, the pre-study selected a variety of experts from different areas (universities, venture capital firms, large corporations, law firms, incubators, accelerators, banks, agencies, consulting groups, business angels) to obtain a comprehensive overview of their experiences and to access a variety of different perspectives. Specifically, selection was based on the following two criteria: a) the expert had lived and worked in Silicon Valley for more than ten years, and b) the expert was involved in doing business with start-up companies.

The open-ended interviews with these experts explored the main research question of this study. Subsequently, the experts were asked to share their opinions and perceptions of how Silicon Valley functions as an ecosystem and specifically of what this ecosystem provides to start-ups. Furthermore, they were asked to list the factors that they believed to be the most important in the success of Silicon Valley and to identify specific differences between Silicon Valley and other high-tech regions in the world.

The interviews were conducted between January and February 2013. All of the interviews were recorded and transcribed. The results were then clustered around specific themes and the relevant aspects were highlighted in preparation for the main study. Finally, the pre-study results were examined in light of the literature review described above, and used in combination as the basis for the main study.

4.3 Main Study and Case Selection

Thirteen (13) Silicon Valley start-up companies were selected for the main study. Three of the cases were subsequently dropped for various reasons[31]. Only 'software-based' start-up companies were selected, which are defined as those 'offering products and services with the core of the offering being software' (Picot et al. 2014, p. 5). In addition to traditional software companies, this definition includes companies that offer internet services and embedded systems (ranging from mobile consumer apps, games, or standardized software products to individually developed enterprise software). Excluded from this group were IT services and integration companies that primarily offer individual (rather than scalable) services (Picot et al. 2014, p. 5). In addition, only companies that had already successfully internationalized their businesses were selected.[32] The background data on the case study companies were gathered between February and April 2013.

The interview guide for the main study was developed based on the results of the pre-study, the literature review, and the conceptual framework (i.e., Porter's Diamond model). The use of this guide ensured the consistent execution of the interviews across different interviewees. To determine which success factors play a leading role in the Silicon Valley ecosystem, the interviews were structured as follows: at the beginning of each interview, the questions were formulated in an open manner. This allowed the interviewee to answer openly and independently and minimized the risk that the interviewee would inadvertently be prompted to focus on certain factors. Subsequent to these initial questions, the interview followed the questions listed in the interview guide[33].

4.4 Presentation of the Cases

The ten participating start-up companies were selected out of the following four areas (Picot et al. 2014): gaming, software, security, and internet. Within these areas, the research focused on companies with both B2B and B2C[34] business models. All of the companies under examination were deliberately chosen to have similar business characteristics to facilitate comparison during analysis.

[31] Either the company did not fit with the selection criteria or there was not sufficient information/data on the company to proceed successfully.
[32] Successful internationalization is defined as 20% or more of the business being conducted outside the United States in 2012.
[33] For the full text of the interview guide, see Appendix II.
[34] Business-to-Business and Business-to-Consumer.

The following Table 3 provides an overview of the details of the examined companies. The participating companies and individuals were guaranteed confidentiality in exchange for their participation in the study to encourage them to fully disclose all information relevant to the study. To that end, the names of the companies are presented in this study using an assigned acronym (based on the NATO alphabet; letters *Alpha* to *Kilo*).

	Alpha	**Bravo**	**Charlie**	**Delta**	**Echo**
Segment	Gaming	Gaming	Software	Software	Software
Area	B2C	B2C	B2B	B2B	B2C
Product Description	Mobile Games	Casual Gaming	Social Advertising	Mobile Advertising	Video Conferencing
No. of Users in m (2012)	50	20	600	n/a	20
Business Model	Freemium, Advertising	Freemium, Digital Goods	Advertising	Advertising	Freemium
Revenue in mUSD (2012)	50	5	30	55	5
No. of Employees	150	15	90	80	150
Founded	2009	2011	2007	2005	2009
Headquarters	San Francisco	San Francisco	Palo Alto	Redwood City	Mountain View
Overall Funding in m USD	38	16	51	72	98
Last Round in 2012	Series B	Series B	Series C	Series D	Series D
Lead Investors	Andreessen Horowitz	Azure Capital	Draper Fisher, T-Venture	Sequoia Capital, Accel Partner	Accel Partner, T-Venture
	Foxtrot	**Golf**	**Hotel**	**India**	**Kilo**
Segment	Security	Security	Internet	Internet	Internet
Area	B2B	B2B	B2C	B2C	B2C
Product Description	Mobile Security App	Enterprise Security	Photo Sharing	Location Based App	Acomm. Marketplace
No. of Users in m (2012)	40	1.2	50	45	
Business Model	Freemium	Licensing	Freemium, Advertising	Advertising	Revenue Share
Revenue in mUSD (2012)	11	n/a	2.5	n/a	190
No. of Employees	200	120	25	160	600
Founded	2007	2010	2007	2009	2008
Headquarters	San Francisco	San Jose	Palo Alto	San Francisco	San Francisco
Overall Funding in m USD	132	30	30	112	326
Last Round in 2012	Series E	Series B	Series C	Series C	Series C
Lead Investors	Andreessen, Index, Accel	Andreessen, Index, T-Venture	Kleiner Perkins, T-Venture	Union Square, Andreessen, DFJ	Sequoia, Andreessen

Table 3: Details on the Case Study Companies.

All of the examined companies have the following characteristics in common. First, they were founded recently, between 2005 and 2011. Second, they generated annual revenue in 2012 of up to US $60 million[35]. Third, the companies employed between twenty (20) and two hundred and twenty (220) individuals[36]. Fourth, each company had between ten (10) and fifty (50) million users. Fifth, each case study company had received investments from at least one top-tier Silicon Valley venture capital firm[37]. The invested amounts ranged between US$ 16 million and 132 million, with an average investment sum of US$ 90 million.[38]

[35] Please note that only eight companies disclosed their revenue.
[36] There was one exception to this: company *Kilo* employed 900 individuals at the time of the interview.
[37] In most cases, the case study companies had received investment from more than one top firm.
[38] Investment totals are calculated based on dollars invested since the company was founded.

All of the interviews contained the following components: a) a brief introduction; b) a description of the company's history with respect to Silicon Valley and the company's success in internationalization; c) an open, in-depth inquiry regarding Silicon Valley's success factors from that specific company's perspective; and d) a request that the company list the key actors that played an important role in its success. Last, each interviewee was asked to rank the five most important success factors in order of importance for the success of his or her company. The interviews were conducted in person at the offices of the start-up companies. In most of the cases, the CEO was interviewed; the interviewee was also usually a company co-founder. In the cases in which the CEO was not a company co-founder, two interviews were conducted (one with the CEO and one with a co-founder). The interviews took between one and two hours to conduct, and each was recorded and subsequently transcribed.

After all of the interviews were concluded, the transcripts from the interviews were summarized and examined so that similar answers could be clustered (see Table 4). For example, when interviewees mentioned 'capital,' 'venture capital,' 'financing' or 'funding' as an important factor, these responses were categorized under the generic term 'capital.' This resulted in a list of eleven different success factors as indicated in Table 4.

	Alpha	Bravo	Charlie	Delta	Echo	Foxtrott	Golf	Hotel	India	Kilo	
	Gaming	Gaming	Software	Software	Software	Security	Security	Internet	Internet	Internet	
	B2C	B2C	B2B	B2B	B2C	B2B	B2B	B2C	B2C	B2C	
Success Factors:											
1. Capital	x	x	x	x	x	x	x	x	x	x	**10**
2. Talent	x	x	x		x	x	x	x	x		**8**
3. Business Culture		x	x	x	x	x		x	x	x	**8**
4. Big Market	x		x	x		x	x	x		x	**7**
5. Social Network	x			x	x		x	x	x		**6**
Intra-nationalization	x		x	x	x		x	x			**6**
Immigrants	x			x			x				**3**
Partner / Advisor	x			x							**2**
Silicon Valley as Brand	x			x							**2**
Infrastructure			x			x					**2**
Role of the Government											**0**

Table 4: Success Factors Mentioned in Interviews.

At the end of the interviews, some of the potential success factors that had been identified in the literature but not mentioned by the interviewee were discussed. This was intended to ensure that these factors really did not play an important role for the companies. For example, interviewees did not mention the role of the government (i.e., taxation, bureaucracy, and regulations) even once without prompting. If interviewees only responded positively to a factor after prompting, this factor was not included on the list of relevant factors.

The interviews provided the main source of data for this study. However, data from multiple other sources were also collected. These sources included follow-up phone calls, observation, and data gleaned from internal company documents (i.e., financial reports, company websites, and internal presentations). During the data collection process, information gathered during the interviews was combined with the information gained using the other collection methods (Eisenhardt 1991). This multiple-data collection method has the advantage of a stronger substantiation of constructs and hypotheses through the triangulation of the different sources (Yin 1989).

