

**FACTORS IMPACTING THE COMPETITIVENESS OF SMALL,
FINNISH GROWTH-ORIENTED SOFTWARE FIRMS**

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ABSTRACT

Purpose: The purpose of this paper is to deepen understanding about factors underlying the competitiveness and profitable growth of small, growth-oriented software firms in Finland. The focus is on factors connected with the firms' business strategy and strategy process.

Methodology/Approach: Both the strategy process and one of its outputs, the business strategy, are multidimensional, general concepts inviting a great number of controversial views. Models of strategic thinking have therefore been created to show in which way these concepts are understood in small, competitive, growth-oriented software firms in Finland. To bring a piece of established wisdom to the field of the current theoretical discussion, the assumptions about the integrated elements associated with the concepts are based on a literature review for theories and views of leading researchers such as Ansoff, Minzberg, and Porter. Detailed assumptions on some specific factors of target firm competitiveness are created as options within the framework of the models. The priority order of importance of the assumed generic and specific factors impacting target firm competitiveness is verified in a field study, which is conducted through interviews of 25 specialists of small software firms.

Assumptions/Core Findings: The strategy process and one of its outputs, the business strategy, are assumed to be generic factors promoting the competitiveness of growth-oriented software firms, measured as profitable growth, which was also one of core findings in the field study.

The target firms' competitive strategy process is assumed, especially during the challenging growth phase, to be an integrative, iterative choice and monitoring process with creative and analytical elements and with three purposes, i.e. the competitive positioning through the business strategy, resource- and action-based choices for implementation, and monitoring the strategic development of markets, products and resources on the basis of an action plan. Choices as the real-time response are needed in the iterative strategy process to maintain the competitive content of the action plan or that of the business strategy in the constantly changing environment. The strategy process is assumed in this paper to include individual application of an entrepreneur's and other participants' intellectual capacity in the mental mapping of strategic thoughts, team learning, and adoption of special tools of strategic management. The assumed outputs of the strategy process include entrepreneurs' and other participants' mental business maps about the target firms' business plan,

documented strategic choices of the board of directors, and a written business plan including the business strategy, resource strategy and action plan.

Three core findings from the field study are connected with the target firms' strategy process. Entrepreneurs' and other participants' business maps are the most important outputs of the strategy processes in the firms. Individual capabilities in integrating mental business maps – perceiving the whole – is the most important capability factor. An entrepreneur is the *strategist* in the process especially at the start-up phase of target firms.

The assumed competitive content of the business strategy includes two major ends. The generic end towards profitable growth, which is indicated by growth objectives expected by potential sources of financing, and by an overall, creative framework for guiding the intended, more detailed business scope. The basic elements of the business scope are definitions for the focused market scope and for the differentiated products. The end for defining the competitive, focused market scope is the intended, attractive growth potential. The means for this are defined by segmentation and internationalization strategies in which the core of understanding centres on the elements of growth potential, on the current and new benefits, needs, wants and other requirements of focused segments in focused locations and on the competition. The assumed end for the differentiation of software products is the superior product with a design that meets the needs and other requirements of focused segments better than the broadly targeted competitor. The means for this are indicated by product and positioning strategies. Three assumed, product-market -based criteria for target firm competitiveness in the business strategy are competitive fits. At the core, a specific criterion is the fit between needs-wants -based requirements of focused customer segments and means of product differentiation. The generic criterion is the fit between the justified, attractive scope of business and ends of intended growth. The third criterion connected with the business strategy as the factor of target firm competitiveness is the competitive fit between the product-market -based business strategy and the resource-action based means for its implementation. The implemented profitable growth is the assumed, intended end of target firms in this paper.

One core finding from the field study is connected with the assumed, specific criteria about target firms competitiveness included in the competitive content of the business strategy. The most important factor in the strategy for differentiating software products is the goal to create solutions to meet focused segment requirements.

Keywords: Strategy process, Business Strategy, Mental mapping, Business Maps, Entrepreneurship

TIIVISTELMÄ

Tarkoitus: Tämän tutkielman tarkoituksena on syventää ymmärtämystä pienten, kasvuun suuntautuneiden ohjelmistoyritysten kilpailukykytekijöistä kohti kannattavaa kasvua. Fokus on niissä tekijöissä, jotka liittyvät kohdeyritysten liiketoiminnan strategiaan ja strategiaprosessiin.

