Capability Profiles of (Corporate) Venture Teams in their Growth Phase

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Thesis

Title	Capability Profiles of (Corporate) Venture Teams in their Growth Phase
Version	Final Version
Date 28-06-2011	

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Preface

This master thesis is the final assignment to complete my ECIU Joint Master Programme Innovation & Entrepreneurship at both University of Twente, the Netherlands, and at Aalborg University, Denmark. After a not successful ending to my first internship, I have had the honour of completing my degree at Philips Electronics N.V. Incubators. Therefore, I would like to thank Marianne van der Steen and Warden Hoffman for giving me this great opportunity.

This thesis would not have been what it is without the help of other people. First, I would like to thank Marianne van der Steen, Michel Ehrenhard, Arjan Frederiks and Michael S. Dahl for their help, support and supervision of this thesis. They gave me comments and remarks that were useful to improve this research report and encouraged me to improve my research even further. Second, I would like to thank Warden Hoffman, and Steven Seuntjens for the great and valuable talks during my period at Philips. Both have certainly broadened my scope regarding corporate venturing, venture capital and venture culture. Besides, their remarks were very useful to get a better insight in the practical matter of this thesis. Third, my gratitude goes also to all the kindhearted people I have had the chance to interview for this thesis. Thanks to them I got a deeper understanding of the importance of having good / entrepreneurial people and a strong culture.

Last but not least I would like to thank my parents and friends for helping and supporting me and being there when I needed you. Thank you very much!

Enschede, June 2011

Pedro Bernardo Meyer

Management Summary

In today's economic environment, large corporations as f.e. Philips Electronics N.V., need innovative concepts for continued sustainable growth. Corporate Venturing is the answer; by alining or integrating external or internal strategic ventures with novel products or services. Unlike established firms with proven record, such ventures are subject to a 'liability of newness' (Stinchcombe, 1965) whereas, without a growth record, survivability is significantly reduced, (Büderal, Preisendörfer, & Ziegler, 1992).

The focus of this study is on the growth phase of ventures, to learn how to deal with the stigmatized perception liability of newness. As Narayanan et al. (2009) point out, ventures have to (re)-arrange their portfolio of capabilities and corresponding activities that change over time, in order to secure growth and sustain competitive advantage. Consequently, it is important to find out the kind of capabilities that are needed to fulfill specific tasks, enabling ventures to react faster to changes. This require that venture managers apply specific leadership roles.

This study research the tasks and capabilities necessary to fulfill leadership roles, at five ventures during their growth phase. An extensive literature review contributed to capture the general understanding of these roles, tasks and capabilities for venture management teams, to secure adequate performance. On the basis of literature review, a theoretical model was construed, additionally validated by both a qualitative and a quantitative study, based on eight interviews.

The objective is to obtain a comprehensive insight in the specifics of tasks for venture management teams, as well to know the required capabilities. To strengthen the results of the interviews, a questionnaire was filled out with the focal point on specific tasks and capabilities. The analysis of the results showed more similarities than differences for both.

In conformity with the interviewed venture managers, the following capabilities are important for successful growth: technological knowledge, industrial knowledge, entrepreneurial intention, network, alliances, people management, operations, lasting exploration, and the ability to transform & exploit the acquired information & knowledge.Whereas the tasks for venture management teams are both external and internal. For external; awareness and credibility, employ people with ample network knowledge and expertise, both with industrial and technological knowledge, to establish strong relationships with stakeholders. For internal; to meet growth objectives, select people with operational skills, entrepreneurial drive, managerial expertise, and more than 100% personal input. Last but not least: Broker and Co-ordinator roles are crucial for venture managers.

Table of Contents

Table of Figures

Table of Tables

There are only two mistakes
one can make along the road to truth:
not going all the way,
and not starting.
- Buddha

1. Introduction

Primarily the setting and the structure of this research is presented. The reader is introduced into the world of (corporate) venturing and informed about important factors of influence for the development of a venture and requirements for management teams. Once the topic is identified, the research objectives are formulated. This research is carried out on behalf of Philips Incubators. Their problem statement is converted into the research question, followed by an explanation of the research strategy.

1.1 Research Background

The world of today goes through a financial crisis, ensuing the current economic malaise in the developed and some of the developing –emerging– economies. As a consequence of this macro economic problem, even large corporations feel the pinch from their competitors, who reduce their prices or introduce more innovative products and services. In this environment corporations are required to act more flexible, innovative, dynamic, and faster. Therefore, companies worldwide, such as Philips, have turned towards Corporate Venturing (CV) as a means of reenergizing their operations, creating and building new capabilities, and achieving strategic renewal, with the objective; the creation of more value for shareholders. Business interest in CV has encouraged and increased academic interest in this topic, resulting in a rapidly growing but fragmented quantity of literature (Narayanan et al., 2009), generating a large number of studies varying in form, antecedents, processes, and outcomes. The interest in CV arise from the fact that it significantly contributes to the development of a corporations' strategy (Ireland et al., 2001) through structuring of new capabilities and businesses that permit renewal, promote strategic change and increases company's profits and growth in both domestic and international markets (Zahra and Hayton, 2008).

Corporate venturing derives from the much larger and faster growing quantity of literature on corporate entrepreneurship (CE) (Narayanan et al., 2009). Research on CE focus on the possible ways how companies can create new businesses generating new revenue flows and added value for shareholders. Whereas CV emphasizes on the creation of new businesses outside or inside an organization (Sharma and Chrisman, 1999). CV is closely linked to innovation and strategic renewal. Some of the activities is built upon a firm's introduction of new products or innovations in new markets and is capable of changing a company's business, strategy or competitive profile, as well as renewing the firm's operations (Narayanan et al., 2009). Moreover, CV not only focus on innovation and renewal but also on the myriad of actions and processes connected with the creation of new businesses and the integration of these into the firm's overall business portfolio.

The start-up and early growth process of corporate and independent ventures is focus of remarkably large amount of research efforts. These studies mainly consist of the identification of factors, characteristics, and conditions that promote entrepreneurial processes, new venture creation, and about what contributes to their success (Grimaldi & Grandi, 2005). Incubation is part of a wider range of initiatives aimed at stimulating and supporting entrepreneurship (Grimaldi & Grandi, 2005), either within large corporations or independently. An incubator tries effectively to integrate technology, capital and know-how in order to positively influence entrepreneurial talent, accelerate venture development, hence accelerate exploitation of technology. Additionally, (corporate) incubators assist emerging ventures by providing support services, such as: assistance in developing business and marketing plans, obtaining capital, access to more specialized professional services and building management teams (Grimaldi & Grandi, 2005). After time, ventures "graduate" from the incubation stage and spun-out to become independent, or spun-in to become part of a business unit, if corporations see the venture's product or service as a strategic asset meeting their vision and mission.

Ventures, as well as firms in general, go through a life-cycle process, about which extensively is published in the literature, for example: Hanks, Watson, Erik, & Chandler, 1993; Kazanjian, 1988; Phelps, Adams, & Bessant, 2007. Briefly, a life-cycle consists of several phases on which a firm develops. These phases range from Birth (initiation of a venture) till Decline (Ferreira et al., 2010). During the early phases of venturing, the tasks of an entrepreneurial team are concentrated on product development and sales activities, whereas the range of tasks for the entrepreneurial team become more intricate in later stages of development, due to more legal requirements, more differentiated product line (Phelps, Adams, and Bessant 2007), extra reporting commitments toward external institutions (Rutherford, Buller, and McMullen 2003), more administrative tasks, and so on. One of the most critical moments in a venture's life cycle is when it crosses the chasm, i.e. gaining market acceptance from the early adopters (Moore, 1999), meanwhile expanding at a rapid rate.

During the development of a venture, entrepreneurial teams must constantly change leadership roles and capabilities, as tasks become more complex. As Narayanan et al. (2009) point out in their review on the fact that the portfolio of capabilities and corresponding venture activities are probable to change over time, due to the strategic challenges the firm faces. Therefore, management team members need periodically to assess the portfolio and make necessary adjustments. Simon (1991) mentions; ventures acquire new knowledge and capabilities in three distinct ways: 1.) through training/learning, 2.) through hiring, and 3.) through organizational memory, i.e. learning from a parent organization, another incubation process, venture capitalist, or a corporation.

This study endeavors to contribute to the growing literature on corporate venturing (Narayanan et al., 2009), by reviewing various publications on CV and independent ventures, and by doing in-depth case studies on corporate and independent ventures. This paper intends to find the basis for further research on the subject to expand the knowledge, and add scientific and practical relevance to the thesis.

1.2 Research Objective

Narayanan et al. (2009) have done an extensive study in addressing the absence of an organizing framework that maps out the various antecedents, processes and outcomes of CV activities. They reviewed existing empirical literature on CV published over the past decade, and then systematically organized these studies into a "context – characteristics of CV – outcomes" framework. One of their conclusions was that past research have underscored the importance of CV for developing new business, learning and building new organizational capabilities that can promote companies' survival, profitability and growth. Though, in order for a company to grow, with help of their ventures, the ventures themselves have to grow first. Growth occurs when the entrepreneurial teams are successfully capable in deciding about how and where they should grow their firms and of course not forgetting the extent to which other factors are in place that enables growth to happen (Gilbert et al., 2006). Attaining growth has different implications for ventures than for their established counterparts. Unlike established firms, which have already achieved a level of viability and survival, ventures are subject to a liability of newness (Stinchcombe, 1965) where, in the absence of growth, their survival may be significantly reduced (Büderal, Preisendörfer, & Ziegler, 1992). Therefore, it is of importance that ventures are given the chance and ability to grow in order to obtain a viable status.

Earlier studies on venture growth have focused only on why ventures grow, excluding the how and where the growth is occurring (Gilbert et al., 2006). The main re-occurring question in past literature has been: Why do some ventures grow more or are more successful than others? Thus far, this question disregards the way by which growth in these ventures have been attained. Therefore, this study builds on the suggestion made by Gilbert et al. (2006, p. 942) that "understanding a venture's experiences in filling key positions and the type of employees that are needed may also contribute to a richer understanding of its growth." This study tries to find out, which leadership roles and capa-

bilities, venture management teams require to organize and accomplish their tasks in turn to obtain growth.

The objective of this study consists of three facets. The first objective of this study is to obtain insight in (corporate) venture phases of development, specifically the transitions between birth, growth and maturity. This field of research has been chosen because it is still rather restricted. Though, two known studies, Phelps et al. (2007) and Vohora et al. (2004), have studied the 'tipping points' and 'critical junctures', in the development of ventures and university high-tech spin-outs. In other words, they looked at the vital transition moments of venture development. Transition from phases, specifically what the differences between the birth and growth phase are, has been chosen as part of the unit of analysis because of the limited knowledge about this. This specific transition of phases is critical for future venture survival.

The second objective of this study is to identify the leadership roles and tasks of the venture management team throughout the development of the venture. Quinn et al. (1988) best describes the leadership roles that management team members can fulfill in order to successfully complete the tasks they have on hand. Having an understanding of the leadership roles that management team members fulfill will give a better comprehension of the tasks that they have on hand in both the birth and growth phase.

The third objective of this study is to identify the different types of capabilities that organizations use to fulfill the tasks they have to comply with. It is chosen to have the tasks as the dependent variable of this study, as the definition from Hafeez et al. (2002) of a capability implies that resources are needed, in the form of knowledge, to fulfill tasks. Therefore an extensive literature review on capabilities is undertaken to identify the capabilities organizations use.

It is assumed that when organizations grow, the leadership roles of the managers will change and that new capabilities will be attracted, in the form of hiring new people, whom have to fit the culture in order to obtain and sustain a fully

functioning firm. Furthermore, it is assumed that ventures in the growth phase are in the process of overcoming their 'liability of newness' (Stinchcombe, 1965) that has stigmatized many ventures in their birth and growth phase.

This study will focus on the independent variables, leadership roles and capabilities, that are needed in order for the venture management team to fulfill the tasks in the growth phase and lead successful transition into the next phase. There are no known studies in the literature of business venturing about this specific topic. Once this is identified, the differences between birth and growth phase can be described.

1.3 Problem Statement

Corporate venturing is relevant for large corporations in order to gain competitive advantage and to eventually achieve firm growth. Porter (1985) defines, next to cost leadership, companies can choose for other comprehensive competitive strategies: differentiation and focus. Differentiation strategy is where firms want to become unique in their industry meeting conditions and dimensions widely valued by buyers (Porter, 1985). The focus strategy concentrate on a confined segment, and attempts to achieve either differentiation or cost advantage within that segment. These are some of motives for a corporation to initiate corporate venturing. Philips is a good example of this differentiation. Five years ago Philips started their own Corporate Incubation program that was business unit specific, namely: Lighting, Lifestyle and Health Care. The idea of starting with venturing and incubation came from the recognition that Philips actually had no breakaway products for over the last 30 years. The last one was the invention of the compact disc (CD). Higher management at Philips understood that an entrepreneurial mind-set and an array of new capabilities were required in order to let new ideas and ventures succeed (P. van Rijsingen, CEO Healthcare Incubator).

Since the start of these incubators, there has been an ongoing discussion about whether to stop it, or move them to other countries or to manage them centrally. Another problem that arose during those years was the acceptation of these incubators and ventures by the respective business units themselves, because in their view and thought, the ideas did not come from them and therefore are not willing to take the risk to build up the ideas into large opportunities, which really could help the business units forward.

The objective for Philips is that once the ventures 'graduate' from the incubation they get integrated in one of the existing business units. At the moment of writing there have been at least six ventures that have gone through the process of integration into their respective business units. Although, with little success, because of numerous factors, to name a few: 1.) the ventures have not shown any historical growth, viability is therefore unknown; 2.) business units treat the ventures as fully grown businesses, placing large sales quotas and high revenue targets; and 3.) mismatch of mindsets between venture management team and business unit team, i.e. risk-driven vs. safe-play (Source: numerous conversations with Philips Incubators employees). The big question that arises for them is: "How can our ventures successfully integrate into our existing business units and grow into a mature business?". Though, people within Philips and Philips Incubators agree that for a venture to successfully integrate into an existing business unit, they have to show growth and viability. Therefore, a new question has risen: "How do we let ventures grow after they 'graduate' from our Incubators?".

This research focusses on the capabilities, together with leadership roles, that venture management teams use to fulfill their tasks in their growth phase, for a successful transition into the next phase.

In summary, the above sections suggest the following central research question:

"How do (corporate) venture management teams use the right set of capabilities to successfully enable a venture to grow to its next phase?"

In this study success of a venture is defined as the completion of a phase and its transition into its next phase of development (Van der Steen et al., 2010). Using variables such as sales, revenue or profit to measure success for a venture that has not shown any signs of growth, is not a good criterion, as it has no history for comparison.

1.4 Research Strategy

Yin, as cited in Saunders et al. (2009), distinguished three types of research: exploratory, descriptive, and explanatory. This study does have an inductive character and an exploratory purpose. Case studies are often used for exploratory research (Saunders et al., 2009). Therefore, case study is an appropriate research strategy for this study, because there are no known research that have studied the influences of leadership roles and capability profiles on the performance of a venture.

This research is built on 5 steps. The first step is problem definition and methodology as discussed in this chapter and chapter 3. The second step embraces the development of the theoretical framework. Within the third step interviews and questionnaires will be applied from which the results will be analyzed. The fourth step encompasses case studies attained through participation of companies and the results of the case studies are analyzed. Additional, a cross-case analysis will be executed on the basis of results obtained from the questionnaires and case studies. Eventually in step 5 all the gathered data and analysis will be concluded to formulate the answer on the principal research question. The steps are visualized in the image below.

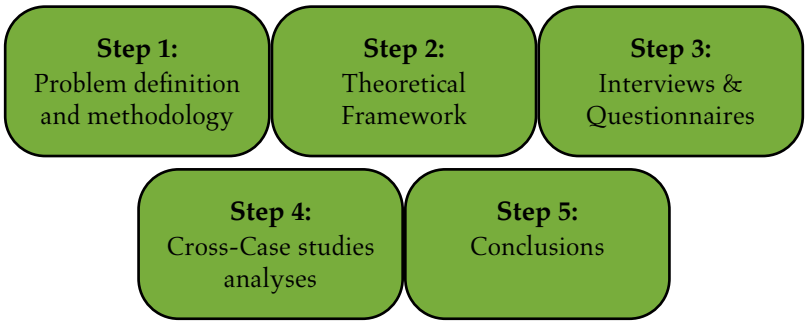

Figure 1: Research approach

2. Theoretical Framework

This chapter provides the foundations of the research and covers the literature review. Section 2.1 describes the methods used to find the scientific articles that are relevant for this study. Do note that due to the limited time for this master thesis project, has restricted the amount of reviewed publications.

The concept of Corporate Venturing will be outlined in Section 2.2. Several definitions are discussed in order to come to the most appropriate definition that will be used in this study. Thereafter, the study focus on the development phases of a venture will be described in sub-section 2.2.1. In section 2.3 the venture management team is defined. Sub-section 2.3.1 covers leadership roles of the venture management team members and thereafter in sub-section 2.3.2 the tasks of a venture management team during their phases of development is defined. In section 2.4 the term 'Capability' will be defined and in the sub-sections thereafter a list of important capabilities are presented. To end this chapter, section 2.5 provides the actual research framework. The previous sections helped to identify areas that call for further research and which concepts could be used in the research framework.

2.1 Literature Review Method

The next step in defining the domain of the research, is searching for previous studies and identifying the relevant concepts and techniques. As stated by Levy and Ellis (2006), a methodological review of the past literature is a crucial activity for any research. Webster and Watson (2002) defined the literature review as an effective review in which "create a firm foundation for advancing knowledge". Three (scientific) search engines were used in the literature review process, these are WebofScience, Scopus, ScholarGoogle and the search engine of the Journal of Business Venturing was also used.

The search for relevant articles was done by adopting the literature research methodology as proposed by Webster and Watson (2002), which are: (1) keyword search; (2) Backward search; and (3) Forward search.

2.1.1 Keyword search

As this study is conducted in a limited time period, priority was on quality rather than quantity. A theoretical study is necessary to lay the foundation for the direction of this research and to provide a solid base for further steps to be undertaken. The literature search was done through a distinct number of databases and key words. Below, in Table 1, an overview of the used databases and key words is provided.

Table 1: Databases used and the Keywords

Source Database	*Keywords*
Scopus	Corporate Venturing, Corporate Entrepreneurship, Independent Ventures, Entrepreneurial Capabilities, Capabilities (see Appendix 1), Top Management Team, SME Growth, S-Curve, Venture Growth, Venture Transition, SME capabilities.
Web of Science	Corporate Venturing, Corporate Entrepreneurship, Independent Ventures, Entrepreneurial Capabilities, Capabilities (see Appendix 1), Top Management Team, SME Growth, S-Curve, Venture Growth, Venture Transition, SME capabilities.
Google Scholar	Corporate Venturing, Corporate Entrepreneurship, Independent Ventures, Entrepreneurial Capabilities, Capabilities (see Appendix 1), Top Management Team, SME Growth, S-Curve, Venture Growth, Venture Transition, SME capabilities.
Journal of Business Venturing	Venture transition, Intention, Intuition, Technological knowledge, Alliances, Networking, venture growth.

2.1.2 Backward search

Webster and Watson (2002) advice to review citations from the identified articles as most of the articles have deeper understanding and could be that other essential content will emerge.

2.1.3 Forward search

It is achieved by utilizing the citation index of Scopus to obtain articles which have high citation index to be included in the review.

A selection was required due to the great magnitude of articles that were found in above-mentioned databases. This was executed by reading the abstracts of the articles and then selected on times cited. Most databases allow the researcher to see how many times an article has been cited; this is a good indicator about the quality of the article. The articles used in this research are based on the norm of at least 10 times of citing in order to be qualified of sufficient relevance. This process was repeated for all keywords used in each database. Once captivated by its abstract the article was downloaded for further examination of its introduction. When still of interest, the whole article was thoroughly examined. Furthermore, special attention was given to the reference list of each article that was read to see whether more interesting articles could be found. Those articles were also harvested through Jstor and GoogleScholar. A well-funded theoretical framework is created on the basis of those selected articles.

2.2 Corporate Venturing

Corporate venturing is the development of new businesses within existing organizations (Sharma & Chrisman, 1999). Another defining aspect of corporate venturing is that it at least has some degree of autonomy from mainstream businesses during (part of) their life cycle (Block & MacMillan, 1993). Corporate venturing is used by organizations as a focused approach to innovation. In

many cases it involves the parent company creating a designated entity – a corporate venture unit or an incubator – to invest in and support new business opportunities. Venture units and incubators take many forms and pursue a wide range of objectives, but their common element is their authority to identify and develop new opportunities for their parent firms. Two sub-types of venture units are typically distinguished: ''internal corporate venture'' (ICV) vs. "corporate venture capital" (CVC) units. ICV focuses on opportunities identified within the company, while CVC units focuses on opportunities external to the company, in the form of independent start-ups. Sharma and Chrisman (1999, pp. 19-20) use another denotation for venturing, namely: internal vs. external venturing. External venturing "refers to corporate venturing activities that result in the creation of semi-autonomous or autonomous organizational entities that reside outside the existing organizational domain," in other words a form of CVC. While internal ventures are "activities that result in the creation of organizational entities that reside within an existing organizational domain" which is the same as ICV. Frequently, however, corporations pursue some combination of internal and external opportunities, in order to gain wider strategic opportunities (Birkinshaw & Hill, 2005).