5. Results and Analysis

This section presents the results of the case studies and elaborates the theoretical framework. Based on the case study analysis, it was possible to identify five main success factors that play a crucial role in the Silicon Valley ecosystem specifically in terms of the ability of start-up companies to succeed internationally. Figure 3 provides a graphic representation of these factors.

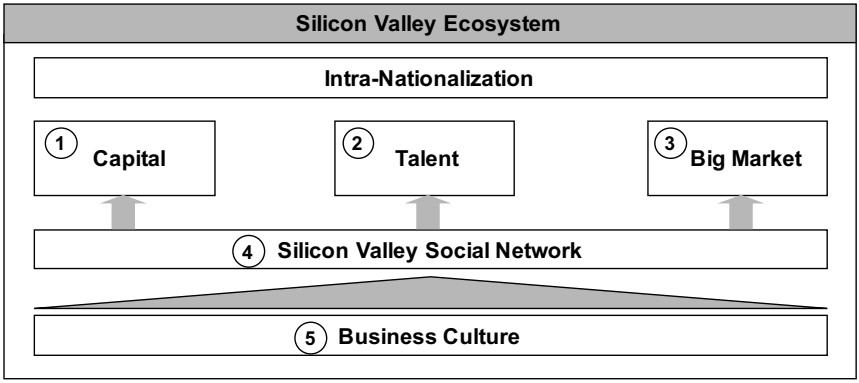

Figure 3: The Theoretical Framework of the Silicon Valley Ecosystem.

This part of the study details the ways in which these factors (1 to 5) contribute to the success of start-up companies based on the evidence provided by the case studies. It also examines how the case study results align and complement the existing literature. The dependencies and correlations between the factors are analyzed, particularly with respect to the successful

internationalization of the companies. To conclude the analysis, the last part of this section introduces the concept of intra-nationalization.[39]

5.1 Capital

"Silicon Valley is the largest creation of wealth in the history of the planet."[40]

Within any innovation network, capital plays an important role, and this is especially true in the Silicon Valley ecosystem (Ferrary and Granovetter 2009). According to Etzkowitz (2012), venture capital is the 'pull factor' for innovation in Silicon Valley; similarly, Hellmann (2000) states that the financing of start-ups by venture capitalists is a central ingredient in the economic success of Silicon Valley. According to research conducted by Picot et al. (2014), the US market is generally characterized by the high availability of venture capital. Thus, the lack of capital is usually not the main barrier to growth for successful start-up companies.

The American National Venture Capital Association (NVCA) describes venture capital firms as "… professional, institutional managers of risk capital that enable and support the most innovative and promising companies. This money funds new ideas that could not be financed with traditional bank financing, that threaten established products and services in a corporation, and that typically require five to eight years to reach maturity" (NVCA 2016). Similarly, Hellmann defines venture capital as the "…professionally managed, equity-like financing of young, growth-oriented private companies" (2000, p. 276).

In the literature, numerous studies address the role played by venture capital in the success of start-up companies. In examining the historic role of venture capital in the LAN[41] industry, Burg and Kenney (2000) describe venture capital firms as active social constructors who are trying "…to shape the future in ways that improve the outcome of their investments" (p. 1139). They posit that successful venture capitalists rely on both experience and their 'gut feeling' to determine where to invest (p. 1152).

Picot et al. (2014) point out that venture capitalists have a significant influence on start-up companies through the board of director positions; thereby, they influence the business strategy employed by the board and can pressure start-ups to pursue rapid growth and

[39] As mentioned earlier, the case study analysis uses the methodology outlined by Eisenhardt (1989), which describes the six steps of the analysis process and the theory building process as the final step in case study analysis.
[40] Quote John Doerr, Partner at Kleiner Perkins Caufield and Byers (Kaplan 1999).
[41] Local Area Network.

internationalization. Furthermore, venture capitalists often act as advisors to these start-up companies, providing them with access to their broad network of experienced experts (Picot et al. 2014, p. 33).

The current academic literature suggests that venture capital plays a critical role in the Silicon Valley ecosystem, especially as it pertains to the success of start-up companies. As Ferrary and Granovetter (2009) argue, Silicon Valley appears to be a very complex cluster in which venture capitalists play the most crucial role. To better examine this crucial role, these scholars have defined the different contributions of venture capital firms within the ecosystem; these include the 'selection' and 'financing' role as well as 'collective learning' and the 'embedding function' (Ferrary and Granovetter 2009, p. 341). In other words, venture capitalists in Silicon Valley do not finance just any company but rather finance companies very selectively. After investing, the venture capital firms continue to play a significant role in managing the companies and contributing their collective learning experience, which in turn helps embed the company into the ecosystem.[42]

The Silicon Valley Venture Cycle

The important role of capital in the Silicon Valley ecosystem was confirmed by the evidence gathered through the case studies. When participants were asked without prompting to extemporize on the factors that contribute to Silicon Valley's success, capital was mentioned by every participant as either the most important or second-most important factor – thus confirming the existing literature.
Based on the case study analysis, capital could be best described as a self-sustaining venture cycle in the current Silicon Valley ecosystem (see Figure 4).

[42] Hellmann (2000) goes so far as to describe venture capitalists as coaches: "If entrepreneurs are like athletes… VCs are like the coaches, who choose which athletes get to play, who train and motivate them, and who try to create the most favorable conditions for them to succeed" (p. 277).

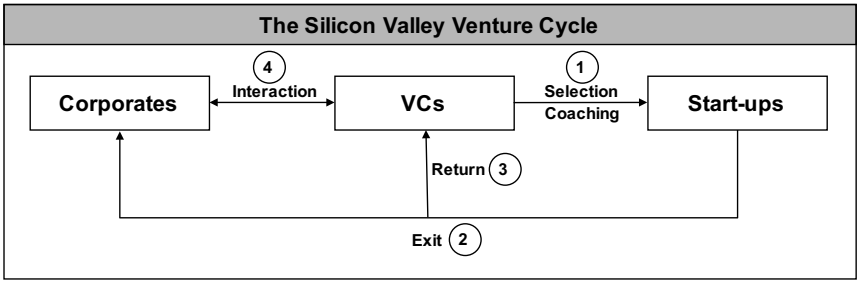

Figure 4: The Silicon Valley Venture Cycle.

The cycle dynamic includes four steps. In the first step, Silicon Valley venture capital investors serve two important functions in addition to the provision of funding. First, venture capitalists select the most promising start-up companies as the recipients of financing. This selection process appears to play a crucial role in ensuring that the most viable start-up companies are supported. Second, venture capitalists often play a very active role in managing and coaching the companies once they have decided to invest; specifically, they assist the companies by providing their individual expertise.[43]

In the second step, the venture capital investors take into account the likelihood of a high return in case of a successful exit when selecting firms in which to invest.[44] As Joffe (2012) points out, what makes Silicon Valley so unique is not only the availability of funding but also the unusually high 'exit potential.'

Third, venture capital investors aim to obtain a 'strategic' price upon exit – this usually refers to a return of approximately ten times or more on the initial investment. The strategic buyers of start-up companies are usually larger corporations, and these are also often local tech companies that are part of the Silicon Valley ecosystem.

In the fourth part of the cycle, intimacy and interaction between Silicon Valley corporations and venture capital investors ensure an alignment of interests. Through close communication, venture capitalists often already have a good idea of whether a start-up company might be of strategic interest to a potential buyer before they invest. Castilla et al. (2000), who describe the venture capital industry as the "…financial engine of the Silicon Valley" (p. 233), find

[43] Often also called 'smart money' (Hellmann and Puri 2000).
[44] A successful return refers to a company going public or (more commonly) being sold to a strategic buyer.

that there is significant migration of staff between venture capitalists, corporates and start-ups.[45]

This analysis demonstrates that venture capital firms are the main players in the ecosystem due to this four step process: first, they select which start-up companies receive funding and help to manage these companies in order to increase the likelihood of success; second, they focus on successful exit to a strategic buyer; third, they increase their returns through the strategic valuation of these companies; and fourth, they maintain close interactions with larger corporations within the Silicon Valley ecosystem in order to identify buyers early in the investment process. As a result, the high (strategic) premiums being paid attract additional capital, which in turn attracts more quality start-ups and entrepreneurs from around the world. This means that venture capitalists in Silicon Valley can be even more selective when choosing which new start-ups to invest in. The fact that this virtuous cycle is self-sustaining is one reason that Silicon Valley has been so successful for decades and through many different tech cycles.[46]

The ten companies examined for this study all stated that, generally speaking, they did not experience difficulty in obtaining funding.[47] Some of these start-ups did note that the selection of the 'right' venture capital investor for their company was more important that the availability of funding. In fact, six of the ten participant companies mentioned the critical and active role played by venture capitalists in ensuring that the company succeeded internationally (i.e., the need for so-called 'smart capital').