Menettelytapa/lähestymistapa: Sekä strategiaprosessi että liiketoiminnan strategia eräänä sen keskeisenä tuotoksena ovat molemmat monidimensioisia käsitteitä, joihin kohdistuu suuri joukko vastakkaisia näkemyksiä. Tämän johdosta on kehitetty strategisen ajattelun malleja, joilla osoitetaan, millä tavoin nämä käsitteet ymmärretään liittyneinä pieniin, kilpailukykyisiin, kasvuun suuntautuviin ohjelmisto yrityksiin. Jotta voidaan tuoda pala vanhaa viisautta teoreettiseen nykykeskusteluun yleiset oletukset näiden käsitteiden integroiduista elementeistä pohjautuvat kirjallisuustutkimukseen, joka kohdistuu johtavien tutkijoiden kuten Ansoffin, Minzbergin ja Porterin teorioihin ja näkemyksiin. Kohdistetut oletukset joistakin kohdeyritysten kilpailukyvyyn erityisistä tekijöistä on luotu oletettuina vaihtoehtoina mallien pääelementtien puitteissa. Kohdeyritysten kilpailukyvyyn yleisten ja erityisten tekijöiden tärkeyden prioriteetteja on tutkittu kenttätutkimuksella, joka on toteutettu haastatteleamalla 25 kohdeyritysten erikoistuntijaa.

Olettamukset/ydin havainnot: Strategiaprosessi ja yksi sen tuotoksista liiketoiminnan strategia oletetaan olevan kasvuun suuntautuvien ohjelmistoyritysten kannattavalla kasvulla mitattavan kilpailukyvyyn yleisiä tekijöitä, joka myös oli yksi kenttätutkimuksen ydin havaintoja.

Kohdeyritysten kilpailukykyisen strategiaprosessin oletetaan, kasvuvaiheen aikana, olevan integroiva, iteroiva päätös ja valvonta prosessi, johon sisältyy luovat ja analysoivat elementit sekä kolme tarkoitusta eli kilpailukykyinen liiketoiminnan asemointi liiketoiminnan strategian kautta, resurssi- ja toimenpide pohjaiset päätökset sen toteutukseen, sekä markkinoiden, tuotteiden ja resurssien kehityksen valvonta toimenpidesuunnitelman mukaisesti. Päätöksiä reaaliaikaisina vastauksina tarvitaan iteroivassa strategiaprosessissa ylläpitämään toimintasuunnitelman ja liiketoiminnan strategian kilpailukykyinen sisältö aina muuttuvassa ympäristössä. Strategiaprosessin oletetaan tässä tutkielmassa sisältävän yrittäjän ja muiden osallistujien aivojen käyttöä strategisten ajatusten henkisessä kartoituksessa, tiimien luovaa oppimista sekä strategisen johtamisen työkalujen käyttöä. Strategiaprosessin oletetut tuotokset ovat yrittäjän ja muiden osallistujien henkiset, liiketoiminnan kartat

kohdeyritysten liiketoimintasuunnitelmasta, dokumentoidut hallituksen strategiset päätökset sekä kirjallinen liiketoimintasuunnitelma sisältäen liiketoiminnan strategian, resurssistrategiat sekä toimenpidesuunnitelman.

Kenttätutkimuksessa on kolme ydinhavaintoa, jotka liittyvät strategiaprosessiin. Tärkeimmät strategiaprosessin tuotokset ovat yrittäjän ja muiden osallistujien henkiset liiketoiminnan kartat. Tärkein yksilöllinen kyvykkyystekijä on integroida henkinen liiketoiminnan kartta- nähdä kokonaisuus. Prosessin ”strategist” on yrittäjä erikoisesti yrityksen startup vaiheessa.

