

6-6-2009

“THIS DEAL IS DEAD!” A LONGITUDINAL STUDY OF VC DECISION MAKING

Jeffrey S. Petty

University of Lausanne, Switzerland, jeffrey.petty@unil.ch

Marc Gruber

Ecole Polytechnique Fédérale de Lausanne, Switzerland

Recommended Citation

Petty, Jeffrey S. and Gruber, Marc (2009) ““THIS DEAL IS DEAD!” A LONGITUDINAL STUDY OF VC DECISION MAKING,” *Frontiers of Entrepreneurship Research*: Vol. 29: Iss. 3, Article 1.
Available at: <http://digitalknowledge.babson.edu/fer/vol29/iss3/1>

This Paper is brought to you for free and open access by the Entrepreneurship at Babson at Digital Knowledge at Babson. It has been accepted for inclusion in Frontiers of Entrepreneurship Research by an authorized administrator of Digital Knowledge at Babson. For more information, please contact digitalknowledge@babson.edu.

**BABSON COLLEGE IRENE M. MCCARTHY AWARD
FOR THE BEST PAPER ON THE TOPIC OF HIGH TECHNOLOGY**

**“THIS DEAL IS DEAD!”
A LONGITUDINAL STUDY OF VC DECISION MAKING**

*Jeffrey S. Petty, University of Lausanne, Switzerland
Marc Gruber, Ecole Polytechnique Fédérale de Lausanne, Switzerland*

ABSTRACT

This paper offers several novel insights on the Venture Capital (VC) decision making process by investigating the criteria used to *reject* deals (as opposed to the commonly studied acceptance criteria), and the *dynamics* of the VC decision-making process over the *lifecycle of a fund*. The qualitative analysis is based on a comprehensive, longitudinal data set comprising 11 years of archival data from a European-based VC firm. During this time, the VC managed two funds, reviewed a total of 3,631 deals, and made 35 investments. Implications of our results for research and practice are outlined.

INTRODUCTION

Each year thousands of entrepreneurs submit their business proposals to VCs in the hope that they will receive the desired capital and access to a network that many believe will enable them to realize their commercial and financial objectives in new business creation. Given that VCs are highly selective in their funding decisions, it is not surprising that a fairly large number of studies seek to further our understanding of the main criteria that influence the VC investment decision (e.g., Wells, 1974; MacMillan et al. 1985, 1987; Hisrich and Jankowicz, 1990; Shepherd, 1999; Franke et al., 2008). These studies indicate that in their selection of deals, VCs emphasize various criteria such as the market growth and size, the innovativeness and competitive insulation of the product offering, and the expected rate of return of the venture project (Tyebjee and Bruno, 1981; MacMillan et al., 1985). Research has also consistently shown that amongst the set of evaluation criteria, VCs tend to place the highest importance on criteria related to the management team (e.g., Wells, 1974; Zopounidis, 1994; Muzyka et al., 1996; Shepherd, 1999).

Yet, despite the progress that has been made in understanding VC decision making, a close examination of the extant literature reveals that prior studies have been curiously one-sided, as they focus on the criteria VCs apply when *accepting* deals and not when *rejecting* deal proposals. Given the complexity and uncertainty inherent in VC decision making and the lack of prior empirical evidence, it would be premature to assume that the criteria used to accept proposals, or significance of the same, will correspond to those criteria that VCs use to disqualify or reject a deal. Arguably, the emphasis on acceptance criteria has been encouraged by researchers' strong interest in better understanding the success of new ventures and not their failure, and also a lack of data on failed venture deals in VC decision making (Barry, 1994). However, when considering that about 97-99% of all submitted business proposals will get rejected by a VC (Hall, 1989), it is quite dissatisfying that we possess hardly any knowledge on deal rejection criteria.

However, there is yet another major shortcoming in extant research, as studies investigating VC decision-making criteria tend to be agnostic to firm-specific factors which are likely to influence the decision-making process and criteria over the lifetime of a VC fund. For example, VCs may have less time to engage in deal selection in later lifecycle stages of their fund, as they will spend more time on monitoring and assisting portfolio firms (Gorman and Sahlman, 1989). Once again, this lack of research incorporating firm-specific factors may be, in part, due to limited availability of data, but is also the result of the cross sectional nature of the majority of research on VC decision making.

Against this backdrop, the purpose of this paper is twofold. First, it seeks to increase our understanding of what VCs consider to be “knock-out criteria” (Franke et al., 2008) during the decision-making process, and secondly, it attempts to highlight firm-specific factors inherent to the decision-making process that are outside the realm of the entrepreneur’s influence, or even awareness, and to date have gone largely unidentified. To shed light on these key issues, we adopted an exploratory case study research design which is recommended for investigating phenomena that are subtle and/or hardly understood. Specifically, our qualitative analysis is based on a comprehensive, self-collected longitudinal data set spanning 11 years of archival data, which included a total of 3,631 deal proposals, from a European-based VC firm.

Next, we review prior studies on VC decision making and point out key open questions in this field of research. We then provide an overview of the research design used in this study and present our key findings. The paper concludes with some theoretical as well as practical implications of our results and we highlight areas for future research.