This observation is best illustrated by a closer examination of the comments of individual participants. The CEO of *Charlie*, for instance, stated that "[the] board and investors helped in actively growing the business." The respondent from *Bravo* indicated that "[the] investors are a really good sounding board. They are giving feedback from other companies they see." For the CEO of *India*, business in Silicon Valley is 'people's business;' in other words, the personal experience of the venture capitalists appears to be extremely important. In the case of *India*, the investors were specifically selected "because we wanted them as board members."

[45] Castilla et al. (2000) go so far as to argue that this flow of people, resources and information among sectors is also of crucial importance to the robustness of the Silicon Valley ecosystem.
[46] The self-sustaining nature of this mechanism ensures that, in addition to the large amount of capital in Silicon Valley, a larger number of start-up companies are attracted to the region; this leads to stronger competition among start-ups for funding. With a larger pool of quality candidates from which to choose, venture capitalists are more likely to select the most viable candidates for investment.
[47] This result is likely due to the fact that only already successful companies were selected to participate in the study (i.e. selection bias).

5.2 Talent

"Very few people understand what works here (in Silicon Valley) … It's very difficult to clone those environments. Too many people think that the criticality in the environment is the money. For me the criticality in the environment are the entrepreneurs."[48]

The case study evidence suggests that, after capital, talent is the second-most important factor impacting the success of Silicon Valley companies. In the context of the theoretical framework described here, talent is another 'hard' factor (or what Porter (1990) calls a production factor). Talent is a term often used to describe the human capital in the Silicon Valley ecosystem – particularly, the high concentration of talented entrepreneurs and engineers, who have historically played an important role in this region (Adams 2005).

It was clear already from the pre-study interviews that the team of entrepreneurs is crucial when evaluating a start-up's potential. As the literature review confirms, talent clearly has an influence over whether the company eventually succeeds or not.

According to Picot et al. (2014), one of the clear advantages of Silicon Valley is the local availability of highly qualified employees and experts. In analyzing the question of how Silicon Valley could be replicated elsewhere, Piscione (2013) came to the conclusion that "…you need two types of people to create a hub of technology innovation: rich guys and nerds" (p. 200).

There are two main sources for entrepreneurial talent in Silicon Valley: local universities (for example, Stanford) and immigrants.

a) Universities: As discussed earlier, the universities adjacent to Silicon Valley, particularly Stanford, have had a longer-term influence on the ecosystem than the venture capital industry[49]. According to Etzkowitz (2012), Stanford quickly developed into a knowledge base for new industrial spin-offs; moreover, "[the] interaction between firm and university in the early years of Silicon Valley created a common technological platform" (p. 9). His research on the sustainability of an economic region such as Silicon Valley concludes that Stanford University continues to play a key role in the ecosystem.

[48] Quote Donald Valentine, Founder of Sequoia Capital (Kenney 2000).

[49] Stanford was founded more than 120 years ago, while the first venture capital firms appeared as early as the 1970s.

The importance of Stanford is highlighted by the region's most recent history: more than half of the revenue of successful companies in the 1980s and 1990s came from start-up companies started either by Stanford students or professors or by using technology developed at Stanford. Prominent examples of these companies include Cisco, Silicon Graphics, Sun, Google, and Yahoo (Markusen 1996).

b) Immigrants: The other important source of talent in Silicon Valley is immigration. Etzkowitz (2012) points out that Silicon Valley became an international magnet for human, financial and intellectual capital alike. Saxenian (2000), who conducted the most comprehensive analysis of Silicon Valley as a social network in the 1990s, later focuses on the role of immigrants in the region. She highlights the significance of immigrant entrepreneurship in Silicon Valley. Skilled immigrants have long been a growing presence in the region and currently account for one-third of the engineering workforce in most Silicon Valley technology firms. In a subsequent study, Saxenian (2002) examines the important role played by skilled Asian immigrants in particular; these immigrants represent two-thirds of the region's foreign-born engineers.

The examples of highly successful Silicon Valley companies co-founded by immigrants include Google, Intel, eBay, Altera, Facebook, LinkedIn, and Tesla Motors (NVCA 2014). According to one study, more than 50% of the start-up companies in Silicon Valley are co-founded by immigrants (Start-up Genome Project 2015, p. 32).

The Silicon Valley Talent Cycle

The results of the case studies confirm the consensus in the literature that – in addition to capital – talent is a critically important factor in Silicon Valley's success. When interviewed, eight of the ten participants indicated that the availability of talented people was very important, with some describing it as of superior importance to capital.

The case studies also confirmed the important influence of universities on the availability of talent in Silicon Valley. For example, the founder of *Charlie* explained that the main reason he moved from Cincinnati to Palo Alto to start his company was the proximity to Stanford and the availability of talent (including managers and engineers).

The case study participants also supported the contention that immigration is an important source of talent. The founders of five of the ten participant companies came to Silicon Valley from outside the US and did not hold US citizenship. Consequently, the link between talent and immigration was a very important factor at these companies.

The founder of *Alpha*, for example, indicated that one of the main reasons to come to Silicon Valley was the availability of talent; he appreciated that Silicon Valley was "…very international, because a lot of developers from all across the world are here." Additionally, the CEO of *Golf* posited that "…to get talent you need to be diversified, and Silicon Valley is very, very diversified. We get people from all over the world to work here, the society is very open."

In another example, the company *Hotel* profited from both Stanford and immigration as a source of talent. The co-founder and CEO of this company is an immigrant from India; as a result, immigrants from India represent a significant source of new engineering talent for the company. The other co-founder and the CTO of *Hotel* is an American who studied at Stanford; when the company started, it only had ten full-time employees but supplemented its workforce with forty interns from Stanford. Without Stanford University and immigration, *Hotel* would not have been able to achieve the success it currently enjoys.

The case study evidence suggests that – similar to capital – the quality of talented human capital in Silicon Valley appears to represent another self-sustaining cycle; this 'talent cycle' facilitates the flow of new talent into the ecosystem (see Figure 5).

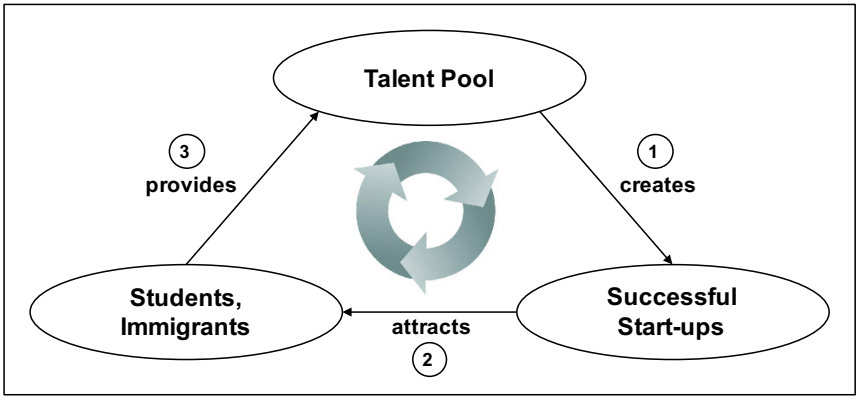

Figure 5: The Silicon Valley Talent Cycle.

The talent cycle consists of three main elements. First, the talent pool of highly qualified talent (i.e., entrepreneurs and engineers) creates more successful start-ups (as measured in terms of successful exits and value creation). Second, this economic success, in turn, attracts more talent (i.e., students and immigrants) and leads the universities to increase their focus on entrepreneurship and practically-oriented fields of study. It also attracts entrepreneurial

immigrants from all over the world. The result is an even larger pool of highly qualified entrepreneurial talent flowing into the Silicon Valley ecosystem.

This third point in the cycle complements the primacy of capital in the ecosystem because a larger pool of entrepreneurial talent allows venture capital investors to be even more selective in choosing potentially successful start-ups; this, in turn, leads to more internationally competitive start-up companies.

5.3 Big Market

Market size also appears to contribute to the success of Silicon Valley. In particular, its location in the United States and thus in the largest economy in the world appears to provide advantages over other global locations. The third factor leading to Silicon Valley's success, therefore, appears to be a 'demand factor' (as per Porter's Diamond model). In the theoretical framework, demand represents the third 'hard' factor that facilitates the success of companies in the Silicon Valley ecosystem.

