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What you get is what you need? The role of venture capitalists in managing growth of new ventures

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**What You Get Is What You Need?
—
The Role of Venture Capitalists
in Managing Growth of New Ventures**

Version: September 2004

**ANN-KRISTIN ACHLEITNER
CHRISTIAN H. FINGERLE**

WORKING PAPER SERIES



**Center for Entrepreneurial and
Financial Studies**



What You Get Is What You Need?

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The Role of Venture Capitalists in Managing Growth of New Ventures

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What You Get Is What You Need?

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The Role of Venture Capitalists in Managing Growth of New Ventures

Abstract

The resource-based view is suggested as a useful concept to shed light on the particular challenges of high potential companies on their way to building a thriving and growing company. In order to be able to apply the theoretical constructs of the resource-based view in the present context, a categorization of resources is elaborated that fits particularly well to high potential companies. Existing literature provides evidence that these companies in general only dispose of a small resource base and that they are characterized by strong resource needs in all relevant resource categories. The role of venture capitalists is assumed to provide high potential companies with financial and non-financial resources that help to create core and non-core competencies. Ultimately, this bundle of core and non-core competencies would allow high potential companies to achieve a sustained competitive advantage.

The empirical results of this paper are based on insights from three in-depth case studies on German start-ups, each representing a different investor-investee dyad. It comprises investees from different industries such as software, biotech, and energy as well as investors with an established track record, first fund investors, and semi-government-dependent investors.

The cases show that venture capitalists provide a number of resources to their portfolio companies that allow building a competitive advantage. The role of the venture capitalists is thus to help high potential companies to complement existing resources and competences in order to develop their full economic potential. However, there is great variation between the resource provisions of the analyzed venture capital firms.

JEL classification: M13, G29

Keywords: Entrepreneurship, Venture Capital, Resource-based View

Introduction

Entrepreneurship and innovation are more than ever essential for securing employment and economic prosperity of a country. The widely discussed finding from Birch (1981) that most new jobs emanated from entrepreneurial firms in the US market has been substantiated for many other countries (Audretsch (2002)). For Germany, Audretsch/Weigand (1999) find that strong job growth is only exhibited among the group of small- and medium-sized technology-based firms.

However, these so-called high potential companies show a need for support in many aspects. As a German venture capital firm puts it: "To quickly reach 'critical mass', young companies today need more than capital. They need access to people and companies who can accelerate their growth by helping them develop strategic partnerships, expand into new markets, raise international expansion financing, cut OEM deals, build distribution channels, secure purchase commitments, and get professional advice." (Target Partners (2004)).

Usually, venture capital firms claim that they offer broad financial and non-financial support to their portfolio companies. Due to the many non-financial activities they are believed to provide, venture capitalists are often esteemed to be "company builders rather than financiers" (Smart/Payne/Yuzaki (2000), p. 16) or "consultants with a financial interest" (Fried/Hisrich (1995), p. 102). The following marketing statement of a leading venture capital firm illustrates this function: "[Our portfolio companies can expect from us] frank, unbiased advice based on our shared financial objectives and over thirty years of experience, assistance with the formation of major advisory relationships, support in the recruitment of high caliber, influential non-executive and executive directors, support and guidance in international expansion through strategic alliances, acquisitions or other means, extensive global knowledge of their sector and technology, an experienced, well connected, international team committed to [the portfolio companies'] success." (Apax Partners (2004)).

Most existing research on the involvement of venture capital firms in the management of their portfolio firms has focused on elucidating important activities of venture capitalists (Deloitte & Touche (2002), Dotzler (2001), Feinendegen/Hommel/Wright (2001), Morris/Watling/Schindehutte (2000), Deakins/O'Neill/Mileham (2000), Coopers & Lybrand (1998), Ehrlich et al. (1994), Gorman/Sahlman (1989)). According to this research, the main activities of venture capitalists can be ranked in the following manner:

- (1) Providing financial support,
- (2) serving as a sounding board to the management,
- (3) supporting strategy development,
- (4) providing feedback to the management,
- (5) helping the management in operational matters,
- (6) providing contacts to third parties,
- (7) recruiting management,
- (8) providing ethical support to the management, and
- (9) supporting organizational planning.

Another research stream argues along the lines of Klein/Leffler (1981) and Diamond (1991) that the reputation of a venture capital firm that is backing a high potential company can transmit valuable signals to third parties. This certification effect has been suggested for various groups, such as:

- Customers (Fried/Hisrich (1995)),
- suppliers (Timmons/Bygrave (1986)),
- investors (Schertler (2003), Lee/Wahal (2002), Kraus (2002), Da Silva Rosa/Velayuthen/Walter (2002), Francis/Hasan (2001), Hamao/Packer/Ritter (2000), Ljungqvist (1999), Lin/Smith (1998), Brav/Gompers (1997), Megginson/Weiss (1991)),
- personnel and management (Bottazzi/Da Rin (2002), Fried/Hisrich (1995)), and
- investment banks and accountants (Tykvová (2000), Davis/Stetson (1985)).

