Execution Matters? Searching the Strategy Logic for Growth of Young High-technology Firms

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Abstract

The paper defines the framework of strategy logic of rapid growth between initialization of a company and the moment when it has reached a state when it is attractive to the formal venture capital and financing industry. The main research question was: Is the success of new companies depending more on execution of the strategy (process, implementation) than intended strategy (content)?

The focus of the study is logic of actions during the fast growth. Life cycle of growth venturing is divided in four phases from strategic management viewpoint. Phases are pre-start-up, start-up, growth and expansion. Venture's strategy content does not correlate with success. The groups of variables that correlate with success are strategy process and partly strategy context. According the survey of 46 young high-technology firms in Finland shows that the success of the firm depends on the formulation (strategy process) and execution of the strategy than intended or initial strategy. Thus, there is no "secret formula" as initial strategy for company growth in early phases that lasts through life cycle instead growth venturing is matter of changing action code e.g. logic of action.

It is to be noted that this paper reports work in progress.

Keywords

growth venturing, growth model, life cycle, entrepreneurship, strategy, strategic management, strategy logic, logic of action

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Introduction

Are entrepreneurs sometimes just lucky or have they really skills to lead young companies to success? Scholars have argued what are the keys to the success of young companies or noted

that there is no commonly agreed upon framework or theory for company growth. Thus, frameworks attempting to explain company growth do exist, but they are not compatible or consistent with each other. They do not agree on what variables are related to company growth.

At the start-up stage founders' skills and abilities were crucial to company growth as well as financial and business resources. After the three first year of operation, there was no difference between the companies started with divergent amounts of initial capital (Doutriaux 1992). Later stages most firms began to loose their entrepreneurial character, such as fast response to problems, simplicity of control, and ability to change focus and resources. Many have claimed, though, that initial strategic emphases alone are insufficient in explaining later company growth (Moore 1976, Maidique and Hayes 1986) and strategic planning and personal resources become increasingly critical (Churchill 1983, Churchill and Lewis 1983). In addition, there was no relationship between company performance and financial support received at the later stages of company development (Utterback et al. 1983).

Research around growth venturing is concentrated on growth strategy (strategy content) e.g. amount of initial capital, growth strategy or characteristics of management team. Although strategic management and entrepreneurship theories have developed largely independently of each other, we would like to suggest that the theory of strategy enriches our understanding of the entrepreneurial process. Strategy, as we know, can be approached and interpreted from several viewpoints. The perspective of this paper is the concept of strategy logic, which is defined by Näsi et al. (1996) as follows: "... strategy logic of a firm comprehends a set of core elements in harmony or coordination, steering the whole of the firm towards survival and success. Strategy logic is subjective logic representing the thinking of key person(s) in the firm." Where former research of growth has been focused on finding a single variable or list of variables to the success, this approach try to find patterns of actions or orientation of the firm for company growth.

Several descriptive models describing company growth indicate how organizations, management practices, and resource requirements evolve as companies grow. Major part of the literature related to life cycle suggests that organizations evolve in a consistent and predictable manner or through crises. On the whole, life-cycle stage definitions remain vague and general, making applying of them to specific cases difficult. Dozens of growth models have been presented, for example, by Greiner (1972), Scott and Bruce (1987) and Churchill and Lewis (1983).

Entrepreneurship is defined in various ways for example it is creation of new enterprise (Low and MacMillan 1988), the process by which individuals – either on their own or inside organizations – pursue opportunities without regard to the resources they currently control (Stevenson, Roberts and Grousbeck 1985), entrepreneurship deals with opportunities for future goods and services (Shane and Venkataraman 2000), entrepreneurship is the creation of new organizations (Gartner 1988) or process whereby an individual or group of individuals acting independently of any association with existing organization and create a new organization (Sharma and Chrisma 1999).

Research framework

Sandberg and Hofer's (1987) study was the opening to introduce a multi-level framework for analyzing determinants of growth. Most previous studies had focused on firm-internal factors. The other widely used perspective is resource dependence research paradigm. The multilevel framework for analyzing determinants of growth is presented in figure 1. In sum, logic of action is the concept, which looks firm's behavior from the perspective of the outside observer ("realized strategy"). Logic of action based on indented strategy and strategy logic of the firm. Thus, three different kind of research paradigm can be identified. The newest member is now called "logic-conduct-performance paradigm". Strategy logic focused on factors such as strategic content, strategy process, structures, leadership, and strategic game.

