1999 Award Winner

Ian C. MacMillan's Contributions to Entrepreneurship and Small Business Research[1]

*Hans Landström**

"Professor MacMillan has been instrumental in introducing an international perspective to entrepreneurship research /…/ he has strengthened the theoretical base and the scientific approach of entrepreneurship and small business research./…/ Professor MacMillan's work has contributed significantly in establishing entrepreneurship as a legitimate scholarly field of study."

The aim of this essay is to present the research of Ian C. MacMillan, the 1999 FSF-NUTEK Award Winner. Only research within the area of the Award will be presented. The presentation starts off with an introduction to the Winner's career and continues with an overview of the most important research contributions.

Career in Brief

Ian MacMillan was born in South Africa in 1940. After graduating in Chemical Engineering in 1963, he worked in the South African atomic energy industry and later on in the oil refining industry. He attended courses in Organizational Politics at the University of South Africa. In 1970 he became a lecturer and graduated from the MBA program in 1972. MacMillan did his DBA at the University of South Africa and presented a PhD thesis entitled *Aspects of Manipulative and Accommodative Behaviour by Graduate Middle Managers* in 1975.

The University of South Africa used to invite a number of American professors to the University. Two of them were Larry Cummings and Andrew Van de Ven. They looked at the work that Ian MacMillan was doing and became interested in it. As a result they asked him to visit the US where he received an offer to lecture at Northwestern University in Boston. In 1975 MacMillan arrived at Northwestern University as a visiting professor.

In 1976 Ian MacMillan became Associate Professor in policy at Columbia University, a position that he held until 1983. Large part of MacMillan's research during this period was focussed on strategic management topics. At about the same time Ian MacMillan became more and more interested in entrepreneurship, and he also became involved in teaching entrepreneurship courses at Columbia. MacMillan received a great deal of attention for his educational efforts. The Fortune Magazine produced a series of articles, which they called "the ten best university business school professors in the country", in which Ian MacMillan and his entrepreneurship courses at Columbia received wide coverage.

In the early 1980s a decision had been taken by New York University (NYU) to launch a Center for Entrepreneurship, and they approached MacMillan and offered him the position of Professor and Director of the Center, and it was at NYU that MacMillan's interest in entrepreneurship gained momentum. Ian MacMillan was Professor and Director of the Center for Entrepreneurship Research at New York University between 1984 and 1986.

In 1986 Ian MacMillan was recruited by Wharton School of Business at the University of Pennsylvania in Philadelphia, where he was appointed Director of the Snider Entrepreneurial Center.

Since the mid 1990s Ian MacMillan's research has developed into the area of corporate entrepreneurship, in which he has worked closely with Rita McGrath, one of the former top scholars at the Snider Entrepreneurial Center, but now at Columbia University Graduate School of Business in New York.

It is hard to present a comprehensive picture of Ian MacMillan's extensive research, but an attempt at presenting the most central

[1] This presentation covers Ian MacMillan's main contributions to entrepreneurship and small business research until around the year 2002.

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contributions is made in the following section. A central theme of his research is that it should be relevant to society as well as to companies.

Research Contributions

Ian MacMillan has an extensive research production within a variety of entrepreneurship topics. It should be noted that his most well-cited work is within the area of strategic management, which will not be treated in this presentation. An adjacent research area is corporate entrepreneurship, in which MacMillan incorporates the fields of strategic management and entrepreneurship. Other areas of entrepreneurship research that will be presented are MacMillan's research on cross-cultural entrepreneurship and venture capital.

Corporate Entrepreneurship

A Corporate Entrepreneurship Framework

Corporate entrepreneurship is the creation of new business within existing firms and can be defined as "the process by which members of an existing firm bring into existence products and markets which do not currently exist within the repertoire of the firm" (Venkataraman *et al* 1992, p. 488). MacMillan takes a managerial standpoint in his corporate entrepreneurship research, which he believes distinguishes the study of corporate entrepreneurship from the study of other forms of entrepreneurship.