Block & MacMillan (1993) move on by stating that for large corporations to innovate, the creation of smaller (independent) businesses is required, as corporations are too colossal and bureaucratic to successfully facilitate innovation within their corporations. Slowly but increasingly, these large corporations are accepting the fact that in this world innovators are king, therefore the interest in CV is growing. Though many authors state that CV is not a walk in the park. Campbell et al. (2003) investigated nearly 100 corporate ventures and have concluded that many corporations fail at corporate venturing because many companies were setting up venturing units with mixed objectives and mixed-up business models. But, companies that were successful pursued a single objective with an appropriately designed venturing model.

However, innovation at companies such as: Merck, Johnson & Johnson, Unilever, DSM, 3M, Motorla, GE, Nokia, Texas Instruments, and many others has

shown that large size does not have to be antithetical to venturing. Yet the fact that so few large companies are effective innovators indicate the difficulties of achieving this success. (Block & MacMillan, 1993).

Many large corporations that apply corporate venturing into their strategy either way choose for one of four ways of venturing (Block, & MacMillan, 1993), by: (1) taking a passive, minority position in outside businesses (corporate venture capital); (2) taking an active interest in an outside company; (3) building a new business as a stand-alone unit; (4) building a new business inside the existing firm with a structure allowing for management's independence.

Ventures, whether corporate or independent, call for entrepreneurial managers, not caretakers. These managers have the characteristics of being persistent, energetic, flexible, resourcefulness, charismatic, team builder and have market knowledge (Block & MacMillan, 1993). But, as these ventures evolve towards maturity, traditional managerial skills become necessary. Some managers might have the right skills of setting-up and running a venture, but do not have the skills of running a mature business. Block and MacMillan (1993) state that these managers are no failures, rather consider them as specialists in starting up and running ventures.

Knowing what type of managers are needed in the phases of development of ventures is important for attaining and sustaining growth over the long-term. In the next sub-heading these phases of development will be depicted, with a close look on the differences of each phase.

2.2.1 Venture Development Phases

A practical way of applying the well-known concept of birth, growth, maturity and decay to management practices is the S-curve. The S-curve generally plots the process of growth and decline. The S-curve, also called life-cycle models, has appeared increasingly in (strategy) management books and articles (Ferreira et al., 2010; Hanks, Watson, Erik, & Chandler, 1993; Land & Jarman, 1992; Ka-

zanjian, 1988; Phelps, Adams, & Bessant, 2007) over the last few decades. A major strength of the literature on life-cycle models is that it adds to our understanding of the rather complex phenomenon of growth, describing how growth happens and the effect that it has on organizations (Kazanjian, 1988).

Land and Jarman (1992) and later on Ferreira et al. (2010) have undertaken steps to give another meaning to the long-established S-curve that explains birth, growth/expansion, and maturity[1] (Figure 2). In all cases of organizational growth the first phase is 'Birth'. At this phase the entrepreneur is certain that his/her idea for a service or product is wanted and needed in the market. Thereafter the entrepreneur and his team have to create a platform where his/her business can rest upon and be able to survive in the marketplace (Mason & Rohner, 2002). This is of utter importance as nearly all new businesses tend to fail within their first five years of activity. Many authors, under which Land and Jarman (1992), denote that this occurrence is a "natural" phenomenon, as in nature, cell mutations do not usually survive for long periods of time. In short, this is the beginning of the S-curve.

Finding and building the right management team is of great importance in the birth phase, as there has to be a good cohesion to not create conflict (Ensley et al., 2002) that can detriment the success of the venture. The task of the venture's leader is to start recruiting a qualified, fully dedicated core team that is able to move the venture forward rapidly, and at the same time, a team that understands the demands of a start-up. Hiring talent in new ventures is different to businesses, as the new venture has to understand the unique role of its employees and their ability to interact with and in a start-up environment (Mason & Rohner, 2002). The central activity throughout the birth phase is to further build the team while making sure it is well balanced.

In the birth phase the CEO needs to be a dynamic leader, by being: part manager, part fundraiser, part networker, part salesman, part crisis coordinator and

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1. Decline and demise will not be mentioned in this research as they are not a unit of analysis in this thesis.

part decision maker. And furthermore taking the roles of a cultural leader, spokesman, recruiter, and the insistent voice that every aspect of the venture has to be measured and assessed, i.e. keeping control. Moreover, the most important people to hire in the birth phase are a chief financial officer (if the CEO is not proficient at it) and chief operations officer, as financial planning and partnering strategies are important for the next phases (Mason & Rohner, 2002), because the venture will move from planning to intensive implementation. A great importance of the venture management team is that everyone in the first phase must be able to take on any part of the business, i.e. being flexible. Therefore, it is of great importance to have a heterogenous team (Hmieleski & Ensley, 2007), which is capable of completing different tasks at the same time, while not wasting precious time.

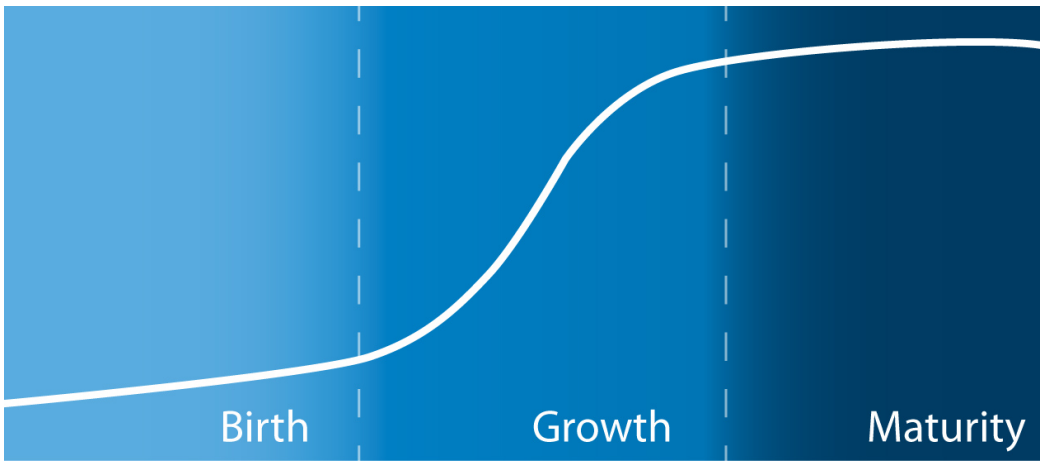

Figure 2: Phases of Venture Development (Own Elaboration)

After the birth phase, the set-up venture is characterized by a complete reversal in strategy, in their path of organizational growth. In the birth phase the venture had the chance of allowing trial and error endeavors, whereas in the transition to the growth phase, the venture has to focus on the standardization of rules that define how the venture has to function and interact with the outside world. The chaotic methods in the first phase are replaced by structured patterns of control, where internal processes are monitored and consistency is the aim. Land and Jarman (1992) explains this growth phase as the implementation of management procedures, processes and controls. All these implementations

are needed to maintain order and predictability. Ferreira et al. (2010) describes this phase as "Expansion", where a more formal structure is implemented compared to the more decentralized birth phase. They further describe that at this phase there is an initial development of a formal system of information processing and decision making, which complies with the implementation of management procedures, process and controls as Land and Jarman (1992) stated.

As ventures grow and faced with new challenges, specific functional expertise's are required to manage new roles for the firm (Kazanjian & Drazin, 1990). These functions are most likely going to be fulfilled by specialized and experienced employees which enables the venture to engage in higher levels of environmental scanning. Because these individuals have a better understanding of their respective areas, it is more suitable for them to monitor their specific environment (Gilbert et al., 2006). Intensifying targeted scanning helps the venture to identify opportunities through which sales growth can occur. When ventures enhances its scanning activities it enables them to become more innovative with their product and service offerings, and furthermore it allows them to become more involved in formal internal planning, which then translates to higher levels of growth (Olson & Bokor, 1995).

Kazanjian and Drazin (1990) investigation on the relationship with organizational structure and systems focused on the impact of functional specialization and decision making on sales growth outcomes (Gilbert et al., 2006). In the growth phase functional specialization is vital because it allows employees holding functional positions to gain expertise in those areas. As when ventures grow the tasks become more complex, therefore to cope with this complexity and react fast, it is of importance for the growing ventures to hire expertise to fulfill complex functional positions. Flexibility of employees at this phase will have to diminish, as learning will have to take place, because of the increasing complexity of specific functions (Robertson, 2005).

In essence, the decision-making structure within a growing venture must facilitate the firm to remain flexible if sales growth is continue to occur (Kazanjian &

Drazin, 1990). As ventures move through the phases of development their decision making processes must become increasingly decentralized. However, the decision-making structure must also allow the management team to preserve a level of control that makes growth occur (Gilbert et al., 2006).

Once an organization reach the maturity phase, the growth rate slows to a level uniform with market growth. Major problems such an organization encounter are to maintain growth momentum and market position (Moore & Tushman, 1982). A professional, experienced manager or team of managers may have replaced or may be supporting the original team (Kazanjian, 1988). At this phase, a venture has developed from an organic technology-product development organization into a well-balanced, functional, operating company distinguished by bureaucratic rules throughout the organization. The organization has adopted a formal structure and has also standardized and formalized internal rules and procedures (Kazanjian, 1988).

Furthermore at this phase, formalization and control, in contrast to the informality and collective action of the first two phases, is necessary to further construct the functional structure, and greater specialization for different areas is needed as a result of continued achievements and increasing structural complexity (Lynall et al., 2003). The organizations at this phase have product reliability, production stability, and maintenance of cash flow as central concerns (Lynall et al., 2003).

The transition towards maturity, consists of radical changes in any organization. Land and Jarman (1992) mention that at this phase firms have to open up and not do things differently, but by doing different things. The organization needs to focus and continue doing its core business but at the same time involving itself in inventing new businesses. Though, organizations should realize that these two activities have to be separated because the entrepreneurial environment of creating new businesses is incompatible with the process and procedure driven environment of the core business.

For a venture to go through these phases of development successfully, they need a management team that is capable of tackling unknown events through the completion of specific tasks and having the right roles to complete these tasks. The next sub-heading will focus on the venture management team and its members.

2.3 Venture Management Team

Many researchers have focused on the entrepreneur as the unit of analysis (Hofer & Sandberg, 1987), while others have advocated that the venture team is more of an appropriate level of analysis (Ensley et al., 2002). As noted by Ensley et al. (2002) the creation and successful management of ventures is often a team effort. Therefore, the success of a venture is often the reflection of the team's ability to merge talent in a creative and coordinated fashion. Superior venture performance will follow when management teams use their diversity to produce insightful yet workable strategies, while also stimulating contentment and engagement among their members. Hambrick (1997, p. 25) stated that "a firm's strategic performance—how a strategy is selected and implemented and in turn how the organization performs—depends not so much on the characteristics, behaviors, and background of the chief executive officer (CEO) alone, as it does on the sum of the characteristics, behaviors, and experiences of the entire senior executive group and how they are able to work together to take full advantage of these strengths". Therefore, in order to understand a venture's performance it is best to take the venture management team as the unit of analysis.

Many past studies have focused on the characteristics of top management teams (TMT) in medium- and large-sized firms, as to understand the inner workings of such teams. These researches have mainly stated that firm outcomes are a "reflection" of the attributes and efforts of a small group of managers (Ensley et al. 2002). Though, team compositions in ventures are utterly different than that of medium- and large-sized firms.

These team compositions must be considered because they influence, as demonstrated, the new venture's performance (Ucbasaran et al., 2003), as well as the degree to which it has been shown to moderate the effectiveness of leadership behavior (Van der Steen et al., 2012). To give an example, in their study, Ensley and Hmieleski (2005) found that venture top management team heterogeneity in terms of education, business skills, industry experience, and functional expertise significantly share a positive relationship with the net cash flow and sales growth of their firms. Their study comprised of a sample of 256 start-ups. Because of the wide array of roles and tasks that venture top management teams must take on, during the critical moments of start-up and growth, it is important that their members have a heterogenous range of backgrounds and expertise (Hmieleski & Ensley, 2007) in order to cope with the often fluctuating directions of the venture.

Heterogenous teams perform best in situations where a team functions in complex environments and fulfilling various ambiguous tasks (Greening & Johnson, 1996), both of which are very common within the new venture development process. This is because diverse teams have a greater chance of gathering information from a large variety of sources and are likely to make more in-depth strategic decisions (Mello & Ruckes, 2006). However, as Amason, Shrader, and Tompson (2006) note, there can be situations where top management team heterogeneity might have negative effect on venture performance, such as in cases whereby consensus and quality of communication are more significant than information seeking and decision comprehensiveness. Thus, the value of top management team heterogeneity appears to be partly context dependent (Hmieleski & Ensley, 2007).

Venture management teams have to cope with many internal and external changes. This is due to do the many activities a venture faces during its existence. If the venture management team is successful in completing these activities, their venture will be prone to grow, and new knowledge will be needed to solve other new activities. Following other TMT studies (Carpenter & Fredrickson, 2001; Finkelstein & Hambrick, 1990) the members of the top management

team used in this study are the CEO, COO, and CFO. As these are the members of a venture that have the greatest influence on the strategic actions of the organization (Carpenter & Fredrickson, 2001). In the next sub-heading the leadership roles of the venture management team members is described. With afterwards, the tasks of the venture management team per phase.

2.3.1 Leadership Roles of Management Team Members

In recent studies, academics have made explicit the importance of leadership in the current dynamic settings within and around organizations. Ireland & Hitt (2005, p. 63) advise managers that, "competition in the 21st century's global economy will be complex, challenging, and filled with competitive opportunities and threats." They have discussed the need for effective leadership practices that aid firms enhancing their performance while competing in tempestuous environments.

Quinn (1988) outlined a framework that comprises four models in four different quadrants created by competing values on two dimensions: an 'internal–external' dimension and a 'flexibility-control' dimension, which he called the 'Competing Values Framework'. These four models are: 1.) The open system model emphasizes the external-flexibility quadrant, whereas 2.) the internal process model emphasizes the internal-control quadrant. 3.) The rational goal model focuses on the external-control quadrant and 4.) the human relations model focuses on the internal-flexibility quadrant (Yang, 2007; Quinn, 1988).

The competing value framework can be used in the field of leadership (Yang, 2007; Quinn, 1988). Quinn's (1988) leadership roles are classified into eight types. Managers in organizations fulfill the roles of: monitor, coordinator, director, producer, innovator, broker, facilitator and mentor roles (Figure 3).

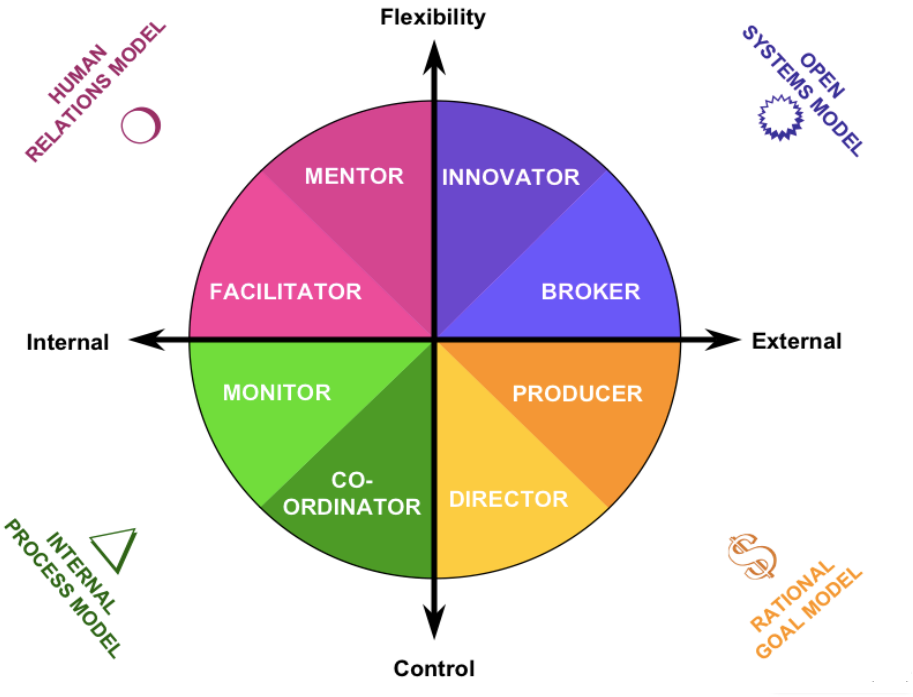

Figure 3: Quinn's (1988) Competing Value Framework (Source: appliedinnovation.com.au)

Managers in the open system model, are seen as visionaries and fulfill the roles of innovator and broker. Innovators scan the outside environment and assimilate collected information and knowledge as fast as possible. Brokers focus on preserving external legitimacy and obtaining external resources. They achieve this by strengthening connections with external entities (Yang, 2007; Quinn, 1988).

Managers in the internal process model, fulfill two roles: monitors and coordinators. Monitors manage employees according to company rules and individual reviews. Coordinators trust and abide by the existing organizational structures and systems. These managers simplify routines and work on building good relationships with different parties, which eventually leads to the enhancement of employees undertakings. These two roles make sure that managers are accountable for the assigned tasks (Yang, 2007; Quinn, 1988).

Managers in the rational goal model, fulfill two roles: producers and directors. Producers highlight the importance of employee productivity and their achievement of goals and assignments as a team. Directors help to define and clarify employees roles, future directions through constructing plans, structures and instructions, determining problems and finding practical solutions (Yang, 2007; Quinn, 1988).

Effective leaders who aim to promote social interactions, fulfill the roles of facilitator and mentor, in the human relations model. Facilitators put weight on group harmony, stimulates interpersonal relationships to diminish conflicts, involves employees in problem-solving sessions and enlarges organizational resources. Mentors help employees to develop their competencies with both empathy and consideration (Yang, 2007; Quinn, 1988).

Grandori & Kogut (2002) state that leaders in a team have the important role to nurture a healthy working atmosphere within the organization for its employees. For many years the view of management was that subordinates act as instruments of their superiors (Roth, 2003). However, this is not relevant anymore as it does not secure long-term success and therefore managers are now asked to motivate subordinates to transfer experience and talent into organizational resources. This calls for leadership rather than management, and coaching and facilitating roles must gain much more attention (Roth, 2003).

Underneath are the roles discussed of the CEO, COO and CFO.

Hart & Quinn's (1993) study focussed on the roles of the CEO. They state that CEO's fulfill four roles simultaneously, in order to obtain organizational performance. The four roles they name are a.) vision setter, b.) motivator, c.) analyzer, and d.) taskmaster, each involving specific tasks in the organization. a.) Vision setter: CEO's define and articulate the basic purpose and future direction of its organization, with special attention on the economic, social and technological trends. b.) Motivator: CEO's translate the vision and economic strategy of an organization into words that inspire and motivate employees to accom-

plish the organization's goals. c.) Analyzer: CEO's focus on bringing efficiency into the management of internal operating systems, controlling management processes, and shaping operating decisions. d.) Taskmaster: CEO's influence subordinates decisions and allocates resources to activities with high priority to increase firm performance (Tsui et al., 2006). Placing the CEO in one of the quadrants of Quinn's (1988) competing values framework is not possible, as (s)he must be able to understand what is happening inside and outside of the organization and at the same time being flexible, for searching new opportunities, and being in control of efficiency and networks.

Bennet & Miles (2006) have looked at the differences between the roles of the CEO and the COO. They have come to the conclusion that COO's fulfill five different roles, though COO's do not fulfill them simultaneously. COO's roles are: a.) the executor, b.) the change agent, c.) the mentor, d.) the other half, and e.) the partner. a.) Executor: a COO leads the execution of strategies developed by the top management team. The COO typically takes responsibility for delivering results on a day-to-day, quarter-to-quarter basis. b.) Change agent: COO's lead a specific strategic event, such as a major organizational change, a turnaround, or a planned rapid expansion. The magnitude of the challenge demands that the change agent COO have a degree of unquestioned authority. c.) Mentor: a COO's role is to mentor the CEO (often a founder) and the rest of the management team. A rapidly growing venture might need a COO who is an industry veteran with a rich network who can develop the CEO, the management team, and the emerging business. d.) Other half: a COO does not have to be a mentor, but as someone whom complements the CEO's experience, style, knowledge base, or preferences. e.) Partner: a COO's role can be one where he or she 'co-leads' the organization together with the CEO (Bennet & Miles, 2006). COO's assist mostly the CEO's in their control tasks, therefore they fit the internal process and rational goal quadrants of the competing value framework, as their task lies at bringing order within the organization and planning the operations with external entities.

The CFO assists the CEO in different ways, they help to reduce the burden of the CEO, whom wants to get closer to the business and customers and remove any barriers that keep them from the front lines. CFO's help the CEO by providing considerable leverage in managing the company without creating organizational barriers (Favaro, 2001). To do so, the CFO needs to fulfill two leadership roles, first: by providing clarity, focus and accountability. Clarity about how and where value is created, focus on what drives value and on the highest value-creating opportunities, and accountability for guiding and managing value throughout the organization (Favaro, 2001). And second: developing and nurturing strong and constructive relationships within the organization. Having these relationships are essential which enables the CFO to strike the difficult balance by supporting and guiding the strategic and operational endeavors, while not threatening their autonomy (Favaro, 2001). CFO's are internally focussed, as they help the CEO by clarifying the strategy to all the members of the organization, bringing human commitment, and helps with the continuity of the internal processes. Therefore, the CFO fits both the internal process and human resources quadrants of the competing value framework.