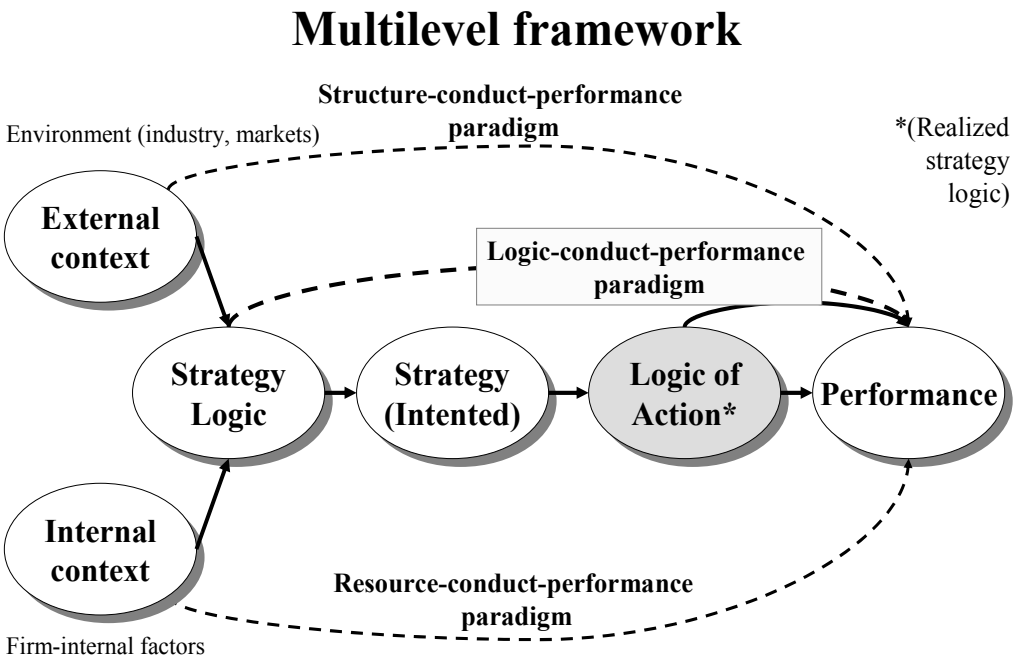

Figure 1. Multilevel framework for analyzing determinants of growth and performance (Ala-Mutka 2003).

Variables of external context are in particular industry, markets, economic situation and competition. Firm-internal factors are size of organization, culture, values, stage of life cycle, ownership structure, etc. These factors form the strategy logic of the young venture, which is subjective logic representing the thinking of top management, founders, V2C and other external owners in the venture. Firm's strategy based on these core beliefs and background of the key persons, but the intended strategy is not the realized one. Logic of action describes the real strategy of the firm and therefore influence directly to the performance of firm (Ala-Mutka 2003).

Aim of the paper and empirical data

The aim of this paper is to describe the strategy logic of rapid growth between initialization of a company and the moment when it has reached a state when it is attractive to the formal

venture capital financing industry. This paper analyses new high-growth ventures from three theoretical points of view: (1) growth models; (2) entrepreneurship in high technology ventures; and (3) strategy logic.

The paper studies the strategy logic of growth clearing up (1) the strategy context, (2) the strategy process, and (3) the strategy content in each period of growth. This study combines the researcher's observations as a former employee in a new high technology venture, which is also partly owned by venture capitalists and external investors, and the survey among high-technology start-ups, and medium-sized high-technology firms in Finland. The survey completed in December 2003. The size of the target population was 335 technology firms that met the selection criteria and 46 firms completed the full questionnaire via internet. The response rate was 14 %.