Previous research on the influence of venture capital firms mostly took an activity-based approach towards examining in which areas venture capitalists actually support their portfolio companies. We suggest that a resource-based view on the activities of venture capitalists is more appropriate to establish a clear and theoretically well-grounded link between the involvement of venture capitalists and their effect on high potential companies.

We employ the case study method for our empirical research since this allows a deeper insight than questionnaires into the dynamics of venture capitalists' activities. According to Yin (1994), the case study method is the appropriate research method to understand complex social phenomena. The major disadvantage of case study research is that findings from individual cases cannot be generalized. In order to mitigate this disadvantage, we follow the suggestions of Roll (2003), who states, that multiple case studies enhance validity and reliability of the research findings. To improve the quality of the research findings further, we further undertake a cross case study comparison by applying the same theoretical constructs to the cases and search for similarities and differences.

The approach to gather the relevant data for the case studies was based on Mintzberg (1979). In a first step, all available written documentation was reviewed in order to obtain an understanding of the chronology of the portfolio companies' development and the relevant players. In a second step, by conducting a number of interviews with the relevant decision makers, the influence of venture capitalists on their portfolio companies was reconstructed. To compile the datasets for each investee-investor dyad, we had full access to important formal documents such as investment agreements, employment contracts, articles of association, bylaws for management and supervisory board, minutes of supervisory board meetings, business plans, budgets and forecasts, auditor reports as well as annual, quarterly and monthly reports, and financial statements. Moreover, we had access to internal market studies and presentations as well as the correspondence between both parties. This information was supplemented by various publicly available information including the companies' websites, their press releases, internet databases, and press articles from third parties. For each case study, we led talks and conducted in-depth interviews with the portfolio company's management team and the corresponding venture capitalists, adding up to about ten hours per case study.

The different investee-investor dyads were chosen to achieve significant variation between portfolio companies' industries and types of venture capital firms. The dataset comprises three case studies on German high-tech start-ups. Bullith Batteries AG was founded in 2000 focusing on solid-state-based lithium-polymer accumulator technology. It received its first financing round in 2002 by the small independent venture capital fund Gi Ventures AG and raised a second financing round from a private investor in June 2004. GPC Biotech AG was founded in 1997 focusing on genomic

technology platforms as well as on drug discovery and drug development. It received its first financing round in 1997 from the large and prominent independent venture capital funds of MPM Capital and Techno Venture Management (TVM). In 1999, it raised a second financing round from its existing venture capital firms and several new investors, mainly venture capital firms and banks. GPC Biotech went public in May 2000. varetis AG was founded in 1983 initially focusing on network software. It received its first financing round in 1990 from the regional and semi-government-dependent venture capital firm BayBG and the company subsequently focused on innovative software solutions in the market for directory inquiry assistance. varetis raised its second financing round in 1997 again from BayBG and went public in February 2000.

Main Arguments

The traditional resource-based view understands the firm as a bundle of distinct resources that are unique to the firm and that other firms cannot acquire easily and most likely not at the same conditions (Penrose (1995), Barney (1991), Dierickx/Cool (1989), Wernerfelt (1984)). The resulting heterogeneity across firms allows firms with a superior resource base to achieve a sustained competitive advantage ultimately leading to above-average profits. For resources to yield a sustained competitive advantage, they must be valuable, rare, durable, imperfectly transferable, imperfectly imitable, and imperfectly substitutable (Barney (1991), Grant (1991)). The knowledge-based view assumes that knowledge is the most important resource in a firm's wealth creation activities (Foss/Foss (1998), Conner/Prahalad (1996), Krogh/Roos/Slocum (1994), Nonaka (1994), Polanyi (1958)). Thereby, the knowledge-based view links the resource-based view with epistemology (Grant/Baden-Fuller (2000)). The relational view argues that idiosyncratic linkages between firms can be a source of relational rents and competitive advantage (McEvily/Zaheer (1999), Dyer/Singh (1998)). The process of founding and growing a company is embedded in a social, political, and cultural context (Brüderl/Preisendörfer (1998)). Entrepreneurs are thus not isolated and autonomous decision makers but are rather required to engage in social activities and interactions when gathering resources. Entrepreneurship is therefore inherently a social activity (Dubini/Aldrich (1991)).