2.3.2 Tasks of the Venture Management Team

The tasks of venture management teams during their phases of development are complex and far from well-defined, as each venture is different. Venture's initiate with the problem of 'liability of newness' (Stinchcombe, 1965), which in other words means that it has to first create legitimacy and reduce uncertainty (Ensley et al., 2002). This suggests that the management team have to "learn their new jobs, learn the specifics of their new environments, and learn to deal with their new stakeholders while on the job and while utilizing new and untested social ties" (Ensley et al., 2002, p. 367). These managers frequently perform a wider variety of tasks than well-established organizations, and because of that, also experience higher levels of autonomy, task identity and other positive job characteristics than is typical in well-staffed / well-established organizations (Baron, 2010).

Ventures in the birth phase do not seem to be as reliable and accountable as well-established organizations, their first concern and task is the need to create an external perception concerning their legitimacy, in order to gather resources and compete with established firms (Delmar & Shane, 2004). In other words, the venture management team have no choice but to perform an immense range of tasks, from supervising daily operations, and searching and securing the needed informational and financial resources, through involving in the product design, discussing and developing business plans and strategies, and even participating in sales and marketing (Baron, 2010). In short, their tasks is largely about creativity and learning, where the importance lies on producing novel and integrated solutions that can distinguish them from others.

Furthermore, ventures in their birth and growth phase lack the relationships with customers and suppliers possessed by established firms (Delmar & Shane, 2004). Ventures therefore need to establish social ties with external stakeholders that are functionally equivalent to those of established organizations to gather resources and be able keep up with the competition (Delmar & Shane, 2004).

Once ventures grow, they run up against the problem of productive routines that established firms have for transforming resources into products and services in an efficient way (Delmar & Shane, 2004). In order for ventures to survive heavy competition from established firms, ventures must obtain the resources that they will transform, develop and establish a set of routines, and market the output of that transformation.

The time it takes for a venture to reach the maturity phase will vary depending on its resources, strategy, industry, etc. It seems reasonable to assume this might occur between three to five years after its creation, though usually it takes a venture eight to twelve years after to reach the maturity phase (Kazanjian & Drazin, 1990). Once a venture reaches its maturity phase, it becomes a well-established organization with well-defined rules, processes, routines and specific tasks, that just have to be executed.

For organizations to survive throughout their entire existence they have to continuously update their capability base. When organizations have abundant capabilities, they likely will survive easily, grow more rapidly, are more profitable, and have more organization slack (Ambrosini & Bowman, 2009; Helfat et al., 2007; Zahra et al., 2006). The next heading gives a better understanding about what capabilities are, and which specific capabilities organizations need, to accomplish their tasks. Besides, to have a better understanding of the specific birth phase tasks of a venture management team, each defined capability in the next heading will delineate these tasks, which were drawn-up by Philips Healthcare Incubator (Source: peopleskills ventures.xls / Appendix 5).

2.4 Capabilities

In the past 10 - 15 years most researches on capabilities report that resources and capabilities are of great importance for the performance of any firm, as firms gain competitive advantage (Keil, 2004) over their competitors. Most researchers agree on the fact that in order for firms to gain competitive advantage, the capabilities firms apply have to be valuable, rare, inimitable, and that the organization can effectively exploit them (Amit and Schoemaker, 1993; Barney, 1991, 1995). The question many ventures ask themselves is: "what is the reason that, over time, some firms manage to become successful using their capabilities, while other firms do not?" (Helfat, 2000). A difficult question to be answered in just one sentence, as there are many factors, internal and external, that influence the success or failure of a firm.

Many authors argue that capabilities are not part of a resource because of their dynamic nature, of their activity of 'doing' something, they therefore see capabilities as a result of resource deployment, an organizational process (Amit & Schoemaker, 1993). Capabilities use resources, and are therefore, more dynamic and complex entities and should be treated independent to resources (Amit & Schoemaker, 1993; Deeds et al., 2000; Eisenhardt and Martin, 2000; Iansiti and Clark, 1994; Teece and Pisano, 1994; Teece et al., 1997).

Hafeez et al. (2002) view capabilities as formed through the co-ordination and integration of activities and processes, but are the product of collective learning of individual assets. They define capability as a person's "ability to make use of resources to perform some task or activity". And they define resource as anything 'tangible' as well as 'intangible' owned by a firm. In a network organization scenario this definition would include all those assets which a firm could employ or have access to in order to achieve its corporate objectives. While resources could exist on their own, capabilities are deeply embedded in the organizational routines, practices and business activities (Nanda, 1996).

Another form of capabilities are the so called 'Dynamic capabilities'. These aim at a continuous adaptation and reconfiguration of their initial resource base, while considering an existing opportunity. From a strategic perspective, these capabilities integrate knowledge in order to find a recombination that allows the organization to meet its performance goals. But since ventures in their birth and growth phase have little dynamic capabilities, they have to develop them over time (Rothaermel and Hess, 2007). In other words, the knowledge base of ventures is largely determined by organizational learning efforts, i.e. through the acquisition of new people, learning done by current employees or using organizational memory (Simon, 1991), as well as the evolution of dynamic capabilities (Eisenhardt and Martin, 2000). Dynamic capabilities are firm specific and path-dependent, because organizational learning is independently distinctive when ventures engage in new activities (Strehle et al., 2010 ; Helfat and Peteraf, 2003).

In other words, dynamic capability focus on the ability of an organization, to create new resources, renew it or even alter its resource mix (Teece et al., 1997). It further recognizes that the top management and its beliefs on the evolution of the organization, play an important role in the development of dynamic capabilities (Ambrosini & Bowman, 2009). In short, dynamic capabilities are about learning, building and creating the most appropriate resource base for the next organizational phase of development. They therefore are future oriented, which is not the case for capabilities, they are focused on today and are 'static'

if no dynamic capabilities are used to modify them (Ambrosini & Bowman, 2009). Organizations need to develop dynamic capabilities in order to survive and adapt to deregulated environmental conditions (Ambrosini & Bowman, 2009).

Most researches on resources, capabilities and firm performance report that well defined and correctly implemented capabilities within companies will help gain competitive advantage over their competitors and therefore drive firm performance. Throughout the course of venture development, there is a shift in the need of capabilities. These changes mainly consist in the objectives of the venture at the different phases of development, for example networking at the birth phase of a venture mainly consists of communication links with other entrepreneurs and scientists, in order to better define the business proposition. Once the venture progresses the focus will lie more on networks with potential customers and suppliers.

In this thesis, thorough research is undertaken by selecting the capabilities used by entrepreneurial ventures and SME's, that are qualified as enabling firm performance. Furthermore, researchers have mainly focused on one or two capabilities in their papers, this study extends this number by including several forms of capabilities. Below, 15 different capabilities are described, with reference to specific tasks a venture management team confronts in its birth phase. These tasks have been mapped out by Philips Healthcare Incubator (Source: peopleskills ventures.xls). A summarized version of the capabilities can be found in Appendix 1.

2.4.1 Intuition

Intuition, as a capability, has been equated to gut feelings, instincts, recognition of forgotten information, a synthesis of research and experience, inferences, evaluative affect, overall managerial judgments (which have both conscious and intuitive analytical elements), and psychic connections (Shapiro & Spence, 1997). Intuition is defined as "the dynamic process by which (entrepreneurial)

alertness cognitions interact with domain competence (e.g., culture, industry, specific circumstances, technology, etc.) to bring to consciousness an opportunity to create new values" (Mitchell et al., 2005). Intuitive capability can both be a powerful and valuable cognitive asset for the entrepreneur and the manager to possess, because it can lead to defensible judgements when available information is not 100% valuable or trusted. However, intuition is filled with uncertainty, as one's awareness of whether intuitive processes are, in fact, underlying judgements. Blume & Covin (2011) have recognized that intuition influences venture founding decisions and that entrepreneurs with prior experience rely more on their intuition.

Several researches investigating managerial judgement suggests that because of incorrectly specifying underlying causal relationships, managers make sub-par decisions when the response function is complex even if they have help from decision aids. Shapiro & Spence (1997) suggests that the best forecast to enhance decision quality in more complex environments is one that harnesses the power of intuition and the use of analytical elements.

This capability helps entrepreneurs and members of a venture management team to identify and describe opportunities when they have a gut-feeling that it can help them move forwards. This capability only is obtained through years of experience.

2.4.2 Entrepreneurial Intention

Intention models state that entrepreneurial conduct is planned, to some point reflecting cognitive processing, in which intentions evolve as entrepreneurs amplify their knowledge, attitudes, beliefs, and experiences (Krueger et al., 2000). Research on entrepreneurial intentions examines two main factors, namely: desirability (the awareness of the personal appeal to start a business) and feasibility (degree in which one feels capable of achieving success) (Krueger et al., 2000). Katz and Gartner (1988) define entrepreneurial intention as "the search for information that can be used to help fulfill the goal of venture crea-

tion." Furthermore, Reynolds and Miller (1992) have indicated that the personal commitment of the potential entrepreneur to launch a business has a major effect on shaping the entrepreneurial intention. Krueger and Carsrud (1993) suggest that intention is the "single best predictor" of entrepreneurial behavior.

Fini et al. (2010) show that intentions are prompted by environmental dynamics that, once recognized and framed, account for entrepreneurial intention formation. The key aspects for triggering entrepreneurial actions is a positive recognition of both market heterogeneity and industry opportunities.

Next to having the intention of starting a venture, which is a major task on its own, entrepreneurs and venture management team members must be capable of identifying the feasibility of the venture as a whole and its product or service. Gathering the needed information therefore is of utter importance.

2.4.3 Industrial Knowledge

An individual that has industrial experience has a better understanding of what the customers wants and needs are, and how to satisfy them, because such information is only available through industry participation (Johnson, 1986). By taking a proactive approach with customers and understanding the disadvantages and advantages of the product or service offerings, as well as the gaps in existing efforts to satisfy customer needs, an individual develops a sufficient understanding of what to offer as a product or service. This gives the advantage to be able to identify and develop a market strategy with ease, and give time to focus on what is most important to gain growth (Delmar and Shane, 2006).

Much of the information and many of the skills needed that are necessary to exploit new opportunities can only be learned through working in an industry, because such knowledge is mainly tacit. This information can be related to market niches, production processes, technological development, or services or products (Cooper et al., 1994; Klepper, 2001). Delmar and Shane (2006) state that venture teams that have prior industry experience are more likely to sur-

vive and achieve greater sales compared to venture teams with no industry experience.

Industry knowledge helps at making preliminary validation of potential customers and markets, and also when making a value proposition with specific marketing insights. It is also useful when product development starts, processes will be set, and scaling production. Furthermore, someone with industry knowledge knows what kind of people should be attracted for a specific job.

2.4.4 Networking

In continuation from industry knowledge, social network ties to suppliers, distributors, entrepreneurs, customers and investors are created over time through activity in an industry. Individuals with prior industry experience in the same industry have the advantage that they can transfer social ties from their prior settings to their current venture (Delmar and Shane, 2006). These social ties are valuable in obtaining commitment and support from other entrepreneurs, suppliers, distributors, potential investors and customers. Social relations facilitate the acquisition of each of these three elements: 1.) tacit knowledge, 2.) financial capital, and 3.) human capital (Sorenson, 2003). Having these social ties provides legitimacy in the eyes of important stakeholders of the venture, which will of course facilitate the process of obtaining resources and organizing new firm operations (Aldrich, 1990). As a result, venture teams that have more industry experience are likely to have advantages over other ventures because of their vast network that they have been working on for years.

Individuals strengthen their personal network when they frequently and directly communicate in a broad span with their external contacts, instead of asking subordinates. At firsthand they gather information about the external environment and develop a profound comprehension of their business. This eventually translates into better performance. Duchesneau and Gartner (1990) did a study on the differences between successful and unsuccessful firms, and found that venture members in successful firms were likely to spend more time com-

municating with employees, suppliers, customers and business partners, than their unsuccessful counterparts. In resume, several studies have found a positive relationship between such networking behavior and venture performance.

Networks is very important for numerous tasks, for example hiring the right talent to build up a core team, and knowing who to contact for financing or who to approach to get the product into an organization.

2.4.5 Technological Knowledge

There are two dimensions to technological knowledge, namely: depth and breadth (Kauffman et al., 2000). Individuals with deep knowledge help organizations to understand the causal linkage of old components in an industry (March, 1991). It enables organizations to make new combinations with old components, as the organizations know the capabilities of such components. Deep technological knowledge in one industry does not only provide expertise in solving one specific type of problem, but it also helps exploring new applications of the technology (Zhang & Baden-Fuller, 2010; George et al., 2008).

Individuals with scope of technological knowledge refers to the range of technological knowledge areas that have to be explored, in order to develop new technologies. Teams that are familiar with many different industries on the technological knowledge landscape are capable of exploring new and more paths in order to find solutions (Kauffman et al., 2000). Studies have found that organizations who have a broad technological knowledge seek to improve their position with continuous search for better solutions (Zhang & Baden-Fuller, 2010).

For ventures to achieve early growth, it needs to be visible and offer its products to its environment as soon as it can. Therefore, the ability to find solutions and develop new products quick, is an important factor in knowing whether a company will succeed or fail. Rothaermel and Deeds (2006) state that this is the case for start-up firms in high technology industries. Thus, technology-based ventures require both dimensions of technological knowledge and product de-

velopment capabilities to succeed on the market (Strehle et al., 2010; Grant, 1996).

Technological knowledge helps accomplishing several different tasks, under which defining specific functional and technical aspects of the product, helping out in product development, and creating and streamlining processes.

2.4.6 Alliances

Alliances are agreements between independent firms who have agreed on developing and commercializing new technologies, products or services (Rothaermel & Deeds, 2006). A study from Powell et al. (1996), has showed that allying has become critical to the success of high-tech entrepreneurial ventures. Furthermore, prior research has provided empirical evidence that alliances enhances entrepreneurial firm's rate of patenting (Shan et al., 1994), product innovation (George et al., 2002; Kelley and Rice, 2002), speed to initial public offering (IPO) (Stuart et al., 1999), market valuation at IPO (DeCarolis and Deeds, 1999) and foreign sales (Leiblein and Reuer, 2004).

Other studies have endorsed positive effect of alliances, but expressed caution that there may exist diminishing returns to extensive allying (Deeds and Hill, 1996). Alliance with the same partner over time positively impacts the performance of subsequent alliances between these two partners (Zollo et al., 2002). Established organizations that have experience in alliances has shown to result in higher stock market value creation, enhanced new product development and an establishment of a dedicated alliance function, which positively impacted alliance performance (Rothaermel & Deeds, 2006). Managing alliances is an important capability for an organization to have, as this increases the access to a larger resource base beyond a ventures own boundaries (Rothaermel and Deeds, 2006).

Alliances are vital when for example a venture partners with another organization that does the production for them. Having experience with alliances helps

the venture management team know what they can ask from them. Knowledge of alliances helps fulfill tasks such as scaling supply chains, building product delivery and making partner analyses.

2.4.7 People Management

Through the provision of incentives and stimulation that evoke the desired behavior, people management practices may influence the perceptions and attitudes in the workforce (Jolink & Dankbaar, 2010). Effective people management knowhow can enhance the networking competencies of organizations, this is done in terms of personnel selection, development, stimulation, and support (Jolink & Dankbaar, 2010).

Many authors have referred human resource management (HRM) as the efforts of influencing employee behavior, though Jolink & Dankbaar (2010) see people management as a more encompassing term. This practice goes further than HRM, it focusses on more tools, such as: communication, culture, work design, leadership, and much more that impact employee behavior and shape their attitudes, competencies, and motivation (Wright et al., 2001). People management is one of the most important assets an organization has. This helps organizations gain competitive advantage over time, while employees come in and out and the external environment constantly changes. Furthermore, systems that have been put into place to manage people are difficult to imitate by competitors (Jolink & Dankbaar, 2010).

It all lies on how effective managers can manage, develop, motivate, involve and engage its employees. Having this is a key determinant of how well those organizations perform (Patterson et al., 1997). Though many small and medium sized companies do not see the essence of investing resources, time and creativity in the management of people within the organizations (West et al., 1996). If entrepreneurs or managers want to affect the performance of their companies, the results of Patterson et al.'s (1997) study show that the most important area to emphasize is the management of people.

Having members in a team who have people management experience, know how and whom they need, to build a solid team; they help with the staffing plans; and are able to motivate and engage its employees.

2.4.8 Marketing & Sales

Marketing capabilities are needed to support differentiation of the organizations product or service offering, this enables the firm to repeatedly deliver desired benefit bundles to its customers (Vorhies et al., 2009). Previous research from Vorhies, Vorhies and Morgan (2005), have explored two important types of marketing capabilities, which exhibit hierarchies of capabilities formed by the integration of relevant knowledge. This hierarchy shows that some capabilities are focused on tactical activities while others are focused on organizing resources for deployment. The two types of marketing capabilities are:

1. Specialized marketing capabilities: These capabilities are functionally focused on building around the integration of specialized knowledge that is being held by the organization's marketing employees. These are marketing specific tasks: marketing communications, product development, personal selling, pricing, and distribution.

2. Architectural marketing capabilities: This type of capability set is needed for the planning and coordination of specialized marketing capabilities, thus focused on resource deployments. This set of capabilities, together with the specialized capabilities, are necessary enablers of product differentiation. Having these capabilities allow organizations collect information from the market environment and develop marketing plans to act on the information collected from the market.

Ventures that have experienced marketing and sales people is important, as they have the knowledge of presenting new products to potential customers (Gruber, 2004), especially for those ventures that rely heavily on high technology. Though, many entrepreneurs have been found to have little knowledge of

marketing and sales, therefore it is important to have an experienced marketeer and a sales person on board (Strehle et al., 2010).

Tasks such as creating a value proposition with marketing insights, product development and scaling marketing and sales activities, call for marketing and sales experience.

2.4.9 Operations

An individual that has operational capability is defined by Dutta et al. (1999) and Nath et al. (2010) as the knowledge of 'integrating complex set of tasks performed by a firm to enhance its output through the most efficient use of its production capabilities, technology, and flow of materials.' In other words, making the process of manufacturing as efficient as possible, in order to increase output and maintain quality. Many studies have highlighted the role of operations capability on firm performance (Nath et al., 2010; Gonzalez-Benito & Gonzalez-Benito, 2006), which argue that an organization can achieve competitive advantage through carefully utilizing its assets and managing an efficient material flow process; and acquiring and disseminating superior process knowledge (Nath et al., 2010).

Having good operations capability within the organization increases the efficiency in the delivery process, reduces cost of operations and achieves competitive advantage (Nath et al., 2010). Furthermore, studies have emphasized that the role of an integrative approach in combining marketing and operations capability will positively influence firm performance (Nath et al., 2010).

Tasks in which operations knowledge is of great use are: product development; production; staffing; creating processes; scaling supply chains; and building a product delivery and/or service organizations.

2.4.10 Customer knowledge

Customer knowledge is all about understanding customers' preferences, which has been identified by Cooper and Kleinschmidt (1995, 1996) as a key prerequisite for new product success. For ventures it is important to learn about customer preferences at each and every phase of venture development, which entails lower costs and lower strategic risk (Cooper, 1998).

The definition used for customer knowledge is "a process of developing an understanding of customer new product preferences that unfolds through the interation of probing and learning activities" (Lynn, Morone, and Paulson, 1996) at the early stages of product development and throughout every phase of venture development. The interaction with customers brings the companies on other thoughts, which include the deployment of new product ideas, concepts, and prototypes for target customers. Customer feedback is valuable for companies, they learn about the real preferences of customers. Through this learning and understanding curve, firms can better react to the changes in the market.

Customer knowledge allow to accomplish the following tasks: preliminary validation of customers and markets; making a value proposition with marketing insights; and able to ask customers for trials in the product development stages.

2.4.11 Entrepreneurial & Managerial Experience

Individuals with entrepreneurial experience consists mainly of three components: 1.) Entrepreneurial: the number of previous new venture involvements of an individual and his/her level of the management role played in such ventures. 2.) Industrial: This refers to the individuals industrial experience. And, 3.) Management: This refers to the total experience in management, regardless of the industry (Ucbasaran et al., 2010; Stuart and Abetti, 1990).

Several studies, including that of Stuart and Abetti (1990) have pointed out that an entrepreneur's experience can influence the performance of a firm positive

or negatively. For example, prior experience can be a stumbling block if drastic strategic changes need to be made. In a study from Jo and Lee (1996), the effect of managerial and industrial experiences of an entrepreneur was studied, and concluded that managerial experience affected performance negatively, whereas industrial experience had a good influence on overall performance. Though other studies, including Stuart and Abetti (1990) and Dyke et al. (1992), reported a positive effect on firm performance from both managerial and industrial experience.

Duchesneau and Gartner (1990) introduced the concept of 'breadth of managerial experience', which in essence combines industrial and managerial experience, and found that this combination of experiences had a significant effect on venture successes. It seems that many researches support the notion of a positive relationship between an entrepreneur's managerial experience and performance.

Having both entrepreneurial and managerial experience permit entrepreneurs and venture management team members to accomplish the following tasks: build a business model; defining a business plan; building a core team; create financial scenarios; create strategic scenarios; building venture platform; scaling supply chains; building a product delivery and or service organization.

2.4.12 Strategic Flexibility

Scholars in the field of strategy have defined strategic flexibility as "a firm's ability to precipitate strategic changes" (Nadkarni and Herrmann, 2010). Others have defined it as the "ability to adapt to substantial, uncertain, and rapidly occurring environmental changes that meaningfully impact firm performance" (Nadkarni and Herrmann, 2010). Thus, in other words, it reflects the capability of a firm to react to unanticipated changes and adapt itself to these unexpected occurrences.