RESEARCH ON VC DECISION MAKING

The VC decision-making process and the criteria used to evaluate potential deals continue to interest researchers after more than forty years. While the early literature primarily sought to develop lists of factors deemed important by VCs (e.g., Hoban, 1976; Tyebjee and Bruno, 1984; MacMillan et al., 1985, 1987; Khan, 1987), a second stream of research further differentiated the screening, evaluation and due diligence stages and developed models of the decision-making process (e.g., Wells, 1974; Hall, 1989; Fried and Hisrich, 1994). Most recently, the focus of the research agenda has returned to the decision-making criteria and has centered on the use of decision aids (Zacharakis and Meyer, 2000; Zacharakis and Shepherd, 2001, 2005) as well as a deeper understanding of how VCs judge the more subjective, albeit important, criteria associated with entrepreneurial teams (Franke et al., 2006, 2008). Table 1 provides an overview of prior research into VC decision making.

The decision-making criteria reported to be important in the evaluation process by VCs have consistently been the characteristics of (i) the company’s management team, (ii) the market, (iii) the product or service, and (iv) the venture’s financial potential (Riquelme and Rickards, 1992; Zacharakis and Meyer, 2000; Franke et al., 2008). Each of these broad categories of criteria have been further broken down into several more specific factors which have been used by the majority of researchers over the past forty years.

One defining characteristic of this stream of research is the preoccupation with the VC’s assessment of the *management team* (Muzyka et al., 1996). For example, Franke et al. (2008) applied conjoint analysis to arrive at a more detailed understanding of VCs’ evaluations of management teams. They found that VCs prefer investing in teams in which all members have industry experience, which can draw on a mixed educational background in terms of engineering

and management expertise, whose members have known each other for a longer time professionally, and are relatively more mature (aged 35 to 45). In terms of the venture's target *market*, the prior literature indicates that VCs tend to prefer market opportunities of considerable size and with high growth rates, as these market characteristics provide the conditions for strong revenue growth and high levels of value creation (e.g., Tyebjee and Bruno, 1981; Bachher and Guild, 1996). With regard to the venture's *product* offering, prior research shows that VCs apply evaluation criteria such as the innovativeness of the offering, its competitive advantage, some proprietary protection of the product, and the level of need a potential customer has for the offering (e.g., 'must-have' vs. 'nice-to-have' product) (e.g., Wells, 1974; Khan, 1987). Finally, in terms of the venture's *financial potential*, the extant literature highlights the importance of criteria such as the expected rate of return and the expected risk associated with these returns (MacMillan et al., 1985). While the financial potential of a venture is determined to a considerable extent by management-, market- and product-related characteristics, evaluation criteria pertaining to the financial prospects are nonetheless of major importance in the VC decision-making process, as a VC firm needs to assess whether the business proposal has the potential to generate the required minimum level of returns (Gompers and Lerner, 1999). For example, in return for financing an early-stage venture, VCs typically expect a "10 in 5", i.e., VCs look for a tenfold increase in investment value over a five-year time horizon, equaling an annual compound interest of 58% (Zider, 1998). While extant research provides a rich set of insights into VC decision making (cf. Table 1), there are several larger issues that remain unaddressed in the literature.

(1) Deal Acceptance Criteria vs. Deal Rejection Criteria. With very few exceptions (MacMillan et al., 1985; 1987; Bruno and Tyebjee, 1986) extant research has focused on identifying the most important decision criteria that VCs apply when *accepting* deal proposals (Hoffman, 1972; Wells, 1974; Khan, 1987; Hall, 1989; Fried and Hisrich, 1994; Muzyka et al., 1996). Notably, most existing studies implicitly assume that these criteria also reflect the reasons as to why business proposals get rejected. This is, however, a fairly bold assumption – the criteria considered important for deal acceptance may, or may not, be the same criteria that lead to deal rejection. Because VC decision making is characterized by an inordinate percentage of rejections (remember that VCs typically reject 97 - 99% of all submitted business proposals), it is key for research on VC decision making to develop a better understanding of the reasons for deal rejection. In turn, such knowledge could also help entrepreneurs in developing and formulating more compelling business cases, and VCs in improving their (limited) understanding of their own decision-making process (Zacharakis and Meyer, 1998).

(2) Firm-specific Factors influencing VC Decision Making. Current research provides insights into the criteria VCs use in their 'funding decisions'. This general perspective is at the same time a strength and a weakness, the former because of the (assumed) broad applicability of research insights, the latter because the generality of current findings also means a corresponding lack of specificity. Other scholars have made similar claims (Sandberg et al., 1988; Muzyka et al., 1996; Shepherd and Zacharakis, 1999), and have suggested various valuable ways of developing more specific insights. For example, Franke et al. (2008) provide fairly detailed results by focusing on the evaluation of the management team. However, one important critique – namely that the current literature on VC decision making is largely agnostic to VC-specific factors which are likely to influence the importance of particular decision-making criteria – has not been answered to date. For example, it seems that the *availability of time* that can be devoted to deal screening and selection may vary greatly throughout the life of a fund, because many VC firms are taking an active role in portfolio companies. In fact, empirical evidence indicates that VCs spend as much as 60% of their time on monitoring and assisting portfolio firms (Gorman and Sahlman, 1989). Hence, the actual procedures in use for deal evaluation may be quite different between the early

period of a fund and the subsequent portfolio monitoring and management phase. One of the key reasons as to why we hardly possess any knowledge about the influence of these VC-specific factors in VC decision making is that practically all of the published studies are cross-sectional and focus on the VC decision-making process in and of itself. They thus fail to capture decision making at different lifecycle stages of a fund, or, in the event that the VC is managing multiple funds, across the life of a VC firm.