However, few resources are productive on their own but rather require the cooperation and coordination of a bundle of resources, often called a competence or capability, to be productive (Javidan (1998), Teece/Pisano/Shuen (1997), Teece/Pisano (1994), Chandler/Hanks (1993), Stalk (1992), Hamilton/Singh (1992), Prahalad/Hamel (1990), Stoner (1987)). The seminal paper by Prahalad/Hamel (1990) makes the point that among a firm's competencies, only few might be core competencies that actually deliver a competitive advantage to the firm. As high potential companies are usually operating in dynamic fast-changing markets, it becomes crucial for them to have dynamic competencies, which adapt continuously to a changing environment in order to preserve the competitive advantages (Blyler/Coff (2003), Eisenhardt/Martin (2000), Teece/Pisano/Shuen (1997)).

Leading scholars of the resource-based view have attempted several categorizations of resources. Barney (1991) only differentiates between physical, human, and organizational resource categories. In addition to these, Grant (1991) adds the categories of financial, technological, and reputational resources. Brush/Greene/Hart (2001) propose a very similar categorization and mention the importance of networking resources, which will subsequently be called social resources (Blyler/Coff (2003); Yli-Renko/Autio/Tontti (2002); Brüderl/Preisendörfer (1998); Portes (1998); Uzzi (1996)). We largely follow these lines but distinguish between managerial and personnel resources among human resources.

High potential companies are typically characterized by the following resource profile:

Technological resources comprise the knowledge behind inventions and innovations that the company can use to pursue its value creating activities. These innovations are regularly technology-driven. The value of technological resources can be enhanced by protecting them with intellectual property rights. High potential companies dispose of unique technological resources, which potentially allow them to create novel products or services for existing industries or even to create new industries (Elfring/Baden-Fuller (2000)). However, their technological resources are often not yet protected or require further development.

Financial resources allow high potential companies to acquire resources from other resource categories. Typically, high potential companies require large amounts of financial resources. This is not surprising considering for instance the enormous costs of \$500m to \$800m that biotech companies have to finance with the introduction of a new drug (Kallmeyer/Canabou (2001)).

Managerial resources are the skills, abilities, and knowledge of managers (Castanias/Helfat (2001)). They are an important part in building core competencies that generate competitive advantage and managerial rents. We argue that not only executive managers, but also members of the supervisory board have to be included in the definition of managerial resources, since supervisory board members are also involved in strategy formulation (Fried/Bruton/Hisrich (1998)). Especially in the context of high potential ventures, entrepreneurial recognition, which is defined as the recognition of opportunities and the behavior of seeking opportunities, is an essential part of managerial resources (Alvarez/Busenitz (2001)). Typically, people with an outstanding academic background found high potential companies but often lack profound business knowledge and relevant practical experience for successfully growing a company (Kulicke/Görisch (2002), Lessat et al. (1999), Pleschak (1998), Timmons/Bygrave (1986)). Therefore, high potential companies require further managerial resources to complete their executive and supervisory board.

Personnel resources are defined in an analogous way to managerial resources as the skills, abilities, and knowledge of non-managerial employees. High potential companies require further personnel resources to carry out the operational value creation activities since they typically begin their operations with only a few founders doing all the work.

Physical resources are the firm's access to resources such as plants, machinery, equipment, and its geographic location (Barney (1991)). High potential companies typically start their operations with only few physical resources and, depending on their business model, show a less or more pronounced need for further physical resources.

Organizational resources comprise internal structures and processes as well as management systems such as accounting, risk management, and employee incentive schemes. These are usually not well established if existent at all at the time of the foundation, but strongly required by high potential companies (Mitchell/Reid (1997), (Hanks/Chandler (1994), Kazanjian (1988)).

Reputational resources are aggregate perceptions of stakeholders about the performance of a high potential company and its reliability (Fombrun/Gardberg/Sever (2000)). Building a corporate reputation requires a significant amount of time. Since high potential companies only have a short history, all stakeholders are just about to gain first experiences with them and a corporate reputation will only gradually build up. Therefore, high potential companies need reputational resources.

Social resources are defined as personal contacts to third parties. They facilitate the access to the resources of these parties (Portes (1998)). High potential companies usually lack a widespread network of business contacts to all stakeholder groups (Davis/Stetson (1985)). As a result, they need further social resources.

In conclusion, high potential companies exhibit an imbalance between available resources and resources required to scoop the economic potential of its technological innovations. The high growth potential of venture capital-backed companies stems mainly from their strong position regarding their technological resources. However, a stand-alone resource such as a patent on a certain technological process does not yet form a competence. Several resources from different categories are required to build a competence. Some of a company's competences need to be core competences, which allow gaining competitive advantage and generating above-average returns for the investors. We argue that venture capital firms contribute resources to their portfolio companies and thereby enable building competences that ultimately lead to economic success.