Several studies on strategic flexibility have focused on technology (Woren et al., 2002), resources (Young-Ybarra & Wiersema, 1999), and network structures (Young-Ybarra & Wiersema, 1999) as antecedents. Although these antecedents do have some effect on a company's ability to be strategically flexible, one that does have a major effect is the CEO's personality. A study from Peterson et al. (2003) has showed that a firm's CEO, is an important member of the management team, and has a profound impact on the strategic direction and performance of a firm.

Empirical studies have shown that the CEO's personality indeed influences a firm's strategic choices, which influences a firm's performance (Nadkarni and Herrmann, 2010). For example, a CEO with internal "loci of control" exploits product innovation strategies, whereas CEO's who aim for achievement, go for broad market strategies. CEO's who are proud of themselves are found to be positively related to paying acquisition premiums and bring a negative effect on firm's performance (Nadkarni and Herrmann, 2010).

Entrepreneurs and venture management team members must be able to cope with fluctuations within the following tasks, which are essential for attaining a firm's performance: creating strategic scenarios; product development; scaling marketing and sales activities; staffing; scaling supply chains; building a product delivery and or service organization.

2.4.13 Exploration, Transformation & Exploitation

The following three capabilities are of a dynamic nature, as described in Chapter 2.4. Zahra & George (2002) stated that these dynamic capabilities 'are essentially change-oriented capabilities that help firms redeploy and reconfigure their resource base to meet evolving customer demands and competitor strategies'.

Exploratory learning, in simple terms, refers to knowledge acquisition, because it consists of recognizing external knowledge and assimilating this knowledge

(Lane et al., 2006). Firms are curious to what is happening around them, therefore many have established scanning mechanisms to recognize external knowledge sources (Cohen & Levinthal, 1990). Once firms have obtained this new knowledge they assimilate it by integrating it to their current portfolio of knowledge.

Szulanski (1996) denotes the importance of prior related knowledge. He states that for firms to have successful acquisition of external knowledge, they need both components of prior knowledge, which are industry knowledge and technological knowledge. Firms usually have enough industry knowledge because they acquire knowledge for a particular application (Todorova & Durisin, 2007). Technological knowledge is critical, as it helps the firm recognize external knowledge sources and to assimilate knowledge (Zahra & George, 2002). Thus, a firm makes its competitive difference with other companies through their technological knowledge they have in store (Lichtenthaler, 2009).

Exploratory learning can help firms react to the changing environments, that constantly alter, by creating new products which meets the need of ever changing markets (Jansen et al., 2006). On a common basis, firms actively acquire external knowledge because it is hard to cope and respond to all technological and market developments internally (Cassiman & Veugelers, 2006). Therefore, the task of recognizing and assimilating knowledge becomes a success factor for the firm (Zahra & George, 2002).

Exploring for information that allow a venture management team to identify and describe opportunities and product/service possibilities; search and validate customers and markets; and make a valuable proposition with marketing insights. Call for exploratory work and learning.

Transformative learning, refers to retaining knowledge over time (Lane et al., 2006). Having only exploratory and exploitative learning is not sufficient to sustain superior performance when cumulative knowledge is involved, time of entry is important, or when an environment is highly dynamic (Argote et al.,

2003). Firms should avoid losing skills and routines that actively manage knowledge retention, in order to keep assimilated knowledge "alive" (Lane et al., 2006). Two essential stages of transformative learning is: maintaining assimilated knowledge and reactivating this knowledge (Lane et al., 2006).

Teece (2007) states that in order to successfully retain knowledge, firms need sufficient prior market and technological knowledge. These two components of prior knowledge contribute to explaining path dependencies in transformative learning (Kogut & Zander, 1992). Firms that have more technological knowledge, find it easier to retain and reactivate additional knowledge that is of importance for a firms success (Garud & Nayyar, 1994). Market knowledge, in combination with other knowledge, is important for deciding to maintain knowledge and for reactivating it (Marsh & Stock, 2006). Thus, a firm needs prior market and technological knowledge to maintain its knowledge and to make inter-firm differences. As, firms with prior market and technological knowledge may easily and flexibly adapt to environmental changes and avoid core rigidities by maintaining a large knowledge base (Teece, 2007).

This capability does not have specific tasks that it can help, though venture management team members must be capable of retaining information they have gathered throughout the existence of the venture, to maybe use it for future product roll-outs.

Exploitative learning, focuses on knowledge in the context of a product or service, and goes beyond assimilating external knowledge (Lane et al., 2006), it is essentially matching knowledge and markets (Rothaermel & Deeds, 2004). After the firm determines potential applications, it then applies the knowledge, which in essence constitutes the actual exploitation step (Lichtenthaler, 2009). Thus, exploitative learning does not refer exclusively to final knowledge application. Two essential stages of exploitative learning is: transmuting the assimilated knowledge and applying this knowledge (Lane et al., 2006).

Market knowledge determine whether exploitable opportunities are discovered and where those are located (Shane, 2000). Market knowledge is the key of prior knowledge in transmuting and applying assimilated knowledge (Teece, 2007). Thus, competitive differences in exploitative learning are likely influenced by market knowledge differences (Lichtenthaler, 2009).

In essence, exploitative learning converts knowledge into new products (Tsai, 2001). By means of gathering external knowledge, firms replenish and build their knowledge bases (Narasimhan et al., 2006). Based on prior market knowledge, exploitative learning rather determines to what degree assimilated knowledge is converted into new products (Zahra & George, 2002).

Exploitation require venture management team members to translate and use the gathered information from the past, to incorporate that in, for example, product development.

2.5 Research Framework

Based on the extensive literature study a research framework is drawn (Figure 3). In essence, this framework is based on what happens in the growth phase of a venture. For a venture's progress into the next phases of development specific tasks have to be completed. The very essence of a manager's work is to create their own jobs, tasks, and roles as their ventures emerge and take shape (Baron, 2010). In other words, these tasks are visioned by the managers (leaders) as obstacles that obstruct the progress of the venture. At the same time managers fulfill their leadership roles to enable them to direct and supervise their subordinates. Through fulfilling these leadership roles the managers are able to know what is needed to accomplish the tasks that are at hand. In some cases, new capabilities will be required, on which the manager decides whether to hire a new subordinate with knowledge of the needed capability, or to learn the current employees about this missing capability.

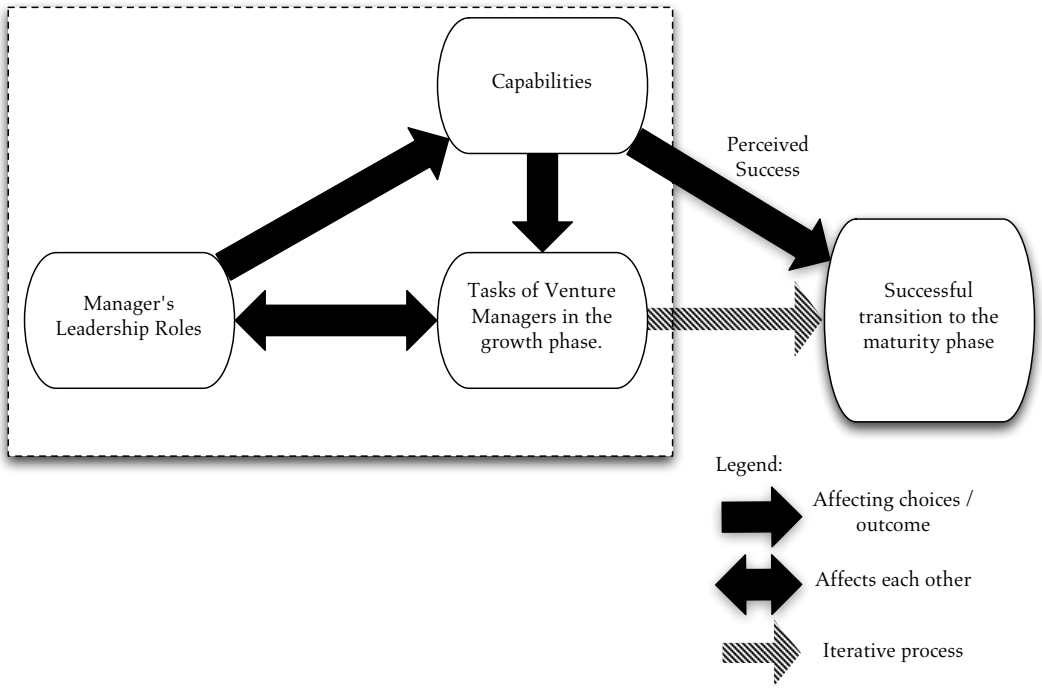

Figure 4: Research Model

Tasks are far from a linear process, they change whenever the internal or external environment fluctuates. This therefore calls for new knowledge of capabilities to adapt to these fluctuations of the environments. Once tasks are completed the venture gets one step closer towards the transition to the maturity phase.

In addition this study will investigate the correlation between capabilities and the perceived success of a venture. And further to understand whether venture managers see some or all capabilities as important factors that will influence the success of a venture.

3. Research Methodology

In this chapter the applied research methodology is described. Consecutively; the research purpose, the chosen appropriate approach and its design. The chapter concludes with a discussion regarding the data collection and the analysis.

3.1 Research Purpose

Research serves many objectives. The most common are: explanation, exploration and description (Saunders et al., 2009; Babbie, 2007). Some studies combine two or all of these purposes, and some change over time (Saunders et al. 2009).

An exploratory study is suitable when the researcher wants to clarify a subject. When the researcher wants to investigate occurrences about found facts, or desires to gain new insights (Saunders et al., 2009). Exploratory studies are appropriate for three purposes: 1.) gain better understanding of a problem, 2.) test the feasibility of a study, and 3.) develop methods that can be employed in any subsequent study (Babbie, 2007).

There are three different ways of performing exploratory research: 1.) literature research, 2.) interviewing experts, and 3.) focus group interviews (Saunders et al., 2009).

The reason for a descriptive research is to observe and consequently describe what has been observed (Babbie, 2007). The objective of descriptive research is "to portray an accurate profile of persons, events or situations" (Saunders et al., 2009). Descriptive studies answer research questions that start with 'how', 'what', 'when' and 'where'. Explanatory studies explain phenomena, by answering why questions (Babbie, 2007). The emphasis of these studies are to explain the relationship between two, or more, variables (Saunders et al., 2009).

This study has an exploratory and descriptive nature.

First, to explore via literature research; the subjects of venture management teams, leadership roles, their tasks, and capabilities. Second, to investigate corporate and independent ventures via questions and to formulate their main tasks in the growth phase of their venture. Finally, this study tries to explain the applied leadership roles and capabilities necessary to adequately fulfill venture management tasks in the growth phase.

3.2 Research Approach

In the methodology literature there are three distinguished types of research approaches: Experimental designs, quantitative methods, and qualitative methods (Saunders et al., 2009; Babbie, 2007; Nardi, 2006).

Experiments are used to study causal relations (Saunders et al., 2009; Babbie, 2007). Qualitative methods are appropriate to study attitudes and/or behaviors best understood in their natural environment (Babbie, 2007). It explores new topics by entering the environment in which people carry out their lives (Nardi, 2006). Qualitative methods generate non-numerical data (Saunders et al., 2009). Quantitive methods do generate numerical data, which are gathered from surveys (Saunders et al., 2007). Researchers may choose one and its corresponding analysis procedure (mono method) or more than one data collection technique and analysis procedures (multiple methods) (Saunders et al., 2009).

Because of the exploratory and descriptive focus of this research, the aim is to investigate, which kind of leadership roles and capabilities are used to fulfill the main tasks of venture management teams in their growth phase. Qualitative research is the most appropriate for this study. Nonetheless, quantitive research will be used as well to reinforce the data gathered from the qualitative research, and to understand whether the researched capabilities have some influence on the perceived success of a venture.

3.3 Research Design

The main question in this study can best be typified by "how". Yin (2003) points out; there are several research strategies suited to answer "how" questions, amongst through case studies. This research is centered on what would work best in practice and subsequently apply the knowledge within a defined setting.

3.4.1 Case Study Research

Case study research is a study to identify the real life context via a single case study or by means of a small number of cases called comparative case study, specifically when the boundaries between phenomenon and context are not clearly evident (Dul & Hak, 2008). This broad definition clearly describes the exploratory nature of this particular type of research. This thesis accomplish a comparative case study in which multiple cases are investigated to achieve replication of a single type of incident in different settings and to compare and contrast different cases (Yin, 2003; Dul & Hak, 2008).

3.4.2 Unit of Analysis

According to Yin (2003) the unit of analysis is the basis for the case. It determines, which individual, event, organization, team, or department within the organization needs to be studied in order to answer the research question. Hence the unit of analysis is related to the research question or to that of the research proposal. The unit of analysis of this study is the accomplishment of venture management teams in their growth phase.

3.4.3 Case Selection

The selection of cases is not randomly. The objective is to select cases which likely extend the problem definition, whilst controlling environmental varia-

tions. This research is specifically focussed on corporate and independent ventures in their growth phase.

The initial idea for this research was to benchmark Philip's way of venturing against that of other corporations such as DSM, Unilever, GSK, BASF, Novartis, Nokia, IBM, Siemens and Johnson & Johnson. Though, after some meetings with other corporate venturing units it became clear that their venturing styles were too different from the ones applied at Philips. Philip's Incubators are focused on building ventures from scratch, whereas the other corporations' strategy is focussed on direct or indirectly participating investment in existing external ventures.

As result of various discussions with Warden Hoffman (HR Manager, Philips Incubators) and Stephen Seuntjens (Advisor to the Healthcare Incubator), it was agreed that the cases should be both corporate and independent ventures with exceptional achievement during their birth phase. On this basis five ventures were selected:

1. Digital Pathology (Pathology / Health Care)
2. Shapeways (3D printing / WebShop / Social Media)
3. Civolution (Informatics / Watermarking & Fingerprinting)
4. Rabo Mobiel (Telecom / Mobile Banking)
5. VIROBUSTER (Medical / Air purification)

These ventures are active in different industries, important for this research in order to achieve a universal conclusion.

To establish appointments for interviews all companies were personally contacted and informed about the objectives and the research purpose. Participating companies were cooperative and did not mind to be named for this thesis. All ventures, except Shapeways (New York), are located in the Netherlands, and

visited personally for the interviews and data collection. The informants were the CEOs of the ventures, with exception for Digital Pathology where also other venture managers were interviewed. Consequently the leadership role characteristics represent the views from the CEOs.

3.4.4 Validity Criteria

Any research has to be validated, in relation to "goodness" and "accuracy" with regard to the applied methods and data gathered on which the analysis is based. To certify its quality, four validities are applied to test empirical research (Yin, 2003). The quality of this thesis is assessed by four validities:

1.) Construct validity: establishing correct operational measures for the concepts being studied. 2.) Internal validity: establishing a causal relationship, in which the conditions are stated that lead to other conditions (this is for explanatory or causal studies only, and does not apply for descriptive or exploratory studies). 3.) External validity: establishing the domain to which a study's findings can be generalized, and 4.) Reliability: demonstrating the repeatability of the study, i.e. data collection procedures, can be repeated with the same results (Yin, 2003).

The validities are tested by examining the case study strategies. Below, in Table 2 the strategies are outlined while some are applicable for this research.

Table 2: Strategies to increase quality

Validity test	*Strategy*	*Application*
Construct Validity	Use multiple sources	Partly, interview (questionnaire and semi-structured interview)
	Establish chain of evidence	Yes
	Review draft case study	Yes
Internal Validity	Pattern-Matching	Not applicable

Validity test	*Strategy*	*Application*
	Explanation building	Not applicable
	Address rival explanation	Not applicable
	Use logic models	Not applicable
External Validity	Use replication in multiple case studies	Yes
Reliability	Use case study protocol	Yes
	Use case study database	Yes

3.5 Data Collection Methods

This study explores leadership roles and capabilities required to enable venture management teams to successfully run the venture in the growth phase. It also investigates the differences and/or similarities in the impact of these capabilities in the various case studies. This require a solid basis to compare the different groups. For that reason, this study aspires to apply a combination of several methods to improve the validity by applying semi-structured interviews and questionnaires. Researchers who employ case study research often make use of multiple data collection methods (Dul & Hak, 2008). Many perceive case study research and qualitative research as similar terms (Yin, 2003). However, a case study research per definition does not mean an exclusive use of qualitative methods. A combination of qualitative and quantitative methods is in fact more desirable. Sometimes empirical evidence can support a qualitative understanding.

A semi-structured interview is used to collect information on the tasks of venture management teams in their growth phase added with the support of capabilities for completion. From this information the researcher is able to uncover the essence and contribution of each capability during the growth phase of ventures. The questionnaire served to better compare the collected data.

3.5.1 Preparation for Data Collection

In preparation of the in-depth interviews a series of pre-interviews were held with ventures at Philips (see Table 3 below). Necessary to validate the list of capabilities gathered from the literature study. As shown in Table 2. Venture Managers were asked which capabilities in their opinion are important during the development/growth phase. If other capabilities were mentioned that were not on the list, these were researched in the literature. Chapter 2.4 offers the definitions of all capabilities involved.

Table 3: Ventures interviewed in the Pre-Interview session

Firm	*Sector*	*Phase(s) of Development*	*Date Interview*
Digital Pathology	Healthcare	Birth / Growth	7/12/2010
CareServant	Lifestyle / Healthcare	Mature Business	8/12/2010
Handheld Diagnostics	Healthcare	Birth	13/12/2010
Helio Hub	Lifestyle	Birth	14/12/2010

Comprehensive interview preparation is vital in order to obtain noteworthy data. It is important the interviewer has insight in the subject matter, with a well-defined vision about the objectives to be achieved. At the start the interviewee is amply briefed about the objective and purpose of the research, to understand his contribution for the investigation. All interviews were recorded for later reference with interviewee's consent. After the interview the questionnaire was provided to the interviewee. Results and data were eventually stored in a computer.

3.5.2 Interview Procedure

As mentioned above, Yin (2003) states; evidence can be acquired through several sources. The collection of data was performed through interviews, in combination with a semi-structured interview via a questionnaire. To acquire both qualitative data, through the interviews, and quantitative data, through the questionnaire. The interviewee first was asked to tell about his entrepreneurial past and to speak about the venture's start-up process. The second part covered the questions to explain the three most important tasks necessary for the venture in their growth phase. Continued with questions about the required capabilities to assure successful achievement. Since capabilities are personified, they were asked whether consulting specialist were hired or employees were selected or trained to fulfill the required job. The third part of the interview concerned the response on the questionnaire. The questionnaire was structured to acquire data via agree or disagree responses, about the importance of capabilities -obtained from the literature study- and whether those were applied during the birth and growth phases of the venture.

The questionnaire structured on the 5 point Likert scale. As this scale sufficiently provides adequate differentiation between low and high scores for the respective questions. In general the Likert scale yields better interpretable results. Dawes (2008) states that a Likert scale with more than five points scale is not necessarily giving better results. Because of time restriction the questionnaire was filled out by the interviewee at the end of the session, with the topic still fresh in mind. All respondents filled-out the same questionnaire, the results are listed in Appendix 2.

3.6 Data Analyses

Data analyses comprise examining, categorizing, tabulating, testing, or recombining qualitative and quantitative findings in order to test propositions to answer the research question (Yin, 2003).

3.5.1 Qualitative analysis

From the recorded interviews a summary was made, highlighting the important elements. An open data analysis methodology is applied for the qualitative part of the study. A thematic methodology is applied to uncover integrate concepts, embedded in the interviews (Rubin & Rubin, 1995). The data are thematically structured in accordance with the tasks, and respective capabilities, that the managers talked about during the interviews.

The data analysis is a cross-case analysis. In-depth case description of all five ventures were defined, to consecutively understand their growth phase situation. As a cross-case analysis allows the understanding of differences and similarities between the cases. Eisenhardt (1989) argues that cross-case analysis should preferably be used to search patterns. The whole idea is to structure diverse lenses for data observation gathered from the cases. To achieve an accurate and more reliable outcome. Cross-case analysis enable confronting and comparing case findings from all participants (Miles & Huberman, 1994). These findings are compared and argued.

The main focus of this study is to analyze which capabilities and leadership roles are used by venture managers, sequentially to fulfill specific tasks during the growth phase, to make it possible to shift into maturity.

3.5.2 Quantitative Analysis

In quantitative part of this study, SPSS is applied to refine statistically the capabilities most significant to perceive a successful transition of a venture. All correlated capabilities that contributed to the success of the venture were listed. Correlation is chosen because it is desirable to measure the causal relation between the variables. The Linear correlation demonstrates the strength of relationship between dependent and independent variable. The value of *Pearson's r* can be interpreted as follow: A *r* nearly zero or zero, implies there is little or no relationship between y (dependent variable) and x (independent variable). A *r*

closer to -1 or 1 implies that there is strong linear relation between y and x. A positive value for r means that y value increases as x value increases. Negative value for r means that y value decreases as x value increases.

Note; causal relationship does not mean causality. It is possible that an increase or decrease in value of y (Perceived Success) may be caused by some other factor apart from x (Capabilities). Hence, it is prudent to conclude when high sample correlation is found, it also could mean the existence of a linear trend between x and y (McClave, Benson, Sincich, 1998).

In this study the independent variables are the capabilities and the dependent variable, which is the success rate the venture managers gave their venture. From the correlation analysis the capabilities with a strong correlation with perceived success are selected.