Interestingly, there are not many studies linking the size of the US market with the success of start-up companies. Picot et al. (2014) is one exception; they state that software-based companies based in Silicon Valley attach high importance to internationalization and growth abroad very early in their development. In so doing, these companies often perceive the size of their domestic market as a clear competitive advantage over companies outside the US with smaller domestic markets. The large potential for growth at home seems to enable these companies to grow quickly and obtain economies of scale domestically before they expand internationally (Picot et al. 2014, p. 61).

The Two Main Advantages of a Big Domestic Market

In line with Picot et al. (2014), the evidence gathered through the case studies suggests that the size of the domestic US market is indeed an important factor in the international success of Silicon Valley start-up companies.

At seven out of the ten participating companies, the interviewees stated (without prompting) that they perceived the large size of the domestic market as major advantage. According to these participants, this allows start-up companies to first focus on growing their businesses quickly and easily in their domestic market without needing to initially take the expensive and time-consuming steps necessary to grow their businesses abroad. In other words, it appears

that Silicon Valley start-up companies find it more strategically desirable to first establish a firm base at home and then expand internationally from this strengthened position.

There appear to be two main advantages associated with access to a larger market that support a company's international success.

First, large markets appear to provide economies of scale that lead to lower coordination costs and thus facilitate more rapid economic growth. This supposition was confirmed by the case study participants.

For instance, the CEO of *Delta*, which offers a mobile advertising platform, stated: "…in the US, you reach faster economies of scale through a much bigger customer base." He argued that this provides a major advantage over the competition, especially internationally. Another example is *Hotel*, which provides a consumer-focused photo platform. According to the *Hotel* CEO, it was clear from the beginning that *Hotel* would have to focus on the US market first: "…the enterprise value (of the company) is basically directly proportional to how many users you have in the US." *Alpha*, a gaming company, initially focused on the US market as well. The CEO of *Alpha* stated: "I would say at the beginning we ignored internationalization for about two and a half years completely," primarily because the size of the US market was "…just big enough to grow."

In line with the insights of Picot et al. (2014), this research suggests that it is not important whether a company focuses on the US market first and then internationalizes or pursues both strategies simultaneously. Both strategies appear to be in common use as long as the companies are growing fast enough.

Interestingly, in the examined cases, the large domestic market did not lead to any complacency or 'do home first' attitude. Rather, it appeared to promote the opposite – namely, to encourage firms to plan for even faster growth based on their strong domestic base, which in turn allowed them to internationalize early on.

Second, the large US market appears to give US-based companies a far better chance to set global technological and software standards early on in their (larger) home market (Picot et al. 2014, p. 55). This was especially important for the B2B companies[50] under examination. Success in the US often means that a business is already bigger than other software-based

[50] Business-to-Business.

companies with smaller domestic markets. This, in turn, makes it easier for these firms to set new standards in their individual markets, which competitors in other parts of the world are then obliged to follow.

In the last thirty years, US-based companies such as Microsoft (for personal computers) or Google and Apple (for mobile devices) have been responsible for setting every new software standard. Standards also played a major role for the B2C companies examined here. For the two gaming companies in the case study analysis (*Alpha* and *Bravo*), the main internationalization strategy was to grow using the platforms provided by Google (Google Play) and Apple (App Store). During the interviews, both of these participants mentioned that their geographic proximity to these two important players, who are also based in Silicon Valley, was advantageous for their company.

In addition, the participants mentioned that the international use of English as a globally well-understood language helped their firms to grow more easily. English is so ubiquitous in technology circles that often companies do not even have to translate their software or services but instead used the English-language versions of their products in foreign countries in order to grow internationally. Both of the gaming companies indicated that using English as an international language provided a major advantage because they did not have to customize and/or translate their services in most countries.

This analysis has demonstrated that, as the third factor contributing to the success of the Silicon Valley ecosystem, the size of the domestic market plays an important role as a demand factor that encourages businesses to develop economies of scale quickly and therefore to be in a position to set international standards before the competition.

5.4 Social Network

"I can – if I want to – meet any executive I want with one phone call through my introductions (by VCs) … I want to meet Reed Hastings from Netflix, I know how easy it is to get him… I can meet with the CEO of Salesforce if I want to. Anybody."[51]

Thus far, this section has focused on the 'hard' factors associated with the success of the Silicon Valley ecosystem – namely capital, talent and the size of the domestic market. Yet, many 'soft' factors – including the underlying social web of actors and interactions – also play a vital role by allowing firms to leverage the hard factors mentioned above. In can be

[51] Quote: CEO of *Echo*

argued that these soft factors act as a type of connective tissue in the Silicon Valley ecosystem, and their role in its success should not be underestimated.

Network theory is based on the work of the sociologist Mark Granovetter (1973), who first described social networks as a web of nodes and ties. His work introduced network theory to economic science.[52] When applied to economics, social networks can be defined as "…a set of nodes or actors (persons or organizations) linked by social relationships or ties of a specified type,"' (Castilla et al. 2000, p. 219). Each tie has strength and content; thus, the level of trust associated with the tie is crucial (Castilla et a. 2000).

Ann Saxenian (1990) was the first scholar to apply network theory to Silicon Valley as a regional network. She examined Silicon Valley in the 1970s and 1980s, and her work highlights the underlying importance of the social networks and the industrial framework for the long-term success of the region. In her research, she concludes that "…the Silicon Valley resilience owes as much to its rich networks of social, professional and commercial relationships as to the efforts of individual entrepreneurs" (Saxenian 1990, p. 105). In other words, the success of the region is due to individual talent within and combined with the underlying social network. Saxenian also discovered that local cooperation contributes as much to the success of Silicon Valley as the fierce competition between companies. In that regard, inter-firm networks appear to help sustain the technological dynamism of the regional economy; this in turn makes Silicon Valley a large and expanding production network (Saxenian 1991).

Several other scholars have recognized the importance of the underlying social network to the functioning of Silicon Valley as an ecosystem. Castilla et al. (2000), for example, have argued that "…the most crucial aspects of the Silicon Valley are its networks" (p. 219). Picot et al. (2014) point out that the internationalization of Silicon Valley companies is often a consequence of a deliberate growth strategy – one that is implemented early in a company's history. More importantly, perhaps, internationalization is fostered in Silicon Valley not only by entrepreneurs but also by numerous company stakeholders – including investors, customers, partners, consultants, etc. – who have a powerful interest in growing the company. Ferrary and Granovetter (2009) have applied network theory to explain the innovative capability of Silicon Valley; in this work, they ask the following: what has made this social network so distinct, so hard for other countries to copy, and so robust for so many decades? In line with Barabasi (2002), they regard the economy as a complex network, with nodes being

[52] Currently, Granovetter teaches at Stanford University; he has recently applied his own network theory in a study of the Silicon Valley ecosystem (Ferrary and Granovetter 2009).

companies and links representing the various economic and financial ties connecting them. Entrepreneurship and innovation are then "…understood as resulting from interactions of numerous economic agents" (Ferrary and Granovetter 2009, p. 328). These agents interact on different social levels, and this, in turn, influences the corresponding economic levels (Ferrary and Granovetter 2009). In other words, two agents linked by friendship (social ties) can become business partners and create a company (economic ties); this has occurred at many Silicon Valley companies, including HP, Apple, Cisco, Yahoo and Google.

What is distinctive about Silicon Valley now is "…its complete and robust complex system of innovation supported by social networks of independent economic agents in which the venture capital firms have a specific function" (Ferrary and Granovetter 2009, p. 326). To understand the success and innovativeness of Silicon Valley as well as what the region provides to individual start-up companies, it is important to understand the entire region as a complex social network of heterogeneous agents. Complex and multiplex interactions have emerged between these agents to create a "robust system" (Ferrary and Granovetter 2009, p. 354) that has evolved and survived several technological cycles. The hard factors that contribute to Silicon Valley's success can only be effectively leveraged within the context of this underlying social network.

Subsequently, innovation at Silicon Valley start-ups is not only the result of processes within the organization but also supported by the social network around it. In other words, the success of a start-up is "…dependent on the single entrepreneur and the embeddedness in the social network" (Ferrary and Granovetter 2009, p. 337).

As described earlier, the hard factors in the Silicon Valley ecosystem are bound together by an underlying web of social contacts, which comprise the social and economic network of the ecosystem.

In terms of the case study analysis conducted here, six participants cited Silicon Valley's 'social network' as important or even crucial to their company's success. For some of these companies, the social network in Silicon Valley was recognized as the most important factor contributing to the company's success and a major reason to move to the region; as one interviewee succinctly stated, the "…social network, where everybody in it is talking and open to find business opportunities all the time."[53]

[53] Quote from the interview with the CEO of *Delta*.