Two important research contributions explicitly establish a link between venture capital financing and the resource-based view. Lee/Lee/Pennings (2001) employ the resource-based view to assess the development of high potential companies dependent on resource provision through external parties such as alliances, sponsorships, and venture capital firms. They show that venture capital firms play an important role in providing their portfolio companies with access to further resources whereas other external parties play a much lesser role. Cornelius/Naqi (2002) assume that the provision of resources depends on the fit between resource needs of portfolio companies and resources available through venture capital firms. They analyze the Hong Kong and Singapore venture capital market by sending out a questionnaire to senior venture capitalists asking about their activities on behalf of their portfolio companies. In general, they find that perceived high resource needs of portfolio companies result in venture capitalists providing more resources to the firm.

An examination of the existing literature on the value-adding activities of venture capital firms, incubators, and, corporate venture capital firms allows inferring that these organizations offer different "resource packages" to their portfolio companies as shown in Figure 1. Accordingly, portfolio companies can expect venture capitalists to support in the acquisition of managerial, financial, organizational, reputational, and social resources. Our analysis of the existing research on venture capitalists' activities yields that we do not find a significant contribution in terms of technological, personnel, and physical resources from venture capital firms. Business incubators, which are defined as facilities which aid the early-stage growth of companies by providing rental space, shared office services, and business consulting assistance, are assumed to provide in addition physical and personnel resources to their portfolio companies (Achleitner/Engel (2001), Allen/Rahman (1985)). Beyond this, corporate venture capital firms can be expected to provide also technological resources to their portfolio companies (Röper (2003), Poser (2003)). Our analysis in this paper focuses solely on the resource provision activities of venture capital firms.

Resource category	Resource provision by		
	Venture capital firm	Business incubator	Corporate venture capital firm
Technological resources	—	—	x
Financial resources	x	x	x
Managerial resources	x	x	x
Personnel resources	—	x	x
Physical resources	—	x	x
Organizational resources	x	x	x
Reputational resources	x	x	x
Social resources	x	x	x

x Some resources provided — No resources provided

Figure 1: Resource provision by venture capital firms, business incubators, and corporate venture capital firms

It is necessary to distinguish between a direct and an indirect resource provision of venture capital firms. Direct resource provision means that the provided resources come directly from the venture capital firm. For instance, a direct resource provision would be a venture capitalist taking over a seat on the supervisory board of a portfolio company, thereby offering his own managerial resources. In contrast, indirect resource provision means that the venture capital firm only acts as facilitator between the portfolio company and third parties. This essentially means that the resources do not come directly from the venture capital firm, but from third parties. The venture capital firm only facilitates the resource transfer between the portfolio company and the third parties. For example, establishing a contact between future members of the management team of a portfolio company is a direct provision of social resources and at the same time an indirect resource provision of managerial resources.

Resource category	Direct resource provision by venture capital firms		
	Bullith Batteries	GPC Biotech	varetis
Technological resources	—	—	—
Financial resources	x	x	x
Managerial resources	x	x	x
Personnel resources	—	—	—
Physical resources	—	—	—
Organizational resources	x	x	x
Reputational resources	x	x	x
Social resources	x	x	x

x Some resources provided — No resources provided

Figure 2: Direct resource provision by venture capital firms

Figure 2 compares the venture capital firms' resource provisions showing that all of them directly provide financial, managerial, organizational, reputational, and social resources and do not directly provide technological, personnel, and physical resources. In this regard, our results confirm the results of the existing literature on venture capitalists' activities. However, this might convey the impression that all venture capital firms add to the resource base of their portfolio companies to the same extent. However, large differences in the resource provision activities of venture capital firms can be found in some resource categories.

An example for this is GPC Biotech's financial need. As already mentioned before, biotech start-ups generally show the highest financial resource need in comparison to start-ups from other industries. The venture capital firms clearly respond to this high need and provide GPC Biotech with more financial resources in the first financing round than do the other two venture capital firms.

All analyzed venture capital firms offer their own managerial resources to their portfolio companies. Concerning the venture capitalists' direct support in terms of managerial resources for the executive board, the strongest commitment comes from MPM Capital, which offers an industry expert as interim CEO for GPC Biotech for one year. This is possible at that time, since MPM Capital just started to invest and consequently had more time resources than it has a few years later. No venture capitalists from Gi Ventures or BayBG are officially nominated as members of the executive board of their portfolio companies. Nevertheless, Gi Ventures provides important executive managerial resources to Bullith Batteries by carrying out the first business planning and by leading many important negotiations with third parties. BayBG sends an investment manager to support varetis on site during its preparations for the IPO.