Oletettu, kilpailukykyinen liiketoiminnan strategia sisältää kaksi pääelementtiä eli yleisen päämäärän kohti kannattavaa kasvua osoitettuna rahoituslähteiden odottamilla kasvutavoitteilla ja luovalla kokonaiskehityksellä, joka ohjaa aiotun, yksityiskohtaisemman liiketoiminnan puitteiden luomista. Liiketoiminnan puitteiden peruselementit ovat määrittely kohdistettujen markkinoiden puitteista ja määrittely differoiduista tuotteista. Päämäärä kohdistetun, kilpailukykyisen markkinoiden puitteiden määrittelylle on aiottu kasvun potentiaali. Keinot siihen määritellään segmentoinnin ja kansainvälistymisen strategioilla, missä ydin ymmärrys on kohdistettu kasvupotentiaalin perusteluihin, kohdistettujen segmenttien vaatimuksiin kohdistetuissa paikoissa ja kilpailuun. Oletettu päämäärä ohjelmistotuotteiden differoinnille on ylivoimainen tuote tarkoituksella vastata paremmin kohdistettujen yritys/kuluttaja segmenttien nykyisiin sekä kehitettyihin uusiin vaatimuksiin verrattuna laaja alaisiin kilpailijoihin. Oletetut keinot tuotedifferointiin ovat vaatimusperustainen, tekninen/luova tuotekehitys tuotestrategian ohjaamana, joka on integroitu differoidun tuotteen asemointiin kohderyhmän mielessä ylivoimaisena tuotteena markkinoinnin funktiostrategian mukaisesti. Kaksi tuote- markkinapohjaista kriteeriä kohdeyrityksen kilpailukykyistä liiketoiminnan strategiassa ovat kilpailukykyiset sopivuudet. Erikoisena ydinkriteerinä on kilpailukykyinen sopivuus kohdesegmenttien vaatimusten ja tuotedifferoinnin keinojen välillä. Yleisenä kriteerinä on sopivuus perustellun, houkuttelevan liiketoiminnan puitteiden ja aiottujen kasvupäämäärien välillä. Liiketoiminnan strategian kilpailukykyyn kohdistuva kolmas kriteeri on tuote–markkina pohjaisen liiketoiminnan strategian ja sen toteutukseen tarvittavien resurssi-toimenpide pohjaisten keinojen välillä. Toteutettu, kannattava kasvu on oletettu kohdeyritysten päämäärä tässä tutkielmassa.

Eräs ydin havainto kenttätutkimuksessa liittyy liiketoiminnan strategiaan. Tuotteen differoinnin strategiassa tärkein tekijä on tavoite luoda ratkaisuja, jotka vastaavat kohdesegmenttien vaatimuksia.

Avainsanoja: Strategia prosessi, liiketoiminnan strategia, henkinen kartoitus, liiketoiminnan kartat, yrittäjyys

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1 INTRODUCTION

1.1 Small Finnish software firms and their challenges

The number of Finnish software firms was still moderately small, 7900, in 2012. The yearly net increase percentage (start-ups/exits) in volume was 4.6% between 2008 and 2012. The Finnish software industry was at the time mostly characterized by small- and medium-sized firms; the share of firms with maximum five employees totalled 46%. (Rönkkö, Peltonen & Pärnänen 2011).

The increase in Finnish software industry revenues grew by 5.2% in 2011 and by 5.8% in 2012. Because domestic markets in Finland are limited, the basic channel for growth is internationalization. In 2012, 55% of Finnish software firms yielded international revenues. The growth rate of Finnish software firms with international revenues is much higher compared with the growth rate of those operating only in home markets. In general, the software industry in Finland has increased its share as percentage of the GDP between 1995 and 2013 from 0.8% to 2.1%, growing both in terms of volume and operating profit (Peltonen, Rönkkö & Luoma 2013, Kontio 2008). On a larger scale, profitable growth is needed in the future to bolster the competitive growth of the Finnish economy.

Software business in general is divided into service business including professional services and product business including enterprise solutions and “packaged massmarket software” (Hoch 1999). The basic software products can be categorized into three types: the *pure* software products sold on their own instead of as a part of another product; embedded software integrated into other products and sold separately and customized software (Nukari & Forsell 1999). Software products and services are sold to enterprise and consumer markets, both of them having their own features.