Subsequently a linear regression analyses is made to find the significance level of each of the strongest capabilities that impact the perceived success rate. Regression analysis is a procedure to estimate the value of dependent variable on the base of independent variable(s) (Kinney, 2002). As an example: What will be the sales quota of product A when commercial activity is undertaken? This is a simple linear regression, where sales of product (y) is the dependent variable and commercial success is the independent variable (x). In this thesis more than one independent variable is used to estimate the impact on the dependent variable. With this study the following question will be answered: "What is the effect of different capabilities on the perceived success rate of a venture?"

This is an example of multiple regression to see whether more than one independent variable affects perceived success. The relationship between the dependent and the independent variables is revealed in the regression analysis.

4. Case Studies

There are many factors that have to be taken into account for a venture to obtain and sustain rapid growth. This chapter describes the five ventures that were investigated (Table 4). A short description of the venture's activities will be outlined, thereafter a short description of the interviewee will be sketch, subsequently their major tasks in the growth phase will be described. Each case will be concluded with a table delineating which capabilities are used for the given tasks.

Table 4: Interviewed ventures and status

Venture	*Status*	*Interviewed*
Digital Pathology	Corporate Venture	CEO, CMO, COO, Q&R
Shapeways	Spin-out (Philips)	CEO
Civolution	Spin-out (Philips)	CEO
Rabo Mobiel	Independent	CEO
Virobuster	Independent	CEO

Each case study has a short intro related to activities, and its management.

4.1 Digital Pathology

Digital Pathology is a venture of Philips Electronics N.V., that was initiated in 2006, when Bob van Gemen (General Manager, GM) approached Philips with the idea of Digital Pathology, asking whether Philips was interested in financing and supporting his concept. Philips was interested, because one year earlier Philips Research started an investigation and research on this same subject. Therefore, this is qualified as a technology push, since Philips already was active in this field. Bob van Gemen said; 'starting a venture within Philips com-

pared to independently is simple'. "It just required a good idea (at the right time) and an explanation about its sensibility for starting a business with it." The product's idea originated from Bob's prior experience via his network in the medical field. The feasibility studies started right after the venture was initiated at Philips, and took eight months. The initial idea changed completely after Bob and his team undertook several studies: a market research, a market analysis, collecting insight knowledge, looking at concepts, and investigating potential solutions. Eight months later a preliminary market business plan was ready.

The first person Bob hired was a strategic marketeer, Guido du Pree, who had no prior knowledge of the medical devices industry, but knew to make a good market research and plan. Guido is now Marketing & Sales Manager, all marketing and sales people report to him. The second person Bob hired was Hans van Wijngaarden. Hans' task is to manage the Operations side of the venture. This includes: making realistic assumptions on development, on technology and manufacturability of their solutions. Hans had neither prior knowledge of the medical devices industry, as he came from the DVD/CD player division from Philips. The third person Bob hired was Dirk Vossen, his task is preparation and control of the Quality & Regulatory process of the product. Dirk has no prior knowledge of Q&R, he came from the research group within Philips. Both Guido and Hans have had prior working experience in ventures, but in different industries.

Bob van Gemen's venture, 'Philips Digital Pathology', develops, manufactures and sells solutions that digitize the pathology lab. Solutions consist of ultra fast scanners for histology slides, PACS software and CAD/CDS software for analysis of histology images.

The interviewees were asked to name their three main tasks of highest importance in the period towards growth. Below these tasks are listed as expressed by GM Bob van Gemen. Bob said that his accumulated capabilities did not influence these tasks, as his "job more or less is done, by defining these tasks. What I do

now is preparing the organization to perform these tasks. I see my job as getting the right people on board, to get the right capabilities and personalities in this venture."

Increase Sales: It is the goal of every venture to increase its sales, as this is the principal driver for growth. In Bob's case it is all about boosting the number of installations in both clinical and research institutes. Bob's duty is to hire the right Sales leaders whom are able to drive and motivate a team to new heights. Having sales people who have a vast network in the clinical and diagnostic industry is an advantage, even better added with social ties that provide legitimacy in the eyes of important customers, this attributes to multiplication of the number of installations. For Bob is it important that sales managers do have the right mind-set and skills to manage a team.

Building Organization to meet Sales: Getting people on board is not difficult, the hard part is getting the right people and placing them on the right seat. In Bob's case a staffing plan was already outlined in the initial stages of the venture, this staffing plan was executed by the managers and Bob together. Bob uses his venture and business experience to know which kind of staff to hire. None of the managers hired by Bob did have prior venturing or industrial experience, if they have the "right mind-set" they can learn this quickly, as is the case with Hans, Guido, and Dirk. It is important that "at the start of the growth everything and everyone has to be in place, because the moment sales start to take-off, all action within the company has to comply, which is R&D, manufacturing, sales, after-sales, and so forth. At that moment you need all these types of expertise on board." Flexibility is important at growth phase, for example a sales person must work together with someone from development and vice-versa. Flexibility is needed in order to fill gaps for an X-period of time until someone else is hired to do that job.

Building an organization consists of two tasks:

1. Selecting the right people, with the right mindset, i.e. being flexible.

2. Team building, to make sure people function as a team, and create a strong culture. "As the coach of a football team, they are all individuals, but they have to work together as a team. And making that happen, stimulating, and to motivate them in that direction, is an important task of the management team of the company." One of the core capabilities of the managers is the ability to manage teams, if they do not correctly, then hire someone else who does have that capability, because this is key in being successful.

Clinical Approval: The process of obtaining clinical approval has been important from day one of the venture, as every production process has to comply with several different regulatory rules. Clinical approval is needed for the organization to being able to sell the products to clinical institutes, i.e. hospitals. Consultants are hired in different countries to advise the organization with the best approach for approval. Prior knowledge of this process is helpful as it quickens the procedure, enabling the firm to sell its products earlier. As Bob encountered that no one within Philips had experience in Q&R, he hired Dirk because of his willingness to learn all ins and outs on Q&R.

What makes a venture successful in the growth phase? Bob's opinion is the team and its resources, i.e. capital. Though, one should not neglect the birth phase, when all preparations are made the core for either success or failure during the growth phase. The most horrible mistakes, are the ones made in the beginning. Being well-prepared is half the work later on. "The first phase is more important for growth than we are now in. Now its just execution, it is clear what has to be done, its no rocket science anymore, now it's really hard work."

Hans van Wijngaarden number two interviewed at Digital Pathology. He is responsible for all operational activities, which includes development, manufacturing, purchase, research and logistics. He manage these tasks due to his 30 years experience in this field at Philips. In the interview he underlined the notion that structure at this phase is critical, without that, ventures will fail. The three main tasks he handles in this phase, are:

Stable product range: When products are produced in great volume a venture is doomed if quality is not maintained. It is the task of the development and production team to work together in order to come up with the right and simplest solutions avoiding production process interruptions. This can be done by writing a concise manual for all phases of production, to achieve constant quality for each unit. It also is important to move away from creativeness and stick to operational procedures, smoothening the production process, and standardization of communications, also to important stakeholders.

Good service organization: A service team with experience in the medical and technological field is important, it is their task to know first hand client's requirements. A specialized team having frequent contact with customers knowing all ins and outs of the product and application, makes it possible for the team to directly respond to needs and requirements of each customer. A strong leader is required to structure his team and standardize procedures.

Predictable production output: Predicting an event is difficult. But it is important to make a realistic judgment concerning production time for a certain number products. Having a steady product flow makes manufacturing time more predictable.

What makes a venture successful in the growth phase? Hans opinion is; 'structure and consciousness in the venture. The organization has to move away from being creative and innovative, which was needed in the birth phase. Now things have to be structured and standardized in order not to become entangled in the next phases as large orders and higher production rates become more frequent.

The third interview at Digital Pathology was with Dirk Vossen, who is responsible for Applications and Quality & Regulatory activities in the company. These activities include exploring new applications for future updates, constant quality checks - process- and product-wise - and gaining approval for clinical applications and trials. Before entering the venture, Dirk had work experience

at Philips Research, where he already investigated technologies for Digital Pathology. His main tasks are:

Applications: The technological platform of Digital Pathology is scanning, archiving and analysis images. In order to come up with new applications for future roll-outs, a good understanding is required about the needs and desires of pathologists. This is essential to assist the venture's decision-making concerning follow-up applications, creating future roadmap for platforms. Many interviews and continuous visits to pathologists help to establish a better insight in new possibilities and product requirements. Internal communication with the product manager is important, as means to implement the requirements from the pathologists into the product platform.

Quality Assurance: These are internal procedures that have to be ISO certified. These certifications are needed to enter the medical device market. In total the company has 40 to 50 ISO certified procedures that are continuously updated.

Regulatory: This task is of strategic nature. As both the product and market are new, the regulatory bodies as the FDA are not familiar with those devices. Much time is spent with external consultants figuring-out how to approach and work with these institutes. The objective and task is to define the road to have the product on the market earliest.

Clinical trials / approvals: This is the most important and critical task for Dirk. Clinical trials consists of testing the product in a real setting for one single application, such as breast cancer, and comparing the results with the microscope method. The focus of these trials are on the safety and efficacy of the product. It is important that this process does not take too much time, the longer it takes, the later the product can be sold.

Dirk Vossen is of the opinion that having strong relationships with suppliers and manufacturers is important for the success of the venture. Because in this

way, new technologies can be exchanged easily and therefore create new opportunities faster.

The fourth interview at Digital Pathology was with Guido du Pree, who is Marketing and Sales Manager of the venture. For him is the prime goal of the venture to generate revenue and market share.

Sales: The focus is, finding early adopters who are willing and able to pay for the new solution. By segmenting the market in accordance to number of criteria, as: size (numbers of glasses per year), location (group of hospitals), and cancer related. The Philips brand name helps to open new doors.

Support: It is important to set-up around the world complete teams for marketing and sales, installation and service & support. Guido calls this 'global clusters'. It is difficult to sell, it is harder to install, but it is hardest to have someone quick on the spot to fix a problem when something turns sour. Building a total solution not only product-wise but also team-wise. The teams must be capable to support customers efficiently, by writing a roadmap for all possible problems solving.

Control growth: At this stage of venturing a firm does not want to sell too many of its products, since not all disciplines are in place yet. Therefore a price mechanism is applied: by making the product more expensive, to discourage institutions to buy too many products at the same time.

Guido du Pree is of the opinion that internal open communication is important in making a venture succeed. Direct communication across the global clusters makes it easier to obtain relevant and on-time knowledge of the market.

Table 5: Digital Pathology's Tasks and Capabilities

Tasks	*Capabilities*	*Explanation*
Increase Sales (mentioned by Bob and Guido)	Industry Knowledge	Sales people with knowledge of the medical industry (and its users)
	Network	Sales people who have a vast network in the medical industry
	People Management	Sales leaders must have experience in managing teams
	Sales Experience	Know different sales mechanisms for new products
Building Support departments (mentioned by Bob and Guido)	Entrepreneurial and Business Experience	Allows Bob to know which people will fit best in the organization
	Inter-organizational Network	The departments within the organization have to communicate
	People Management	Experience in managing small to large teams is a plus
Clinical Approval (mentioned by Bob and Dirk)	Industry Knowledge	Have some knowledge of the clinical approval process
	Network	Able to make contacts with key people to move forwards
Stable product range	Alliances	Constant communication with key partners, explaining processes and changes
	Technical Knowledge	Use of technological knowledge find quick solutions
	Operations	Bringing standardized processes into place for manufacturing

Tasks	*Capabilities*	*Explanation*
Service Organization	Industry + Technological Knowledge	Have to know the ins and outs of the technology and of the industry in question (i.e. Medical)
	Customer knowledge	Person's that have had frequent contact with medical end-users
Applications	Exploration	Searching for new knowledge and information
	Network	Build network within the pathology community
	Inter-organizational Network	Build good communication line with product manager and product development team
Quality & Regulatory	Exploration	Exploring strategic possibilities for getting a product approval as quick as possible
	Operations	Know how to make and put procedures into place to gain ISO certification
	Industry Knowledge	Know the inside-outs of the regulatory laws and rules
Predictable Production output	Prior knowledge	Prior production knowledge in a business environment helps implementing standardized processes
	People Management	Making people understand the need of standardized processes, to increase efficiency

4.2 Shapeways

Shapeways, is the world's first 3D co-creation community, offering cost effective design via high quality 3D printing. Shapeways is redefining 'Do-It-Yourself' by connecting consumers to the latest in personalized production methods with easy to use click-and-drag product customization and advanced upload-to-print tools for seasoned 3D designers. Shapeways covers a diverse community of artists and enthusiasts engaged in everything from collaborative creation to selling their own 3D designs as end-product to end-users through the unique Shapeways Shops. An international marketplace for consumer created 3D printed products. Shapeways was a venture in the Lifestyle Incubator of Royal Philips Electronics. Which spun-out from Philips in August 2010, with the help of Venture Capital Union Square as their main investor.

Philips Design had the idea to become active with 3D printing, but it did not have the right person to lead this project forward. Current CEO, Peter Weijmarshuisen, was recruited in 2007 by the Lifestyle Incubator to run Shapeways, because of his experience in start-ups and in the internet domain. Thereafter, Robert Schouwenburg (CTO) and Marleen Vogelaar (CFO) were recruited because of their experience in the internet domain and venturing, and before worked together with Peter in other ventures.

For this case, CEO Peter Weijmarshuisen was interviewed. He said the three main tasks of a CEO are: to maintain company vision, create an inspiring environment for people to work in, and keep money in the bank. Though, for the time being his three main tasks are as follow:

Growing the community: The growth of the community is of highest importance, as more people interact with one another, the higher the chance that more products are sold. This is a task for Marketing department, of which Peter is head, next to being CEO. He directs three people in this department. Their main task is promoting the website to generate growth in the community. Peter

makes sure that everyone within the firm is familiar with his vision. Key advantages of communities are:

1. Cost of entry is low compared to traditional media and other marketing entities. Very much a "grass roots" feeling.
2. Easy access to communicate and exchange with many. Tons of touch points, combined with high degree of passion.
3. Trusted source – community members have likely experienced your challengers, or will do so shortly. The feeling you can "steal with pride" best practices and contribute to your own successes.
4. Ability to enter new markets and industries. Opportunities to network, build like-minded connections and potentially drive business development opportunities.
5. Credibility that comes with "member of" status. Make the affiliations and partnerships that make your organization seem larger and more connected. Getting published or quoted as an expert or thought-after leader is invaluable for your organization and personal brands. (Source: Lenovo blogs: '*the growing importance of communities'*)

Furthermore, it is important that each department within the company work and communicated efficiently with one another. This form of communication needs to be structured, to avoid loose ends. To not to make this a large task on its own, Peter looks for people who have the entrepreneurial personality whom have worked in a start-up before, because they are mainly people who are flexible to fulfill other tasks when needed.

Reducing costs of goods sold: This task involves all costs from producing to get the product to the end-user. These costs form Shapeways' main concern: labour, machine, material and transportation. The idea behind Shapeways is, everyone can personalize their product, facilitating a 'personalized production'. Prospective customers will not design a product to have it produced for a high

price, it must be within the price range people will pay. In the near future the focus will lie on 'Rapid manufacturing', a segment with high volume, but with low margin that reduces the end-price. Now producers are focused on 'Rapid prototyping' which consists of high margins and low revenues due to lower volume. Here is a need to apply the best practices of world class operations management for rapid manufacturing. Materialized through constant communication with factories, explaining that lower prices will increase revenue and profit through growth. But, at the moment, producers do not yet understand this concept. The goal of Shapeways is to cut costs by 50% this year.

Scaling production: This only can be achieved when the community of customers grow, this will happen if prices stay stable or decrease. Peter is of the opinion that in 2011 the concept of 3D printing will go mainstream. A way to scale production is to enlarge the network of producers around the world, but this can only be achieved through better awareness. Therefore, Peter's team is profiling 3D printing as 'simple and affordable'. Making your own design is easy, the service provided is top, while all relevant materials are included. 3D printing will change production methods as we know, local printing stations will shorten production pipelines from weeks to days, consequently new products are developed quicker.

Table 6: Shapeways's Tasks and Capabilities

Tasks	*Capabilities*	*Explanation*
Growing Community	Marketing & Sales	Have experience in marketing and selling products / services in new markets
	Entrepreneurial minded	Find new ways of approaching potential customers
Reducing costs of goods sold	Alliances	Having strong alliances with the producers will help with negotiations of prices

Tasks	*Capabilities*	*Explanation*
	Operations	Experience in finding areas where costs can be reduced
Scaling Production	Industry Knowledge	Knowing the industry will help find the right producers
	Network / Alliances	Using and scaling the network of producers is of importance (creating alliances)

4.3 Civolution

Civolution is the leading provider of technology and solutions for identifying, managing and monitoring media content. Civolution offers an extensive portfolio of cutting-edge applications for digital watermarking and fingerprinting, which enable forensic marking of media content in pre-release, digital cinema, PayTV and online. They also offer the most comprehensive broadcast monitoring and online content identification and monetization solutions to manage and facilitate profitable content distribution. These technology applications and solutions contribute to strengthen and growing video / audio circulation.

Civolution was set-up in the late 1990's, when Philips was interested in the digital television market. The tasks of the start-up team was to acquire all the patents to keep the venture against potential competitors. Civolution was pushed around through several departments within Philips, until it found a place within the Technology Incubator in 2005. At that period, Philips was undergoing a large organizational restructuring. One of their interests, digital television, faded away and gave space to their medical and lifestyle devices. In 2006 Alex Terpstra was hired as CEO of Civolution to give the venture an acceleration, as it seemed likely that the venture would eventually have to spin-out from Philips. In 2008, Civolution became financed by Prime Technology Ven-

ture. Civolution B.V. is independent and a trusted supplier to the entertainment industry to maintain control of their valuable copyrighted assets.

Alex Terpstra completed a 15 year career at Philips prior to entering Civolution in 2006 as CEO. At Philips his functions were more technology than business driven. His main tasks were testing, engineering and installing MPEG/DVB digital TV products. After working 5 years as a technician, he made the move to become more business oriented and became Product Manager (2 years) for professional Digital TV products, in Philips Digital Transmission Systems (DTS) department. In this position he gained a lot of knowledge about how organizations work. His tasks were to talk to and work together with the sales team while acting as customer relations person, to acquire and implement new ideas. Other positions: Marketing Manager for DTS department(2.5 years), Product Marketing & Sales manager (9 months), Senior Product Manager (1 year and 2 months), eventually becoming General Manager (3 years) of Philips CryptoTec, which was an independent business unit that developed, marketed and sold Pay-TV Conditional Access (security) solutions. He also was Senior Director Business Development (6 months) at Semiconductors prior to Civolution.

During the interview, Alex Terpstra pointed to four key tasks that brought the company to where they are now, with healthy growth and many recurring clients. The market they penetrate; entertainment (audio/visual), was not aware of these security possibilities. Timing was crucial in the early stages of the venture, as they had to show the importance of their products and create awareness. It took some years to let the market understand the added value of their product. Second, the acquisition and merging of Thomson's STS watermarking business also enabled Civolution to supply watermarking services to their existing clients, creating a fuller package to become the number one in this market. Third, the entrepreneurial mind of every single person in the management team and employees of the organization has enormously contributed, to react rapidly to changing conditions. Fourth, a reliable product is important, a large amount of time was spent to perfect the product. A requirement for demanding

clients (such as film studios in Hollywood). If problems occur they must be solved quickly, their technical service team is available 24/7.

Partnering: As yet, Civolution does not have its own world wide sales network. Hence, they use: Agents, to bring clients; VARS (Value added resellers) that add value to their own product; System integrators, who deal in large projects in which Civolution is a small component; and finally Distributors that sell Civolution's products to their own clients. These sales channels enable Civolution to be present in all major markets. Alex's future target is to be present on their own in every core market, (L.A. and New York) and in Asia.

People: Finding and hiring the right person for a specific job is one of the hardest tasks of the management team. Even more difficult when the company is small, each person hired is valuable to the organization, one cannot accept 'bad guys'. In each function of the organization, you need to have the right person. Every person, a venture hires has to be able to do more in the future than he or she can do today (flexibility), to let the venture grow. "Every one hired has to increase the average level of knowledge in the organization." As the environment of the organization changes rapidly it is even more difficult. The biggest challenge of the past two years was finding the right people.

The two major tasks the team of Civolution had in the past years was building a network of partners that also can sell outside their core market and finding the right people to become important contributors moving forward. Alex Terpstra finds before the process of growth starts, the venture must have organized and structured its process, otherwise once the venture grows too fast it is too late to implement procedures.

Table 7: Civolution's Tasks and Capabilities

Tasks	*Capabilities*	*Explanation*
Partnering	Network	Finding an entrusted network of sellers of your products and services
	Alliances / Sales	Create alliances with entrusted sales organization that can add value to your products for the customers
People	Network	Using the network of team members to hire the right person for a specific function
	Industry + Technological Knowledge	Add value for the organization, while avoiding wasting time
	People Management	Managing and motivating people to focus on their task

4.4 Rabo Mobiel

Rabo Mobiel is a Dutch Mobile virtual network operator. It was launched on the 15th of November 2006 into a market where at the time 50 virtual network operators were active. Rabo Mobiel runs in cooperation with its mother company Rabobank Nederland, offering postpaid & prepaid mobile telecommunications services, and mobile banking and payment services.

Rabo Mobiel focuses on mobile banking, payment functionalities and applications. This includes products as SMS alerts, mobile banking via secure SMS, mobile phone parking services, etc. Since 2006, they have been working on Near Field Communication (NFC) technologies, including trials at C1000 supermarkets, FEBO, and Coca Cola.