In examining the case study evidence, it is clear that the social network and the complex ties between the actors play a particularly important role in the capital and the talent cycle discussed above. In most cases, a dense network of social and economic relations already existed between the start-up entrepreneurs, the venture capitalists and the major companies that can act as business partners and potential buyers of these start-ups. In the case of *Hotel*, for instance, the lead investor arranged a meeting with the Google CEO early on, so that the company would better understand the type of technology that Google was interested in. The photo sharing solution that the company developed was bought by Google for its Android operating system a year later. *Hotel* was eventually sold to Yahoo, one of Google's competitors, in 2014.

In addition to the close relationships between the actors in this ecosystem, it also appears that the actors' roles in the ecosystem are not fixed. In other words, an entrepreneur may become a venture capitalist, or a corporate manager from a tech company may become an entrepreneur and start her own company. Such was the case with the CEO of *Charlie*, who worked at Google before launching his own start-up company.

As this analysis has demonstrated, the three hard factors that contribute to the success of the Silicon Valley ecosystem are embedded in a dense and complex social network that very efficiently connects the various actors in the ecosystem through social and economic ties.

5.5 Business Culture

"Silicon Valley has become not just a place, but a culture and state of mind."[54]

The last of the five factors that have been identified as facilitating the success of Silicon Valley companies is the specific and local business culture; this culture is unique to this ecosystem and supports the social network described above.

Hofstede (1986) was one of the first scholars to examine the differences between national cultures and to catalog the impact of these differences on the business world. His scholarship, which analyzes the cultural differences between fifty countries, concludes that the main features of a national culture are that it a) is shared within a nation and is intangible and that it b) is confirmed by others (outside of the nation). National culture then consists of a deep level of values, norms and beliefs and is therefore difficult or even impossible to change (Hofstede 1986).

[54] Vinod Khosla, Founder of Khosla Ventures (Lee et al. 2000).

At an organizational level, however, cultural differences between companies are principally identified at the level of practices (Hofstede 1994a). This refers to the ways in which members of an organization relate to each other, to their work and the outside world, and to the factors that distinguish them from other organizations. In this context, company practices are far more tangible than company values (Hofstede 1994a). Subsequently, organizational culture can be defined as the collective state of mind that distinguishes the members of one organization from another. Depending on its configuration, an organization's culture may support high productivity or it may stand in the way of achieving maximum productivity (Hofstede 1994b).

The concept of business culture can be applied to an ecosystem-level analysis because, similar to a biological ecosystem, an innovation ecosystem relies on a steady flow of 'nutrients' – in this case, talent, ideas and capital. Consequently, an innovation ecosystem becomes more productive when the nutrients are distributed more quickly, and business culture plays a critical role in determining the speed of 'nutrient' distribution in this system.

The following observations on the Silicon Valley business culture are based on Hofstede's definition of organizational culture. In this context, the business culture is defined as the practices and behaviors that determine how actors (entrepreneurs, investors, corporations etc.) interact and handle transactions (practices) based on the norms, values and traditional behavior of the individual organizations and, more importantly, of the ecosystem as a whole. In other words, the business culture comprises specific rules and procedures that support the ecosystem. To use an alternative metaphor, if the ecosystem is an engine producing new and innovative start-up companies, the business culture is the lubricant that ensures that the engine is running smoothly.

Based on the case study evidence, the business culture in Silicon Valley demonstrates two unique features that distinguish it from other regions in the world – namely, locality and the intense focus on business.

In both the pre-study and the main study, most interviewees mentioned the specific Silicon Valley culture as one major advantage for start-up companies in the region. When asked specifically about the factors that contribute to Silicon Valley's success, eight out of the ten participants ranked the region's business culture as important or very important. Interestingly, the background or heritage of the participants did not appear to impact their evaluation of the importance of business culture in Silicon Valley. Two American founders of companies

participating in the study who were not from the Bay Area specifically mentioned the business culture as one reason they decided to move to Silicon Valley. For them, the culture of Silicon Valley was not only unique but also local, and it could not be found anywhere else in the United States. Respondents who were not originally from the US made similar arguments.

It is important to emphasize that for respondents, this discussion of the local culture in Silicon Valley is not in reference to a general (social) culture that played an important role for the examined companies. Rather, most participants were emphasizing the importance of the specific business culture among Silicon Valley actors. The specific nature of this very culture is perceived to be the 'secret' formula that helps entrepreneurs leverage the other 'hard' factors available in the region.

Five Aspects of Silicon Valley Business Culture

Based on the case study research and the literature analysis, five different aspects of the Silicon Valley business culture are identified (see Figure 6).

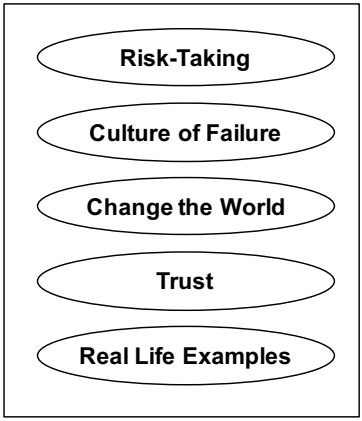

Figure 6: The Five Aspects of the Silicon Valley Business Culture.

Aspect 1: Risk-Taking. According to Saxenian (1996), the Silicon Valley business culture is characterized by both a high level of competitive individualism and a very high willingness to take risks. Similarly, Lee (2000) observed that the Silicon Valley entrepreneurs "…take enormous risk in order to create new technologies" (p. 103).

The case study analysis draws a similar conclusion. Risk-taking is often rewarded in Silicon Valley and is supported by the large amounts of (risk-free) capital from venture firms, who generally support this type of behavior within this cultural community.

Aspect 2: Culture of Failure. In conjunction with risk-taking, a culture of failure also appears to be prevalent in Silicon Valley. Saxenian (1996) defines this as a culture that accepts "…learning through experimentation and failure" (p. 29); she states that in Silicon Valley, "…unlike elsewhere, there is little embarrassment or shame associated with business failure" (1996, p. 29).

It is important to emphasize that this belief is shared by all actors in the ecosystem and not only the entrepreneurs. This means that venture capitalists accept that, statistically speaking, approximately half of their portfolio companies are likely to fail. Among the case study participants, this culture of failure attitude was also quite common. As the CEO of *Echo* put it, "…the way that these venture firms work, failure is not negative, but success is quadrupled." When asked about the possibility of failure at their firm, the founders and CEOs interviewed for the case study analysis generally did not respond negatively. For example, the CEO of *Hotel* stated that in Silicon Valley "…people are not judged by failures. Silicon Valley deals with failures, that is what makes Silicon Valley successful." The CEO of *Foxtrot* also indicated that "…making a mistake and failing or spending a little too much money doesn't really scare us. So, certain things we really take seriously. Others we just move fast. And if we fail, we fail. This is our culture."

Aspect 3: 'Change the World' Attitude. In his study, Lee (2000) compared the characteristics of small business owners and traditional entrepreneurs to Silicon Valley entrepreneurs. He observed that Silicon Valley entrepreneurs are different because the rapid pace and 'invent-the-future' orientation of Silicon Valley corresponds with a unique way of thinking about business management and about the world (Lee 2000). Accordingly, "Silicon Valley connectedness is a way of life, and passion is understood and supported by the business support infrastructure (venture capitalists, attorneys, consultants)" (Lee 2000, p. 94).

An analysis of the personal motivations of the co-founders and CEOs of the case study companies paints a similar picture. The entrepreneurs who came to Silicon Valley to establish their companies appeared to be very ambitious and possessed of a strong desire to make a difference in people's lives or to make an impact through their business. In other words, these entrepreneurs appear to be less driven by financial gain and profit and more driven by a grander ambition to change the world. This is emphasized by the fact that when asked to

identify the motivation behind their work, only one out of the ten founders of the case study companies mentioned financial gain as his or her primary motivation for starting the company.

Aspect 4: Trust. Castilla et al. (2000) determined that in any social network, the level of trust in the tie between the nodes (agents) is crucial in Silicon Valley, as it is elsewhere. Two aspects of the social network affect trust: one is 'relational' – having to do with the particular history of that tie, which produces conceptions of what each actor owes to another; the other is 'structural,' with some network structures facilitating the development of trusting relationships between actors and the avoidance of malfeasance.

The Silicon Valley culture is uniquely open. This openness enables people with different skills – people who often do not even know each other – to collaborate with and trust in one another in ways that people in other cultures usually do not. Cohen and Fields (2000) describe this 'performance-generated trust' as the building block of Silicon Valley's special brand of social capital. Moreover, these scholars emphasize that the special trust culture in Silicon Valley is uniquely open to outsiders.

A dense network containing many connections facilitates the dissemination of information about the good and/or bad aspects of one's reputation. As Silicon Valley's social network is very dense, the saying that 'you always meet twice' is particularly true in this ecosystem, where people have often been doing business with each other in various configurations for many years.