These observations served as departure points for the present study. Specifically, we set out to investigate three interrelated research questions that will allow us to arrive at a more complete understanding of the VC decision-making process:

1. What evaluation criteria are identified as important when *rejecting* a business proposal?
2. Are these criteria consistently cited over the entire *lifecycle* of a venture fund?
3. Which additional *firm-specific factors* influence the VC decision-making process?

DATA & METHOD

Deal rejection in VC decision-making and the dynamics of the VC decision-making process over the life of a venture fund are poorly understood research topics. To answer the research questions outlined above, we thus chose an exploratory research design (a historical case study) which is recommended for investigating phenomena that are subtle and/or hardly understood (Eisenhardt, 1989; Strauss and Corbin, 1998; Yin, 2003). Exploratory case study research designs have been usefully employed in a number of studies in entrepreneurship (e.g., Lichtenstein et al., 2006). In particular, this type of research design permits a thorough understanding of the phenomena in question, which is of great importance for developing new knowledge on complex and dynamic phenomena such as VC decision-making over the lifetime of a venture fund (Fried and Hisrich, 1988). As this study seeks to explore the factors affecting the VC decision-making process over the life of a fund, the use of archival data analysis is preferred over an interview approach because it allows for the collection and analysis of the different criteria and their respective frequencies over several time periods (in our case, a total of 11 years). This approach also provides access to the records showing what the subject of the study actually did or decided at the time of the event rather than asking them to recall a distant, often non-significant event, and thus helps enhance the validity of the data over that often associated with self-reported techniques (Hall and Hofer, 1993; Shepherd and Zacharakis, 1999).

Study Setting

This study uses archival data from a European VC firm, unknown to the researchers prior to the study, which has multiple offices in Europe. The firm is focused on investing in seed-, early- and late-stage companies from around the world within a specific high-tech, high growth industry. Despite its financial success and the ability to attract limited partners for more than one fund – a common occurrence in successful funds –, the firm remains relatively small, with fewer than ten VCs, their support staff, and the original founders still active in the day-to-day operations of the firm. The team is comprised of people from four different countries with each of the VCs in the firm holding a graduate degree and at least five years of relevant industry experience. At the time of data collection the firm had made a total of 35 portfolio investments, some of which had received subsequent funding via both internal rounds and new financing rounds, across the two funds. The average acceptance rate of deals submitted to the firm over the entire period was 1%, which is consistent with the industry averages reported in many other studies. All of the investments had been syndicated with other VC firms based in Europe and/or North America and

the firm under study had acted as both the lead and co-investor, the roles divided almost equally across the portfolios. In the following, we will use the term “firm” to describe the VC firm, whereas the terms “company”, “deal”, and “proposal” all apply to the entrepreneurial ventures evaluated by the VC.

Data Collection Procedure

The data collected spans an 11-year period and includes information on deals that were submitted to the firm during the life of two venture funds. Although the funds overlapped in time, the origination and screening phases of Fund II were not initiated until after the final investment in Fund I had been completed and officially announced to the limited partners. However, the same team of VCs was responsible for all of the activities related to both funds, so while the investment decision-making process had been completed in Fund I, they were still involved in the monitoring, assistance and cashing-out activities while managing the origination, screening and evaluation activities related to Fund II.

The data set was created by first reading emails and memos, both electronic and written, in the archived deal files as well as all of the entries in the firm’s deal flow data base (“action log”) which contained 7,284 passages of text. The primary source of data was the firm’s action log that the firm uses to track the progress, comments, and ultimate disposition of a potential deal throughout the evaluation process. Although the materials received from prospective companies varied considerably in detail and length (ranging from short introductory emails and one-page “teasers” to 176-page business plans) the VCs provided approximately the same amount of information regarding their initial assessment of each deal filed as “Dead”; the term “DEAD” as opposed to rejected was a term that the firm consistently used to categorize deals that had been reviewed and, based upon reasons stated, were no longer active in the deal flow process. In total, the firm had received 3,631 deal proposals over the 11 years.

Data Analysis Procedure

The data was analyzed using qualitative methods (Locke, 2001; Roberts, 1997) which involved an interpretative approach to the documents containing text related to the VC’s views and decisions of the deals they had reviewed. Those comments representing the firm’s view or reasons, both explicit and implied, for categorizing the deals as “Dead” were collected along with information pertaining to the stage of the deal, the geographic region where the company was domiciled, the referral source of the deal, the date the deal was first received by the VC, and the date of the final disposition. While it was neither possible nor realistic to observe the firm over the life of a fund, typically ten years (Gorman and Sahlman, 1989), having access to all of the internal records and information related to each deal over the entire life of the VC firm facilitated the development of a “practical understanding” (Miles and Huberman, 1994, p. 8) of the firm’s deal screening and evaluation process as well as the evaluation criteria used by the firm.

Given that previous research on VC decision making had focused predominantly on positive investment decisions, the initial review of the data was not approached with an a priori list of specific criteria; however, an initial framework of broad categories, or preliminary codes, based upon the existing literature was developed. However, these categories only served as a basis for the iterative coding process which involved going back and forth between the data and the emergent categories, similar to the constant comparative method (Glaser and Strauss, 1967, Strauss and Corbin, 1998). The text was examined line by line and data specified categories (Locke, 2001, p. 67) were assigned. This open coding (Strauss and Corbin, 1998) process, and the

creation of categories and the subsequent division, combination, or abolishment of the same, used throughout the initial coding procedure was maintained in successive readings of the text. The final coding scheme with the list of categories and codes is presented in Table 2.