Concerning the venture capitalists' support in terms of managerial resources for the supervisory board, four venture capitalists from Gi Ventures, three from MPM Capital/TVM, and one from BayBG join the supervisory board of the respective portfolio companies. The venture capitalists of MPM Capital and TVM bring in more specific industry experience than the venture capitalists from Gi Ventures and BayBG since they have been working respectively investing in GPC Biotech's industry for many years.

With respect to filling managerial gaps in their portfolio companies, Gi Ventures and MPM Capital/TVM exert a strong influence. Gi Ventures even makes its investment conditional on Bullith Batteries hiring a sales manager. In contrast, BayBG does not push varetis to hire a new manager to support the remaining Managing Director, when the other Managing Director, who is responsible for technology development, leaves the company.

All venture capital firms provide their portfolio companies with organizational resources. In this category, the variance between the resource provisions of the analyzed venture capital firms seems to be very low. All venture capital firms support their portfolio companies in setting up an internal accounting and reporting system, which best meets their own controlling requirements. In addition, they are also involved in setting up a stock option, management incentive or employee incentive plan.

The analyzed venture capital firms transfer some reputation to their portfolio companies. The fact that Bullith Batteries, GPC Biotech, and varetis are venture capital-backed companies is generally perceived as a positive signal by third parties. However, the fact that "Gi Ventures" finances Bullith Batteries or that "BayBG" finances varetis does not play a further role. This is different in the case of GPC Biotech, where the name "TVM" plays an important role for example in facilitating raising the silent partnerships from tbg and Bayern Kapital. Therefore, the effect of reputational resources can be split into two components. Firstly, all portfolio companies gain reputation by receiving venture capital. This supports the results of the above discussed certification hypothesis. Secondly, if they are backed by venture capital firms with a long-term track record such as TVM, the positive reputational effect is reinforced. This finding fits well to the argument of Fried/Hisrich (1995), who state that especially successful venture capital firms can transfer their positive reputation to their portfolio companies.

All venture capital firms provide their portfolio companies with social resources, which foremost allow their portfolio companies to access further financial and managerial resources. However, there is one pronounced difference between the social network offered by MPM Capital/TVM and those offered by Gi Ventures and BayBG. MPM Capital and TVM establish contacts to highly regarded experts within the biotech industry. One of them replaces the interim CEO of GPC Biotech from MPM Capital and two more join GPC Biotech's supervisory board. This is mainly because the venture capitalists from MPM Capital and TVM have been working respectively investing for many years in the life science industry. This enables them to access a large network of contacts, which they have built over time. Gi Ventures and BayBG can offer a broad network as well, but it is less tailored to the specific needs of Bullith Batteries and varetis. They do not provide their portfolio companies with contacts to internationally well-known industry experts.

Resource category	Indirect resource provision by venture capital firms		
	Bullith Batteries	GPC Biotech	varetis
Technological resources	x	x	—
Financial resources	x	x	x
Managerial resources	x	x	x
Personnel resources	—	—	x
Physical resources	x	—	—
Organizational resources	—	—	—
Reputational resources	—	x	—
Social resources	—	x	—

x Some resources provided — No resources provided

Figure 3: Indirect resource provision by venture capital firms

Whereas all venture capital firms directly provide resources from the same resource categories, a less clear picture emerges when comparing their indirect resource provisions as shown in Figure 3. The unique technological resources of their portfolio companies are one of the main reasons why the analyzed venture capital firms invest. This might be the reason why all venture capital firms push the managers of their portfolio companies to protect their technologies with intellectual property rights. The build-up of further technological resources is clearly the task of the entrepreneurs since the venture capital firms only rarely get involved within this resource category. However, the case of Bullith Batteries shows that Gi Ventures facilitates the acquisition of the full license for its technology by leading the licensing negotiations. In the case of GPC Biotech, TVM advises the founding team on technology transfer issues, thereby indirectly facilitating the acquisition of the licenses, even before TVM is invested in the company.

All analyzed venture capital firms facilitate the acquisition of additional financial resources for their portfolio companies. They regularly interact with other financial investors to help their portfolio companies to raise further financial resources. This is of high importance to the venture capitalists since this allows them to better diversify their portfolio, as they do not have to meet the full financial resource need of each of their portfolio companies. Venture capital firms can spread their investors' money across more portfolio companies and are thus more likely to enhance the returns to their investors. In the case of varetis, BayBG directly provides only 20% of the total volume of the first financing round and indirectly facilitates to raise the remaining 80% with bank loans since it leads the negotiations with the local banks. MPM Capital/TVM directly contribute 38% of the volume of the first financing round and facilitate to raise the other 62% in form of silent partnerships from the government-dependent venture capital firms tbg and Bayern Kapital. Gi

Ventures directly provides 100% of the first financing round and subsequently helps Bullith Batteries to secure a leasing package by providing a guarantee for the company.

