SELECTING PROJECTS FOR VENTURE CAPITAL FUNDING:

A MULTIPLE CRITERIA DECISION APPROACH [*]

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Summary: *The field of entrepreneurship offers numerous opportunities for the analysis of complex decisions. This paper examines the selection process where, given a portfolio of business proposals, only a subset of them will be chosen for investment by a venture capitalist. It outlines the application of a Multi Attribute Value Theory* (*MAVT*) *model to an actual process undertaken by a venture fund based at the Weatherhead School of Management at Case Western Reserve University. Each year, managers of this venture fund review several business plans and select a handful of proposals for investment. We apply the MAVT approach to a previously examined set of business plans and describe the actual selection process, contrasting it with the selection performed with the aid of the Multiple Criteria Decision Analysis methodology. We compare our model with other decision models proposed in the entrepreneurship literature, and address the shortcomings noted in those models.*

Keywords: venture capital; investment decisions; multi attribute value theory.

1. Introduction

It is generally accepted that venture capitalists evaluate potential companies under three broad criteria: quality of management, unique product or market opportunity, and potential for capital appreciation. It is also a fact that this evaluation process combines elements of objective information gathering and analysis with "the venture capitalist's intuition, gut feeling and creative thinking" (Hisrich and Peters, 2002: 400). Hisrich and Jankowicz (1990) explore the nature and components of intuition in venture capital decisions in an attempt to better understand which particular subjective factors are at play. Even when venture capital firms

establish investment objectives and philosophy, in an effort to minimize these subjective evaluations, there are still observed discrepancies between the official and de facto policies for the assessment of a new venture proposal (Shepherd *et al.*, 2000). This disconnect is attributed to the fact that decision makers, especially experienced ones, tend to overlook established objectives and instead rely on intuition and various heuristics (Shepherd *et al.*, 2003) when undertaking the selection process. Heuristics are "rules of thumb" that while not "bad" per se, are susceptible to various sources of cognitive biases (for a classic discussion see Tversky and Kahneman, 1974). Some of the cognitive biases that may affect the way venture capitalists address decision situations include overconfidence (thinking that one knows more than one actually does) and anchoring, one form of which is to follow past practice and shun innovative alternatives (Keeney, 1992).

Bygrave *et al.* (1988) document considerably low rates of return for investors in venture capital funds. Perhaps in response to this less than optimal performance, some entrepreneurship scholars have attempted to reproduce the decision process undertaken by venture capitalists, with the ultimate goal of improving it. Such attempts include the work of MacMillian *et al.* (1985) who studied how venture capitalists choose the entrepreneurial venture in which to invest, and whose results were replicated by Fried *et al.* (1993). Both studies used questionnaires that provided the venture capitalist with 24 criteria for analyzing an investment, and asked the respondents to weigh these criteria directly on a four-point scale. Tyebjee and Bruno (1983) asked venture capitalists to evaluate previously examined plans on 23 criteria using a four-point scale, again with the decision process replication in mind. In as much as these studies provided insight into the way venture capitalists go about business selection, Zacharakis and Meyer (1998) propose that methods that use surveys to ask venture capitalists to revisit previous choices and use those choices as a base to assess their decision process are biased. Some more recent approaches that respond to this concern include Conjoint Analysis, Actuarial Models and "Utilité Additive" (UTA) Models.

The conjoint analysis approach, (e.g. the work by Riquelme and Rickards [1992] and by Musika *et al.* [1996], also Shepherd *et al.* [2003] for a literature review of the many applications of this methodology), a descriptive process that proposes to capture decision policies as the decisions are made, sheds light into which criteria are relevant for the decision making process. It is based on Multi Attribute Value Theory (MAVT), but unlike the MAVT approach we propose herewith, it infers the relative weights of these criteria. The inference process uses either a set of previously made choices or an artificially constructed portfolio of options presented to the decision maker. In either case, this approach offers decision makers a very limited number of possible ratings for each criterion (high or low, for example). Conjoint analysis derives utility scores for each criterion in a manner analogous to linear regression.