In July 2008, Rabo Mobiel launched Rabo SMS Betalen (Pay), a product for person-to-person and person-to-merchant payments via SMS. The product is operator- and bank-independent, and available to all customers, not only customers of Rabo Mobiel or the Rabobank.

For this specific case study, Eric Huygen, former CEO of Rabo Mobiel was interviewed. Before taking on the CEO position at Rabo Mobiel, he was Managing Director and vice Chairman of Vodafone Libertel for four years; Chief Communication Officer for Orange Nederland for three years; subsequently CEO of MobilTel EAD, which is the biggest telecommunications player in Bulgaria, for four years; in 2005 he was named CEO of Rabo Mobiel, which went life in November 2006. In between he additionally initiated several ventures / projects in the telecom industry.

Eric Huygen did not have the idea himself starting Rabo Mobiel, but someone in his network, made the connection with Rabobank and presented the idea. His contact and Rabobank wanted Eric to lead this project. First, Eric hired four consultants for the market research and feasibility study for the Dutch market, which lasted six weeks. This report was presented to the board of directors at Rabobank in Utrecht, explaining the great potential of the idea. The Board accepted the plan, and to continue with a business plan. Eric hired seven consultants to make this business plan, which took four months. He hired consultants for those tasks because he and his team did not have the capabilities and time to do these studies necessary. Eric explained that he lacked knowledge making this financial plan himself, as this is too comprehensive and complex. After the business plan was presented, a decision was made about the technology to apply. First was considered the Random Reader (Rabobank's internet banking calculator), but was dismissed, as the requirement was a mobile, and the use of mobile phones was widely accepted.

The investment for the whole project was €70 million for which investors were invited. The principal investors are, Talpa (20%), the management team (20%) and Rabobank (60%). Eric and his team made a deal with Rabobank not to have

their office near Rabobank's Head Quarters in Utrecht, to reduce HQ interference. Agreed was to report only to the chairman of the board of directors. "If that would not have happened, it (the project) would have been doomed to fail."

The management team of this venture consisted of five people (CEO, CTO, CMO, CFO and COO) all with years experience in the telecom and banking environment and all having started their own companies in these industries too. Eric selected them for his team because they all were capable learning the key facts of both industries. Developing the necessary technology, for mobile banking, was their first task. A specialized team was set up that understood both the mobile and the payment methods of the banking systems. This team did not have to build the whole system from scratch, as they used existing technologies. These had to be combined and integrated in order to make mobile banking work.

The second task, the greatest of this venture, was process defining and structuring to obtain the required operational certifications. CapGemini was hired to control the implementations of the various processes. Weekly meetings were held with all team members to explain their specific deliverables. The deliverables from each discipline within the organization were displayed on a five meter wall. Each Friday morning the whole organization met and discussed the deliverables, checking about eventual problems before final completion. Each deliverable, part of a project, totaled 27 different projects, tackled in six months.

The third task was implementation of the system in the market. Available were 1,200 Rabobank affiliates as points of sale, for which customers had to be traced and motivated, like the baker around the corner, the taxi driver, etc. to use the new service from Rabobank. This task took more time than envisioned.

The whole process, from starting the venture till it was a fully operational business unit, took less than three years. A result contributed by several different factors: the idea was supported by a large bank from day one; Eric and his

team hired experienced consultants who knew the market inside out; and the whole team worked on a tight time schedule to stay continuously updated.

Table 8: Rabo Mobiel's Tasks and Capabilities

Tasks	*Capabilities*	*Explanation*
Making the technology	Industry knowledge	Have people who have knowledge of the industries your product will be used.
	Technological knowledge	Having technical people who are able to see and use the technology to make a product work
	Network	Use current network to find the people that will help the venture move forwards
Operations	Operations	Having experience in leading large operations at a high pace
	People management	Keeping track of the employee and motivating on the essential moments
Market awareness	Industry Knowledge	Having industry knowledge allows the person to explain the pro's of the products/services to the end-user.
	Marketing & Sales	People who have experience of marketing and selling new products/ services in banking and mobile markets
	Network	Using the network of the employees to find the right people to promote the product/service

Tasks	*Capabilities*	*Explanation*
	Entrepreneurial	Having a team that is entrepreneurial is important, so that they take risks to find new ways to create awareness

4.5 Virobuster

The rising need for better hygiene in hospitals, laboratories and outpatient clinics call for innovative and sustainable solutions to contain infectious agents. This is where VIROBUSTER comes in, since it offers a new technology to enhance cleaner air, meanwhile achieved high level of acceptance and is testimonial in national and international research projects, and practical application. VIROBUSTER products are very compelling for their outstanding efficiency, its compatibility with existing hygiene measures and attractive design, enabling to fulfill even the most rigorous customer requirements.

The inventor and founder of VIROBUSTER is Herbert Silderhuis, a sequential entrepreneur with interests in developing solutions in lighting, electronics, internet and computer (Van der Steen et al., in press). He set-up quite a number of ventures in different industries, beginning with advertising by using neon lights, advancing in the computer industry by making his own personal computers, named Sirex Computers. Sirex at that time competed with giants like IBM, they became successful by offering clients three years of guarantee, the manuals were written / drawn in 'Jip and Janneke' style, i.e. "keeping it stupid simple". After a few successful years, Sirex was sold to a Private Equity company in the United Kingdom. Herbert is an advocate of the principle staying small; "then you are able to stay in control", when organizations become too big, management is more occupied in meetings, running the risk losing the touch on innovation, which in his opinion stay at the core of your business.

As result of Herbert's prior experience in different ventures, he created a feeling for what the market really wants. He accumulated ample knowledge about the functionality of each department within an organization and knows that timing to the market is crucial. He learned the latter the hard way, as it took him approximately six to seven years to get people convinced to accept that infections are caused by bacteria floating in the air, and must be killed in advance.

Herbert's first step, was to make a market analysis for which he hired consultants, as he does not want to have people on his payroll at that stage. The consultants were specialized in industries as, medical, educational institutes, food sector, etc. Industries he wanted to penetrate first, with his product. Soon was understood that the markets were not ready (2000), as the medical and food industry specifically were focussed on the transmission of bacteria via hands, clothes, rooms, etc., and one never 'thought' of air as transmitter of bacteria. The majority even denied that bacteria transmission took place via air, maybe because they thought there would not be solution to kill these in advance.

Consequently his first task was to appoint people in his team who had both the drive and the networks in these industries. The key factors of making an organization successful from its start, is to have a: "We" mentality; management by walking, i.e. walk around the working floor and constantly communicate with everyone in the organization; have a good financial, marketing, and operational persons on the team, with knowledge of the market and the technology. Herbert searched and talked to candidates, and followed his intuition whether to hire them or not. Those people had to fit in the culture of the organization, with working experience in dynamic environments. Herbert compared it with a speed boat, that changes directions quickly, whereas an oil tanker, i.e. a large corporation takes months before its course is changed. The entrepreneurial spirit of the team was an important success factor for this venture. Herbert created a culture, motivating his team to think in 'we' terms, to let them feel like an entrepreneur even though they were not, and gave them the rewards they deserved. This generated a 150% employees' commitment for VIROBUSTER.

Herbert's second task was to get at least a few organizations / institutes to test his product, becoming able to others about the true value of his product to publish the results widely. But this turned out to be harder than expected. Via the networks of his consultants and team members he came in contact with organizations in the filter industry, who had in different countries connections with institutes for trials. Once tested his product showed that the bacteria truly were killed. Proofing in practice that bacteria indeed circulated in the air. Only then, several years later, some laboratories in the Netherlands wanted to test the product and concluded that the air was 99% cleaner than before. More, 'thanks' to major bacteria infection cases in hospitals, his product became acknowledged and appraised by medical institutes. This process for market acceptance took over six years.

Table 9: Virobuster's Tasks and Capabilities

Tasks	*Capabilities*	*Explanation*
People	Network	Finding the right people for the task through your current network
	Industry knowledge	People hired should have knowledge of the industry
	Technological knowledge	People hired should have the technical and commercial ability (to explain and sell)
	Entrepreneurial	Entrepreneurial minded is of importance, to think on their own and find new ways (i.e. looking for strategic alliances)
	Intuition	Using gut feeling to make decisions of hiring the person for a job (this also comes with years of experience)

Tasks	*Capabilities*	*Explanation*
Market awareness	Network	Employees networks are important, as there is a need to find the right entrance in order to gain awareness
	Alliances	Make alliances with institutes that can create value to the product (through credibility and awareness)
	Marketing & Sales	Having knowledge of how to simplify the message so that everyone understands the product
	Technological knowledge	Explaining the key functions of the product to specialists in a simple manner is crucial to gain attention

5. Analyses

This chapter analyzes in detail the leadership roles and capabilities.

In 5.1 the leadership roles is investigated. To uncover the specific tasks of venture managers, during the growth phase, based on interviews during this study. In 5.2 each individual capability is analyzed to identify similarities and differences. The plan is via (analytical) generalization to expose the found results in a way; to identify similarities and differences, providing better insight in capabilities of venture management teams during the growth phase.

In the previous chapter, the focus was on the tasks of the venture management, and the way their capabilities contribute to fulfill those tasks. In this cross-case analyses, the data from the previous chapter is analyzed with the emphasis on tasks, Figure 5, and each capability, as depicted in Table 10 below.

5.1 Leadership roles

Specific tasks mentioned by the venture managers in the previous chapter are put in Quinn's (1988) Competing Value Framework. As explained in Chapter 2, Quinn's (1988) model is divided into four quadrants. Each quadrant is highlighted, to show the task's position and its emphasis within the investigated ventures during their growth phase.

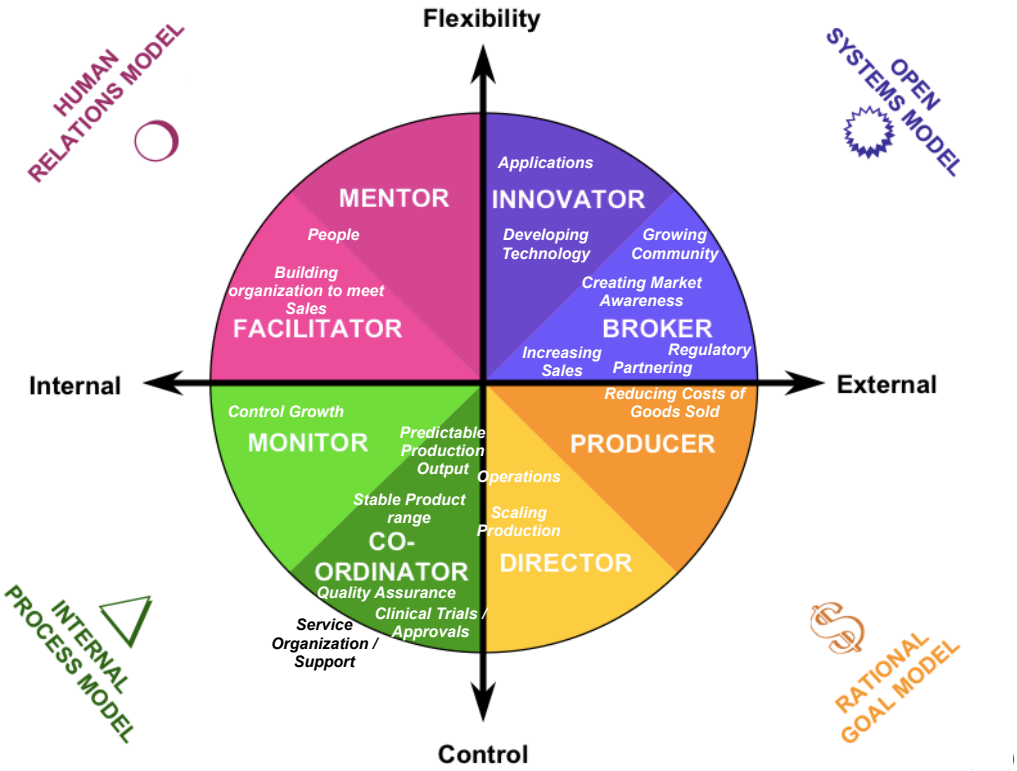

Figure 5: Venture managers specific tasks in Quinn's (1988) Competing Value Framework.

5.1.1 Open System Model

The upper right quadrant of Figure 5, represents the tasks the venture managers qualified important being completed in order to obtain growth and new resources. These tasks are outwardly directed in order to acquire positive assessment from external entities after these tasks successfully are accomplished.

Innovator: This leadership role is to explore and reflect in a creative manner about new potential ideas for products and services, to promote changes. The task mentioned by managers was 'Developing Technology' and 'Applications', where Rabo Mobiel and Digital Pathology use internal accumulated knowledge and information by their technicians, service and sales people observed at end-

users. With the purpose to create new applications to become integrated in future product roll-outs. Performing these tasks advance innovations.

Broker: Is a leadership role that constructs a power base to promote the organization to external entities, negotiate agreements, to claim concepts and commitments, in order to attain resources for growth. Partnering with strong and well established organizations generate credibility and reliability, and acquire additional knowledge. Growing a Community of experts allowed Shapeways to gain traction in the market of 3D printing generating wider acceptance and additional sales force. Familiarity with the inroads of regulation quickens the process of approval from the FDA, shortening the time to market considerably. Sales growth is important in every organization, that require experienced and well trained sales staff to increase revenue. Creating enhanced market awareness, is another crucial characteristic during the growth phase. Marketing & sales must be structured and planned in a down to business model to assure unequaled reputation.

5.1.2 Internal Process Model

The bottom left quadrant represents the tasks qualified being important by venture managers to secure stability and control. These tasks have to go together with a direct flow of information via skillful communication by each department.

Monitor: A role devoted at monitoring and managing staff, to stimulate individual, collective and organizational performance. The interviewed managers expressed this aspect, by controlling growth of the venture, when entering the market to monitor and streamline the growing production flow. Avoiding obstructions a.o. caused by accumulation of problems.

Co-ordinator: A role that co-ordinates processes, by structuring work flows across various disciplines, to assure optimal efficiency. Co-ordination and control of a foreseeable production output is necessary for a seamless production

flow and output. To avoid product failures and errors, managers co-ordinate communication procedures between development and production departments, assuring clear understandings. Quality assertion was mentioned to be an important aspect, to document and regulate production processes for maintaining high quality standards, necessary to obtain ISO certification, and radiate credibility towards external stakeholders. Medical devices made by Digital Pathology have to pass clinical trials, carried out in hospitals, to test reliability and effectiveness under real work circumstances. Important to get approval. Last but not least, the service department needs to be synchronized to meet requirements from both sales and development departments, by means of problem solving discussions and coordination.

5.1.3 Rational Goal Model

The bottom right quadrant represents the tasks according to venture managers that have influenced their profits, productivity and efficiency. These tasks have to be well-planned and organized, with a clear statement concerning the objectives the venture intents to achieve. Well-structured communication is an important medium in this achievement.

Producer: Is the role that looks after efficiency in work procedures, work environment, and deals with time, progress, delay and stress. Cost and expense reduction to avoid waste is an important aspect of this role, a lower end-price increases revenue and profitability in attracting more potential customers. The concept of efficiency requires better understanding through frequent communication with co-workers, with the objectives to smooth production flow and reduce cost. This role is narrowly tight to the Broker role, to attain better external legitimacy with stakeholders.

Director: This role deals with organization structure, vision and objectives, by coordinating procedures, and process allocations. This role is close with the coordinator role as both concern organization and control. This part of the quad-

rant capitalizes on efficiency, scale of operation, and increase in production to best meet demand.

5.1.4 Human Relations Model

The upper left quadrant represents the tasks that according to venture managers are important to maintain cohesion and morale in the team, establishing the company's culture, so that each employee knows his/her position and standing.

Facilitator, and to certain extend *Mentor*; is where managers execute, motivate, stimulate, control employees to make sure that objectives are met, both in production and sales quotas. Building teams with the right people to reduce conflicts through successful communication to secure smooth progress by getting commitment and fully 100% participation. Finally, motivating staff by letting them participate in decision-making processes is key to a successful venture.

5.2 Capabilities (Qualitative)

In Table 10 all 15 capabilities from chapter 2.4 are listed. The "X" in this table represent the capabilities that were explicitly emphasized by each of the interviewed managers and "Y" represents the capabilities that have been implicitly emphasized. Below, each capability is individually analyzed illuminating the differences and similarities between the various case studies, and compared with previous research.

Table 10: Depiction of which capabilities are used by which ventures

Capabilities	*Digital Pathology*	*Shapeways*	*Civolution*	*Rabo Mobiel*	*Virobuster*
Intuition					X

Capabilities	*Digital Pathology*	*Shapeways*	*Civolution*	*Rabo Mobiel*	*Virobuster*
Entrepreneurial Intention		X	X	X	X
Industry knowledge	X	X	X	X	X
Networking	X	X	X	X	X
Technological knowledge	X		X	X	X
Alliances	X	X	X		X
People Management	X		X	X	
Marketing & Sales	X	X	X	X	X
Operations	X	X		X	
Customer knowledge	X				
Entrepreneurial & Managerial experience	X				
Strategic flexibility					
Exploration	Y	Y	Y	Y	Y
Transformation	Y	Y	Y	Y	Y
Exploitation	Y	Y	Y	Y	Y

5.2.1 Intuition

Intuition was mentioned several times by the CEO of Virobuster in his interview. In his opinion 'Intuition' is developed during years of experience as entrepreneur in various industries. His strategies and decisions for hiring, and product development were based on his experience. The tasks most influenced on intuition was the hiring of capable sales people, and his approach to potential

markets. He recognized the approach problem in new markets, without having the required in-house expertise, consequently was the need to find the right person for that job. Moreover in his opinion; before any action, recognizing potential markets, but without the knowledge, require some intuitive judgements based on good analytical research. This also was concluded in both studies of Blume & Covin (2010) and Shapiro & Spence (1997), where they have stated that intuition is always paired with formal and analytical reasoning.

That the other interviewed managers did not mention 'intuition' as an important capability does not mean they do not use it. The contrary, they certainly use their intuitive / judgement capability, though they might not see it as an all important capability in the growth phase. As Blume & Covin (2010) state 'that intuition is specially an important capability when founding a venture.'

Intuition in the birth phase differs from that in the growth phase, namely: at birth intuition is used to identify and support the entrepreneurs' idea, as well is applied to make primary market decisions, while during growth, intuition is used, to support managers in their decision making, hiring people, and fine tuning the strategy and product development.

5.2.2 Entrepreneurial intention

Entrepreneurial intention is a capability that an individual has and it is one that motivates the person or a team of people to initiate a venture due to its desirability and feasibility (Krueger et al., 2000). The intention of starting a venture is not applicable for the growth phase of a venture, though most of the interviewed managers (Shapeways, Civolution, Rabo Mobiel, and Virobuster) have mentioned that they specifically look for and hire people with entrepreneurial aspirations, being creative, ability to work independently and keen to explore new ways to promote their product. They further mentioned that entrepreneurial people are open minded, easily gather the needed information, having the ability to look for (non obvious) alternatives, because they are quicker in recognizing new market opportunities. These statements correspond with what Fini

et al. (2010) conclude in their study, by stating 'that these organizations do benefit from this kind of people, exploring new paths to stay ahead of the competition.'

'Intention' at the birth phase is the main driver for an entrepreneur, to start a new venture because of his firm believe that his idea fills a gap in the market, to making it advantageous and feasible. However in the growth phase, 'intention' is focussed on the hiring of people, to find the best management team for the job. These candidates must have the intent -objective- to learn new skills and to apply these in the organization.

5.2.3 Industrial knowledge

Industry knowledge is identified by all venture managers as one of the most important capabilities, especially for managerial staff in sales, marketing and service. Those qualified managers allow the organizations to immediately apply expert knowledge, by instantly adding proficient value to the venture, without wasting much time. All interviewees mentioned that people with this capability are able to know and understand what customers' requirements are, to communicate these back to the development team, to better fine-tune the product before its release. Sales people with a proactive approach engage easier with their customers, while service team members are able to quickly identify customer problems and needs. All of them mentioned to call for individuals who are familiar with an industry and able to look outwards beyond the usual to identify the next standard and communicate these findings back to other department managers in the organization, to stay ahead of the competition. Delmar and Shane (2006) support this venture managers' statement in their study.

Industrial knowledge in the birth phase is essential to quantify the opportunities the entrepreneur has in mind, to get a feeling about the need of his invention in the market place. To see timely its viability, to create his market niche.

5.2.4 Networking

The importance of their own network added with that from others contributed significantly to the success of their ventures. Networks enable access into different market segments, to generate new opportunities. The right candidates are the ones with ample contacts with either end-users, producers and/or suppliers in the industry. Another important benefit is, increased credibility for the ventures, augmenting their legitimacy towards important stakeholders. It also generate new knowledge and resources for the venture, as Aldrich (1990) and Zimmerman & Zeitz (2002) concluded; 'networks enables organizations to strengthen their legitimacy towards the outside environment and attain valuable resources'. Furthermore, venture managers use their networks and that of their peers, to obtain the best human capital to fulfill specific functions and recognize new opportunities, as Sorenson (2003) stated.

Networking in the birth phase mainly consists of making the right contact with potential stakeholders, such as suppliers, producers, customers and possibly investors. Later in the development process of the venture, communication and exchange within the network grow more robust offering better results.