In corporate entrepreneurship, managers face three distinct challenges: (i) the challenge of business founding, which deals with the issue of creating and developing the competencies and infrastructure required to develop, manufacture and market the product, (ii) the challenge of managing the hierarchical process, i.e. to foster new venture initiatives within the firm, for example, gaining political support and acquiring the necessary resources, and (iii) the challenge of managing the institutional context within which founding and fostering take place, which includes a repertoire of organizational strategies such as incentives and infrastructural support. The three challenges are continually changing, since business creation is an evolutionary process, consisting of four stages: definition, penetration, contagion, and institutionalization.

Corporate entrepreneurship includes the processes involved in fostering new ventures (including culture, corporate support and venture efforts to stimulate corporate entrepreneurship) as well as the processes related to managing new ventures (e.g., planning, monitoring, and strategy formulation). In MacMillan's extensive research production on corporate entrepreneurship we can find significant contributions in both areas.

Fostering Processes

Competitive advantage is of limited duration. The pursuit of new advantages is therefore a critical strategic objective, and the main mechanism through which firms develop competitive advantage is the pursuit of new initiatives. Thus, it is important for managers to foster corporate entrepreneurship. However, this is not always an easy task. Based on a multistage Delphi study, MacMillan, Block and SubbaNarasimha (1984) found that corporate start-ups encountered more obstacles compared to alternative modes of venturing, such as joint ventures and acquisitions. The major problems with start-ups appear to be: (a) imperfect market analysis, (b) impatience for results at the corporate level, (c) refusal by corporate managers to acknowledge the venture's weaknesses, (d) underestimation of competitors, and (e) underestimation of the risks inherent in the venture. It is also interesting to note that experience seems to lead to significant benefits, i.e., companies that have attempted several ventures show a substantial improvement in effectiveness. Moreover, there seem to be distinct areas of learning, for example, firms appear to be capable of learning from experience in terms of reading the market and becoming more realistic in their expectations regarding the venture. On the other hand, it seems to be more difficult to learn from past inadequacies in planning and to provide adequate support for the venture.

A key problem for general managers seems to be the development of new sources of competitive advantage to replace those that no longer yield rents. McGrath, Venkataraman and MacMillan (1994) developed the "advantage chain" model, grounded on resource-based reasoning, which explores the conditions for gaining insights about, and access to, firm-specific resources with a potential for future rents. They identified five antecedent conditions, which are sequential and cumulative: causal understanding, team proficiency, new competencies, distinctive competencies, and competitive advantage.

First, there must be a causal understanding among the venture team members regarding the drivers of the venture's performance, i.e., the team must grasp the relationship between antecedents and consequences of concern to the venture. By definition, this is no easy task in the early stages of a new venture – decisions must be made under conditions of uncertainty (absence of information) as well as ambiguity (lack of clarity about the meaning of data). But as causal understanding develops, the team develops insights, from which new ways of combining resources may emerge. Second, causal understanding is not enough – new ideas must be translated into action, and this is the responsibility of the venture team. The venture team creates durable sources of uniqueness by establishing new "bundles" of assets. As the causal understanding improves and team proficiency increases, the firm becomes capable of meeting new objectives in a reliable and predictable manner. It is likely that the resource allocation that led to this outcome will be repeated, i.e., the venture team "learns" what patterns of resource deployment will lead to desired outcomes, and the organization begins to exploit competencies created by the new venture – mobilization of new competencies is the third necessary antecedent for a venture to yield rent. However, the emergence of new competencies does not automatically confer advantages on a firm in competitive markets. A fourth antecedent is therefore that the firm must have some firm-specific competencies that give it distinctiveness in comparison with competitors. Finally, in order to yield rents for the firm, the offerings of the venture must be different from those of competing firms, but they must also be the choice of sufficiently large populations of customers in order to generate adequate revenues. In summary, "new competencies" is determined in relation to the firm's past experience and "distinctive competencies" in relation to competition. The fifth antecedent "competitive advantage" relates to superior product attributes in the eyes of customers.