Actuarial models as proposed by Zacharakis and Meyer (2000) are another attempt at accomplishing some improvement in the venture capitalist decision process. As the conjoint analysis models, these models also propose to mimic the decision process undertaken by experts. This is accomplished by the decomposition of a decision into its component parts. Actuarial models include environmental and bootstrapping models, where the former employ discriminant or regression analysis on actual decision data, whereas the latter models "aim to capture the cognitive system of a decision-maker, including both the decision criteria and the relative weights actually used in past decisions" (Shepherd *et al.*, 2003: 386).

The UTA method develops an additive utility function that attempts to be consistent with the decision maker's values, and as Conjoint Analysis and Environmental Actuarial models, use a reference set of alternatives as the initial point. Siskos and Zopounidis (1987) propose its use in venture capital investment decisions. Recently, there has been a call for more than mimicking the investment selection process, and instead for the use of decision aids in the venture capital world (Shepherd and Zacharakis, 2002).

In this paper we apply Multiple Criteria Decision Analysis (MCDA) to a previously examined set of business plans. We present the results of that application and compare and

contrast the selection processes performed with and without the aid of the MCDA methodology. Our premise is that this methodology can, as it has in many other real world situations (see Pomerol and Barba-Romero [2000] for a listing of applications), aid a venture capitalist / decision maker, but without prescribing what the "optimal solution" is. Bootstrapping, Conjoint Analysis and UTA models are related to the MAVT approach in their acknowledgement of the multiplicity of criteria that a venture capitalist must simultaneously consider during the evaluation of business plans. However, in contrast with these, our model does not directly utilize a decision maker past evaluations of business plans as the initial point. It focuses instead on attempting to elicit from the venture capitalists the frame of mind under which current evaluations would be made. Our model tries to bridge the gap between the official and de facto policies for the assessment of a new venture proposal by helping decision makers understand and express what these policies actually are, and then incorporating them into the model. Past decisions are employed only as a "reality check" (the adequacy of the MAVT decision aid is tested by comparing its results with past decisions). Our work further contributes to the field of MCDA by exploring an application not frequently seen in the literature, and demonstrating how this application can be approached in a rigorous fashion that is nevertheless appealing and transparent to a venture capitalist not versed in the theoretical aspects of MCDA.

2. The Case for MCDA use by Venture Capitalists

There is a vast body of literature on the use of multi criteria methodologies in financial decision making (Zopounidis and Doumpos, 2002) such as investment portfolio selection (Bouri *et al.*, 2002), extension of credit (Matsatsinis, 2002), and foreign direct investment (Doumpos *et al.*, 2001). Much less is reported on applications of MCDA to venture capital portfolio selection. Spronk *et al.* (forthcoming) list only four applications, two involving Conjoint Analysis and two that applied UTA. Belton and Stewart (2002) note that neither method completely identifies the decision maker's value function, since they estimate it from less precise inputs than the value

function methods that require decision makers to assess their relative preferences. Belton and Stewart (2002) do note, however, the merits of such "quick and dirty" methods for preliminary analyses or for decisions of lesser importance, particularly the lighter demands they place on decision makers. We believe that the complex nature of venture capital decision merits the consideration of more involved MCDA processes such as MAVT.

MCDA, in particular methods such as MAVT models that require elicitation of preferences and include a relevant sensitivity analysis, may be an adequate answer to Shepherd and Zacharakis's (2002: 1) "call for research into decision aids and cognitive feedback" in the context of decisions processes of venture capitalists. Moving away from trying to explain and reproduce the process, as the Conjoint Analysis, Bootstrapping, and Environmental Actuarial models do, MCDA has the potential to aid venture capitalists in understanding the complexities of the decisions they face. The feedback gained by these individuals at the last stage of the MCDA process – interactive sensitivity analysis – has the potential to bring to the forefront aspects not previously considered, thus improving the quality of the their decisions. Furthermore, the heavy reliance on intuition on the part of venture capitalists reminds us of Belton and Stewart's (2002) recounting of that their "most memorable interventions in organizations have been those in which the multicriteria analysis has brought about a strong challenge to the decision making group's intuition" (p. 283).