The case study evidence confirms that trust is shared by every player in the ecosystem – from entrepreneurs to venture capitalists to large corporations. As a result, honesty and supporting a positive sum game for all players over the long-term appears to be more important than 'winning' an individual transaction in the short-term. This conclusion is supported by the fact that most of the company founders interviewed for this study already knew their investors and co-founders before they started their companies.

Aspect 5: Real-Life Examples. The famous and more recent successes of companies such as Google, Facebook, AirBnB and Uber are still present in the minds of the people working in Silicon Valley. Every entrepreneur is familiar with these stories and often has personal contacts with some of the actors directly involved. When start-up success stories are not just abstractly understood, but confirmed through real-life social interactions, it appears to have a

strong impact on the motivation of entrepreneurs. Because of the density of the social network, everyone working in Silicon Valley appears to have personal relations to at least someone associated with a thriving start-up company.

For example, the co-founder of *Hotel* mentioned that his friend and classmate from Stanford founded the photo sharing service Instagram, which was sold to Facebook two years later for US $1 billion. The fact that almost everyone in Silicon Valley has a tangible personal connection to such real-life success stories functions as a motivator or provides role models for many entrepreneurs.

To conclude, this research therefore demonstrates that the specific Silicon Valley business culture appears to be a very local phenomenon focused predominantly on business connections. The five different aspects of this culture highlighted above identify the features that make this business culture unique and allow it to function as the lubricant for the social network that undergirds the Silicon Valley ecosystem.

5.6 The Concept of Intra-Nationalization

All of the companies examined in this study can be classified as born globals, as conceptualized by Sharma and Blomstermo (2003). As such, these companies internationalized their operations from the very beginning; they never considered a growth strategy that did not include a presence on the global market. For these companies, internationalization was only a question of when and what type of international strategy to choose.

Most of the case study companies expressed similar rationales for internationalization. The participant from *Kilo*, for instance, indicated that the company's founder wanted to build "a billion Dollar company" from its inception and that this would only be possible if the company were to expand globally. For the *Delta* CEO, advertising by its nature is an international business. Moreover, since investors wanted to internationalize, "…you have to be global from day one." In addition, most Silicon Valley companies are co-founded by immigrants; for these entrepreneurs, it is natural to pursue a strategy that includes two domestic markets: the US and the founder's home market. The CEO of *Hotel*, who is an immigrant from India, stated that the whole company had "…international growth in mind from the very beginning."

Porter's research (1990) has already highlighted the paradox of a modern knowledge economy: namely, that the enduring competitive advantages in a global economy are

increasingly found in local conditions (such as knowledge relationships) that distant competitors cannot replicate. The importance of these local conditions appears to be especially salient to the Silicon Valley ecosystem.

Defining Intra-Nationalization

In terms of the case study analysis, most of the companies under examination grew internationally early on, and they did so predominantly by leveraging the Silicon Valley ecosystem. This phenomenon is defined here as 'intra-nationalization.' As displayed in the theoretical framework (see Figure 3) above, intra-nationalization is an overarching characteristic of the Silicon Valley ecosystem that best explains the international success of the companies. The neologism derives from the word 'internationalization,' but instead of going 'inter-national,' Silicon Valley companies often appear to go global without even leaving the region. They go 'intra-national,' meaning they stay 'intra'[55] (within) the ecosystem. Accordingly, intra-nationalization is only possible because the local ecosystem appears to provide all of the important resources and conditions needed for a successful internationalization.

The case studies show that proximity is key for intra-nationalization. The most important partners for start-up companies interested in internationalization are large globally active tech companies; in Silicon Valley, these companies are literally located across the street from the start-ups. Consequently, internationalizing occurs predominantly within the Silicon Valley ecosystem; Silicon Valley entrepreneurs are able to conclude partnerships or roll out software or services on the global market while physically remaining in Silicon Valley.

As discussed above, capital and talent are integrated within the ecosystem, creating self-sustaining cycles that naturally foster international growth. In addition, the significant size of the domestic market enables companies to grow faster globally because they are able to achieve economies of scale locally and launch international ventures from a position of strength. This, is turn, makes it easier for start-ups to establish international standards in their field, especially compared to companies from other parts of the world. The actors in Silicon Valley are connected through a dense social network. Every relevant actor in the Silicon Valley ecosystem views thinking and acting globally as an important component of their shared business culture. The openness to risk-taking, the lack of fear of failure, and the tendency to plan on a grand scale all favor the development of companies that are internationally active.

[55] 'Intra-' is a Latin prefix used to form words that mean 'on the inside' or 'within'.

The Role of Corporations in Intra-Nationalization

As the case studies demonstrate, local corporations play a decisive role in intra-nationalization. Participants from six of the ten case study companies specifically mentioned the importance of corporate partnerships to their international success. All of the companies already had at least one significant partnership with a large corporation in Silicon Valley, and most of the case study companies had several. For the international success of the individual company – and in fact of the ecosystem as a whole – this has two main advantages: partnerships and acquisitions.

In terms of partnerships, Gabrielsson and Kirpalani (2004) find that networks and multinational corporations are very helpful in opening up new international markets for small start-ups. Today, most of the world's large tech companies are based in Silicon Valley and are themselves an integral part of the ecosystem. Furthermore, these large corporations in Silicon Valley are culturally very open to working with start-up companies. As Castilla et al. (2000) point out, large Silicon Valley companies (such as HP, Intel or Cisco) "…do not compete to the death with small firms, but instead have an elaborate and complex relation to them" (p. 246).

The case study analysis strongly supports this proposition. The CEO of *Hotel*, for instance, indicated: "The reason why we started partnering with Facebook, Google and Instagram is not only because they are big brand names but because we have good relationships with these guys and they are all here." Similarly, the founder of *Charlie* noted that the "…potential technology partners are all in Silicon Valley, like Facebook, Google, Twitter, and not in Cincinnati."[56]

In terms of acquisitions, a mainstay of Silicon Valley's sustainability as a tech region over a long period of time is the significant quantity of venture capital that is available to start-ups; this has fueled the ecosystem for several decades. As described above, the venture cycle is mainly driven by strong exit opportunities to high valuations for investors, which in turn is mainly driven by large tech companies that frequently and strategically buy smaller tech firms. According to a recent study (SVB 2015), eight of the top ten companies who are most active in acquiring start-up companies over the last eight years are also based in Silicon Valley: Google, Yahoo, Oracle, VMware, Facebook, Twitter, Cisco, LinkedIn.[57]

[56] The founder originates from Cincinnati.
[57] The other two are IBM and Groupon.

Despite its importance to the Silicon Valley ecosystem, intra-nationalization has been neglected completely in the existing academic literature. One of the primary aims of this study has been to draw attention to intra-nationalization as a promising and important venue for future research, particularly in the analysis of business ecosystems. In the Silicon Valley ecosystem, the concept of intra-nationalization is crucial for the international success of companies and provides a fundamental mechanism upon which the entire ecosystem depends. Large tech companies appear to play a crucial role in this context.

6. Conclusion

"The reason why we started partnering with Facebook, Google and Instagram is not only because they are big brand names, but because we have good relationships with these guys, and they are all here."[58]

The concluding section of this study summarizes the main results and discusses the conclusions drawn from the previous analysis. In addition, it proposes practical implications for governments and businesses. Finally, this section delineates the limitations of this study and highlights some of the implications for further studies.

6.1 Discussion

As the literature review above has shown, there is no current theory that comprehensively explains the case study results presented in this study. Despite the multiple academic studies addressing Silicon Valley's history as well as the attributes linked to its success, there is currently no theory that can explain the Silicon Valley ecosystem as a whole.

This study fills this gap by providing an analysis of the Silicon Valley ecosystem that highlights the interplay between all of the relevant factors contributing to its success in one coherent theoretical framework. Based on case study evidence and an extensive literature analysis, the study identifies five important factors that together support the success of the region and its resident companies. Using Porter's Diamond model as a conceptual springboard, the study identifies three hard factors (capital, talent, and market size) and two soft factors (social network and business culture) that contribute to the Silicon Valley ecosystem and demonstrates the interdependence between them, which in turn provides a comprehensive description of the entire ecosystem within one theoretical framework.

[58] Quote CEO of *Hotel.*

Additionally, it lays the groundwork for a better understanding of the international success of Silicon Valley companies.

In that context, this study provides evidence that the Silicon Valley companies that internationalize successfully most often do so without even leaving the region. These companies are going global by staying and acting local – a phenomenon that is described by the concept of 'intra-nationalization.'

It is important to note that several factors traditionally associated with Silicon Valley's success did not appear to play a significant role in the international success of the case study companies. In particular, the case study participants did not attribute a significant role to government, legislation, regulation, or infrastructure.