Finnish software firms have been categorized in the National Industry Survey according to two variables by product type, i.e. tailored products and productized products, and two by business type, i.e. product-based business and service-based business. By the above categorization Finnish software firms can be grouped into four categories: product tailors, solution consultants, product integrators, and product licensors. Product licensors offer productized products for mass markets and they have been categorized to belong to the purest end of product-based business. Services constitute the main share of

product integrators' offering in the service business, but software still forms the core. (Lassila, Jokinen, Nylund, Huurinainen, Maula & Kontio 2006)

The initial challenge for small, Finnish software firms is the survival during the start-up phase. The second challenge for growth-oriented firms is posed by long-term profitable growth in the constantly changing environment during the phases that follow. The prerequisite for both survival at the start-up phase and profitable growth at the later phases contribute to firm competitiveness, for which the strategy process and as its output, the business strategy are assumed to provide the integrated, strategic framework and the direction based on products and markets.

1.2 Background of key concepts

This study focuses on product-market factors promoting profitable growth, which is the challenge and measurement of small, growth-oriented software firms' competitiveness. There are two integrated, strategic concepts which are connected with this challenge and therefore at the center of this paper. The key integrated concepts include the integrative, iterative strategy process and its product-market output – the competitive business strategy.

Resource strategies including financing and the action plan are also important outputs of the strategy process as means in the implementation of attractive growth potential defined in the business strategy. They form no key concepts of this study the way product-market factors do, but are still shown in the following, logically integrated models of strategic thinking in order to provide an overall view.

Both of the theoretical concepts under scrutiny, the strategy process with its different labels and the business strategy, have a long history, outlined in the following.

Strategy Process

In the past fifty year, a large number of writers have investigated this particular concept, applying different names and labels. The major concepts together with some exemplary authors include the following: Long Range Planning (Drucker 1959, Vancil 1983), Corporate Planning (Ackoff 1970, Piercy 1984), Strategic Planning (Berg 1965, Hayes 1985), Strategic Management (Ansoff 1979, Hax 1984) and Strategy Process (Lechner & Muller-Stewens 2000). An indication of the number of the authors' books and articles is given by the 160 references which are connected with the before-mentioned literature review of the strategy process.

Most of the writers focus on large firms but there are also situation-specific solutions for small ones, such as *Strategic Planning for Your Small Business* (Bubenicok 2010), *Strategic Planning in Growth Oriented Firms* (Mazzarol 2009) and *Strategic Planning in Small High Tech Companies* (Berry 1998). There are even dedicated publishers for small firms.

As early as in 1950s, Simon defined “a behavioral model of rational choice” with the following phases: intelligence as information, design of options, and choice (Simon 1955). In 1960s, Ansoff created the first model of strategy formulation in his classical book *Corporate Strategy* (Ansoff 1965, 34, 172–173). Ansoff called it the “Decision flow in product-market strategy formulation”. It is a model for the rational, analytic choice process towards growth and other objectives. There are also other similar models which belong to the so-called design school (Minzberg 1990).

In his book *The Rise and Fall of Strategic Planning*, Minzberg attacks with over 500 references against “formal planning” in general, against “design school” as an analytic choice process, against planning with planners, and against the pitfalls in planning. Instead of formal planning and the analytic choice process, Minzberg emphasizes the importance of creativity of the human brain and that of generative learning (Minzberg 1994). On top of design school and formal planning, Minzberg has found earlier, other schools of thought (Minzberg 1990, 171):

- the cognitive school concerned with the mental process
- the learning school concerned with the emergent process
- the environmental school concerned with the passive role
- the configurational school concerned with the integrative process
- analytical positioning to create an attractive product-market position of the firm and
- the entrepreneurial school as an opposite of participative, integrative approach

The basic difference between strategic planning and the concept of strategic management is that strategic planning includes no task of implementation. The original paradigm of strategic management, first presented in 1977, included the following tasks: goal formulation, environmental analysis, strategy formulation, strategy evaluation, strategy implementation, and strategy control (Schendel 1994). A large number of writers can in one way or another be connected with the concept of strategic management. About 50 of the previous authors analyzing these topics can be grouped into the following categories: (Venkatraman & Camillus 1984)

- Strategy formulation school (11 writers)
- Strategy implementation school (10)
- Integrated formulation-implementation school (9)

- Interorganizational strategy networks school (6)
- Strategic choice school (5) and
- Overarching “Gestalt” school (7)

In terms of strategic management, the definition of business strategy is an output of the phase called strategy formulation, but the phases of implementation and control are needed to transform the defined, competitive business strategy into the implemented, competitive business strategy. The Integrated formulation-implementation school and strategy implementation school focus on the implementation phase. Some concepts that focus on the implementation phase include roadmapping and balanced scorecard (Cascella 2014, Kaplan & Norton 1996).