Great care was taken in assuring the reliability of the coding. Once the hierarchical coding scheme was developed, a random sample of excerpts from the data set was coded by a second person not involved in the study, but who had been trained in the coding scheme. The interrater agreement between the two raters was checked by computing Cohen's Unweighted Kappa (Cohen, 1960). The value for Kappa ranges between 0 and 1, where $K = 0$ signifies no agreement between the raters and $K = 1$ indicates perfect agreement between the raters. Although there is no definitive value deemed as an acceptable level of reliability, a Cohen's Kappa above .80 is generally considered to demonstrate high interrater reliability (Landis and Koch, 1977). Having established a high level of reliability ($K = .91$), all of text in the data set was coded.

FINDINGS

Our qualitative, longitudinal exploration of the VC decision-making process uncovered several novel findings. We first report some of the more general results that provide background information on key characteristics of the decision-making process in the examined VC firm. We then focus on the criteria applied in deal rejection, and report how the fund lifecycle and other VC-specific factors influence the VC decision-making process.

The decision-making process observed in this VC firm largely resembles the process previously described in the literature in that all of the deals received by the firm are subjected to an initial screening with those deals considered potentially interesting being evaluated further and, finally, more extensive due diligence is carried out on the minority of deals that are deemed potentially viable based upon a number of factors. VCs at this firm estimated that about 20% of business proposals made it past the screening phase, and about 10% received a preliminary investment recommendation, that is, an internal document sent by the "sponsoring" individual to the investment committee. These numbers also correspond to those frequently reported in the literature on VC decision making (e.g., Roberts, 1991), suggesting the importance of research on the criteria used for deal rejection.

Given that almost all prior studies investigated the criteria leading to deal acceptance, we were particularly interested in better understanding the rejection of deal proposals by VCs.

Deal rejection criteria. The main categories of criteria identified by researchers as being important to VCs when accepting deal proposals for financing are also evident in the reasons stated for rejecting a deal. Several interesting results stand out in Figure 1, which provides an overview of the reasons for rejection organized by fund year. First, we see that the typically referenced reasons for deal acceptance (e.g. product, market, finance) also feature in the reasons for deal rejection. Second, analyzing the trend over time reveals that VC fund-related reasons gain in importance over the lifetime of a fund. Third, the one finding that at first appears counter to the majority of previous research is the frequency of comments related to the characteristics of the management team ($n=93$). The reasons stated (e.g., "*Lack of confidence in management*", "*Lack of management team experience*", "*Need of restructuring board and exchange CEO*") by the VCs do reflect the criteria reported in previous studies. However, the frequencies are substantially lower than one might expect given the high importance attributed to the management team in previous research (Bruno and Tyebjee, 1985; Khan, 1986; Robinson, 1987; Wells, 1974). This seems to be a result of prior research being primarily interested in the factors related to deal

acceptance, whereas our study captures the reasons for rejection that precede a VC's final decision. The few cases in the dataset may simply represent those where the management team is an obvious disqualifier such as "*CEO does not have the best reputation*" and therefore is considered a knock-out criterion.

Lost opportunities in the deal flow. Perhaps one of the most unexpected and instructive findings regarding the deal flow is that although this VC firm, like most others, had only invested in roughly 1% of the deals reviewed, the remaining 99% classified as Dead had not all been rejected by the firm. Rather, a relatively large share of all received deal proposals – about 10% of the 3,631 deals – were classified as Dead because the VC firm no longer had the opportunity to pursue them. There were many reasons for these lost opportunities, but the majority of these cases were simply because the respective companies failed to respond to the request for additional data. Despite the VC's efforts to receive more information and maintain a dialogue with these companies, a surprisingly large number (n=192, or 5%) *never responded* to the VC. The following quotes from the action log illustrate this point: "*No response to request for more detailed revised business plan.*", "*DEAD no information received as requested*", "*No response since sending out confidentiality agreement*", "*Interesting but non-responsive company*".

It is important to note that all of these deals had been sent to the VC firm unsolicited and the firm waited almost half a year, often sending additional requests in the interim, before categorizing the deal proposals as Dead. Without contacting these companies, it is not possible to know exactly why they failed to respond to the VC's signal of potential interest, but judging from the comments regarding other deals that did not go forward, a few potential reasons for non-response could be (i) the requested information was unavailable or too difficult for the company to compile, (ii) the company received funding from another source, (iii) the company went bankrupt in the meantime, or (iv) that the company's management had changed their mind regarding the raising of external funding in general.

The remaining 5% of the deals that were "lost" by the firm can be attributed to decisions made by the company with respect to VC funding in general or, in some cases, specifically related to the VC firm in the study: "*Dead Company decided to go with alternative VC deal.*", "*Management not ready for VC.*", "*Company unwilling to accept certain Term Sheet conditions.*" "*Company decided against a later closing due to oversubscription, therefore no slot available for us. Keep in contact for future rounds.*", "*Finance discussions with unknown competitors. Company might come back. No response (after 3 months).*"

However, unlike the previous sub-group of lost opportunities that failed to respond during the initial screening and evaluation phase, this second sub-group of companies had progressed through the evaluation phase and was often in the due diligence process, or even in the final stage of investment consideration. This distinction is important as it implies that the VC had already expressed a genuine interest in the deal. The VC had also expended a substantial investment of time and financial resources in their pursuit of these opportunities, most of which would be simply expensed and considered a sunk cost.