We have interacted with a fund manager to develop a hierarchical framework that captures the venture capitalist's perception of business plan evaluation criteria. We chose to employ a MAVT based model, and thus have elicited the decision maker's value functions and weight preference structure. MAVT is one of the most widely employed MCDA methods in practical applications (Belton and Stuart, 2002), and in our personal experience easily understood by individuals who are part of the business world. As the evaluation of each business plan under each criterion reflects the perception of the fund manager, we must acknowledge that the preferences articulated by the venture capital fund manager are influenced

by the modeling and structuring of the problem and that the manager may not always be entirely consistent and rational. But by including the fund manager in the sensitivity analysis of the results we are able to account for these issues and allow for a potential reevaluation of previously assessed preferences.

While also acknowledging that our proposed methodology might encounter resistance on the part of venture capitalists who report taking an average of only 8 to 12 minutes to evaluate a business plan (Sandberg, 1986), we nevertheless believe in the value of MCDA. The fund manager with whom we interacted did not share the perception that evaluations could take such an insignificant amount of time. Rather, she proposed that the 12 minute figure should be understood as an average since many business plans do not meet basic minimum criteria and are eliminated prior to any form of analysis. She acknowledged the multiplicity of objectives that a fund manager must simultaneously consider, and thus agreed to partner with us to investigate the potential of our proposition.

3. JumpStart Case Study

3.1 Overview

JumpStart is an American venture fund based in Cleveland, Ohio. It was created by business and academic leaders to provide start-up capital to companies headquartered in Northeast Ohio. Twenty-three angel investors and institutions contributed $100,000 each, for a total of $2.3 million. Between 2001 and 2003, Jumpstart was based at Case Western Reserve University. In 2004 it became part of a larger organization which adopted the name JumpStart Inc. Until 2004, a typical JumpStart investment amount was in the range of $200,000. Each year between 2001 and 2003, the fund manager reviewed several business plans and presented to the board of directors a handful of proposals for investment.

Our case study evaluates nine business plans previously considered for investment by JumpStart. In order to protect the confidentiality of JumpStart and of the businesses, their actual

names were replaced by the following aliases: (1) Dental device, (2) E-commerce facilitation, (3) Human resources tool, (4) Management software, (5) Market research tool, (6) Media company, (7) Medical device, (8) Pharmaceutical, and (9) Supply chain management software.

3.2 Modeling and Analysis

We started our modeling effort by developing criteria in interactions with the JumpStart fund manager. We used a combination of the two structuring techniques for developing value systems (Watson and Buede, 1987), top-down and bottom-up. Since the alternatives in question were pre-defined, the attributes that differentiated these alternatives were very clear to the decision maker, and served as a starting point for the development of criteria. The main objective of the decision maker was, however, crisply defined, and hence the use of the objective-driven top down analysis "felt natural". We encouraged the fund manager to avoid the pitfalls of criteria redundancy, lack of independence, and extreme complexity while being comprehensive and sensitive to criteria relevance. Once the overall goal of "selecting the best business to invest in" was defined, four sub-goals emerged – "Management and Governance", "Feasibility of Proposition", "Market Considerations" and "Return on Investments". Each of the 10 lower level criteria, or performance measures, fell under one of the four sub-goals, resulting in the hierarchy of criteria displayed in Figure 1.

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Insert Figure 1 about here
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We note that a fourth criterion was added to the three cited in our opening sentence (Hisrich and Peters, 2002) – "feasibility of the proposition", which measures the realism of the business plan. Works by others in the field have produced sets of criteria that bear more or less similarity to our set. Tyebjee and Bruno (1984) add yet a fifth criterion called "environmental threat resistance" which accounts for business cycles and barriers to entry. This criterion might