In the implementation phase of the iterative strategy process, Ansoff’s concept of “the real time response” is assumed to play an important role. (Ansoff 1984, iv). Even today, the related research focuses on resolving strategic issues as a part of the iterative strategy process (Abebrese 2011).

Business Strategy

In terms of strategic management, the business strategy can be assumed to be the output of the strategy formulation phase. Ansoff has defined strategic management as “the systematic approach for managing strategic change” with one of the major ends being “positioning the firm through (business) strategy” (Ansoff 1984, xvi). Already in 1960s, Ansoff defined the role of business strategy as follows: “the firm needs a well defined scope and growth direction ... (growth) objectives alone do not meet this need ... additional decision rules are required if a firm is to have orderly and profitable growth ... such decision rules and guidelines have been broadly defined as (business) strategy or, sometimes as concept of the firm’s business” (Ansoff 1965, 94). The more detailed modules of business strategy are the following: product-market scope, growth vector to fill the growth gap, competitive advantage and synergy (which means resource-based capabilities for implementation), and the effect ($2+2=5$) i.e. “the combined return of the firm’s resources is greater than a sum of its parts” (ibid, 75, 78–79). Even today, growth vector, growth gap thinking and competitive advantage are adopted both in theoretical lecturing and in management consulting.

Abell, in his book *Defining the Business*, combines ends, a definition of business, with functional strategies into business strategy. The definition of business includes the scope of markets and differentiated products. The more detailed dimensions comprise customer groups together with function and product technology. Abell’s conclusion about business strategy in general is “Business strategy is an elusive animal to describe”. (Abell 1980, 189–190.)

Porter in his Dynamic Theory of Strategy defines the more detailed dimensions of a firm's business scope as products, customer segments served, and their locations. Porter hypothesizes that "competitive advantage cannot be examined independently of competitive scope" (Porter 1991, 101).

In 1980s, Ansoff detailed the dimensions of business scope for any Strategic Business Unit (SBU) with a technical product as follows: needs, types and locations of customers, and technology of products (Ansoff 1984, 45).

The special definitions of the ends connected with the business strategy are mission and vision statements. During a 40-year period, several types of definitions have been formulated by different types of writers discussing the purpose of missions and visions for small and large firms and the difference between them. A special name business idea as addressing factors related to products and markets has been assigned to the mission of small firms (Karlöf, 1986).

Conclusion as the basis for objectives of this study

Based on the above summary, one can draw the conclusion that both the strategy process and one of its outputs, the business strategy are multidimensional concepts with a great number of controversial views. Therefore, it is important in this paper to define by means of generic models and generic assumptions how these concepts are understood in this study. The defined generic models with generic assumptions can provide a framework for some focused assumptions about potential factors promoting the competitiveness of small, Finnish, growth-oriented software firms, as measured in terms of profitable growth. These focused assumptions can then be verified through a field study.

1.3 Objectives of the study

The objectives of this study are as follows:

(1) The first objective of this study is to analyze the importance of the strategy process and business strategy of small software firms, as compared with other potential concepts of target firm competitiveness at the generic level. For this purpose, an integrative model of strategic thinking has to be defined in order to understand the role of focused objects among other options. Their importance is verified against the results of the field study FS 2010.

(2) The second objective is to define well-grounded models with generic assumptions for the competitive content of small, growth-oriented software

firms' business strategy and for their integrative, iterative strategy process, in order to show in which way these concepts are understood in this study.

(3) The third objective is to define in the above generic framework the focused assumptions about factors promoting the competitiveness of small, Finnish, software firms, measured as their profitable growth, and to verify the focused assumptions through the results of the field study FS 2010.