Open-door rejection. Throughout the data set there were comments that showed that "no" in the VC context is not always a definitive rejection. Although the overwhelming majority of deals rejected by the VC were given no indication of any potential future interest, there were comments in both the internal records and the letters of rejection to companies that provided evidence of the VC's willingness to reconsider the deal at a later time. The reasons for this future potential included both company-specific issues as well as ones related to the VC firm or the specific VC

fund. In instances when the VC firm saw potential promise in a deal, they not only told the company why the deal was being rejected, but also provided very specific feedback with respect to the firm's interest, when the company should resubmit, and any necessary milestones to be achieved in order for the firm to pursue a subsequent evaluation. The VC's log provides several interesting illustrations of this issue: "*Interesting concept but too early stage,...should come back in second round*", "*Proof-of-concept in maybe about 9 months, company shall come back then.*" "*Too early but candidate for next fund*", "*Does not really fit our portfolio at the time, but stay in touch*". However, even though the firm had "left the door open" with many deals (n=146), there were only 22 instances where these companies submitted their proposals to the firm a second or third time; one of which was ultimately accepted as portfolio deal. This low response rate, much like the "no response" rate, may be due to a variety of factors not related to the VC firm's comments or request and can only be captured through contacting the companies directly. This finding, while new to the literature, is not altogether remarkable when one considers the difficulty and time requirements associated with sourcing quality deal flow (Gifford, 1997), the potential need to identify complementary skills or products to help existing portfolio companies, and the value of access to information about emerging companies and or technologies.

We now discuss our findings from a longitudinal perspective. In addition to those firm-specific factors related to the general firm strategy and deal characteristics that have been identified in past research (Wells, 1974; Tyebjee and Bruno, 1984a, 1984b; Hall, 1989), there are also factors that appear to be a result of VC characteristics and, in particular, the lifecycle of the VC fund, and thus are only likely to be captured in longitudinal or ethnographic studies.

The effect of time. Although some of the findings reported above are directly related to process or timing issues, their potential impact on the decision-making process is not fully appreciated unless they are viewed collectively over the entire timeline of the firm (See Figure 1).

Several observations seem to be particularly noteworthy. First, we see that across the lifecycle of an investment fund, there is quite some fluctuation in the primary criteria applied to reject deals. This is an important finding, as it highlights the dynamics of the VC decision-making process over time. Second, we see an intriguing increase of the fund-related reasons over the years indicating that there are factors *within* the VC firm that become more important in decision making over time. Importantly, these types of reasons have been neglected in prior research on VC decision-making criteria, which can be seen as a major shortcoming because fund-related reasons are the primary rejection criteria in the final years of our observation period (Years 9, 10 and 11). We will look more closely at one key driving force for this result – portfolio composition – below. Third, we see a rise and fall of the market- and product-related reasons which may be attributable to factors *outside* of the firm such as increased interest in a particular industry or market that fuels entrepreneurial activity and a subsequent increase in the submission of lower quality business proposals. Fourth, we now see in a more detailed manner that evaluation criteria related to the management team feature least prominently in deal rejection. Although the logged rejection criteria are also a function of the VC's deal flow, this result is nonetheless puzzling. Most notably, as noted above this results runs counter to one's intuition, because one would expect that team-related criteria feature much more prominently given that the management team has consistently been ranked as the most important evaluation criterion when it comes to deal acceptance.

VC management time. Although the number is quite small (n=66), there were times when the firm simply did not have the management capacity within the team to adequately pursue a potential deal, even when the deal was acknowledged to be potentially viable. The firm noted in its action log: "*Interesting but time constraints due to other due diligence.*", "*Too busy with other*

projects.”, “Rejected due to high activity on other deals at this time.”, “Were too occupied with four own closings to participate.”, “Not at the moment due to our Deal Flow.”

Resubmissions over time. Prior research suggests that once a deal is rejected by a VC, there is no chance that this particular VC will review the deal again, let alone provide funding for it. While we already noted that there were 146 open door rejections, our longitudinal data allows us to track whether rejected deal proposals that did not receive an invitation to resubmit actually were submitted to the VC firm again after some time. Table 3 indicates the number of times the VC firm had received a deal. Two observations are particularly interesting: First, we see that there were an astoundingly high number of 438 proposals that were submitted to the firm *more* than once. Only 22 of these deal proposals had been invited for resubmission as per the VC firm’s feedback (see section on “Open door rejection”). Second, the VC firm invested in approximately the same share of these resubmitted deals as in the original deals (1% in the second submission attempt, and 2% in the third submission attempt), despite having already rejected the deals once; the one exception being the successful fourth submission (7% acceptance rate) but that is due to the deal being one of only 14 proposals sent four times.

CONCLUSIONS

This study is based upon the actions and decisions of VCs operating within their normal context and therefore captures what was actually done at the time of the real decision rather than what is reported in response to a survey or interview about past deals. This difference alone may explain why, despite the fact that many of the criteria cited as the reasons for the Dead deals are consistent with those identified in previous research, the operational demands on the VC management team’s time and the profile of portfolio companies within the fund appear to impact the decisions made by the VCs more so than in previous studies.

When viewed from the perspective of rejection, the impact of firm-specific, *VC-specific factors* appears to be more pronounced than previously considered, and the conceptualization of VC decision making appears to be more *dynamic* when one considers the effects of time. Also, in order to develop a more comprehensive understanding of VC decision making, more attention should be given to these Dead deals. VCs are assumed by many to be expert decision makers and VC firms are commonly judged by the performance of their portfolios, which only represents one percent of the deals reviewed, with little to no consideration for the other 99% that were not selected. That said, this study reveals that not all dead deals are the result of rejection by the VC, so researchers should be wary when collecting and interpreting data related to deal acceptance/rejection rates.