have overlapped with our "market potential", and therefore we are comfortable with its omission. Jain (2001) employed factor analysis to conclude that the three critical success factors for the performance of venture capitalist-funded new ventures are the "strategic fit" between the venture capitalist and management, management's long-term commitment and a focused strategy. Shepherd (1999) shows that venture capitalists generally use criteria that are consistent with research found in the strategy literature. These "in-use" criteria, however, are not necessarily the criteria venture capitalists would report as their "espoused" ones. The criteria of Shepherd *et al.* (2000) and Shepherd *et al.* (2003) are similar to ours. Zutshi *et al.* (1999) present a review of previous work that attempted to develop a set of venture capitalist evaluation criteria and investigate the case of venture capitalists in Singapore. Muzika *et al.* (1996) discusses criteria used by European venture capitalists. Their findings seem to indicate a rather consistent set of evaluation criteria, with the entrepreneur's "experience" and "personality" being among the most highly weighted criteria. Khan (1987) had previously arrived at the same observation. While recognizing the slight variations in criteria lists mentioned in the literature, we believed that the structure of the value tree that resulted from our interactions was acceptable and met the guidelines discussed in the MCDA literature (for example Hobbs and Meier, 2000), while the lower level set of criteria (measures in Figure 1) meet Keeney's (1992) requirements of being measurable, understandable and operational.

With the hierarchical structure of criteria defined, we asked the JumpStart fund manager to rate each of the nine plans on the ten measures selected for the decision process. These ratings were based primarily on information contained in the business plans. Roure and Keeley (1990) ascertain that most venture capital decisions are made based on information contained in the business plan presented by the aspiring entrepreneur. As in any value measurement model, performance was assessed on an interval scale of measurement containing minimum and maximum reference points. Local reference points were utilized for the development of scales used in the swing weight approach. The decision not to attempt to use global reference points

resulted from the realization that the group of business plans being analyzed was representative of the universe of plans targeted by JumpStart. In other words, in this case global and local reference points coincided. We offered the fund manager complete flexibility in the choice of scales for the ratings (categorical or numerical). On most criteria, she chose to assess the performance of the alternatives in terms of a subjective description or categorical scale (e.g. high, medium or low). This description was later converted into a numerical value, in relation to the specified reference points. The ratings elicited from the JumpStart fund manager are presented in Table 1.

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Grey cells in Table 1 represent probabilistic assessments. For "Exit Opportunities", these are point estimates of discrete probabilities of each event (e.g., Pharmaceutical's exit opportunities have been assessed to be acquisition with probability .75, initial public offering with probability .25 and no exit opportunity with probability 0.). For "Potential Market Size" and "Time to Achieve Profitability", the numbers shown on Table 1 are the expected values of uniform distributions between the upper and lower estimates for these measures as mentioned in the business plans. (For example the business plan for "management software" estimates the potential market size for the product as at least 2.2 billion dollars, but with the potential to reach a maximum of 5 billion. We modeled this with a uniform distribution between 2.2 and 5 billion – the expected value of this distribution – 3.6 billion – may be seen in Table 1). The probabilistic ratings are incorporated in the analysis and are reflected in the resulting ranking of the alternatives under consideration. (Logical Decisions®, the software package we used for the analysis, uses Monte Carlo simulation to compute a probability distribution for the aggregate utility of an alternative by drawing a large number of samples from the probability distribution of the ratings of the alternative [Logical Decisions, 2002].)

The probability estimates we assessed are, by nature, not frequency based probabilities. They must be understood as subjective probabilities, or probabilities broadly defined as "degree of belief", that incorporate the decision maker's personal judgment about the uncertainty of the outcome (Raiffa, 1968). In eliciting these "degrees of belief", we attempted to avoid cognitive biases by structuring the interview and encouraging the fund manager to think carefully about each probabilistic estimate.

The most intuitive and prevalent method for weight estimation is direct rating (von Winterfeldt and Edwards, 1986). Case in point, when weights are mentioned in works that attempt to reproduce the venture capital decision process, such as the ones of Khan (1987), Fried *et al.* (1993) and Zutshi *et al.* (1999), these weights are often assessed directly, using a qualitative scale. We avoided the direct rating approach and instead elicited weights by the swing-weight approach favored by Stewart (1992). The swing-weight procedure worked well for the criteria on the lower level of the hierarchy. For the higher level goals, however, the decision maker felt very strongly that all goals should have equal weights. We decided not to insist on revisiting this proposition until the time that sensitivity analysis was performed.