2 METHODOLOGY

2.1 Definition of models

The method of defining integrated models is based on a literature review and represents an iterative process of choosing between three phases:

- (a) Choices related to the basic elements in generic models with their modules, and choices about the integrative logic between the elements;
- (b) Choices about views which substantiate the choices made; and
- (c) Designing the conceptual, integrative scheme in order to illustrate *the integrated whole* before elaborating the details.

2.2 Verifying the focused assumptions

Focused assumptions are typically verified in a field study by means of interviews and questionnaires.

There have been two field studies which have focused on the factors of competitiveness in small software firms. Both studies were conducted by the present author in cooperation with the Finnish Funding Agency for Technology and Innovation (Tekes). Most of the 40 participants in the 2008 field study were entrepreneurs or board members. Half of the participants were interviewed, and all of them completed a questionnaire. The results of this study were published in Tekes report No 238/2008 without a theoretical framework (Harju 2008). Some of the results will be referred to also in this article.

The sample of the 2010 field study (FS 2010) included 25 participants. Most of them were consultants or other types of specialists with in-depth knowledge of small software firms. All 25 participants were interviewed and at the end of the interview, they all completed a questionnaire. The results of FS 2010 are published in this report.

As the terms and expressions applied in the questionnaire may have varying definitions, some key concepts, such as the content of the business strategy in the business plan and the content of the strategy process, were explained in the interviews to all of 25 participants. This was achieved by means of models and discussions helping create a mutual understanding between the interviewer and the interviewee.

3 THE IMPORTANCE OF THE STRATEGY PROCESS AND BUSINESS STRATEGY AS GENERIC CONCEPTS OF TARGET FIRMS' COMPETITIVENESS

3.1 The model

Both the strategy process and one of its outputs, the business strategy have been assumed to be concepts of small, Finnish software firms' competitiveness and therefore the first objective of this study is to test their importance compared with other potential concepts at the same level. An integrative model of strategic thinking is defined in Figure 1 to enhance understanding about the focused concepts and their role among some other options, which in this model address differentiated products, development and operational resources and financing.

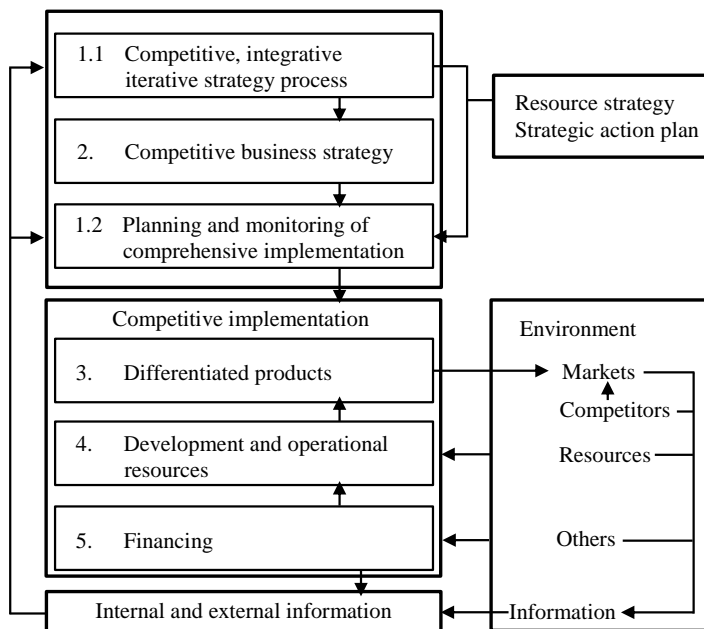


Figure 1 The major generic factors of small software firms' competitiveness

Small, growth-oriented software firms operate in a challenging, constantly changing environment. The theoretical criterion for firm success is the competitive fit between the firm and its environment as the generic, integrative logic of firm competitiveness. (Rumelt, Schendel & Teece, 1991.) In the framework of Figure 1, the target firm is understood as the integrated combination of managerial and implementation systems (Kast & Rosenzweig 1980; Schendel, 1994). The following components are found in the managerial system: (1) The strategy process combined with monitoring and short-term planning systems, which receive input internally and externally, and (2) business and resource strategies together with the strategic action plan as outputs of the strategy process. The implementation system is assumed to include both development and operational sub-systems with their special resources. (Harju 1999, 18.)