Conceptual foundations

Strategy concepts

The actual strategy concept can be approached and interpreted from several points of view. It can be seen as a plan, a ploy, a pattern, a position or a perspective (Mintzberg, 1987). The most dominating viewpoint is to see strategy as a plan and strategy making as a process of planning (Näsi, 1996). The literature related to this approach normally deals with corporate, business and functional levels (Hofer and Schendel, 1978) and nowadays also with network level. Today there are numerous schools of thought to be found of which for example Mintzberg et al (1998) ten (see also e.g. Näsi, 1987, Karlöf, 1987).

Chandler (1962) considered strategy as "the determination of basic long-term goals and the objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals". For Näsi (1991, 1996), strategy meant "the plot of action of the firm", whereas Gilbert et al (1988) considered it to be "logic of action of the firm". Several other definitions are based on similar elements (e.g. Johnson and Scholes, 1989, Karlöf, 1987, Näsi and Aunola, 2002, 2001). In sum, the plot or the logic of action, the long-term goals of the firm, competitive advantage and the defined time period which could be regarded as the basic elements of strategy. The plot and the logic of action view strategy as a direction or a vision, core competence, cost leadership, a differentiation, an activity system etc. (see e.g. Porter 1980, 1985, 1996, Mintzberg et al, 1998, Näsi, 1996, Hamel and Prahalad, 1994). Another basic element, the competitive advantage, is relative to competitors. As a unique competitive advantage is not sustainable, strategy also tends to vary in time and in different context. Competitive advantage (e.g. valuable position) will attract imitation by incumbents (Porter, 1996). Strategy in this paper means the plot or the logic of action of the firm for carrying out long-term goals and for creating competitive advantage.

The framework of strategy concepts consists of norm, humane and logic concepts. The logic concept is defined and being connected with other theories of cognitive thinking, a strategist's work, game mastery, business history and core competence (Näsi 1999). "Strategy logic is subjective logic representing the thinking of key person(s) in the firm." (Näsi et al. 1996). The logic concepts are recent ideas exposing the core of strategy. These concepts are called logic concepts because their idea is to expose the rationale of action in firm (Näsi 1999). Thus,

cognitive maps, schemas, paradigm, the Dominant Logic or the Logics of Actions are relative concepts, of which we can be understand nowadays as logic concepts of the strategy. Strategic management, strategic structures, strategic leadership, and strategic game are the subfields of strategic thinking, and strategy logic has overlapping parts with previous four categories, and on the other hand, it could be seen as a category of its own. This paper focused on to the field of strategy logic.

Originally, in his book "The Structure of Scientific Revolutions" Thomas Kuhn defines the paradigm in 1962. In strategic management theory the paradigm is defined by Johnson (1987) as "a set of beliefs held relatively commonly throughout the organization, taken for granted, but discernible in the stories and explanations of the managers", and durable and powerful, but tacit assumptions about the business reinforced by success of the organization.

In the article Prahalad and Bettis (1986) defined the dominant logic "as the way in which managers [in the firm] conceptualize the business and make critical resource allocations decisions." Furthermore, they noted that it was stored via shared schemas, cognitive maps or mindsets and was determined by the managers' previous experiences. The dominant logic forms a sort of information filter that filtered relevant data to aid strategy development. The filtered data are then integrated into the strategy, systems, values, expectations, and reinforced behavior of the organization (Bettis and Prahalad 1995).

As can be seen the definitions of dominant logic and paradigm are quite similar concepts. Both are based more or less on the cognitive psychology - how managers perceive the contextual environment and how they response the environmental changes. In comparison, Karpik's (1972, 1978) logics of action look the same problem from the outside observer viewpoint. Although, Karpik mentioned that behavior based on organization's culture, values and attitudes, his focus was on the whole range of observable actions.

Karpik pointed out that when analyzing firm's strategies is needed also to study the groups, which create them. In addition, the Logic of Action means first of all that it should compare all actions, which influence to organization. Karpik mentioned also that in the large organization could have several logics of action. The logics of action forms hierarchy, but it is hard to identify. Furthermore, logics of action are also relative to each other, and only whole variety of behavior makes it possible to identify them (Karpik, 1972, 1978).

In the concept of logics of action the units of analyses are both powerful individuals as well groups. Individuals and groups form the organization's culture, attitudes and behavior. Altogether they define also organization's principles of action or in other words Logics of Action, of which can be identified by outside observer by analyze the whole range of behavior of organization. The behavior is result from internal political struggles that defines the dominant logics of action in the firm. The competitive coalitions and powerful individuals have own preferences and the winning coalition or individual defines the dominant logics of action in the firm (Karpik 1978, 1981).