5.2.5 Technological Knowledge

All venture managers, except Shapeways, indicated the importance of technological knowledge. Mainly due to product development or service oriented tasks people fulfill. Hiring people with prior technological knowledge implies that ventures do not have to train them, which translates into more available time for further development of their products, by applying fresh knowledge and ideas for future roll-outs. Those people offer an immediate contribution to the venture. Venture managers have a demand for technical people with knowledge of applicable technologies, being capable developing new technologies, as Kauffman et al. (2000) and Zhang & Baden-Fuller (2010) conclude: 'these people can make the linkage with old and new technologies, and seek for better solutions'.

The CEO of Virobuster opines the greatest importance of technological knowledge of his sales people, otherwise they would not be hired. He qualified this as an important capability in order to better communicate with customers, who most of the time are of the same caliber. Facilitating sales staff to better communicate with product development team about market requirements. The CEO of Virobuster puts importance to the fact, "keep it simple stupid" to better communicate the message. Literature review showed however mainly the focus on technical ability at production side and not at external sales staff. As the CEO of Virobuster is of the opinion that more added value is obtained when also sales people do have technological knowledge.

Technological knowledge in the birth phase allows ventures to make their prototypes by applying existing technologies, or developing their own. Once a venture grows, this capability is used to fine-tune the current product range, or as in the case of Virobuster, to radiate via sales people outwards.

5.2.6 Alliances

Allying with producers (Digital Pathology and Shapeways), medical institutes (Virobuster), and sales organizations (Civolution) allow organizations to focus on growth. Digital Pathology and Shapeways do have on-going communication with their producers, while both meanwhile are positioned to obtain large orders. The quality of their products for that reason must remain constant, by minimizing errors, and consequently saving on expenses. Whenever the producers of Digital Pathology encounter a problem the development team is informed about, when the solution is found production receives a step-by-step plan to efficiently solve that problem. Digital Pathology do access the production resource base of their allied producers, which Rothaermel and Deeds (2006) agree 'as affecting a firms performance'.

Shapeways on the other hand has alliances with local producers in different countries, to minimize costs for transportation, and to reduce customer' delivery time. Their main task at this moment is to find sufficient number of pro-

spective partners, in various countries, in the field of 3D printing. Leiblein and Reuer (2004) conclude; 'having strong alliances allow an organization to expand its (foreign) sales,' as is the objective of Shapeways, meanwhile in the process reducing expenditure for end users.

Civolution has alliances with external (sales) organizations adding extra value to its final product for end-users. Civolution cooperate with external organizations to amplify sales through allied partner's networks to enlarge sales territory at no initial cost. Leiblein and Reuer (2004) concludes; 'having strong alliances allow an organization to strengthen its (foreign) sales', as is the principal of Civolution, that allow them to reach into unknown areas through networks from others.

The objective of each venture for using alliances, is basically to create more credibility and reliability in their markets. In order to create sufficient market awareness it is necessary for organizations / institutions to partner with trustworthy affiliates, to assisting with product and/or process development, and to reinforce legitimacy.

Alliances are very important for ventures. In the birth phase it is already decided whether partnering is required. If so, a search is initiated to generate close relationships culminating in contracts stipulating each others responsibilities. Once the birth stage enters into growth phase, communication between these partners continue on higher level, to comply with procedures to meet enlarged demand.

5.2.7 People Management

Three of the five ventures (Digital Pathology, Civolution and Rabo Mobiel) expressed the importance of hiring people with small team management experience. Team managers should be able to stimulate employees, and transfer venture's culture, vision and intentions into practical duties. Further to assist with H&R selections, development, stimulation, motivation and support.

This capability should be matched with at least industrial experience, enabling team managers to judge people's skills to assure certain tasks that can be performed satisfactorily. Candidates must be able to perform open communication at peer level and between departments. Which is collaborated by Jolink & Dankbaar (2010) study, where is concluded; 'the performance and competitiveness of a venture relies on the ability to build and use inter-organizational networks'. As both employee configuration and external environment constantly change Ventures implement people management systems adjusted to their environments.

People management is not required in the early birth phase of a venture, as the team consists only of a few people. Once an organization starts to grow in size, it is important that managers do have the skill to lead teams, to motivate and to convey venture's vision. The growth phase is critical in terms of people management, because this is the first move in creating a company's culture.

5.2.8 Marketing & Sales

Ventures create new products that have to be marketed, to customers unaware of their innovation. The importance of sales capabilities was identified by four of the five ventures: Digital Pathology, Civolution, Rabo Mobiel, and Virobuster. While marketing capability was only mentioned by Shapeways. However all were of the opinion that candidates should have at least some sales experience, and preferably industrial knowledge, to better identify their prospective customers, and rapidly recognizing their industrial requirements. Sales people with an entrepreneurial mind function even better in their ventures. Sales staff must be keen to understand the new product's market potential to pass on, in developing customer base. Sales candidates must have sufficient market acquaintance to quickly locate new potential end-users. Civolution employs external organizations with proven technological and industrial knowledge within established sales offices in strategic areas to perform most of their sales activity.

Shapeways is an online shop community, interested in e-marketeers to promote its services through their own web-shops. A web-shop is qualified by its ability to introduce new products to their wide ranged customer community. E-marketeers are required to attract interest from new leads in need of 3D objects.

In the birth phase individuals with specialized marketing & sales knowledge are needed to explore the markets in tracing potential customers and translate their specific needs, to better adapt the new product to the prospective customer base. While in the growth phase marketing and sales is more directed outwards to obtain maximum potential and to strike firm deals.

5.2.9 Operations

Operation comprise the integration of complex tasks to enhance its output through efficient use of its production capabilities, technology, and flow of materials. As is defined by Dutta et al. (1999) and Nath et al. (2010). Operations are crucial for large volume and high-tech production companies, to ensure that all the processes are in the right order and place, securing optimal efficiency and quality, while lowering costs and reducing production time. 'Operations' was qualified a crucial element in the development for Digital Pathology, Shapeways, and Rabo Mobiel. Digital Pathology has two production facilities to make parts and assemblage for their digital scanners, they view processes standardization as important, to increases efficiency and decrease the number of erroneous units that roll from the production band. Addressing production failures by the development team cost time to investigate both cause and remedy. Clearly important to have been solved before production starts. Shapeways' goal with operations capability is to reduce costs in the process of 3D printing. Consequently they explain and train producers to operate in the most efficient manner. This is time consuming. So far they were more focused on prototyping, implicating low volume, with high margins and low revenue. By quickening their process they will enter the market for higher volume, lower margins, larger revenue. Rabo Mobiel kept a tight schedule regarding 'going live' on time, as Rabobank (their major investor) wanted the service in the market

rather sooner than later. They hired a consultancy company to lead the operations within the set tight schedules. The operations as investigated do comply with Nath et al. (2010); 'organizations are in need of introducing efficiency in order to obtain maximum performance.'

Operations in a simple manner, for example, are performed by making prototypes, and to standardize procedures for later production runs. Those are analyzed and recorded to prevent misunderstanding. Contrary in the growth phase, operations procedures are fine tuned to meet higher production standards.

5.2.10 Customer Knowledge

Digital Pathology was the only one to express the importance of customer acquaintance or knowledge. Most likely, in their case expertise with highly specialized clients as pathologists at hospitals and clinical centers, is not easily obtained by outsiders of this branch. From day one they have maintained frequent contact with end-users to better understand their philosophy and product preferences, to better adapt the product to their needs. As Lynn, Morone, and Paulson (1996) conclude; 'for an organization to be innovative and eventually successful, it needs to have successive approximations with its end-users, by letting them try the early version of the product and give their feedback on it'.

While the other ventures mentioned as important detailed knowledge about customers' preferences. In fact they are more interested in their marketing & sales, to become informed timely about customers' industrial and technological knowledge level. Feedback from customers is only made once the product is on the market. Shapeways for example gathers its customers feedback through their forum. Civolution, Rabo Mobiel and Virobuster obtain their customer knowledge through their sales and service people, whom have both industrial and technological knowledge.

Customer knowledge is needed throughout the whole life span of a venture's organization. At the birth phase the venture will try to understand the latent problems and the potential for its solution at their prospective customers, so that their answers are integrated into their product or service. In the growth phase, customer knowledge is gathered on the basis of customers' reactions towards the new product to better understand their preferences, and subsequently are integrated in later roll-outs.

5.2.11 Entrepreneurial & Managerial Experience

Each venture manager qualified entrepreneurial experience in the birth phase of the venture as important. Entrepreneurs are more versatile they know the "bits and tricks" from inside out when starting a company. In the growth phase, entrepreneurial experience is still important, but all reported that essential parts of this knowledge is already implemented in the birth phase. They judged that their experience essentially had influenced the course of their venture, but even more what was learned over the years in industry and about technology. This complies with Stuart & Abetti (1990) who qualified this 'an important factor in the firm's performance.'

However in the growth phase all venture managers expressed the need to employ people with entrepreneurial minded-set. This does not mean they should have prior experience in setting-up ventures. What the CEO of Digital Pathology explicitly said, and other managers referred to 'in-between the lines', 'experience in setting-up and running ventures', make them better realize the kind of people they need to hire for certain tasks, and to foresee and understand future obstacles.

5.2.12 Strategic Flexibility

Strategic flexibility was not mentioned by any of the interviewed managers. They only reported that in the birth phase many results were different as was expected, mainly caused by changes in their external environment, as f.e. new

technologies, new market potential for the product, change in end-users' and clinical approval conditions, just to name a few. Though, once a venture has reached its growth phase, flexibility diminish because of the change in procedure and performance conditions (Interview: Peter Robertson). Even flexibility in the workforce is reduced in the growth phase. Compared with a large boat to check for errors with much time needed to change course. In the growth phase function, specific staff is hired to solve occurring problems as quick as possible. As the interviews were mainly held with CEO's it is difficult to tell whether Peterson's et al. (2003) study results, on the effects of CEO personalities on firm strategy, also apply to the cases of this research.

5.2.13 Exploration, Transformation & Exploitation

These dynamic capabilities serve when everyone in the venture works together to recognize, assimilate, retain and apply new accumulated knowledge. To understand precisely whether the ventures apply these capabilities it was decided to use a questionnaire with listed questions from Lichtenthaler (2009) who specifically focused on these three capabilities. Comparing the results of Lichtenthaler (2009) with the results of this study, may conclude that all ventures put greater emphasis on exploration and transformation of obtained knowledge gathered over the years by continuing communication with customers, suppliers, producers and other important stakeholders.

Exploration is used in every phase of the venture. Ventures continuously search for information: markets, customers, technologies, competitors, etc. to better understand how and where their product or service perform best, and to be different from eventual competitors.

Transformation of accumulated knowledge and information evolves primarily at the stages of product development and market penetration. This take place when ventures integrate gathered information and knowledge. To better understand the use of a new product, once it is developed and implemented in the markets.

Exploitation of accumulated knowledge and information take place in the product's production process and at the introduction of the product in the market. All useful knowledge and information that is obtained over the years, is integrated and applied in production process and used for the venture's (market) strategy.

The use of these dynamic capabilities keep the other mentioned capabilities fresh, and helps firms avoid some of the traps related to pure efficiency seeking repetition (Zahra et al., 2006). Furthermore, the organization will continue learning through the acquisition of new internal and external knowledge.

5.3 Capabilities (Quantitative)

Different analyses were applied to support the qualitative data collected from the interviews with the eight selected participants. Firstly a correlation analysis was performed to secure a better impression regarding the relationship between independent variables (capabilities) and dependent variable (perceived success). The correlation analysis (Appendix 3) illustrate an interesting correlation for Perceived Success with Alliances, Network, Marketing & Sales, Customer Knowledge, Exploration, and Transformation. These correlations are presented in table 11. Note; caution should be taken when interpreting correlations, because no indication of direction of causality is given. In the case of positive correlations, it can be concluded that perceived success goes up as alliances, network, exploration and transformation go up, although it cannot be stated that high perceived success is caused by these positive correlated capabilities.

Table 11: Correlations of the six Capabilities

	Perceived Success
Alliance	.423
Network	.424
Marketing & Sales	-.717*
Customer Knowledge	-.506
Exploration	.406
Transformation	.531

** Correlation is significant at the 0.05 level (2-tailed)*

These are the only six capabilities that have a strong correlation, both negative and positive, with perceived success. As can be seen, Marketing & Sales is the only significant variable, having a negative correlation with Perceived Success (Pearson r=-.717). This outcome can be pure coincidence due to the fact that only eight participants filled in the questionnaire, and / or might not have understood the questions correctly.

An ANOVA was carried out, using those six variables as independent variables and Perceived Success as dependent variable. The test showed no significant influence of the six chosen capabilities on the dependent variable ($F(6,7)=2.465$; $p=.452$), but it showed that about 94 percent of the data explained the outcomes of Perceived Success ($R2=.937$). This means, that six percent of the variability is still to be accounted for by other variables.

To gain better insights into those six capabilities, ANOVAS's for all of those variables (Appendix 4) were carried out separately in dependance with Perceived Success. Table 12 shows the results.

Table 12: ANOVA's of the six capabilities

	Perceived Success F-value	*R2*
Alliance	1.306	.179
Network	1.313	.179
Marketing & Sales	6.337*	.514
Customer Knowledge	2.063	.256
Exploration	1.182	.165
Transformation	2.354	.282

** F-value is significant at the 0.05 level*

The ANOVA shows whether the model, overall, results in significantly good degree of prediction of the outcome variable. It does not tell about the individual contribution of the capability. The ANOVA's showed that Marketing & Sales was the only significant variable, influencing Perceived Success ($F(1,7)=6.337$; $p=.045$).

The other ANOVA's did not produce any significant outcomes. Alliance ($F(1,7)=1.306$; $p=.297$), Network ($F(1,7)=1.313$; $p=.296$), Customer Knowledge ($F(1,7)=2.063$; $p=.201$), Exploration ($F(1,7)=1.182$; $p=.319$), Transformation ($F(1,7)=2.354$; $p=.176$).

5.4 Qualitative vs. Quantitative Results

Table 13 portrays the qualitative and quantitative results of this study. Observe; four out of the 11 capabilities from the qualitative study are supported by the quantitative results.

Table 14: Qualitative vs. Quantitative Results

Qualitative Results	*Quantitative Results*
Intuition	
Intention	
Industrial Knowledge	
Alliances	Alliances
Network	Network
Technological Knowledge	
People Management	
Operations	
Exploration	Exploration
Transformation	Transformation
Exploitation	
	Customer Knowledge
	Marketing & Sales

The quantitative analysis results show that six of the twelve capabilities (from the questionnaire) studied represent 94 percent (R2=.937) of the perceived success of a venture. The difference of the outcome of the qualitative and quantitative analyses, is explained by the fact that the questions in the questionnaire are directly related to the capabilities, whereas the results of the qualitative analysis are based on the interpretations of the researcher. One can state that four out of the six quantitative results are approximately for 50 percent correlated with the perceived success of a venture, but are not significant in this study.

5.5 Birth vs. Growth Phase

In the table below (Table 15) show the differences in capabilities and tasks during the birth and growth phase.

Table 15: Birth vs. Growth Phase - Capabilities & Tasks

Birth Phase		***Growth Phase***	
Capabilities	*Tasks*	*Capabilities*	*Tasks*
Intuition	Identify & describe opportunities	Intuition	Finding the right people
Intention	Identifying feasibility of venture and its product	Intention	Growing community; market awareness; finding the right people
Industrial Knowledge	Preliminary validation of potential customers & markets; making value proposition; product development / scaling production; creating & streamlining processes	Industrial Knowledge	Increase sales; service organization; quality & regulatory; scaling production; finding the right people; making the technology; market awareness

Birth Phase		***Growth Phase***	
Capabilities	*Tasks*	*Capabilities*	*Tasks*
Networking	Hiring talent for core team; financial contacts; customer contacts	Networking	Increase sales; building support departments; clinical approval; applications; scaling production; partnering; finding the right people; making the technology; market awareness
Technological Knowledge	Defining functional and technical aspects; product development; creating & streamlining processes	Technological Knowledge	Clinical approval; stable product range; service organization; finding the right people; making the technology; market awareness
Alliances	Scaling supply chains; building product delivery; making partner analysis	Alliances	Stable product range; reducing costs of goods sold; scaling production; partnering; market awareness

Birth Phase		***Growth Phase***	
Capabilities	*Tasks*	*Capabilities*	*Tasks*
People Management	Search the right people; staffing plans; motivate and engage employees	People Management	Increase sales; building support departments; predictable production output; finding the right people; operations processes
Marketing & Sales	Value proposition; product development; scaling marketing & sales activities	Marketing & Sales	Increase sales; growing community; partnering; market awareness
Operations	Product development; production; staffing; processes; supply chains; service organization	Operations	Stable product range; quality & regulatory; predictable production output; reducing costs of goods sold; operations processes
Customer Knowledge	Preliminary validation of potential customers & markets; making value proposition; customer trials	Customer Knowledge	Service Organization

Birth Phase		***Growth Phase***	
Capabilities	*Tasks*	*Capabilities*	*Tasks*
Entrepreneurial & Managerial Experience	Build a business model; business plan; building core team; financial & strategic scenarios; building venture platform; supply chains; product delivery / service organization	Entrepreneurial & Managerial Experience	Building support departments
Strategic Flexibility	Strategic scenarios; product development; scaling marketing & sales activities; staffing; supply chain; product delivery / service organization		
Exploration	Identify & describe (product) opportunities; search and validate customers & markets; value propositions	Exploration	Applications; quality & regulatory
Transformation	Retain gathered knowledge & information		
Exploitation	Translate and exploit gathered knowledge & information for future roll-outs		

6. Discussion

The analytical results of this research contribution, both theoretical and practical, are discussed in this chapter, by concluding the limitation and a suggestion for further research.

6.1 Conclusion

The study attempts to meet the three objectives as outlined in Chapter 1, to sequentially answer the Research Question.

- The first objective; understanding the transition of a (corporate) venture from birth into growth phase.
- The second objective; understanding the specific leadership roles that are required for the growth phase of a venture.
- The third objective; understanding the specific capabilities, venture managers require to fulfill their specific tasks.

Stinchcombe (1965) introduced the term 'liability of newness', which states that at the birth phase of an organization the risk of dying is highest and decreases once the organization is on its growth curve. The objective of a venture's growth phase is all about bridging this phenomenon. For that reason venture management team's aim is to create awareness and credibility, by promoting the viability of the organization to eventual stakeholders. This facet is complied with by the actions and roles all investigated ventures assumed.

A venture's conception starts with the birth phase and is the most critical period, for the reason that all envisioned activities have to be well described and prepared to assure success in the following phases. Where the growth phase is dedicated to implement and materialize the birth phase plan. Establishing effi-

cient sales & administration procedures and production processes. During the transition from birth to growth phase, ventures mainly hire (consultants) experts with capabilities to fulfill specific tasks. The most important tasks in the growth phase are acquiring market awareness through marketing and sales activities and to develop and apply up-to-date operations, with an ongoing communication with partners and departments leading to (mass) production.

In accordance with Quinn's (1988) model, the interviewed venture managers qualified during the growth phase as important the leadership roles of Broker and Co-ordinator. These roles enable an organization to develop its power base, by positioning itself in the envisioned market segment, adequate product design, and internal process as stabilization of production and quality control.

To achieve these objectives, venture managers hire people with the necessary capabilities to fulfill those tasks, once completed, the venture is in a position to attract market awareness and fine-tune their operations. In the qualitative part of the thesis, the managers frequently mentioned the following capabilities as important for the growth phase of a venture; technological knowledge, industrial knowledge, entrepreneurial intention, network, alliances, people management, operations, permanent exploration, and ability to transform and exploit the acquired information and knowledge. While, the results of the quantitative results indicated that the venture managers put an emphasis on the following capabilities: alliances, network, marketing & sales, customer knowledge, exploration and transformation. These capabilities represent by 94 percent (R2=.937) the perceived success of a venture .

An important factor to make a venture overcome its 'liability of newness' is the use of ample networks to generate new leads and ideas; recruit reliable staff willing to put more than 100% effort into the organization; to build a strong open culture with open communication; and last but not least, to create tight relationships with suppliers, producers and end-users. If an organization does not succeed in fulfilling these duties, most likely success is not achieved.

Understanding these characteristics of above objectives in detail, facilitate the answer to the Research Question:

How do (corporate) venture management teams use the right set of capabilities to successfully enable a venture to grow to its next phase?

Venture management teams do understand the importance of their growth phase to bridge the liability of newness with market reality, otherwise success is not achieved. Consequently the task for venture management teams are both external and internal. To create external awareness and credibility, people are hired with ample network knowledge and expertise, they must have both industrial and technological knowledge, to establish strong relationships with stakeholders. To meet growth objectives, people with operational skills, entrepreneurial drive, managerial expertise, and more than 100% personal input are the requirements for the organization. Moreover, a balance between their exploration, transformation and exploitation learnings, are essential. If too much emphasis is directed to one of those learnings, the firm's growth can be hold back. Subsequently venture managers have to fulfill all leadership roles, though focussing on fulfilling the roles of a Broker and a Co-ordinator.

6.2 Contribution

This research makes contribution to both theoretical significance and practical significance. The details of contribution are explained below.

6.2.1 Theoretical Contribution

This research provides several important contributions for theoretical significance.

First; a preliminary theoretical model is construed, which provides valuable insight in the specific capabilities and leadership roles a venture in its growth

phase require to fulfill specific tasks. This research presents as novelty in detail the importance of capabilities that ventures need to successfully fulfill specific tasks in their growth phase, valuably augmenting the literature on the subject venture growth and capabilities.

Second; the study compared ventures from different industries and backgrounds in respect of corporate spin-offs or independent start-ups, to ascertain the general conclusion that all types of -studied- ventures face comparable tasks, fulfill similar leadership roles, and use similar capabilities to accomplish their success.