MacMillan and his colleagues developed this reasoning further. In McGrath, MacMillan and Venkataraman (1995), they emphasize the role of the venture team in defining and developing competencies necessary to create a competitive advantage. MacMillan *et al.* argued

that competitive advantages cannot emerge unless the venture team can develop competence in what they are doing. Of course, many factors may underlie the success of developing competence, but two processes seem to be important at the venture team level if such convergence should occur: "comprehension", i.e., the process of understanding what combinations of resources are necessary to achieve fixed objectives, and "deftness", i.e., the process involved in creating working relations that allow the venture team to perform effectively. Comprehension and deftness are necessary but complex requirements (due to the uncertainty and ambiguous character of the new venture) for the emergence of competencies, and it could be proposed that the degree of competence developed, measured by the ability to achieve objectives, will be positively associated with the venture team's level of comprehension and deftness. This proposition was tested on data from a sample of 160 ongoing projects in 40 different corporations in 16 countries. The results offered only moderate support for a correlation between comprehension and emerging competence. However, strong support was found for a correlation between deftness and the ability of the venture team to become competent, which indicates that deftness is fundamentally important for the development of competence – it is difficult to become competent as a group if the group processes are clumsy or awkward. It may be that the processes that create deftness are to some degree dependent on the degree to which comprehension emerges – comprehension may be a necessary antecedent to deftness, but deftness has a greater influence upon competence.

To further elaborate on the relationships between team comprehension, team deftness, and team performance, Nerkar, McGrath and MacMillan (1996; see also Nerkar *et al.* 1997) argued that job satisfaction could constitute a mediating variable in explaining the performance of venture teams. A distinction was made between "instrumental satisfaction", which has to do with the way the task is progressing, "social satisfaction", i.e., the way the team members interact with each other, and "egocentric satisfaction" indicating the individuals' perceived personal benefits. They find that the effects of deftness and comprehension on performance is mediated differentially and by different aspects of job satisfaction. Social satisfaction seems to be critical to the innovation process as well as a key mediator between deftness and venture performance, whereas instrumental dissatisfaction appears to obstruct the ability of the venture team to deploy its comprehension to achieve progress in the project. In this situation there is a real need for a methodology that allows the team to discover the underlying reasons why progress is not being made (see for example the reasoning about milestone planning and discovery-driven planning below). Surprisingly, the results show that egocentric satisfaction seems to have no mediating effect between deftness and performance. It may be that participants are willing to accept fewer short-term benefits in anticipation of future prestige and/or rewards.

Managing Processes

Much has been written on how to foster new ventures as well as creating an entrepreneurial climate in corporations. The main focus of interest in Ian MacMillan's research is, however, on the processes of managing new ventures. MacMillan has focused upon several topics, for example, market entry strategies for new corporate ventures, management planning in turbulent situations, and the resource acquisition problems, which new venture managers have to overcome.

Market entry strategies. In MacMillan and Day (1987) it was shown that, in many cases, firms base their strategies on the assumption that a high market share will be quickly achieved and that the performance (measured as both market share and ROI) will be superior compared to those firms that enter with less aggressive market share aspirations. As a consequence, large corporations that have the necessary resources and that can afford the cost of failure as well as make significant front-end investments in marketing and production will have significant advantages. The study was based on the so-called PIMS (Profit Impact of Market Strategies) start-up database. This database included 161 corporate ventures that marketed a service or product that the parent company had not previously marketed, and the ventures were mainly divisions or profit centers within larger corporations. Success in obtaining market shares was found to be strongly associated with market entry early in the product life cycle as well as with avoiding fragmented markets and markets upon which the largest competitor is highly dependent. It is noteworthy that it may be less desirable to enter high growth markets due to the fact that many others may be trying to enter the market simultaneously. On the other hand, entering markets that are dominated by a small number of well-entrenched firms may be advantageous because this enables the new entrants to position themselves clearly.