The realized strategy could be interpreted as logical outcome from the strategy formulation and the dominant orientation of the firm e.g. logics of action. The concept of logic of action can be seen also as a normative theory. The company's structure can be based on customer orientation that forms the leading logic of the firm. The whole set of management practices

are built based on markets and customer's needs. One of the appearances of the logic of action is balanced scorecard, which is balanced according customer strategy (Ala-Mutka and Talvela 2004)

Stages of growth and strategic management

Dozens of growth models have been presented, for example, by Greiner (1972), Scott and Bruce (1987), Churchill and Lewis (1983) and The Kazanjian model of growth of technology-based companies (Kazanjian 1984, Kazanjian and Drazin, 1990). Notable in Kazanjian model is the pre start-up phase (also often called 'a seed phase') that is missing in most of the other general growth models. Four states of growth from a strategic perspective are described in Figure 2.

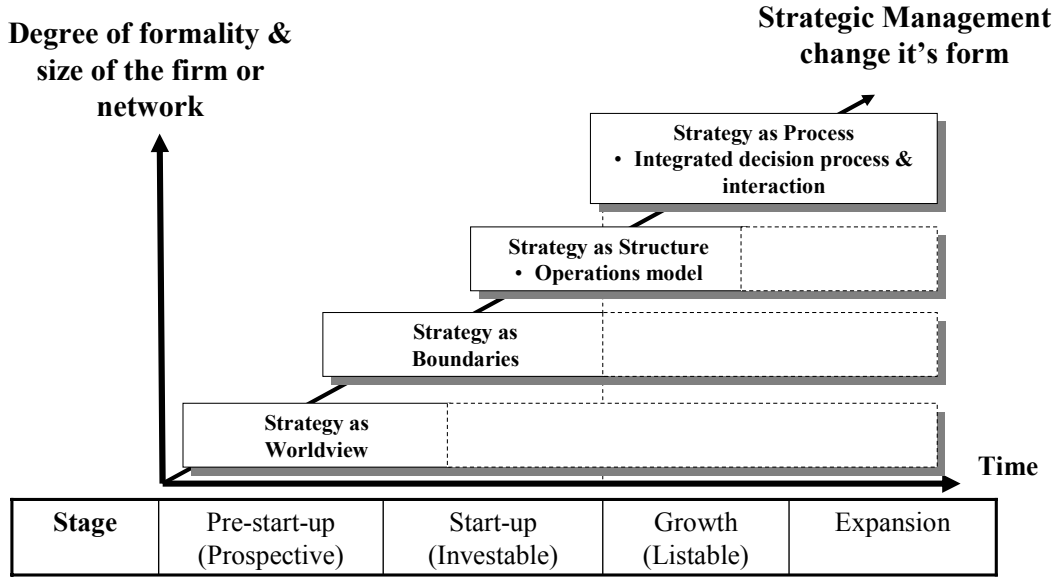

Figure 2. Stages of growth from strategy viewpoint (Ala-Mutka, 2002)

The first stage of the growth is the pre start-up that could be regarded as the time before the actual firm is founded or the time when the company invents new products and develops them through customer projects. For small firms, strategy in this state means, first of all, a strategic worldview (Näsi and Aunola, 2002, 2001). In the beginning they did not even have a clear image of the products, only ideas and assumptions about the benefits of new technology. The state described here could be called 'strategy as worldview'. The company's customers, who at this point are innovators and early adopters, should also share this 'worldview' (Ala-Mutka, 2002).