From the perspective of venture capital firms and founders, it is very important that the company can raise financial resources from third parties through financial instruments such as silent partnerships, leasing, and bank loans, which do not dilute the equity stakes of the various shareholders within the company. This argument is of particular relevance for the case of GPC Biotech. MPM Capital and TVM already receive together 48% of the shares of the company in turn for providing the company with €3m. If the founders raise the additional €5m from the government-dependent venture capital firms tbg and Bayern Kapital also by selling common stock, they would have to sell all their shares of their company at the first financing round. In turn, this implies that the founders' incentives to work hard for their company would be largely reduced. A further advantage of raising financial resources through non-dilutive financial instruments such as bank loans, leasing, or through public subsidized financial instruments such as the silent partnerships of tbg and Bayern Kapital is that the associated costs of capital are relatively low. Therefore, these instruments make it possible for entrepreneurs and venture capitalists to benefit from a potential leverage effect.

A further argument for venture capital firms to help their portfolio companies raise financial resources from third parties is that they regularly report the performance of their investments to their investors. According to the conservative value and fair market value method of the EVCA Valuation Guidelines, an investment of a venture capital firm in a portfolio company should be valued on the transaction price of "a new financing round or partial sale, involving a material investment by a third party at arm's length" (EVCA (2001), p. 22). This implies that a venture capital firm can only report a value increase of its portfolio company to its investors when third parties invest into the portfolio company with financial instruments that require a valuation of the company such as common or preferred shares and convertible debt. In this regard, a new investment with silent partnerships or bank loans in a portfolio company does not allow the venture capital firm to report a higher value to its investors.

Gi Ventures, MPM Capital, and TVM are organized as independent partnerships. They continually have to raise new funds since they are required to liquidate the fund at the end of its term and distribute the returns to their investors. This gives them an incentive to let third parties contribute to e.g. a second financing round of their portfolio companies since this allows them to report a value increase to their investors. As Gi Ventures and MPM Capital are relatively newly founded and consequently have not yet established a track record showing their investment selection and investment development expertise, this might be a further explanation for their efforts to provide their portfolio companies indirectly with additional financial resources. This logic does not apply to BayBG, which is organized according to a corporate holding structure and usually can reinvest the proceeds from its investments.

All venture capital firms facilitate the acquisition of managerial resources. They use their social network to find suitable candidates for the executive board and the supervisory board of their portfolio companies. In the case of GPC Biotech, these individuals bring along an excellent reputation and an extensive social network within the biotech industry, which they contribute to the resource base of GPC Biotech. Thus, MPM Capital and TVM also indirectly provide GPC Biotech with additional reputational and social resources.

Two further examples show that the support from the analyzed venture capital firms is highly dependent on the needs and the particularities of the situation of their portfolio companies. In a time of a severe shortage of software developers in the Munich area, BayBG supports varetis to find additional software developers by addressing its network. As Bullith Batteries is once confronted with a unique opportunity to buy the production plants and machinery of two insolvent companies, Gi Ventures takes over the lead in the purchasing negotiations and thereby indirectly facilitates the acquisition of physical resources.

Conclusion

The investment process of venture capital firms is typically presented as a sequence of consecutive and independent phases of the venture capital firms' activities (Achleitner (2001), Fried/Hisrich (1994), Tyebjee/Bruno (1984), Wells (1974)). According to these schemes, the actual influence of venture capital firms is expected to begin with the signing of the investment agreement. However, the cases of Bullith Batteries and GPC Biotech show that venture capitalists already influence potential portfolio companies during the investment due diligence and the investment structuring phase, i.e. even before an investment agreement has been signed and a financial interest in such a company has been established. In the case of GPC Biotech, TVM provides the founding team with social and managerial resources before the investment agreement is signed, since it establishes the contact to the future CFO and supports the foundation process of the company by discussing business model and technology transfer issues as well as the financing strategy.

An important pre-contractual influence of Gi Ventures on Bullith Batteries is a change of the management team's mindset towards a more commercial orientation. TVM and Gi Ventures stress the importance of building a well-rounded management team by having a person with business background joining the management team before any financial resources are committed. In the case study on varetis, there is no significant pre-contractual influence of BayBG to be found. However, this might be due to the more developed state of varetis since its management team has already proven itself and varetis has been profitable for several years at the time of BayBG's first investment.