What lessons can be drawn from launching a new product or a new venture from an existing corporate base? This question was discussed in Block and MacMillan (1994), especially in relation to strategic aggressiveness to enter the market (power and degree of effort and amount of resources committed) and the focus of the entry efforts (extent to which the efforts are sharply focused or broader in nature). Management often face some real dilemma as to whether to be aggressive and/or focussed in their entry strategy, because different combinations of aggressiveness and focus have their particular advantages and disadvantages. However, by looking at the characteristics of the market environment in terms of "munificence", i.e., degree of richness or sparseness of the niche being entered, and "hostility", i.e., the fierceness of competition that the firm encounters when entering the market (see also Tsai *et al.* 1991), the managers could obtain some clues as to what might be the most appropriate entry strategy. Based on aggressiveness and market entry focus, four strategies are identified:

- The Blitzkrieg – a highly aggressive and broad-fronted strategy, using all forces over wide ranging geographic and market segments. This strategy requires rapid market penetration and is unlikely to be appropriate in situations where the market is not munificent.
- The Cavalry Charge – a highly aggressive but focussed strategy concentrated on a market segment and/or limited geographic area. This strategy requires a market that is munificent but not so hostile that deferred market segments are swallowed up by the competition.
- The Strike Force Approach is a non-aggressive and focussed strategy. It uses relatively small resources and demands less commitment from the firm. It is a strategy that might be appropriate for a hostile and sparse market. The venture can quietly enter the market, laying the groundwork for further expansion, without alarming competitors.
- Guerrilla Tactics is a non-aggressive mode of entry where a wide scope is used for striking wherever the firm can be most effective in

establishing a market position. A guerrilla tactic may be appropriate in a market that is munificent but hostile; the breadth of market will support a broad entry, but the presence of major competitors calls for a less aggressive approach.

Management planning. New ventures take place under conditions where information is either missing or difficult to interpret, i.e., decisions and actions must be pursued in the face of uncertainty and ambiguity. In such situations traditional planning of the ventures seems inappropriate. Rather than trying to force new ventures into a traditional planning methodology developed for existing, well-understood businesses, a different approach to new venture planning based on a milestone-triggered process might be appropriate. After establishing objectives for the venture, significant milestones required to reach each objective are defined, and planning will focus on getting from milestone to milestone. In this way venture managers, senior corporate managers and investors can learn in an evolutionary fashion. This milestone planning is further explained in Block and MacMillan (1985), where they identify ten typical milestones that new ventures have to pass:

1. Completion of concept and product testing
2. Completion of prototype
3. Initial financing
4. Completion of initial plant test
5. Market testing
6. Production start-up
7. Bellweather sale
8. First competitive action
9. First redesign or redirection
10. First significant price change.

These ideas regarding "milestone planning" were further developed together with Rita McGrath in what they called "discovery-driven planning" (McGrath and MacMillan 1995), which converts unclear assumptions into knowledge as the venture develops. That is, when new data are uncovered, they are incorporated into the evolving plan (see reasoning above about "the advantage chain"). Discovery-driven planning offers a systematic method for uncovering uncertain assumptions that might otherwise pass unnoticed. The process is captured in four related documents:

1. A reverse income statement, which models the basic economics of the business. It starts with the bottom line – "required profits" – and works its way up to determine how much revenue it will take to deliver the required level of profit.

2. *Pro forma* operation specifications, which set out the operations needed to run the business – these activities comprise the venture's allowable costs.

3. A key assumptions checklist, which will ensure that assumptions are discussed and checked.

4. A milestone planning chart, which specifies the assumptions to be tested at each project milestone.

When new data are uncovered, each of the documents is updated. It is a question of successively transforming uncertain assumptions into knowledge.

Resource acquisition in new ventures. A new venture is by definition uncertain, and there are many types of start-up problems in the corporate context that new venture managers have to overcome. These problems can be summarized as (i) venture managers have to overcome problems of legitimacy – both inside and outside the firm, (ii) the ventures are often desperately short of resources – they must compete internally against powerful established departments, and (iii) venture managers frequently find themselves facing organizational resistance and inertia. How can new venture managers handle this situation?

According to Starr and MacMillan (1990; 1991), new venture managers must attempt what is termed "asset parsimony", i.e., deploying the minimum amount of assets needed at minimum cost. As a result, corporate entrepreneurs seem to employ a high level of cooperative strategies, primarily by utilizing social transactions – rather than economic exchanges – to secure the results they seek. The entrepreneurs have a tendency to "steal" personal time, conceal development activities etc. to secure the resources needed for the development of the new venture. In this respect, Starr and MacMillan differentiate between two types of venture managers:

– Administrative venture managers – who favor economic exchanges at full fare.