It is appropriate to perform value function elicitation by direct assessment for those criteria with only a few possible discrete values (Keeney and Raiffa, 1993). Value functions for all criteria with the exception of those of a continuous nature ("Potential Market Size" and "Time to Achieve Profitability") were assessed in this fashion. Value functions for the two criteria modeled by continuous variables were assessed with the aid of graphical tools available in the Logical Decisions® software package used for the analysis. For instance, the resulting value function for "Potential Market Size" was linear, with a minimum cutoff point below which a plan would be removed from consideration. The concave value function for "Time to Achieve Profitability" shown in Figure 2 reflects an aversion to risk on the part of the fund manager. We assumed an additive value function model to aggregate the value functions for each criterion. Although more complicated aggregation procedures are sometimes proposed, the

additive function is very intuitive, widely used in practice, and mathematically sound provided that criteria are properly defined and the scoring process understood by the decision maker (Stewart, 1992).

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Insert Figure 2 about here
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3.3. Results and Sensitivity Analysis

The ranking resulting from the aggregate value function representing the information elicited from the JumpStart fund manager, in the form of a graph output from the Logical Decisions® software package, is shown in Figure 3. The horizontal lines at the extremities of the bars indicate the uncertainties resulting from the probabilistic nature of some of the assessments. We explored the variations in ranking that would occur as a result of an outcome other than the expected value of each probabilities assessment, as well as with variations in the elicited weights for the various criteria. The ranking of the five top alternatives was very robust, with rank reversal occurring only between “medical device” and “market research tool”.

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Insert Figure 3 about here
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We revisited the issue of equal weights for the four higher level goals (management and governance, feasibility of the proposition, market consideration and return on investment). We noted that the top ranked alternatives were quite insensitive to variation in the weights assigned to these goals, and therefore the issue of equal weights was not revisited.

Only after the analysis was completed did we ask the JumpStart fund manager which of the businesses were actually selected for investing. The four highest ranked businesses had been selected. These were the alternatives that had exhibited considerable robustness to variations in weights or probabilistic ratings.

4. Discussion and Conclusion

Zacharakis and Meyer (2000) express their disappointment at the level of decision improvement obtained with their model. They define improvement as the model selecting a higher percentage of ultimately successful business plans than the venture capitalists themselves had selected. The authors suggest that their actuarial models could achieve better results if they better reflected the "needs and beliefs" of each firm, instead of being generalized. We believe we have addressed this concern, since MCDA allows for the incorporation into the model of the value system embodied by each venture capitalist, and therefore might be a more effective decision aid. The goal of MCDA is not, however, to replace or outperform venture capitalists, but rather to improve their decisions by shedding light into the complexities of the choices they face and minimizing their cognitive biases. Better results may be a natural consequence.

Shepherd *et al.* (2000) used conjoint analysis to reproduce the decision process of venture capitalists. One of the stated limitations of that research effort was the use of dichotomous attributes (high – low, for example). Our work avoided that limitation by offering decision makers considerable freedom in the design of the scales in which they wish to rate business plans. Also, Shepherd and Zacharakis (2002) call for research into decision aids and cognitive feedback in the context of the venture capitalist decision process. The MCDA model we propose gives venture capitalists the feedback on the processes used in their decision called for in that work. It allows for greater flexibility than other models in the choice of scales in which to evaluate alternative plans. Criteria weights as determined in our work tend to be accurate representations of decision makers values, while respecting the axioms of MCDA. Lastly, the multiattribute model we employed allows us to capture a venture capitalist's uncertainty about outcomes in a manner not embedded in other models reported in the literature.