Based upon this research the most important, yet basic, advice to entrepreneurs is to maintain communication with the VC if they have expressed interest in the deal. It is all too easy for a VC to tell a company that their proposal does not meet the needs of the firm, so when a VC takes the time to request information or provide feedback and encourages someone to come back, it is a sign that your deal is still being considered. Along similar lines, it seems that VCs should reevaluate their practices regarding the deals they have rejected. Because the market for quality deals is highly competitive, VCs should seek to strengthen their relationships with companies they believe are potential candidates for future funding. Entrepreneurs should also spend time learning about the firms they send their proposals to in order to tailor their documents to the current phase of the fund and/or requirements of each firm. Two firms with similar investment strategies may view the same proposal quite differently simply by virtue of the fact that they are focused on different criteria based upon the lifecycle phase each firm is in at the time. Finally, our findings also suggest

that VC firms should evaluate their existing management capacity and develop strategies to accommodate for times when they experience increased deal flow, above average due diligence activity or number of deal closings.

While this study provides additional insights into the decision-making process, many questions still remain unanswered. For example, much research has been conducted on the evaluation of the entrepreneurial team and the relevance of this evaluation, but the biases similar to those reported in Franke et al. (2006) may very well influence the evaluation of factors related to the other key criteria, namely the product and industry. Additionally, how does the participation in syndicates bias the evaluation and selection process? Guler (2007) showed that reinvestment decisions are influenced by the politics of the industry so it is highly likely that this institutional process also influences initial investments as well.

CONTACT: Jeffrey S. Petty; jeffrey.petty@unil.ch; (T): 41-79-827-9182; (F): 41-21-560-4250; HEC, University of Lausanne, 1015, Lausanne, Switzerland.

REFERENCES

- Bachher, J.S., & Guild, P.D. (1996). Financing early stage technology based companies: Investment criteria used by investors. In R. Ronstadt, J. Hornaday, R. Peterson, & K. Vesper (Eds.), *Frontiers of Entrepreneurship Research* (pp. 363–376). Wellesley: Babson College.
- Barry, C. B. (1994). New directions in research on VC finance. *Financial Management* 23(3): 3-15.
- Benoit, J. L. (1975). *VC Investment Behavior: The Risk-Capital Investor in New Company Formation and Expansion in France*, Texas, The University of Texas at Austin.
- Bruno, A. V., & Tyebjee, T.T. (1985). The entrepreneur's search for capital. *Journal of Business Venturing* 1(1): 61-74.
- Bruno, A. V., & Tyebjee, T.T. (1986). The destinies of rejected venture capital deals. *Sloan Management Review* 27(2): 43-53.
- Bygrave, W. D. (1988). The structure of the investment networks of venture capital firms. *Journal of Business Venturing* 3(2): 137-157.
- Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement* 20(1): 37-46
- Dimov, D., Shepherd D. A., & Sutcliffe, K.M. (2007). Requisite expertise, firm reputation, and status in venture capital investment allocation decisions. *Journal of Business Venturing* 22(4): 481-502.
- Dixon, R. (1991). Venture capitalists and the appraisal of investments. *Omega* 19(5): 333-344.
- Eisenhardt, K.M. (1989). Building theory from case study research. *Academy of Management Journal*, 14(4): 532-550.
- Franke, N., Gruber, M., Harhoff, D., & Henkel, J. (2006). What you are is what you like-similarity biases in venture capitalist's evaluations of start-up teams. *Journal of Business Venturing* 21(6): 802-826.
- Franke, N., Gruber, M., Harhoff, D., & Henkel, J. (2008). Venture capitalist's evaluations of start-up teams: Trade-offs, knock-cut criteria, and the impact of VC experience. *Entrepreneurship Theory and Practice* 32: 459-483.
- Fried, V.H., & Hisrich, R.H. (1988). Venture capital research: Past, present and future. *Entrepreneurship Theory and Practice* 12(4): 15-28.
- Fried, V.H., & Hisrich, R.H. (1994). Toward a model of venture capital investment decision making. *Financial Management* 23(3): 28-37.