Next, in the start-up state, the firm has to start making decisions. At this point the pure 'worldview' does not work any more. It cannot be applied to everything as the resources of the entrepreneurial firm are scare. A new venture does not normally have capital or even management resources to diversify at early stages of the development. The new venture needs to concentrate on something niche or on a somehow limited market segment. One of the most

useful marketing constructs to become integrated into high-technology marketing is the concept of a 'whole product' (Levitt, 1986). The concept identifies four different perceptions of a product: a generic product, an expected product, an augmented product and a potential product. A generic product is what is "shipped in the box". Other perceptions could include for example a variety of products in information technology such as cables, training, support, consulting, additional software, additional hardware, system integration, installation and debugging. In reality, this means for example up-stream and down-stream integration in value chain, acquisitions, partnerships, alliances etc. The new venture starts setting boundaries around the initial business idea (Näsi and Aunola, 2002, 2001). At the same time the total level of risks become higher. The company has to take into account not only technological risks but also financial risks and risks in partnerships and alliances. In the terms of strategy, this state can be called 'strategy as boundaries' (Ala-Mutka, 2002).

The first two states emerge during the 'early market', but the whole game will change in the third state ('the growth'). The new venture's products and services around the generic products ('the whole product') are almost ready or partly outsourced to partners. This state includes "crossing the chasm". Winning of the early majority business is then the key to any substantial profits and growth. Early Majority wants to see well-established references before investing substantially. In comparison to the innovators, the early majority wants to buy a productivity improvement for existing operations. They look for minimizing the discontinuity with the old ways (Moore, 1998). Strategy starts thus to become more structured and may even form an operations model. This also means that strategy becomes more sales and marketing oriented. In this state, the new venture needs to make decisions about sales channels and also to take into account possible channel conflicts. This state is called 'strategy as a structure' (Ala-Mutka, 2002).

After a short, but a rapid growth period, the new venture is not actually young or small any more. More people are involved in strategy making that forces the structure to become more formal and standardizes the communication and process between people and units. The last state of the new venture can be called 'strategy as a process' (Ala-Mutka, 2002).

Actors in and around entrepreneurial firms: venture-to-capital

Rasila et al (Rasila et al 2002, Rasila 2004) define venture-to-capital actors (later 'V2C actors') as follows: "V2C operative is the actor, a legal entity or natural person performing V2C activities in V2C space, i.e. the Venture-to-Capital operating area. The goal for V2C operative is to find companies, which can be defined as "Prospective", and by V2C operations assist them in becoming "Investable", i.e. fit for receiving an investment for a VC company. V2C push new ventures into the direction of formal venture capital and faster growth rate. In the pre start-up state the board is normally internal including only the founders. In fact, working with the founders also means influence over the company and its strategic decisions. These and other V2C actors operate between the pre start-up state and the formal venture capital industry (Ala-Mutka, 2002).

Statistical analysis

The statistical analysis based on the Bayesian modeling, which is a high-level representation of a probability distribution over a set of variables. In order to be able to apply this theoretically elegant approach in practice, the set of possible models has to be constrained by some basic assumptions on the problem domain. The problem domains are: (1) internal and external strategy context including periods' characteristics (states) of development and ownership structure; (2) strategy process (analysis, decision, implementation and control); (3) strategy content; and (4) firm's performance and growth. The Bayesian network model is constructed by explicitly determining all the direct dependencies between the independent variables of the problem domain. In a Bayesian network each node represents one of the observable features of the problem domain, and the arcs between the nodes represent the direct dependencies between the corresponding variables.

Definition of performance in the survey

Typically, the measures of growth for young technology based firms are sales, number of personnel and assets (Salonen 1995). The advantages of these measures are that these are understandable and measurable. On the whole, good question is what the mainly economical measures really are able to describe. At the first couple of year's young ventures shows two to tree digits growth rates, but fast growth actually does not describe the real success of the firm, especially, when the success is defined from strategy viewpoint. The growth of an organization can be also considered its development and improvement of quality of its operations (Penrose 1995). Thus, organization growth can be quantitative and qualitative (Laukkanen 2000).

In the Worldview stage firms are in pre-start-up phase, where firms do not form an organization, products are mainly prototypes, business processes are unclear, financial situation is not stabile and the future in general looks quite open and markets unlimited. How can we measure the success of these kinds of companies? In the study the success of the firm is not only defined by quantitative measures, because the performance variables differ by the stage of life cycle. Variables contain also evaluation of firm's success in finance, publicity, technology, knowledge, profitability, business processes, and customers and markets.