Of course, the use of MCDA has its limitations. We have not determined if venture capitalists' decisions would indeed be improved with the use of MCDA models. Because of the

nature of our experiment, we cannot assess "improvement" in the way Zacharakis and Meyer (2000) do. Virtually all the business plans we analyzed were developed by startup companies that are still in the early stages of doing business at the time of the writing of this paper. In order to answer this question, we could also redefine "improvement" in this context. If "better" means better educated, more transparent and more "thought out" decisions, we believe the answer would be affirmative. We cannot claim, however, that higher returns on investment would actually result from decisions made with the aid of multiple criteria models.

MCDA might present an enhancement to the current practice of venture capital decision making, which is teeming with heuristics. Experienced venture capitalists, the ones most likely to use intuitive decision making (Shepherd *et al.*, 2003), could benefit from the minimization of cognitive biases that tends to result from a structured process such as the one we propose. Inexperienced ones, on the other hand, would benefit from using a MCDA approach by understanding it as a learning tool. The process of model building will encourage these less seasoned individuals to carefully evaluate priorities, engage in systematic rating and critically examine results through sensitivity analysis.

We recognize that the elicitation of subjective probabilities in which we engaged during the analysis shares the drawback of vulnerability to cognitive biases. Even assessments that the fund manager deemed certain (as in quality of management or founder's track record) have an element of subjectivity. In contrast with the situation where the decision maker makes "gut" decisions alone, when he or she engages in a systematic process led by an experienced decision analyst, the cognitive and motivational biases that tend to occur in the elicitation of subjective probabilities may be overcome. While it is not possible to ascertain that the elicitation procedures we employed with the fund manager of JumpStart eliminated any bias, we attempted to minimize those by following recommended bias avoiding procedures (Spetzler and Holstein, 1975). We especially believed in the importance of structuring the interview, and encouraging the fund manager to think carefully about each probabilistic estimate. Most importantly, the

sensitivity analysis which is an inherent part of good MCDA practice served as a safeguard that further reduced the impact of cognitive biases.

We designed our experiment with the assumption that the venture capitalist had a collection of potential businesses to be invested in. Jumpstart and its successor Jumpstart Inc. issue requests for business plans to be submitted by a certain date. Many venture capitalist funds do not operate in such a fashion, and instead receive a steady influx of plans that are evaluated as they are submitted. We believe that the approach presented in this paper has merit for that way of operating as well. An initial evaluation of a group of plans would be necessary. Subsequent plans could be assessed individually and then inserted into the existing ranking of previously evaluated plans.

The businesses selected for funding by the JumpStart fund manager corresponded to our four highest ranked businesses. This encouraging result increased the confidence of the fund manager in the methodology, but did not prompt her to considering changing the fund's decision process. Informal consultations with other venture capitalists also revealed an attitude of cautious interest in the methodology. The few venture capitalists to whom we presented this approach may not portray a representative sample of the universe of venture capital firms. However, the reaction we observed reproduced Zacharakis and Meyer's (2000) study of actuarial decision models, which demonstrated that although venture capital decision making could be improved with the use of such models, venture capitalists were reluctant to use them. The reluctance on the part of venture capitalists to consider the use of decision aids, if indeed widespread, is unfortunate. Perhaps one of the most important calls for further research in this area is the one for methodologies and processes that focus on facilitating the acceptance of MCDA by venture capital firms. In particular, insights may be gained from comparing and contrasting the merits of MAVT methods such as the ones we presented with simpler and faster (Belton and Stewart [2002] refer to them as "indirect") MCDA approaches. Among them are the

already explored UTA method and MACBETH (Bana e Costa and Vasnick, 1994), the application of which to venture capitalist decisions is not yet documented in the literature.

This paper presented the results of an experiment conducted with the manager of a venture capital fund, where a MCDA approach was used. We interacted with the fund manager to elicit information that was modeled based on a MAVT method. Nine business plans were evaluated with the resulting decision model. The motivation for this research arose from a gap in the literature on improving venture capital funding decisions, which includes several attempts to reproduce the decision making process with the ultimate goal of perfecting it. We believe that our work has addressed some of the concerns expressed in that literature, and has proposed a fresh perspective on the venture capital decision making modeling issue. We proposed a concerted effort in determining if MAVT or other multi criteria methods would find acceptance in the venture capitalist community. This effort could be enhanced by parallel research on how to conduct interviews with these decision makers in a manner that at the same time minimizes errors in judgment, maximizes the comfort level of the venture capitalist with the process, and retains all the necessary validity conditions for the construction of a mathematically rigorous MCDA model.