- Gifford, S. (1997). Limited attention and the role of the venture capitalist. *Journal of Business Venturing* 12(6): 459-482.
- Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory; Strategies for Qualitative Research*. Chicago: Aldine Pub. Co.
- Gompers, P., & Lerner, J. (1999). *The Venture Capital Cycle*. Cambridge: MA, MIT Press.
- Gorman, M., & Sahlman, W.A. (1989). What do venture capitalists do? *Journal of Business Venturing* 4(4): 231-248.
- Guler, I. (2007). Throwing good money after bad? Political and institutional influences on sequential decision Making in the Venture Capital Industry. *Administrative Science Quarterly* 52(2): 248-285.
- Hall, J. (1989). *Venture capitalist's decision-making and the entrepreneur: An exploratory investigation*. Unpublished doctoral dissertation: Georgia, University of Georgia.
- Hall, J., & Hofer, C.W. (1993). Venture capitalists' decision criteria in new venture evaluation. *Journal of Business Venturing* 8(1): 25-42.
- Hisrich, R.D., & Jankowicz, A.D. (1990). Intuition in venture capital decisions: An exploratory study using a new technique. *Journal of Business Venturing* 5(1): 49-62.
- Hoban, J.P. Jr. (1976). *Characteristics of venture capital investments*. Unpublished doctoral dissertation: Utah, The University of Utah.
- Hoffman, C.A. (1972). *The Venture Capital Investment Process: A Particular Aspect of Regional Economic Development*. Unpublished doctoral dissertation: Texas, The University of Texas at Austin.
- Khan, A. M. (1986). Entrepreneur characteristics and the prediction of new venture success. *Omega* 14: 365-372.
- Khan, A. M. (1987). Assessing venture capital investments with noncompensatory behavioral decision models. *Journal of Business Venturing* 2(3): 193-205.
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics* 33:159-174.
- Lichtenstein, B. B., Dooley, K. J., & Lumpkin, G.T. (2006). Measuring emergence in the dynamics of new venture creation. *Journal of Business Venturing* 21(2): 153-175.
- Locke, K. (2001). *Grounded Theory in Management Research*. London. Thousand Oaks: Sage Publications.
- MacMillan, I. C., Siegel, R., & Subba Narasimha, P. N. (1985). Criteria used by venture capitalists to evaluate new venture proposals. *Journal of Business Venturing* 1(1): 119-128.
- MacMillan, I. C., Zemann, L., & Subba Narasimha P. N. (1987). Criteria distinguishing successful from unsuccessful ventures in the venture screening process. *Journal of Business Venturing* 2(2): 123-137.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis an Expanded Sourcebook*. Thousand Oaks: Sage Publications.
- Muzyka, D., Birley, S., & Leleux, B. (1996). Trade-offs in the investment decisions of European venture capitalists. *Journal of Business Venturing* 11(4): 273-287.
- Rea, R. H. (1989). Factors affecting success and failure of seed capital/start-up negotiations. *Journal of Business Venturing* 4(2): 149-158.
- Riquelme, H., & Rickards, T. (1992). Hybrid conjoint analysis: An estimation probe in new venture decisions. *Journal of Business Venturing* 7(6): 505-518.
- Roberts, E. B. (1991). *Entrepreneurs in High-technology – Lessons from MIT and Beyond*. Oxford: Oxford University Press.
- Roberts, C. W. (1997). *Text Analysis for the Social Sciences*. Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Robinson, R. B., Jr. (1987). Emerging strategies in the venture capital industry. *Journal of Business Venturing* 2(1): 53-77.

- Sandberg, W. R., Schweiger, D.M., & Hofer, C.W. (1988). The use of verbal protocols in determining venture capitalists' decision processes. *Entrepreneurship Theory and Practice* 12(Winter): 8-20.
- Shepherd, D. A. (1999). Venture capitalists' assessment of new venture survival. *Management Science* 45(5): 621-632.
- Shepherd, D. A., & Zacharakis, A. (1999). Conjoint analysis: A new methodological approach for researching the decision policies of venture capitalists. *Venture Capital* 1: 197-217.
- Shepherd, D. A., Zacharakis, A. & Baron, R. A. (2003). VCs' decision processes: Evidence suggesting more experience may not always be better. *Journal of Business Venturing* 18(3): 381-401.
- Strauss A. L., & Corbin, J. (1998). *Basics of Qualitative Research*. Thousand Oaks: Sage Publications.
- Tyebjee, T., & Bruno, A. (1981). Venture capital decision making: Preliminary results from three empirical studies. In K.H. Vesper (Ed.), *Frontiers of Entrepreneurial Research* (pp. 281-320). Wellesley: Babson College.
- Tyebjee, T. T., & Bruno, A. V. (1984a). A model of venture capitalist investment activity. *Management Science* 30(9): 1051-1066.
- Tyebjee, T. T., & Bruno, A. V. (1984b). Venture capital: Investor and investee perspectives. *Technovation* 2(3): 185-207.
- Wells, W. A. (1974). *Venture Capital Decision-Making*. Unpublished doctoral dissertation: Pennsylvania, Carnegie Mellon University.
- Yin, R. K. (2003). *Case Study Research*. Thousand Oaks: Sage Publications.
- Zacharakis, A. L., & Meyer, G. D. (1998). A lack of insight: Do venture capitalists really understand their own decision process? *Journal of Business Venturing* 13(1): 57-76.
- Zacharakis, A. L., & Meyer, G. D. (2000). The potential of actuarial decision models: Can they improve the VC investment decision? *Journal of Business Venturing* 15(4): 323-346.
- Zacharakis, A. L., & Shepherd, D. A. (2001). The nature of information and overconfidence on Venture Capitalists' decision making. *Journal of Business Venturing* 16(4): 311-332.
- Zacharakis, A., & Shepherd, D. A. (2005). A non-additive decision-aid for venture capitalist's investment decisions. *European Journal of Operational Research* 162(3): 673-689.
- Zider, B. (1998). How venture capital works. *Harvard Business Review* 76(6):131-139.
- Zopounidis, C. (1994). Venture capital modelling: Evaluation criteria for the appraisal of investments. *The Financier ACMT* 1(2): 54-64.