The generic logic of the model in Figure 1 dictates that the growth potential defined by the product-market based business strategy is implemented in the development and operational processes of the competitive implementation by capabilities of resources. The development of product- market- and resource-based means is guided by business and resource strategies. The object of resource-based development is resource-based capabilities (Hamel & Prahalad 1989). The needed actions are summarized in the action plan.

The purpose of the differentiated product is to meet the needs, wants and other requirements of the particular, focused segment of markets better than their more broadly-targeting competitors (Porter 1985). The differentiated product is an output of product development. The strategy for product development is assumed in this study to be a part of the business strategy. The differentiated products are positioned and sold in focused markets.

3.2 Findings from the field study FS 2010

Figure 1 as the integrated combination of the major generic factors underlying the competitiveness of small software firms was shown to and discussed with the participants of FS 2010. Question No. 1 asked the participants to “Prioritize the ranking positions (from 1 to 5; 1 being the most important) of the optional elements in the competitiveness of small software firms in two different situations (A) the start-up phase and (B) the growth phase”. The results are shown in Table 1.

Table 1 Findings from Question 1

FR=The final ranking
AR=The average of rankings

		A) Start-up	B) Growth
The competitive content of business strategy	FR	No. 1	No.1
	AR	1.28	1.2
The differentiated product	FR	No. 2	No.2
	AR	2.36	2.68
The strategy process	FR	No. 3	No. 3
	AR	3.6	3.28
Financing	FR	No. 3	No. 4
	AR	3.6	4.0
Other operational resources	FR	No. 4	No. 4
	AR	3.84	4.0

The participants of FS 2010 shared the opinion that a competitive business strategy is the most important factor for the competitiveness of small software firms both at the start-up and growth phases. The product, which is the variable both in the strategy process and in the competitive business strategy, was considered the second most important factor. A business strategy together with a resource strategy and a strategic action plan are the outputs of a strategy process, regarded as the third most important factor. Financing during the start-up phase was considered equally important. Operational resources and processes follow as the fourth most important factor.

Although the sample was quite limited in size, the results provide indication that both the strategy process and one of its major outputs, the business strategy, constitute important factors underlying the competitiveness of small software firms.

4 THE COMPETITIVE BUSINESS STRATEGY

According to the objectives of this study, a model is defined in this chapter with generic assumptions on the competitive business strategy of small, growth-oriented software firms. In the framework of these generic assumptions, focused assumptions will be made about the factors contributing to the competitiveness of small, Finnish software firms and tested against the results acquired from the field study FS 2010

4.1 The model

The model with its integrated elements is shown in Figure 2. The model is a conceptual, integrated scheme, the purpose of which is to create an understanding about the integrated whole before examining the details, which are defined and substantiated in sections to follow. The basic elements in the model describing the business strategy are (1) generic ends, (2) the focused scope of markets, and (3) differentiated products. The market-based scope, together with differentiated products, creates the business scope.