In the study the success is defined by eleven quantitative and qualitative measures[1]:

1. Turnover (annual growth rate)
2. Number of personnel (annual growth rate)
3. Organic growth
4. Non-organic growth
5. Profitability
6. Planned goals
7. Knowledge and technology
8. Publicity
9. Finance
10. Customers and markets
11. Business processes and concepts

[1] Each measure is evaluated with scale from 1 to 5.

Quantitative growth measures in each stage are turnover and number of personnel. Economical measures are insufficient to describe the success of firms in early stages. Growth and other performance measures are listed in table 1.

	Pre-start-up	Start-up	Growth	Expansion
1. Turnover (annual growth rate)	x	x	x	x
2. Number of personnel (annual growth rate)	x	x	x	x
3. Organic growth			x	x
4. Non-organic growth			x	x
5. Profitability			x	x
6. Planned goals	x	x	x	x
7. Knowledge and technology	x	x		
8. Publicity (brand recognition)			x	x
9. Finance	x	x	x	
10. Customers and markets			x	x
11. Business processes and concepts			x	x

Table 1. Defining performance and success metrics of growth venturing.

Introduction to the survey

The questionnaire is sent via internet and totally 46 firms completed the full questionnaire via internet. The response rate was 14 %. This is quite satisfactory result in Finland (Näsi and Aunola 2001). Usually questionnaires are sent via ordinary mail and response rates are typically between 10% and 20%. In table 2 is presented how 46 answers divided in different phases in life cycle. In pre-start-up phase have only five answers, which is not surprise. It is hard to find companies that are only one or two years old or those are just founded. All in all, there are 17 ventures that presents early phase of the life cycle, 20 ventures in growth phase and nine in expansion phase. The target group in the study was growth oriented technology-based firms, which are VC backed, located in technology center or already listed in Helsinki Exchange. Over 650 companies were evaluated and 335 met the selection criteria.

	Answers	Average Foundation year	Median Foundation year
Pre Start-up	5	1998	1999
Start-up	12	2001	2001
Growth	20	1996	1999
Expansion	9	1986	1988
Total	46		

Table 2. Number of answers and average and median year of foundation

The whole questionnaire contains 74 variables divided into three main categories, which are strategy content, process and context. Groups of variables are goals, products, customers,

cooperation, critical success factors, business development, strategy process, strategy (topics), control and external and internal context. Each variable are defined with help of my experience as a management consultant and described in growth model. The fundamental base of the study is the division of strategic management into three parts according to Pettigrew (1985).

Idea of the study was explain the total model of the data with help of Bayesian modeling. The study contains totally 74 variables, which is too much with 46 answers. That's why the total model is divided in eleven groups of variables. Each group contains three to 12 variables, growth variables (turnover and personnel) and success measure. Then the biggest model contains 15 variables. Thus, in each model added three times more answers than there are variables. In this study a one single variable is not important instead the groups of variables and the whole presentation of data.

Results

Results of the analysis of the presentation of the whole data are presented in table 3.

N=46

Strategic Management	**Group of variables**	**Correlation with life cycle**	**Correlation with success**
Strategy Content	Goals	Yes	No
	Products	Yes, variation	No
	Customers	Yes, variation	No
	Cooperation	No	No
	Critical Success Factors	Yes	No
	Business develop (actions)	Yes	No
Strategy Process	Planning Process	Partly	Yes
	Planning (Topics)	Partly	Yes
	Control (Measurements)	Incremental (average)	Financial and Customer measures
Strategy Context	External	Partly	Partly
	Internal	Yes	Partly (V2C)

Table 3. Summary from the analysis of data by Bayesian modeling

Strategy content correlates mainly with the stage of life cycle. Data does not show any evidence that there is a "secret formula" as initial strategy of growth venturing. One of the interesting details is that the level of cooperation does not correlate with life cycle and either success. There is about equal amount successful ventures with very broad cooperation or not. It seems that goals, critical success factors and business development change during the life cycle. These variables do not stay constant between stages of life cycle.

The analysis shows evidence that the code of management correlates with success and also with life cycle. Ventures, which are more systematic and analytical, are also successful. Those venture, who have also broader measurement system especially financial and customer measures.