6.2 Practical Implications

In the following segment, the practical implications derived from this study's results will be described, and recommendations for governments and businesses will be given.

Practical Implications for Governments

Over the past decades, many governments worldwide have tried to replicate the success of the Silicon Valley ecosystem (Adams 2005). Picot et al. (2014), for example, analyzed the German software industry and its international competitiveness. Compared to the dominant software companies, which are mostly based in the Silicon Valley, companies from Germany and Europe play a minor role in this area (Picot et al. 2014).

This study analyzed the ecosystem in depth and showed that five success factors are essential elements of the Silicon Valley that are leveraged through the concept of intra-nationalization. What lessons from the Silicon Valley analysis can benefit other tech regions in the world?

First, governments should concentrate on the hard factors to create the basic conditions for a flourishing ecosystem. As is shown, having easy and sufficient access to capital was crucial for all of the companies examined in this study. In particular, when looking at Silicon Valley's history, public money and government initiatives traditionally played a major role in the development of that region. Further, government supported research was very important in allowing Silicon Valley to develop into the knowledge society that it is today.

In addition to public money, private money can be attracted through a well-functioning venture cycle as described in Figure 4. In this regard, governments should generate favorable business conditions and not burden companies with too many regulations, bureaucracy or taxes. Most importantly, as the venture cycle has shown, the main driver for private money is large corporations and the important role that they play as strategic partners and potential acquirers of start-ups. For governments, this could mean that making it easier for these big players to finance, partner with and eventually acquire start-up companies may be essential to activating the venture cycle.

Considering the success factor talent, in addition to top universities such as Stanford, Silicon Valley has traditionally been very open and fueled by a constant influx of talented people from around the world. The lesson here for governments may be that in order to build a Silicon Valley-like ecosystem that aspires to international success, it must be open to immigration. Highly qualified workers and entrepreneurs in particular should be attracted and find good conditions and easy access to the ecosystem. Silicon Valley has shown over decades that immigrants are not a threat or competition to local workers and entrepreneurs but instead strengthen the ecosystem and are decisive for future growth and regional competitiveness.

The third hard factor, the large domestic market that Silicon Valley companies can easily access, is harder to replicate elsewhere. However, there are still lessons to be learned for governments: namely, they should actively support and encourage companies to go international early on. A medium-sized and ‘large enough’ market such as Germany should not lead to complacency (Picot et al. 2014).

Other typical factors such as infrastructure may also play a role in the formation of an ecosystem such as Silicon Valley, but they do not to appear to be decisive in that regard. In other words, even though a good infrastructure is necessary, it does not appear to differentiate one ecosystem from another. Ultimately, at least in Silicon Valley, the role of the government may be quite simple in that “the government is not standing in the way,” as the CEO of *Echo* put it.

Finally, it is popular to look at today’s Silicon Valley as something to replicate quickly. However, the analysis in this study has shown that just having the elements is not enough. On top of these elements, it took the ecosystem decades and substantial investment to develop.

Practical Implications for Businesses

For individual companies or businesses planning to move to Silicon Valley, a few practical recommendations derived from this study's results can be given as well.

First of all, the Silicon Valley ecosystem is generally a tough environment for many start-up companies. The venture cycle can drive some companies to international success very quickly but its selection process is also very hard on many others. As easy as it may seem for the most successful companies (such as those examined in this study) to raise capital in Silicon Valley, it is equally hard for many others that are just not good enough to compete and enter the venture cycle. For the ecosystem, this challenging selection process secures overall success by letting only the best companies survive. For the individual company, this may mean a much lower probability of raising money and succeeding compared to other regions in the world and must be considered.

While the talent cycle might have been successful in fueling the ecosystem overall, the competition for talent in the region at a company level is fierce due to a lack of qualified workers and engineers. This may be the biggest weaknesses of Silicon Valley and must also be kept in mind. Accordingly, for many companies moving to Silicon Valley, it may make sense to only move management there while keeping the product development and tech team in the home country with its much lower wages and less intense competition for talent.

The Silicon Valley social network and business culture is uniquely open. Subsequently, most actors in the ecosystem are used to interacting with people from around the world on a frequent basis. Through the dense social network described above, most business dealings between universities, entrepreneurs, venture capitalists, and large corporations are being conducted through personal interaction and represent 'people's business.' For companies from abroad, this means that to become part of this social network, management must be locally present rather than trying to start a business by means of business trips. The Silicon Valley identity appears also to be far less connected to the national American identity than to the identity of the region itself and its local culture. This means that physically being in Silicon Valley also gives individuals the opportunity to take part in it.

Finally, it should be made clear that the Silicon Valley is not the ideal environment for every start-up company and that the chances of success may vary significantly from company to company. Thus, it is advised to test the chances and opportunities for a particular business first and over a longer period of time by being there and taking part in this unique ecosystem.

6.3 Limitations

This study intended to lay the groundwork for further research on internationalization and ecosystems such as that found in Silicon Valley. That said, this study has certain limitations. The results of this study are based on evidence obtained from a sample of only ten case studies; as a result, they may not be representative of all aspects of the ecosystem. To facilitate comparison between case study participants, the research focused on very similar companies. As a result, these cases do not depict the diversity of Silicon Valley companies. In future research, the sample of companies should be extended to include start-up companies that were unsuccessful in order to explore the links between the role played by the Silicon Valley ecosystem and the perceived rationale for the failure of these start-ups. A broader scope and the examination of more diverse companies is likely to deliver further insights.

By its very nature, the case study method can only provide anecdotal evidence to support or undermine the theoretical framework. Further quantitative research may be advisable to investigate the central thesis presented in this study, the theoretical model and the correlations between the various success factors.

In addition, it should be mentioned that this study only observed the case study companies for a short period of time. A longitudinal approach would also provide a more robust understanding of the contribution made by the Silicon Valley ecosystem to the success of these companies over time. It would also reveal the role played by changes in the ecosystem during various stages in a company's life cycle. A time-series analysis is particularly relevant, given that the object of analysis is the ecosystem itself. After all, the Silicon Valley ecosystem did not develop overnight but rather took decades to evolve.

General Conclusion and Discussion

This cumulative dissertation contributes to the broader research agenda in organizational literature on the matter of how to manage and organize corporate innovation successfully. In doing so, this dissertation especially focuses one recurring topic in the literature - how firms can achieve long-term success by being both efficient and exploiting their current business; while simultaneously being flexible to environmental changes and adaptive through innovations and the exploration of new opportunities. Despite the fact that Schumpeter's process of creative destruction has been well known for over a century, it is still discussed among scholars as to how it can be managed successfully, especially in a corporate context. This dissertation is a contribution on this matter and thus extends the existing organizational and management literature in academia.

Overall, this dissertation laid out clearly that corporations often struggle to survive in the modern globalized and technologized world. Traditional corporate businesses are increasingly threatened primarily due to the recent emergence of competition by new software-based tech companies and start-ups. And given the fact that the pace of this disruption by new technologies seems to ever accelerating, traditional forms of corporate innovation and R&D are increasingly insufficient to keep up with the fast-changing market.

All of the three studies presented here are motivated by the main underlying research question on how corporate innovation can be managed successfully in the long-term and to what extent the environment of the firm plays a role. Accordingly, each of the three studies explored how the described innovator's dilemma could be approached and possibly resolved. This appears to be even more relevant given that it is still not completely understood in literature how large corporations can benefit from start-up innovativeness while simultaneously leveraging their own capabilities.

The first study chose a theoretical approach and laid the groundwork for further research by developing the new theoretical model of 'Ambidextrous Venturing' (ACV-model); i.e. how to exploit existing capabilities by simultaneously exploring new ones through means of venture capital.

On that theoretical basis, the second study explored how ambidexterity could be achieved in practice and what organizational designs could be implemented to that end. In this context, the Spin-Along Approach was developed as one potential solution to deal with the innovator's dilemma in practice. The second study concluded by showing that the Spin-Along Approach

B. Gold, *Silicon Valley Start-ups and Corporate Innovation*,
Markt- und Unternehmensentwicklung Markets and
Organisations, https://doi.org/10.1007/978-3-658-19886-2_4

is a possible way to leverage start-up innovativeness and the capabilities of large corporations simultaneously to achieve 'the best of both worlds'.

The third study changed the perspective to an outside-in view by examining how an ecosystem like the Silicon Valley could support start-up innovativeness and international success. A theoretical framework of the main success factors of the Silicon Valley ecosystem was developed. Further, the question was answered, of what an ecosystem like the Silicon Valley provides to a company that often leads to the exceptional international growth and success many tech companies from that region show. On top of that, the concept of intra-nationalization was developed as a specific phenomenon in Silicon Valley.