– Social transaction-oriented managers – who favor social exchanges that secure resources at reduced fare.

To gain access to necessary resources that otherwise have to be secured by economic exchange at much greater cost, the social transaction-oriented managers will use "cooptation" by employing four different strategies: borrowing, begging, scavenging and amplifying (the capacity to leverage more value out of an asset than was perceived by the original owner of the asset). This kind of resource cooptation is closely linked to social transactions, whereby the venture managers exploit certain "social assets" in their possession, i.e., a set of obligations, expectations and mutually developed norms and sanctions, which evolved from social interactions. Furthermore, the venture managers build a "social contract" in which he/she "cashes in" on the expectations, norms and governance structures that have been built from past relationships. The social assets used by the social transaction-oriented managers can be described along a spectrum related to the formality of the recognition of a social "debt" by both parties and the cost of "maintaining" the asset. At one extreme, we find "friendship", i.e., a social asset that can be used over and over again without exhausting the relationship or leading to a sense of indebtedness. "Liking" and "gratitude" are less intense than friendship, whereas "trust" can be regarded as neutral in terms of the granting of favors. However, these favors are more formally recognized and must be returned some day. At the other extreme we find "obligations" in which there is a mutually clearly perceived understanding that a debt is being incurred and that a return of the favor is required to release the debtor from his/her obligation. When social transaction-oriented managers develop a new venture, it can be assumed that they will build and make more use of social assets to procure resources than administrative managers. The latter spend more time on detailed budgeting and a priori estimates of specific resource needs and monitoring of resource utilization.

To pursue a more social transaction-oriented strategy is not an easy task. Corporate venture managers may have more difficulties in using resource cooptation compared to independent entrepreneurs due to corporate constraints. For example, established organizations do not have a mindset characterized by asset parsimony (these organizations are often too slow, overplan and are overstaffed, which can be hazardous to fragile new ventures), management techniques for established businesses are inappropriately equipped for new ventures, corporate entrepreneurs are not allowed to bend and break rules, and they do not have the time to develop social assets and build

networks.

Cross-cultural Entrepreneurship

For many years, countries have been exploring and developing policies and programs aimed at stimulating entrepreneurship. The starting point of these programs has in most cases been knowledge about the motivation of the individual to become an entrepreneur, often developed in an American context. But are these results valid and relevant outside the US? Is there some basic set of beliefs that entrepreneurs hold about themselves and others that transcend cultures? Are entrepreneurs different from other people? Are there any underlying patterns of beliefs among entrepreneurs that differentiate them from others despite cultural diversity?

In an extensive international study, Ian MacMillan, together with Sari Scheinberg and Rita McGrath, among others, tried to find evidence for the argument that entrepreneurs show significant differences in values compared to others in society and that these differences transcend different cultures, i.e., that some general entrepreneurial values are core values, which could be the seeds of entrepreneurial behavior.

Earlier studies in entrepreneurship (see chapter 3) have attempted to isolate those aspects that differentiate entrepreneurs from what is not entrepreneurial in terms of variables such as need for achievement, internal locus of control, propensity for risk-taking, etc. MacMillan's approach is to put the entrepreneur in the context of society in general. In this respect MacMillan and his colleagues utilized Hofstede's (1980) four cultural dimensions; "power distance" which concerns the inequality within society, "individualism" indicating the relationship between individuals and collectives, "uncertainty avoidance", i.e. the stance toward the future, and "masculinity", which concerns the allocation of roles between the sexes. Furthermore, MacMillan put forward the idea that, in many societies, entrepreneurship is regarded as a deviation from usual behavior and entrepreneurs who object to the perception of being different act as deviants. The implication of this would be that entrepreneurs as a group, regardless of culture, tend to view others in society as an "out-group" of sorts.

The results are based on a large survey of entrepreneurs carried out in 13 countries (Australia, Canada, China, Denmark, England, Finland, Italy, Kenya, Norway, Portugal, Sweden, Taiwan, and the US) in 1987. The inclusion criteria for entrepreneurs were as follows: (i) to have founded their own business (in partnership or alone) between 1979 and 1986, (ii) having at least one other person working for them, and (iii) the business was their primary means of livelihood. The selection processes of entrepreneurs differed somewhat from country to country, as did data collection methods and response rates (from 64 percent in Finland to 3 percent in the UK). The database contains over 3,000 responses.