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Figure 1: Hierarchy of Criteria for Business Plan Evaluation

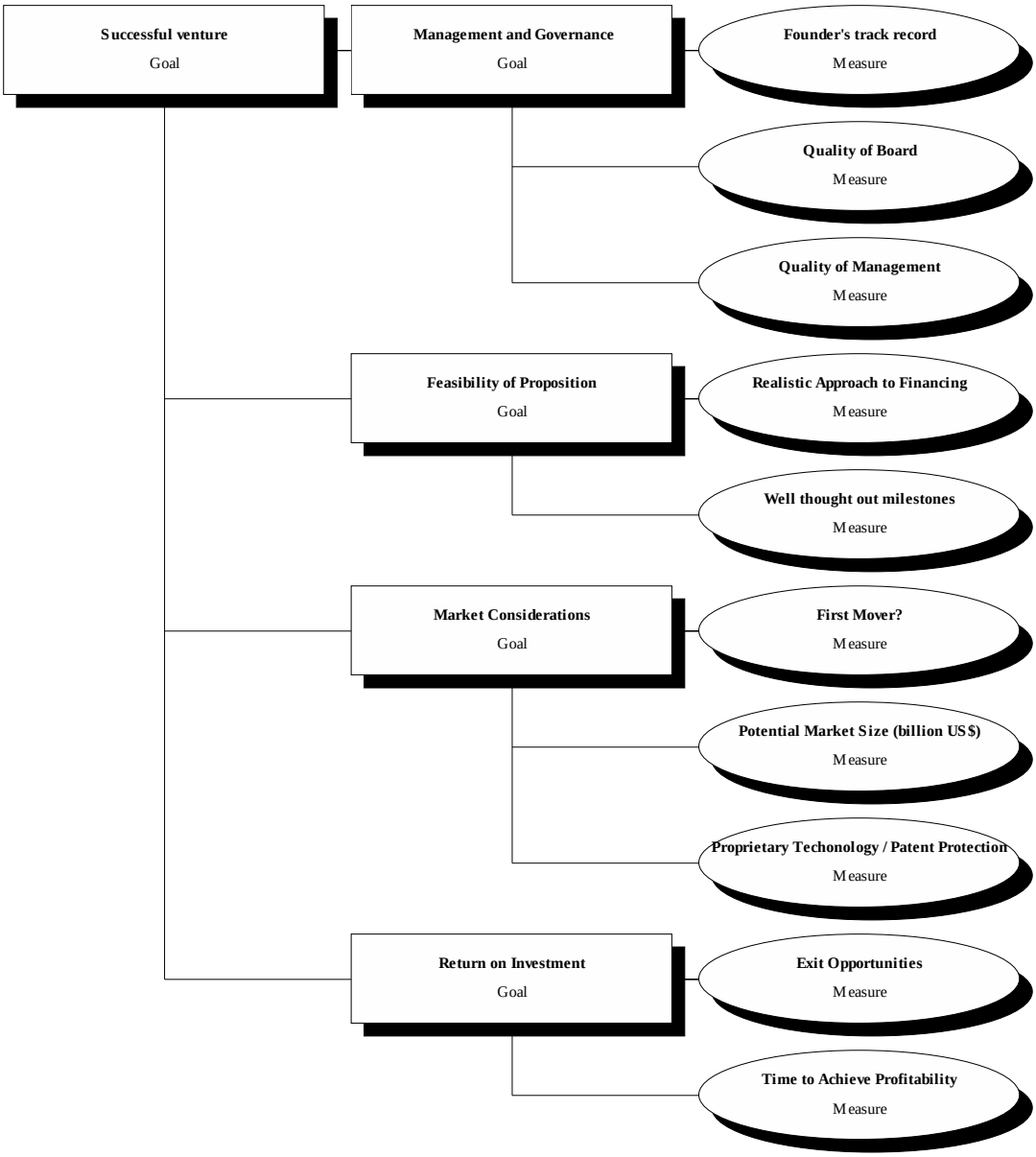
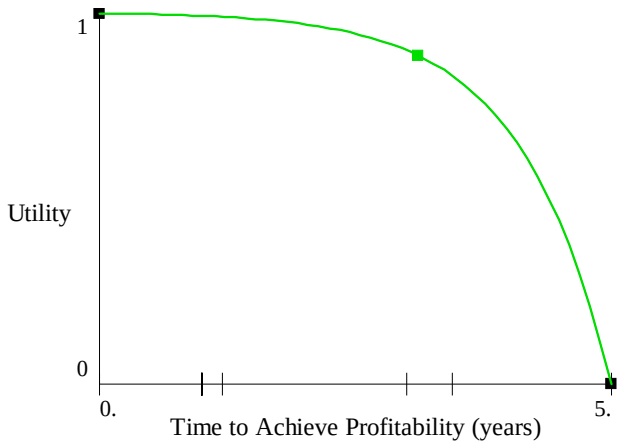