6.2.2 Practical Contribution

The study also offer practical benefits. The results are applicable for both corporate and independent ventures, to be used as guidelines and warning signs concerning tasks, equally external and internal to encounter in the growth phase. Further how to proceed in finding and employing the right kind of staff to meet specific capabilities both in industrial and technical knowledge, network, alliances, customer knowledge, etc.. This study proves that ventures in the growth phase must bridge the shadowing liability of newness from the start with continued existence in maturity.

6.3 Limitations and Future Research

The limitation of this study mainly consists the lack of a greater number of respondents. Eight respondents in five different cases is too little to make a trustworthy and substantial conclusion, that spans the whole spectrum of venture types. Besides, mainly CEO's, instead of f.e. CFO's, were interviewed, which may have restricted the view on needed capabilities to accomplish the various tasks. More research exploring the influence of capabilities from other views in more ventures is certainly of interest, to test whether the outcome of this study would be different if more and different kind of managers had participated. At

least more participants will better validate and strengthen the qualitative and quantitive results to ascertain a persistent conclusion.

In this study the definition of success towards the respondents was not defined, for future research it is recommended to determine definitions of applied expressions. To become more accurate on which basis the venture managers perceived success of their venture. For example, success can based on current or future turnover, number of employees, profit, cash-flow, sustainability, etc. More to the point, a bias occurs when venture managers are questioned about their success, as very few managers will state their venture to be a failure.

What is more, this study only investigated successful ventures, a better picture may be obtained if unsuccessful ventures are researched too. So another suggestion for future research is to include failed ventures as well to investigate the differences and similarities between successful and unsuccessful ventures.

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Appendix 1 - Literature Review (Capabilities)

Study	*Capability*	*Field of Research*	*Definition*
Blume & Covin (2010)	Intuition	Entrepreneurship	*"affectively charged judgments that arise through rapid, non-conscious, and holistic associations."*
Krueger et al. (2000)	Intention	Entrepreneurship	*"perceptions of personal attractiveness, social norms, and feasibility"* vs. *"perceptions of personal desirability, feasibility, and propensity to act."*
Ucbasaran et al. (2010)	Entrepreneurial Experience	Entrepreneurship	*"business ownership experience"*
Stuart & Abetti (1990)		Entrepreneurship and Management	*"reflects the number of previous new ventures and the role played in such entrepreneurial ventures by the entrepreneur"*
Stuart & Abetti (1990)	Management Experience	Entrepreneurship and Management	*"the years of management experience of the entrepreneurial team."*
Delmar and Shane (2006)	Industry Knowledge	Newly founded ventures	*"A founding team that has industrial experience has a better understanding of what their customers wants and needs are, and how to satisfy them, because such information is only available through industry participation"*
Delmar & Shane (2006)	Networking	Entrepreneurship	*"provide the relationship and channels of communication between individuals."*
Kelley et al. (2009)	Intra-organizational Networking	Corporate Entrepreneurship	*"how people form temporary, project-specific ties for non-routine phenomena"*
George et al. (2008)	Technological Knowledge	High-tech Entrepreneurial firms in New Markets	*"a firm's level of expertise within a technological niche and the scope or the number of different technological niches in which the firm operates"*
Rothaermel & Deeds (2006)	Alliances	High-tech Ventures	*"voluntary agreements between independent firms to develop and commercialize new products, technologies or services"*

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Study	*Capability*	*Field of Research*	*Definition*
Leiblein & Reuer (2004)	Inter-firm Alliances	High-tech Entrepreneurial firms in New Markets	*"exploit its innovativeness as well as access financial resources and partners' complementary resources in order to expand"*
Patterson et al. (1997)	People Management	Personnel and Development	*"It all lies on how effective the organization can manage, develop, motivate, involve and engage its employees."*
Vorhies et al.,(2009)	Marketing & Sales	Market entry resources and capabilities	*"to support differentiation of the organizations product or service offering, this enables the firm to repeatedly deliver desired benefit bundles to its customers"*
Lichtenthaler (2009)	Exploration	Exploratory Learning	*"reconfiguring a firm's knowledge base" and "helps firms to capitalize on changing environmental conditions by creating new products and meeting the needs of emerging markets"*
Cooper and Kleinschmidt (1995, 1996)	Customer Knowledge (Service)	New product development	*"Customer knowledge is all about understanding customers' preferences, which has been identified as a key prerequisite for new product success"*
Nadkarni & Hermann (2010)	Strategic Flexibility	SME	*"ability to adapt quickly to environmental changes"*
Lichtenthaler (2009)	Transformation	Transformative Learning	*"Transformative learning links exploratory and exploitative learning, and it refers to retaining knowledge over time"*
Lichtenthaler (2009)	Exploitation	Exploitative Learning	*"exploitative learning is associated with matching knowledge and markets"*

Appendix 2 - Questionnaire

Corporate Venturing Questionnaire

You are invited to participate in our Research Study about the effects of business capabilities that ultimately influence the success of a Venture.
We highly appreciate your participation by completing this questionnaire that will take about 15 minutes from your time. The information submitted will be treated with complete confidentiality and you can be assured that none of this information in any form will be related to you as an individual. Anonymity in the final publication is assured.
Upon completion we herewith thank you for your contribution.

1. General Questions

Check the box that corresponds to your answer.

Name of Venture: _____

Your name: _____

Gender: ☐ Male ☐ Female

Age: _____

Nationality: _____

Position at the Venture: _____

2. Education

What is your degree?

☐ PhD ☐ MSc ☐ BSc ☐ High School
☐ Other:

What is your educational specialization?

☐ Technical ☐ Natural Science ☐ Social ☐ Humanities
☐ Arts ☐ Other:

Did you participate in a MBA course?

☐ Yes ☐ No

3. Work Experience

Specify the industries you have been active?

☐ Agriculture ☐ Manufacturing ☐ Oil & Gas ☐ Water Supply
☐ Construction ☐ Transport ☐ Financial ☐ Scientific
☐ Human Health ☐ Other:

How many years of business experience do you have in *large companies* (> 100 people)?

_____ years

How many years of business experience do you have in *ventures*?

_____ years

Which highest level of management have you achieved in *ventures*?

☐ No subordinates ☐ 5 -10 subordinates ☐ 10 - 20 subordinates ☐ 20 - 50 subordinates

☐ 50+ subordinates ☐ Manager ☐ Owner

For how many years?

_____ years

Which highest level of management have you achieved in *large companies* (> 100 people)?

☐ No subordinates ☐ 5 -10 subordinates ☐ 10 - 20 subordinates ☐ 20 - 50 subordinates

☐ 50+ subordinates ☐ Manager

For how many years?

_____ years

Did you acquire work experience in new ventures?

☐ Yes ☐ No

And in which positions?

_____

Did you ever start a new venture *on your own*?

☐ Yes ☐ No

Did you ever start a new venture *with a team*?

☐ Yes ☐ No

How many ventures did you start?

_____ venture(s)

In which industry(s), please specify:

☐ Agriculture ☐ Manufacturing ☐ Oil & Gas ☐ Water Supply

☐ Construction ☐ Transport ☐ Financial ☐ Scientific

☐ Human Health ☐ Other:

How many of them are still active?

_____ venture(s)

Are those related with ventures you are active in today?

☐ Yes ☐ No

4. Statements

The statements in this questionnaire make use of rating scales with 5 levels; as stated below:

1 = *strongly disagree*
2 = slightly disagree
3 = Neutral
4 = slightly agree
5 = strongly agree

Example:
You need to select the number that best describes your opinion. For example, if you were asked to rate the importance of entrepreneurial intuition in the start-up phase on such a scale, the 5 levels should be interpreted as follows:

When you think that you strongly agree with "**I consider that our actual *entrepreneurial intuition* has brought success to the start-up of the venture.**" then you need to select 5 by marking it with a "**X**".

I consider that our actual *entrepreneurial intuition* has brought success to the start-up of the venture.	1	2	3	4	**X**

Statements	Strongly disagree	Slightly disagree	Neutral	Slightly agree	Strongly agree
I consider that our actual *entrepreneurial intuition* has brought success to the start-up of the venture.	1	2	3	4	5
I consider that our actual *managerial intuition* has brought successful growth to our venture.	1	2	3	4	5
I consider that our *entrepreneurial intentions* have brought success to the start-up of the venture.	1	2	3	4	5
Good preparations were helpful to make the venture successful during its *start-up phase*.	1	2	3	4	5
Advanced market study contributed to the start-up phase considerably.	1	2	3	4	5
Advanced preparations were helpful to make the venture successfully grow fast.	1	2	3	4	5
Feasibility studies contributed to encourage the initial team with the start-up of this venture.	1	2	3	4	5
I consider our network has positively influenced the start-up of this venture.	1	2	3	4	5
I consider our experience in starting new ventures in the past contributed to this venture in its *start-up phase*.	1	2	3	4	5
I consider our experience in venturing has made this venture grow at a high rate.	1	2	3	4	5
I consider my experience in different jobs at ventures contributed to the success during start-up of this venture.	1	2	3	4	5
I consider my experience in different jobs at ventures contributed to the growth of this venture.	1	2	3	4	5
I consider our management experience and skills contributed to the success of this venture.	1	2	3	4	5
I consider our experience in this industry brought better application knowledge concerning our technology.	1	2	3	4	5

Statements	Strongly disagree	Slightly disagree	Neutral	Slightly agree	Strongly agree
I consider the contracts made with other companies / institutions contributed to the *start-up phase*.	1	2	3	4	5
I consider the contracts made with other companies / institutions contributed to the *growth of this venture*.	1	2	3	4	5
I consider our network with other *entrepreneurs* contributed making this venture a success.	1	2	3	4	5
I consider our network with *Venture Capitalists* contributed making this venture a success.	1	2	3	4	5
I consider our network with *industry specific people* contributed to the success of this venture.	1	2	3	4	5
I consider our network with *managers in mature businesses* contributed to the growth of this venture.	1	2	3	4	5
I consider any kind of *formal* network do assist ventures through the phases of development.	1	2	3	4	5
I consider any kind of *informal* network do assist ventures through the phases of development.	1	2	3	4	5
I consider my colleagues and subordinates sufficient flexible in accepting new directions and strategies.	1	2	3	4	5
I am of the opinion that because of our technological know-how we can change strategy without losing momentum.	1	2	3	4	5
Strategic *inflexibility* has actually impeded the growth of the venture.	1	2	3	4	5
I feel comfortable to delegate work to my subordinates, due to their competence.	1	2	3	4	5
I prefer to delegate to individuals.	1	2	3	4	5
I prefer to delegate to a group.	1	2	3	4	5
I collect information from internal sources.	1	2	3	4	5
I collect information from external sources.	1	2	3	4	5
I trust information collected by my colleagues and subordinates.	1	2	3	4	5
Our sales team in the *start-up phase* explores potential customers.	1	2	3	4	5
Our sales team continues exploring for potential customers.	1	2	3	4	5
Our sales team *consults with customers* about product features.	1	2	3	4	5
Our Service manager has several *years of experience in this industry*.	1	2	3	4	5
Our Service manager has *work experience in different industries*.	1	2	3	4	5
Our marketing team has many years of experience in this industry.	1	2	3	4	5
Our sales team has many years of experience in this industry.	1	2	3	4	5
Our marketing team has experience in the promotion of new products / services.	1	2	3	4	5

4 out of 6

Statements	Strongly disagree	Slightly disagree	Neutral	Slightly agree	Strongly agree
Our sales team has experience in the sales of new products / services.	1	2	3	4	5
Our sales team has experience in exploring new markets.	1	2	3	4	5
Our marketing team continues with market research for alternative potentials.	1	2	3	4	5
Our marketing manager obtained experience in mature businesses.	1	2	3	4	5
Our sales manager obtained experience in mature businesses.	1	2	3	4	5
We frequently scan the environment for new technologies.	1	2	3	4	5
We thoroughly observe technological trends.	1	2	3	4	5
We observe in detail external sources of new technologies.	1	2	3	4	5
We thoroughly collect industry information.	1	2	3	4	5
We have information on the state-of-the-art of external technologies.	1	2	3	4	5
We frequently acquire technologies from external sources.	1	2	3	4	5
We periodically organize special meetings with external partners to acquire new technologies.	1	2	3	4	5
Employees regularly approach external institutions to acquire technological knowledge.	1	2	3	4	5
We often transfer technological knowledge to our firm in response to technology acquisition opportunities.	1	2	3	4	5
We thoroughly maintain relevant knowledge over time.	1	2	3	4	5
Employees store technological knowledge for future reference.	1	2	3	4	5
We communicate relevant knowledge across the units of our firm.	1	2	3	4	5
Knowledge management is functioning well in our company.	1	2	3	4	5
When recognizing a business opportunity, we can quickly rely on our existing knowledge.	1	2	3	4	5
We are proficient in reactivating existing knowledge for new uses.	1	2	3	4	5
We quickly analyze and interpret changing market demands for our technologies.	1	2	3	4	5
New opportunities to serve our customers with existing technologies are quickly understood.	1	2	3	4	5
We are proficient in transforming technological knowledge into new products.	1	2	3	4	5
We regularly match new technologies with ideas for new products.	1	2	3	4	5
We quickly recognize the usefulness of new technological knowledge for existing knowledge.	1	2	3	4	5
Our employees are capable of sharing their expertise to develop new products.	1	2	3	4	5

Statements	Strongly disagree	Slightly disagree	Neutral	Slightly agree	Strongly agree
We regularly apply technologies in new products.	1	2	3	4	5
We constantly consider how to better exploit technologies.	1	2	3	4	5
We easily implement technologies in new products.	1	2	3	4	5
It is well known who can best exploit new technologies inside our firm.	1	2	3	4	5

Final question:

Please indicate the success of your venture on below scale, 1 – 10. In which 10 represents very successful.

1 2 3 4 5 6 7 8 9 10

We herewith express our sincere gratitude for your highly appreciated contribution to this research project, and wish you all the success with your venture.

Have a nice day.

Appendix 3 - Correlation analysis

Correlations

		Intuition	Intention	Experience	Alliances	Network	StrategicFlex	Leadership	CustomerKnowledge	MarketingSales	Exploration	Transformation	Exploitation	SUCCESS
Intuition	Pearson Correlation	1	.701	.605	.324	.215	-.282	-.147	-.288	.544	.420	.099	.717*	-.169
	Sig. (2-tailed)		.053	.112	.434	.609	.499	.728	.489	.164	.300	.815	.045	.689
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Intention	Pearson Correlation	.701	1	.132	.130	.316	.172	-.361	-.544	.214	.335	.004	.512	-.210
	Sig. (2-tailed)	.053		.755	.759	.446	.684	.380	.163	.611	.418	.993	.195	.617
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Experience	Pearson Correlation	.605	.132	1	.121	.232	-.061	.223	.321	.259	.026	.150	.144	-.037
	Sig. (2-tailed)	.112	.755		.776	.580	.886	.596	.438	.536	.951	.723	.733	.932
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Alliances	Pearson Correlation	.324	.130	.121	1	.369	.025	.195	-.212	.227	.565	.666	.025	.423
	Sig. (2-tailed)	.434	.759	.776		.369	.953	.644	.614	.589	.145	.071	.952	.297
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Network	Pearson Correlation	.215	.316	.232	.369	1	.545	.404	-.357	-.319	.788*	.817*	.275	.424
	Sig. (2-tailed)	.609	.446	.580	.369		.163	.321	.385	.441	.020	.013	.511	.296
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
StrategicFlex	Pearson Correlation	-.282	.172	-.061	.025	.545	1	.318	.119	-.374	.090	.494	-.369	.048
	Sig. (2-tailed)	.499	.684	.886	.953	.163		.443	.780	.362	.832	.214	.368	.911
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Leadership	Pearson Correlation	-.147	-.361	.223	.195	.404	.318	1	.582	.272	.245	.495	-.079	-.207
	Sig. (2-tailed)	.728	.380	.596	.644	.321	.443		.130	.514	.558	.212	.853	.622
	N	8	8	8	8	8	8	8	8	8	8	8	8	8

Correlations

		Intuition	Intention	Experience	Alliances	Network	StrategicFlex	Leadership	CustomerKnowledge	MarketingSales	Exploration	Transformation	Exploitation	SUCCESS
Intuition	Pearson Correlation	1	.701	.605	.324	.215	-.282	-.147	-.288	.544	.420	.099	.717*	-.169
	Sig. (2-tailed)		.053	.112	.434	.609	.499	.728	.489	.164	.300	.815	.045	.689
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
CustomerKnowledge	Pearson Correlation	-.288	-.544	.321	-.212	-.357	.119	.582	1	.364	-.594	-.172	-.507	-.506
	Sig. (2-tailed)	.489	.163	.438	.614	.385	.780	.130		.375	.120	.683	.200	.201
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
MarketingSales	Pearson Correlation	.544	.214	.259	.227	-.319	-.374	.272	.364	1	-.026	-.198	.341	-.717*
	Sig. (2-tailed)	.164	.611	.536	.589	.441	.362	.514	.375		.951	.639	.408	.045
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Exploration	Pearson Correlation	.420	.335	.026	.565	.788*	.090	.245	-.594	-.026	1	.767*	.643	.406
	Sig. (2-tailed)	.300	.418	.951	.145	.020	.832	.558	.120	.951		.026	.085	.319
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Transformation	Pearson Correlation	.099	.004	.150	.666	.817*	.494	.495	-.172	-.198	.767*	1	.102	.531
	Sig. (2-tailed)	.815	.993	.723	.071	.013	.214	.212	.683	.639	.026		.810	.176
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Exploitation	Pearson Correlation	.717*	.512	.144	.025	.275	-.369	-.079	-.507	.341	.643	.102	1	-.146
	Sig. (2-tailed)	.045	.195	.733	.952	.511	.368	.853	.200	.408	.085	.810		.730
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
SUCCESS	Pearson Correlation	-.169	-.210	-.037	.423	.424	.048	-.207	-.506	-.717*	.406	.531	-.146	1
	Sig. (2-tailed)	.689	.617	.932	.297	.296	.911	.622	.201	.045	.319	.176	.730	
	N	8	8	8	8	8	8	8	8	8	8	8	8	8

*. Correlation is significant at the 0.05 level (2-tailed).

Appendix 4 - Individual ANOVA's

Alliances

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.423[a]	.179	.042	.69215

a. Predictors: (Constant), Alliances

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.626	1	.626	1.306	.297[a]
	Residual	2.874	6	.479		
	Total	3.500	7			

a. Predictors: (Constant), Alliances

b. Dependent Variable: SUCCESS

Network

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.424[a]	.179	.043	.69183

a. Predictors: (Constant), Network

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.628	1	.628	1.313	.296[a]
	Residual	2.872	6	.479		
	Total	3.500	7			

a. Predictors: (Constant), Network

b. Dependent Variable: SUCCESS

Marketing & Sales

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.717[a]	.514	.433	.53262

a. Predictors: (Constant), MarketingSales

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.798	1	1.798	6.337	.045[a]
	Residual	1.702	6	.284		
	Total	3.500	7			

a. Predictors: (Constant), MarketingSales

b. Dependent Variable: SUCCESS

Customer Knowledge

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.506[a]	.256	.132	.65884

a. Predictors: (Constant), CustomerKnowledge

b. Dependent Variable: SUCCESS

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.896	1	.896	2.063	.201[a]
	Residual	2.604	6	.434		
	Total	3.500	7			

a. Predictors: (Constant), CustomerKnowledge

b. Dependent Variable: SUCCESS

Exploration

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.406[a]	.165	.025	.69809

a. Predictors: (Constant), Exploration

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.576	1	.576	1.182	.319[a]
	Residual	2.924	6	.487		
	Total	3.500	7			

a. Predictors: (Constant), Exploration

b. Dependent Variable: SUCCESS

Transformation

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.531[a]	.282	.162	.64726

a. Predictors: (Constant), Transformation

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.986	1	.986	2.354	.176[a]
	Residual	2.514	6	.419		
	Total	3.500	7			

a. Predictors: (Constant), Transformation

b. Dependent Variable: SUCCESS

Appendix 5 - People Skills

	Pree seed / ideation	seed
tasks	Describing the size and nature of the upportunity Identifying first product/service possibillities prelimanary validation of customers and markets Outlining the value network and competible environment Builiding business model Defining your Concept business plan	builiding a value proposition house with marketing insights Specifiing functional and technicak aspects of the proposition Building a core team Make / buy partner analysis Set-up an advisory board Writing the businessplan and getting formal approval Defining fanacial businessscenario's including exit paths
competencies	Strong networking skills Selfstarter Abillity to translate an idea into a concept ability to work alone know's what he does not know Discision maker	Abillity to translate concept into businessplan People manager / leadersship skills Structural builder
experience	Domain knowledge / network Start-up/venturing experience technical/product knowledge	funding experience Building a team from Scratch

	Alpha	Beta
tasks	product/service prototyping First customer/ business Trial Identifing and prioritize target markets/customers Defining product/business scaling roadmap outlining supplychain operations Run through business model building venture platform	Launching the business in the market Building and staffing core team Attracting new talent in line with large scale of operation scaling marketing and sales activities scaling supply chain activities in line with roadmap building a product delivery and or service organization sector alignment and venture integration scenario's
competencies	People/team management Thinking bigger then yourself Pursue market opportunities Strong decision maker	Structured organisation builder People manager visionairy thinker
experience	scaling a business Reforming a small team into large organization Strong business development experience	International experience leading a business