A number of publications have been based on different parts of the study, and some of the main results can be summarized as follows:

• The results agree with US stereotypes. The US scored higher than any other country for the factor "need for independence", while their interest in "communitarianism" was lower than that of the other countries (Scheinberg and MacMillan 1988).

• The Scandinavian countries (Sweden, Denmark and Norway) differed from other countries in that they placed less emphasis on financial aspects as a means of achieving their objectives as well as little interest in investing in their community (maybe as a result of the high tax rates in these countries). Another group of countries includes Portugal, China, Puerto Rico and Italy, which favored "communitarianism" (which may be explained by their similar level of economic development and the inherent cultural orientation that values the family. Finally, a group consisting of some Anglo-Saxon countries (Australia, England, the US) and Finland seems to have a stronger tendency to see money as a means to achieving their objectives but at the same time have little interest in investing in their communities or supporting their relatives (Scheinberg and MacMillan 1988).

• In order to discover which aspects of culture are enduring and which are changeable, an analysis was made comparing China, Taiwan and the US. China and Taiwan share an ancient cultural heritage (in which individuals are unimportant and people are expected to conform to well-defined roles and are bound by the obligations inherent in those roles, etc.), which is fundamentally different from the Western cultural heritage of the US. However, for the past 50 years, Taiwan has embraced a radically different western style capitalistic ideology, whereas China has pursued a communist ideology. One would assume that if culture predominates and endures, the Chinese and the US entrepreneurs would show different patterns of response, while the Taiwanese response patterns would be similar to those of the Chinese entrepreneurs. But if culture can be eroded by ideological forces and is thus relatively changeable, the US and Taiwanese entrepreneurs should show similar response patterns. It was found that, despite 50 years of ideological pressure, there has been little shift in the basic collectivistic values and in attitudes to work in the two groups of Chinese entrepreneurs (China and Taiwan), whereas some of the Taiwanese entrepreneurs' values have changed – they have accepted a higher power distance and moved toward a recognition and acknowledgement of the risks associated with starting a business to a larger extent than their Chinese counterparts (McGrath, MacMillan, Yang and Tsai 1992).

• Based on an analysis of three widely differing cultural regions; Anglo-Saxon (Australia, England and the US), Chinese (China and Taiwan), and Nordic (Denmark, Finland, Norway and Sweden), it was found that there seems to be a couple of common "beliefs" among entrepreneurs, irrespective of culture. For example, entrepreneurs believe that there is a link between social benefits, freedom and individual effort and that others in society are unwilling to take charge of their own destiny, unwilling to work hard to earn social rewards as well as less likely to enjoy what they are doing (McGrath and MacMillan 1992).

• In an analysis contrasting the beliefs of entrepreneurs (business founders) and career professionals (school teachers, bank branch managers, and government employees), it was found that entrepreneurship was, not surprisingly, associated with higher individualism (in favor of individual rather than collective action). Entrepreneurs seem to exhibit higher power distance, reflecting an acceptance of inequality, a lower level of uncertainty avoidance – which indicates that they are prepared to take risks – and more pronounced masculinity, in which success is associated with recognition and wealth (McGrath, MacMillan and Scheinberg 1992).

• The US entrepreneurial culture is based on values such as independent actions, taking personal risks and self-reliance. Based on the findings of MacMillan and his colleagues, programs funded to

foster entrepreneur¬ship in collectivistic cultures may run a serious risk of failure – it is difficult to infuse individualistic values into a collectivistic culture.

The conclusions are that the entrepreneurial culture differs between countries, which difference may explain the fact that business formation rates vary from society to society and that different cultures have different entrepreneurial beliefs. But some underlying patterns of belief seem to exist among entrepreneurs, despite cultural differences, and these can be regarded as core entrepreneurial values.