Figure 2: Value Function for Time to Achieve Profitability



Selected Point -- Level: 3.11111 Utility: 0.886154

Figure 3: Ranking for “Successful Venture” Goal

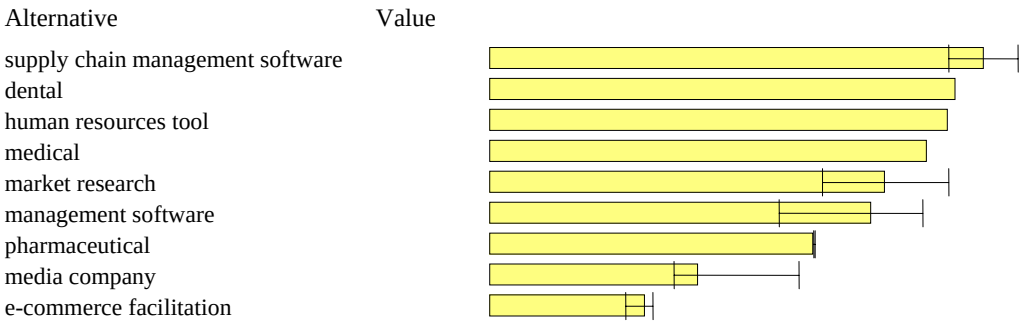


Table 1: Ratings of Business Plans

Business Plan	Exit Opportunities	First Mover?	Founder's track record	Potential Market Size (billion US$)	Proprietary Techonology / Patent Protection	Quality of Board	Quality of Management	Realistic Approach to Financing	Time to Achieve Profitability (years)	Well thought out milestones
dental device	Acquisition likely	yes	High	1	Patent protected	No board mentioned	High	Highly realistic	3	Well thought out
e-commerce facilitation	No exit opportunity	yes	Medium	0.5	patent pending	Medium	Medium	Financing not mentioned	3.45	No Milestones mentioned
human resources tool	Acquisition likely	no	Medium	3.3	No protection	High	High	Highly realistic	1	Well thought out
management software	Acquisition likely	no	High	3.6	No mention	No board mentioned	Medium	Somewhat realistic	0	Well thought out
market research tool	Acquisition likely	no	Medium	5.9	No protection	High	Medium	Highly realistic	1.21	Well thought out
media company	No exit opportunity	yes	Low	0.1	No mention	No board mentioned	Low	Highly realistic	1	Somewhat realistic
medical device	Acquisition likely	yes	Low	4.8	patent pending	High	Medium	Highly realistic	5	Well thought out
pharmaceutical	Acquisition likely	yes	Medium	3.375	patent pending	No board mentioned	Medium	Financing not mentioned	1	Somewhat realistic
supply chain management software	Acquisition likely	no	Low	15	No mention	High	Medium	Somewhat realistic	1	Well thought out