Table 1: VC decision making literature

Study	Method/Sample/Location	Research focus
Wells (1974)	Interviews/7 VCs in 10 VC firms/US	VC activities and the decision making process
Benoit (1975)	Survey, interviews/ 22 VC/France	Factors related to VC investment decisions
Hoban (1976)	Archival analysis, questionnaire/3 VCs firms/US	Identification of the variables that predict venture success
Tyebjee & Bruno (1984a)	Telephone survey, questionnaires/Study I - 46 VCs, Study II - 41 VC firms/US	Study I - VC evaluation process, Study II - Investment decision criteria
Khan (1986)	Questionnaire/36 VC firms/US	Entrepreneurial characteristics & successful venture outcome
MacMillan et al. (1987)	Questionnaire/67 VC firms/US	Classes of screening criteria, successful & unsuccessful ventures
Robinson (1987)	Mail survey/53 VC firms/US	VC firm strategies and strategic
Bygrave (1988)	Venture Economics/464 VC firms/US	VC co-investment networks
Rea (1989)	Mail survey/18 VC firms/US	Factors that affect VC-entrepreneur
Hisrich & Jankowicz (1990)	Interviews/5 VCs/Unknown	The role of VC intuition in investment decision making
Dixon (1991)	Interviews/30 VCs/UK	Factors considered when evaluating proposals
Riquelme & Rickards (1992)	Conjoint exp./Step 1-6 VCs, Step 2-7 VCs/Unknown	Applicability of conjoint measures, confirming and ranking of criteria used to evaluate deals
Hall & Hofer (1993)	Interviews/4VCs/US	Criteria used to make investment decisions
Muzyka et al. (1996)	Interviews, questionnaire/73	Factors used when evaluating deals,
Shepherd (1999)	Conjoint exp./66 VCs/Australia	VC assessment of new venture survival
Zacharakis & Meyer (2000)	Conjoint exp./53 VCs/US	Decision aids in VC decision making, assessment of a venture's success
Zacharakis & Shepherd (2001)	Conjoint exp./53 VCs/US	VC overconfidence in investment decision making
Shepherd et al. (2003)	Questionnaire/66 VCs/Australia	The impact of VC experience on decision making
Dimov et al. (2007)	VentureXpert/108 VC firms/US	VC firm characteristics and investment selection
Franke et al. (2008)	Conjoint exp./51 VCs/Europe	VC evaluation of start-up teams

Table 2: Coding scheme

100 Product (General)	500 VC-Specific (General)
110 Strategy/model	510 Firm investment criteria
120 Perception/View	511 Out of firm focus - Product
121 No USP or differentiation	512 Out of firm focus - Stage
122 Not convincing/compelling	513 Out of firm focus - Size
123 Need proof of concept	514 Out of firm focus - Geography
124 Single product	515 Not viewed as a VC deal
125 Too basic	520 Fund/Portfolio related
126 Complexity	521 Competes with portfolio
130 IP related issues	522 Not appropriate at this time
200 Market (General)	523 Too early for fund
210 Existence and/or clarity of market	524 No funds remaining for region
220 Character	525 No time due to fund activities
221 Too small or niche	530 External expert view
222 Too crowded or competitive	540 Deal structure
223 Too fragmented	541 Need lead investor
224 Too large or mature	542 Oversubscribed
230 Acceptance (potential) of prod/svc	543 Existing investor intent
240 Regulation	544 Lack of existing VCs
300 Financial (General)	550 Rejected/No opportunity
310 Exit	551 No response
320 Revenue/return potential	552 Closed by other VC
330 Use of proceeds	553 Not invited to participate
340 Valuation	554 Terms rejected
400 TMT (General)	555 Decided against VCs
410 Inexperience	556 Closed before fund
420 Reputation	600 Other
430 Lack of confidence	610 Dead but door left open
440 Key-man issue	700 No reason stated
450 No/incomplete management	800 OPEN (Still in deal review process)
	900 INVEST

Figure 1: Summary of deals reviewed and frequency of “Dead” reasons per year

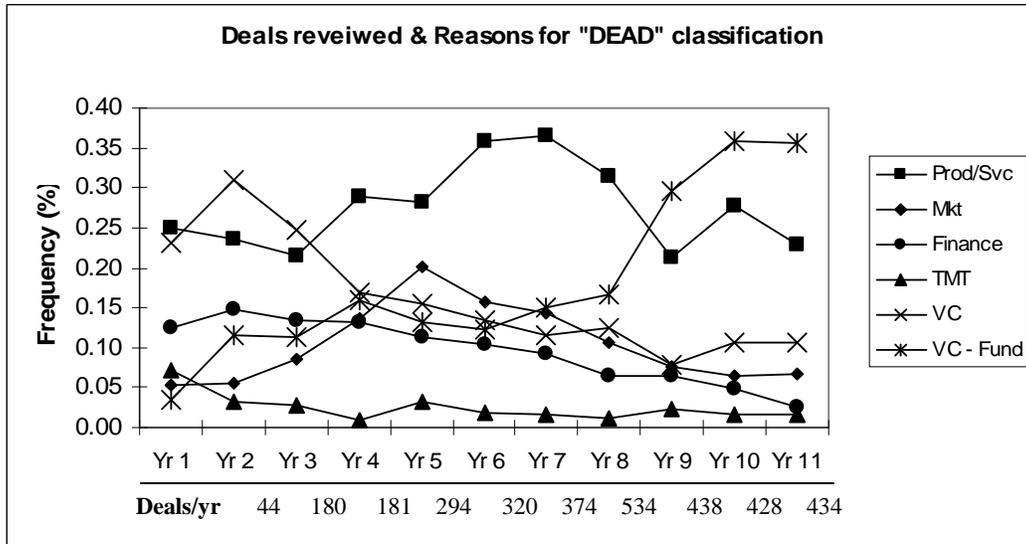


Table 3: Deals reviewed, grouped by submission attempt

	First submission	Second submission	Third submission	Fourth submission	Firm Totals
Deals reviewed	3,091	438	88	14	3,631
Investments	29	3	2	1	35
Resubmit rate		0.14	0.2	0.16	
Investment rate	0.01	0.01	0.02	0.07	