Venture Capitalists' Evaluation of New Venture Proposals

Venture capital seems to be an important source of capital and knowledge in the establishment of new businesses, and many dynamic regions are characterized by an ample flow of venture capital. In several of his early studies, Ian MacMillan focussed on the activities of the venture capitalist. One of the research questions he attempted to answer was: What criteria do venture capitalists use when evaluating venture proposals? In a study together with Siegel and SubbaNarasimha, Ian MacMillan elaborated on this question (MacMillan, Siegel and SubbaNarasimha 1985a; 1985b). They identified 27 different evaluation criteria on the basis of 14 interviews with venture capitalists. These criteria were used in a questionnaire distributed to 150 venture capitalists, where the response rate was 68 percent. The results of the study confirm the position taken by many experienced venture capitalists, which is that the quality of the entrepreneur – his or her experience and personality – determines whether or not they will invest. If the entrepreneur is so essential, why then is so much emphasis placed on the business plan?

The business plan seems to be a key factor in determining whether or not entrepreneurs will obtain funding from a venture capitalist, although the business plan normally says very little about the entrepreneur – it is generally devoted to detailed descriptions of the product/service, the market, and the competition. MacMillan and SubbaNarasimha (1986) analysed 55 unfunded and 27 funded business plans and concluded that there is a "credibility window" of values that venture capitalists find acceptable. Excessively optimistic performance forecasts can create credibility problems – showing evidence of business naïveté on the part of the proposers. On the other hand, business plans predicting performance below the lower threshold of this window are obviously not worth the risk to the venture capitalist. In addition, the business plan needs to show a balance between key functions (marketing, finance, management). Business plans where any one function had either too much or too little influence tended to remain unfunded. MacMillan and his colleagues argued that, while the business plan is necessary, it is not the sole reason why venture capitalists decide to invest. However, the business plan must show that the entrepreneur will fit the business, which indicates that the entrepreneur has staying power, a track record, can react well to risk, and is familiar with the target market.

Furthermore, MacMillan, Siegel and SubbaNarasimha (1985a; 1985b) indicated that venture capitalists systematically evaluate ventures in terms of six risk categories: (i) competitive risk (little threat of competition and an existing clearly competitively insulated market, (ii) risk of being unable to bail out if necessary, (iii) risk of losing the entire investment, (iv) risk of management failure (whether the entrepreneur is capable of intense sustained effort and knows the market thoroughly), (v) risk of failure to implement the venture idea (whether the entrepreneur has a clear idea of what s/he is doing and whether the product has demonstrated market potential), and (vi) risk of leadership failure. In addition, three clusters of venture capitalists were identified. The first cluster representing about 40 percent of the venture capitalists in the sample can be called "purposeful risk managers", indicating that they tried to ensure that various risks (see above) were well managed. The venture capitalists in this group seek entrepreneurs with demonstrated leadership skills and a product and market with characteristics that clearly reduce risk to manageable levels. The second cluster, termed "determined eclectics", comprised 33 percent of the venture capitalists and is made up those who were open and prepared to consider any deal. The third cluster – "parachutists" – (about 25 percent of the venture capitalists in the sample) consisted of venture capitalists willing to support most ventures as long as they felt that they would have an easy way out if things went wrong.

MacMillan, Siegel and SubbaNarasimha (1985), as well as many similar studies, analyze which criteria are used by venture capitalists to evaluate venture proposals. However, these studies do not address the question whether or not these criteria are actually helpful in distinguishing successful from unsuccessful ventures. Therefore, in a follow-up study, MacMillan, Zemann and SubbaNarasimha (1987) tried to determine the extent to which criteria are useful predictors of performance. The results indicated that it was possible to identify three classes of unsuccessful ventures. In the first cluster (19 percent of failures) – "well qualified dropouts" – the ventures were characterized by an entrepreneurial team that was highly familiar with the market and had a well-established track-record but was incapable of sustaining intense efforts against their competitors. The second cluster – "arrow-catchers" – (32 percent of unsuccessful ventures) was characterized by a good entrepreneurial team but that had nevertheless failed to protect the product. Thus, as soon as the entrepreneurs had opened up the market, other companies invaded it. Finally, the third cluster – "hopeless amateurs" – (almost 50 percent of the ventures) comprised ventures lacking all desired criteria. They were not capable of sustained effort, had no track record and were not familiar with the market. On the other hand, MacMillan and his colleagues identified four clusters of successful ventures:

- Cluster 1 (52 percent of successes) – "high-tech sure bets" – involves high-tech products and a strong entrepreneurial team.
- Cluster 2 (13 percent of successes) – "distribution players" – involves distinctly low-tech products with well-established distribution channels.
- Cluster 3 (18 percent of successes) – "market makers" – employs articulateness and perseverance to create a market, which can subsequently be defended against competitive attacks.
- Cluster 4 (about 25 percent of successes) – "lucky dilettantes" – has a poor entrepreneurial team and low market acceptance – their only redeeming feature being high product protection.

In each case, the major difference between a winner and a loser seems to be some "difficult-to-define" entrepreneurial team characteristics. As a result, it seems rather difficult to find major criteria that are predictors of venture success. It is not surprising that the evaluation of venture capital proposals is often considered to be an "art".

However, further analysis of the data showed that only two criteria consistently and pervasively predicted performance: (1) the ex-

tent to which the venture is initially insulated from competition, and (2) the degree to which market acceptance of the product is demonstrated. Interestingly, of all criteria identified in early studies, these two seem to be the most essential, yet neither was rated as essential in the early study (MacMillan, Siegel and SubbaNarasimha 1985). These two criteria are market related rather than product or entrepreneur related.

Why were no criteria related to the entrepreneurial team (capacity for sustained effort, demonstrated leadership, track-record, etc.), which have been emphasized as important by venture capitalists? In this respect, MacMillan *et al.* make a distinction between necessary and sufficient conditions for success. Venture capitalists will not back ventures with a bad entrepreneurial team. Success and failure have to do with what happens to those ventures that receive funding, i.e., the evaluation of the entrepreneurial team is essential in order to obtain financing from venture capitalists, whereas the two criteria – competitive threat and market acceptance of product – are predictors of success for firms already financed by venture capitalists.

One conclusion that can be drawn from the above-mentioned studies is that the entrepreneurial qualities and the entrepreneurial team seem to have a higher impact on venture capitalists' evaluation process than any product and market considerations. In addition, when a venture proposal is presented to a venture capitalist, the product and market can be considered as given; for a specific venture proposal there is little the venture capitalist can do about the product and the market. Thus, the evaluation of the entrepreneur and entrepreneurial team is paramount.

In a project in collaboration with Paola Dubini, using the database developed by MacMillan, Zemann and SubbaNarasimha (1987), Ian MacMillan elaborated on the question "Which entrepreneurial team characteristics are useful predictors of performance, given the product and market characteristics of the new venture? Different groups (clusters) of firms were identified (Dubini and MacMillan 1988):

• Cluster 1: High-powered Followers (21 percent of the ventures).

This group of ventures entered a well-developed market with established distribution systems and significant competition, but they had high market acceptance in addition to high distribution acceptance. In this group of ventures, the capacity for sustained and intense effort was the entrepreneurial team trait that strongly predicted performance, but also the team's familiarity with the market had a major positive effect.

• Cluster 2: High-tech Inventors (42 percent of the ventures).

These are the "darlings" of the venture capital industry – high-tech firms with strong product protection coupled with new market potential. The entrepreneurial team's ability to manage risk and their capacity to pay attention to detail seem to be pervasive predictors of success for these firms.

• Cluster 3: Low-tech Distribution Players (14 percent of the ventures).

The firms in this group have access to well-developed distributors – otherwise these ventures would be rather unexciting. They are low-tech ventures, with low protection and a high risk of competitive action. In this situation, shrewd, carefully evaluated, yet decisive leadership is essential for success.

• Cluster 4: Dream Merchants (20 percent of the ventures).

This group consists of high-tech firms with high product protection and uncertain long-term profits. For this cluster the strongest predictor of success is the entrepreneurial team's familiarity with the target market, which is not surprising due to the tenuous nature of the project and low market acceptance.

In conclusion, it was shown that different entrepreneurial team characteristics are important for each cluster of firms and they predict the performance of the various clusters, thus supporting the conventional wisdom that some skills are more important than others in different contexts.

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