All case studies reveal that the examined venture capital firms do not influence their portfolio companies over time with the same intensity. In the case of GPC Biotech, there is a strong influence in the first year after the first financing round, especially since one of MPM Capital's venture capitalists assumes the position of an interim CEO thereby getting deeply involved in the operational management of the company. In the beginning, TVM also assumes a more hands-on role by helping to establish management systems and organizational structures. After GPC Biotech's interim manager is replaced with a professional manager and industry expert, the involvement of both venture capital firms, and mainly that of MPM Capital, is significantly reduced. Over time, GPC Biotech's management team gains the trust of the venture capitalists and consequently the venture capitalists pursue a relatively hands-off approach towards their investment. This becomes evident in the subsequent important events such as the second financing round and the IPO, where both venture capital firms remain largely passive and only give advice if the management team asks them to do.

In the case of Bullith Batteries, Gi Ventures is initially deeply involved in the operational management of the company by taking over the whole business planning. After the company established several organizational routines and hired a second Managing Director, the involvement of Gi Ventures in routine operations is largely reduced. However, Gi Ventures continues to play a leading role in negotiations with third parties such as prospective investors for the second financing

round as well as two insolvent companies. Negotiations with potential customers remain solely the task of the company's management.

In the case of BayBG's investment in varetis, the dynamics of BayBG's resource provision follow a different pattern. After the first financing round, in which BayBG is invested only with a silent partnership, its support activities mainly center on monthly meetings with the varetis management. This changes after the second financing round, when BayBG acquires in addition an equity stake in the company and assumes a seat on varetis' supervisory board. BayBG's support peaks at the time of its exit, i.e. during the time of varetis' IPO.

After the IPO of GPC Biotech and varetis, the role of the venture capital firms is reduced to that of a passive financial investor. The venture capitalists keep their personal appointments to the supervisory boards of their portfolio companies and thereby continue to support the companies for quite some time after the IPO.

The comprehensive resource-based view argues that for companies to achieve a sustained competitive advantage they must have resources that are valuable, rare, durable, imperfectly transferable, imperfectly imitable, and imperfectly substitutable. The analyzed venture capital firms directly or indirectly provide their portfolio companies with resources that match these criteria. Intellectual property rights are prime examples for resources that fulfill the above requirements. Gi Ventures plays a crucial role in the negotiations for the full license of Bullith Batteries' technology. TVM also helps the founding team of GPC Biotech to acquire the licenses for several technologies.

In terms of managerial resources, Gi Ventures provides a venture capitalists, who has experienced several times on its own what it requires to build a company from scratch. He leads the negotiations for the company with important third parties and assumes the position as chairman of the supervisory board. MPM Capital and TVM provide GPC Biotech with venture capitalists that have an exceptionally broad management and investment experience in the life science industry. BayBG also provides a venture capitalist, who has been responsible for numerous investments in small- and medium-sized companies from all industries and consequently brings in a very broad management expertise.

BayBG helps to find software developers, i.e. personnel resources, for varetis during the peak of the worldwide IT boom in the years 1999 and 2000, thereby enabling the company to stay on track with its software development projects. Gi Ventures helps Bullith Batteries to realize the unique opportunity to acquire the production facilities of an insolvent company, i.e. physical resources, which promise a true competitive advantage for Bullith Batteries, since it is the only mass production plant that exists for their technology in the world.

Due to the long innovation cycles and large capital requirements in the biotech industry, the reputation of biotech start-ups plays a crucial role in their development. By transferring the excellent reputation of TVM and MPM Capital to GPC Biotech, the venture capital firms help the company to gain the trust of third parties more easily. In addition, by providing GPC Biotech with the contacts to two highly respected industry experts that eventually join the supervisory board, the venture capital firms help GPC Biotech to further increase its reputation and certify the company to third parties thereby facilitating to conclude important collaboration agreements with large pharmaceutical companies.

The comprehensive resource-based view claims that few resources are productive on their own and rather need to be bundled to competencies. Some of them will be core competencies, which ultimately allow achieving a true competitive advantage. The analyzed venture capital firms not only provide their portfolio companies with important resources for the development of their core competencies, but also support in the creation of non-core competencies that are required to harvest successfully the returns from the core competencies. A prime example for the latter is the

provision of organizational resources such as helping in building internal accounting and reporting systems, key account management systems, and incentive schemes that are required for a smooth operation of the portfolio companies.