External context is defined with five variables (markets today, market development in 2-4 years, competition today, technology uncertainty, changes in customer needs 1-2 years). The most successful companies assess average level of competition, less technological uncertainty and quite favorable market development in the near future.

Internal context is defined by stage of life cycle and external actor's influence on development of venture. Different external actors influence on venture growth in various stage of life cycle. Business angels, advisors and V2C actors influence in pre-start-up and start-up phase, incubators mainly in start-up phase and venture capitalist in growth phase. Only V2C actor, who is specialized in growth venturing, correlates with success.

Discussion and conclusions

The main research question was: Is the success of new companies depending more on execution of the strategy (process, implementation) than intended strategy (content)? The focus of the study is logic of actions during the growth. According the survey of 46 high-technology firms in Finland is likely to show that the success of the firm depends on the formulation (strategy process) and execution of the strategy than intended strategy (content). Thus, there is no "secret formula" as an initial strategy for company growth in early phases that lasts through life cycle instead it is matter of changing logic of action.

First of all, the task of entrepreneurship is a creation of new business, organization or even economy, whereas growth venturing is to run the small business to the big business. Growth venturing is like project business. Consecutively to commercialize an innovation, a venture is needed in the process. Young high-technology firms are regularly controlled by active entrepreneurial characters that react quickly to take benefit of new and innovative opportunities. Large firms, quite the opposite, often posses a management structure that stifles entrepreneurial effort (Rothwell and Zegveld 1982). Of course, there is no idea to adopt management practices directly from big companies to small entrepreneurial firms. Although, there is sort of chaos in daily management on the growth of the new venture, still we can observe the development of new venture from strategic management viewpoint. In the long run, according the results of this study, the most successful ventures are those who plan and also measure their business performance.

If entrepreneurship is concentrated on creation of a new organization and then Professional Entrepreneurship is deals with growth venturing. Gradually entrepreneurial firm loose its entrepreneurial characters through realized commitments e.g. size of organization or network, connected alliances, preferred technological standards, etc. This not needs to mean that ventures are totally loosing they entrepreneurial spirit instead it has to change its action code. In figure 3 is illustrated the transformation between entrepreneurship and strategic management of growth venturing. Question for future research is that could Professional

Entrepreneurship be understand as a professional activity and could be also separated from way-of-living type of entrepreneurship?

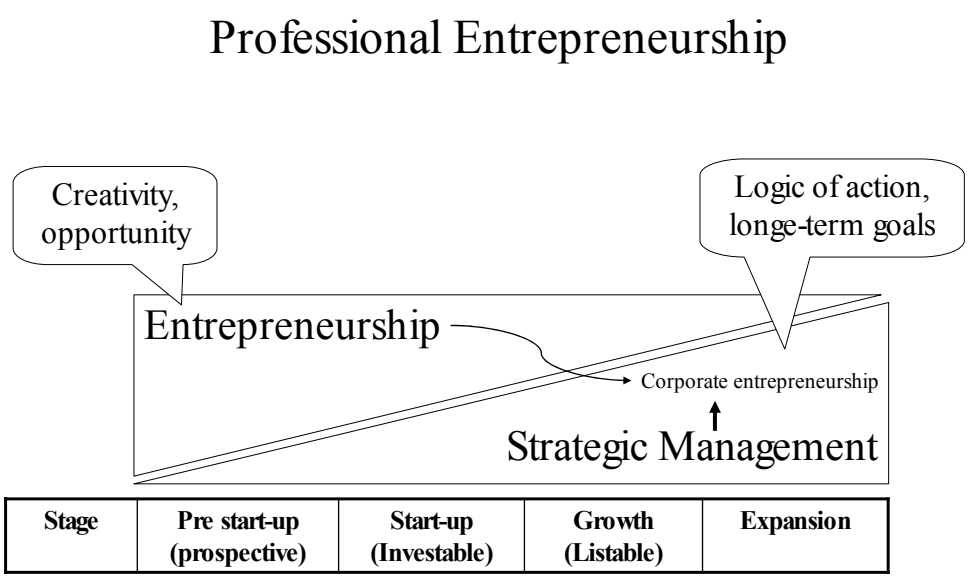

Figure 3. Transformation between entrepreneurship and strategic management of growth venturing

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