Besides the contribution of this dissertation to organizational theory in academia, practical recommendations for business management, governments and policy makers have also been derived from the evidence. For businesses, the Spin-Along Approach showed very practical implications of how to realize ambidexterity and secure a firm's long-term success. For policy makers, the third study, especially, showed the conditions necessary to create a highly competitive environment that can lead to exceptional international growth and innovative success, as the Silicon Valley has shown over the last decades.

Inevitably, this dissertation has several limitations. The main purpose was to build theory and a framework as the basis for further studies. This applies to the proposed ACV-model and the Spin-Along Approach, as well as to the theoretical framework of the Silicon Valley ecosystem. The empirical data that was presented as the basis of the studies was mainly case study evidence. This data helped to understand the underlying problems in-depth, yet by its very nature, the case study method can only provide anecdotal evidence to support the theory building. At the same time, it also restricts the empirical basis to these few cases, so that broad and generally valid conclusions are difficult to draw. A quantitative research approach to validate the assumptions of the models presented might be a useful next step. Furthermore, all data presented here was collected in a short time frame. It is recommended that to analyze long-term developments and effects, a longitudinal examination of the correlations could deliver further interesting insights.

Even though the three studies presented in this dissertation focused on different aspects of corporate innovation, several general conclusions can be drawn. The innovator's dilemma can possibly be resolved through ambidextrous venturing that is defined by combining the exploration and exploitation of innovations simultaneously. In practice, this combination can be realized by the Spin-Along Approach that enables the leveraging of the innovativeness of

start-up companies with the capabilities of corporations. Finally, to secure the international success of innovations, an ecosystem like the Silicon Valley enables the concept of ‘intra-nationalization’ where companies innovate and go global yet stay local.

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Appendices

Appendix I: Interview Guide Spin-along Case Studies (in German)

Interviewleitfaden Spin-Along Fallstudien

01.10.2009

Unternehmen:
Name:
Position: (relative Position – also wie viele Hierarchiebenen hat Unternehmen und auf welcher steht Interviewpartner)
Ort:
Datum:
Dauer des Interviews:

Vorstellung der eigenen Person
Erlaubnis der Tonbandaufnahme

Thema des Interviews:
„Corporate Venture Aktivitäten großer Unternehmen."

Definition Spin-Along:
Spin-along ist eine eigene organisatorische Einheit (Beteiligung, Spin-off oder Spin-in), die „unter Kontrolle" der Muttergesellschaft gehalten wird mit dem Ziel, die Innovationsarbeit in der Muttergesellschaft zu unterstützen. Der Spin-along approach kann dabei auch beschrieben werden als Kombination von Elementen von internem und externem Venturing.

Haben Sie bevor das Interview beginnt noch Fragen?

B. Gold, *Silicon Valley Start-ups and Corporate Innovation*,
Markt- und Unternehmensentwicklung Markets and
Organisations, https://doi.org/10.1007/978-3-658-19886-2

Interviewfragen:

1. Wie viele Spin-Alongs haben Sie in Ihrem Unternehmen bereits durchgeführt? Seit wann führen Sie Spin-Alongs durch?
2. Wie lange hat die Durchführung der Spin-Alongs jeweils gedauert?

Bitte beziehen Sie die folgenden Fragen zunächst auf einen bereits erfolgreich durchgeführten Spin-Along Fall aus Ihrem Unternehmen:

3. Warum wurde dieser Spin-Along durchgeführt?
4. Strukturelle Elemente des Spin-Alongs
    a. Wie wurden die Verträge explizit gestaltet?
    b. Wie wurde das Spin-Along organisiert?
    c. Wie wurde dieser Spin-Along von der Muttergesellschaft gesteuert? (Kennzahlen, Freiheitsgrade)?
5. Kontextuelle Elemente des Spin-Alongs
    a. Was waren die Gründe für das Spin-Along?
    b. Welche Ziele wurden damit primär verfolgt?
    c. Welche (extrinsischen oder intrinsischen) Anreize/Motivation spielten im Spin-Along eine Rolle?
    d. Welche „weichen“ Faktoren (Kultur, Corporate Entrepreneurship etc.) waren entscheidend für den Erfolg?
6. Welche Austauschbeziehungen zwischen dem Spin-Along und dem Corporate gab es? (Welche Ressourcen wurden konkret vom Spin-off genutzt und wie konnte umgekehrt der Corporate profitieren?)
7. Welche Synergien zwischen dem Spin-Along und dem Corporate gab es?
8. Einfluss der strukturellen Elemente und den Austauschbeziehungen/Synergien zwischen Corporate und Spin-Along?
9. Zusammenhang zwischen kontextuellen Elementen und Austauschbeziehungen/Synergien zwischen Corporate und Spin-Along?
10. Wie ist der Zusammenhang zwischen den Austauschbeziehungen und Synergien?

11. Werden neue Fähigkeiten durch die Durchführung von Spin-Alongs beim Corporate aufgebaut? Wie geschieht das?

12. Werden bestehenden Fähigkeiten des Corporates durch das Spin-Along genutzt? Wie und welche werden genutzt?

13. Welche Rolle spielte das Senior Management in dem Prozess?

14. Welche Bedeutung / Einfluss hatte das Senior Management für den Erfolg des Spin-Alongs?

15. Woran haben Sie den Erfolg des Spin-Alongs konkret gemessen?

16. Gemessen an diesen Performancemaßen, wie erfolgreich war dieses Spin-Along?

17. Welche Probleme gab es bei der Durchführung des Spin-Alongs? (Welche Probleme gab es konkret bei der Ausgründung (spin-off) und welche bei der Reintegration (spin-in)?)

18. Wie wurden diese Probleme konkret gelöst? (Was war entscheidend dafür, dass die Probleme gelöst wurden?)

Appendix II: Interview Guide Silicon Valley Case Study Interviews (in German)

Leitfaden Interviews

I. Einführung:

1. Vorstellungsrunde

2. Vorstellung des Forschungsprojektes

3. Hinweis: Es handelt sich um ein exploratives Interview mit offenen Fragestellungen, mit dem Ziel Hypothesen für die weitere Untersuchung zu generieren

II. Interview:

1. Abfrage wichtigster Unternehmensdaten sowie kurze Unternehmensgeschichte

2. Offener Gesprächsteil

- Welche Gründe sehen Sie weshalb sich Silicon Valley Firmen durch ein so hohes Wachstum im internationalen Vergleich auszeichnen?
- Welche Gründe sehen Sie weshalb Silicon Valley Firmen durch einen so hohen Internationalisierungsgrad im globalen auszeichnen?
- Welche Erfolgsfaktoren des Silicon Valley spielen dabei konkret für Ihre Firma eine Rolle?
- Was unterscheidet die Softwarebranche im Silicon Valley von anderen Branchen?
- Was unterscheidet speziell Silicon Valley Firmen im internationalen Vergleich?

3. Spezifischer Gesprächsteil

- Die einzelnen Ebenen kurz nennen und ggf. beschreiben: Welche Stellschrauben (Wettbewerbsfaktoren und Untersuchungsaspekte) sehen Sie auf jeder Ebene, die besonders bedeutend sind für Wachstum und Internationalisierung ihrer Firma?

- An welchen Punkten hat das Silicon Valley Ökosystem seine Stärken und Schwächen?

  a) Unternehmensebene :
  Unternehmensstrategie, Unternehmensstruktur, Unternehmerischer Eigenschaften
  b) Branchenebene:
  Wettbewerbsdruck und Wettbewerbsumfeld, Marktgröße und Nachfrage, Bedeutung von verwandten Branchen, Bedeutung von unterstützende Branchen
  c) Standortebene:
  Humanfaktoren, Kapitalfaktoren, Infrastruktur, Lebensqualität
  d) Gesellschaftsebene:
  Kulturelle Faktoren, Kulturbedingte Unternehmerische Faktoren
  e) Staatsebene:
  Staatliche Regulierungen, Bürokratie, Intellectual Property, Fördermaßnahmen
  f) Netzwerke und Kontakte:
  Bedeutung von Kontakten, Kooperationen und Verbände

- Nennen sie noch einmal die 5 wichtigsten Erfolgsfaktoren des Silicon Valley Ökosystems für den internationalen Erfolg ihrer Firma.
- Bringen sie diese in eine Rangfolge nach Wichtigkeit.

4. Zusammenfassende Fragen

- Was zeichnet das Silicon Valley im Vergleich zu anderen Standorten aus? (Vor- und Nachteile)
- Was ist aus Ihrer Sicht die größte Motivation von Silicon Valley Gründer zu gründen?
- Was war Ihre persönliche Motivation ein Unternehmen zu gründen?
- Wenn Sie der politische Entscheidungsträger wären, welche Stellschauben würden Sie betätigen und welche halten Sie für besonders relevant