Summarizing, the resource-based view has been suggested as a useful concept to shed light on the particular challenges of high potential companies on their way to building a thriving and growing company. In order to be able to apply the theoretical construct of the resource-based view in the present context, a categorization of resources has been elaborated that fits particularly well to high potential companies. Existing literature provides evidence that these companies in general only dispose of a small resource base and that they are characterized by pronounced resource needs in all relevant resource categories. Nevertheless, the existing resource base potentially allows extracting a high economic value. Starting from this assumption, the role of venture capitalists is to provide high potential companies with financial and non-financial resources that help to create core and non-core competencies. Ultimately, this bundle of core and non-core competencies allows high potential companies to achieve a sustained competitive advantage. The role of the venture capitalists is thus to help high potential companies to complement existing resources and competences in order to let their full economic value develop.

Based on the results of these case studies, an answer to the question “do high potential companies get what they need from their venture capitalists?” is: Partly yes, partly no. Concerning the coverage of their financial and managerial resource needs, all analyzed portfolio companies received very important support. In other resource categories, there has been significant variation between the abilities of the analyzed venture capital firms to provide their portfolio companies with the relevant resources. An example for this is the provision of social resources, which is strongly dependent on the professional background of the analyzed venture capitalists. These cases show that venture capitalists are an important but not the exclusive source of resources for high potential companies. In several instances, the analyzed venture capitalists make the first step for their portfolio companies but then the management team has to go the rest of the way on its own. The analyzed venture capitalists deploy their resources carefully. They only provide as much resources as are obviously needed by their portfolio companies. Tasks that the entrepreneurs can do on their own are usually also left to be done by them.

Recommendations

This analysis allows drawing several implications for researchers. The resource-based view on the role of venture capitalists on in managing the growth of high potential companies has proven to be capable of producing results that are worth to be further pursued by the research community. In this regard, a number of extensions of the research design are conceivable.

It would be highly interesting to compare the influence of different investors over the “investor lifecycle” of a high potential company. As Artley et al. (2003) point out, venture capitalists only accompany a high potential company for a limited time, implying that the equity investors of a high potential company change over time. In this regard, one could examine and compare the role of equity investors through resource provision across different investor types such as family and friends, business angels, research organizations, government-backed institutions, and venture capitalists. This research design would take the perspective of the investors. However, the analysis of why companies in different stages of their development choose different investors seems also to be a promising field of research. The focus of analysis in this area would be to compare the resource needs of early-stage companies with later-stage companies and to compare the resource

provision activities of venture capital firms with those of later-stage investors such as private equity firms.

Another interesting research direction is the analysis of the effect that different business models of venture capital firms have on their influence on high potential companies. In this respect, a comparison between independent venture capital firms and dependent venture capital firms such as corporate venture capital firms and fully government-backed venture capital firms would be interesting. A first step in this direction has already been taken by including BayBG as a semi-government-dependent venture capital firm in the present dataset. It has been shown that there are some differences between BayBG on the one hand and MPM Capital/TVM and Gi Ventures as independent venture capital firms on the other hand.

The present case study research is subject to a survivor bias and the findings are likely to exhibit a bias since the cases only present deals that have been successful. Therefore, a further research direction is the analysis of the influence of venture capitalists on portfolio companies that have ultimately been unsuccessful. In view of the limitations of the case study research approach in terms of the ability to generalize the research findings, the adoption of other empirical methods of research is also indicated for future research. A more quantitative research design will clearly reduce the contextual richness and the detail level of the research findings, but in return allows drawing conclusions that will be more generalizable than the case study research findings.

In addition to the implication for researchers, our results allow outlining several implications for practitioners. Entrepreneurs should have a clear perception of what their resource needs are when seeking external financing. Only by knowing what they actually need, entrepreneurs can make an informed decision for a certain investor. The research findings of this study allow entrepreneurs to better understand what venture capitalists can do for them and what they likely cannot do. Entrepreneurs should not only let venture capitalists perform an investment due diligence but they should engage themselves in a detailed "investor due diligence". A promising way to do this would be to enter into talks with other entrepreneurs that already have some experience in working together with the respective venture capital firm and can tell what kind of support they have received. Furthermore, these peers often have a much better insight into the industry and the relevant venture capital firms and might thereby be able to tell which venture capital firm respectively which venture capitalists should be addressed at all.

Venture capitalists themselves should assess their resource base in order to gain a clear understanding of their strengths and weaknesses. One possibility to engage in such an assessment would be to analyze their previously managed deals and elucidate to which extent they have been capable of providing adequate resources. This will help venture capitalists to more clearly define an investment strategy that promises to make the best use of their strengths. Furthermore, such an assessment allows them to identify their own weaknesses in order to identify areas in which they still need to improve their service proposition towards their portfolio companies.

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