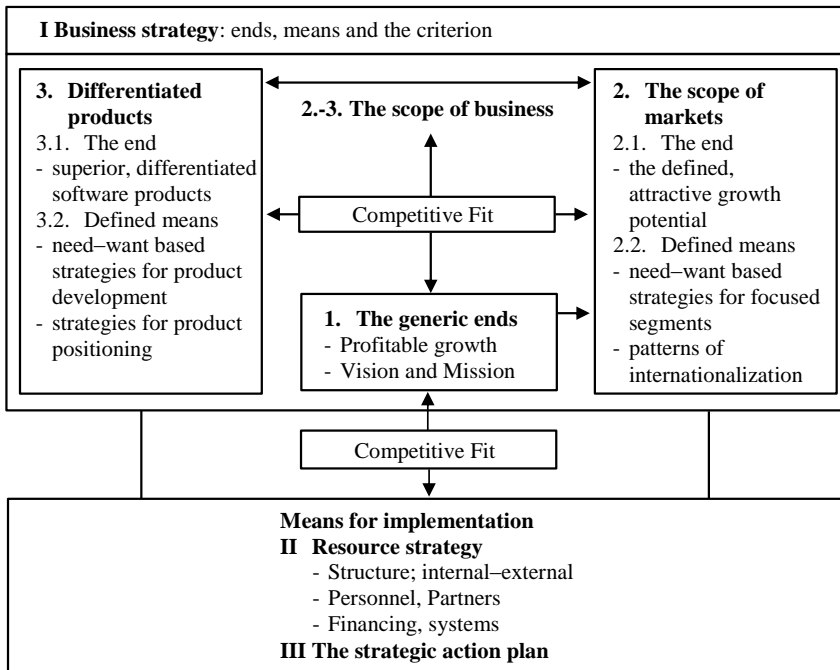


Figure 2 The basic elements of the competitive Business Strategy (1–3) and of those a Business Plan (I–III)

The integrative logic connected with the defined content of target firms' scope of business is based on Porter's Dynamic Theory of Strategy. Some basic hypotheses of his theory state that "...a successful firm is one with the attractive position ... attractive position is caused by a sustainable, competitive advantage ... competitive advantage cannot be examined independently of the competitive (business) scope ... dimensions of business scope are: 'products, buyer segments served and geographic locations, in which the firm competes'" (Porter 1991, 101).

Competitive advantage is also called generic strategy by Porter (Porter 1985, 11). One of Porter's four generic strategies is differentiation focus. As a generic strategy for target firms' business scope, differentiation focus is assumed in this study to refer to differentiated products for specific segments of focused geographical areas.

The generic ends provide objectives for profitable growth and a framework for the targeted growth potential defined in the focused scope of markets, which is one of the integrated elements of target firms' business scope.

Two assumed product-market criteria for the competitiveness of target firms in the business strategy are competitive fits (Venkatraman & Camillus

1984, 513–525, Harju 1993, 18–42). The core criterion is the fit between needs- and wants-based requirements of focused customer segments and means of product differentiation. The generic criterion is the fit between the justified, attractive scope of business and ends of intended growth. The third criterion connected with the business strategy as the factor promoting target firms' competitiveness is the competitive fit between the product-market - based business strategy and the resource-action -based means for its implementation. The implemented profitable growth is the assumed, intended end of target firms in this paper.

The business strategy and related means of implementation of the target firms are outputs derived from the integrative strategy process (Figure 1). Porter hypothesizes that “the essence of strategy is choice” (Porter 1991, 101). Minzberg emphasizes the importance of creativity instead of rational choices (Minzberg 1994, 394). In this study, business strategy is assumed to be an output of an integrative, iterative strategy process based both on analytical choice and creativity elements.

In the rapidly changing environments, all the elements in Figure 2 with their modules are variables in the integrative, iterative strategy process. Also generic ends are included as variables. The more detailed elements of target firms' business strategy together with their grounds will be defined in the following sections.

4.2 The generic ends

The assumed components of the generic ends defined in the competitive content target firms' business strategy include:

(a) Long-term goals towards the generic objective of profitable growth. Current and potential investors of small software firms expect growth goals to be defined in the content of the business plan. (Cusumano 2004.)

(b) A mission together with the vision statement. Both the mission and vision concepts have a history extending over several decades. During this long period, a great amount of definitions have been created to explain what we mean by these concepts. Below you will find some of them.

A mission statement defines the business idea of a small firm (Karlöf 1986). “A mission statement must be a concise paragraph describing what your company does and for whom. Show your mission to your mother, if she does not understand it, start again” (Zahorsky 2009, 1). “A vision statement is your ticket to success. A photograph in words of your company's future. It provides inspiration for both daily operations and your strategic decisions” (Ward 2012, 1). “Vision & Mission differ in that a vision statement describes the

anticipated future results of a company's actions, while a mission statement describes the intentions and goals of a company's current actions. Written mission and vision statements are generally included in company's business plan" (Austin 2012, 1). Porter hypothesizes that the "vision sets the broad outline of the (business) strategy, while leaving the specific details to be worked out" (Minzberg 1994, 209).

In the content of the competitive business strategy, the concise mission with the vision statement, together with long-term growth goals give the direction and the overall framework for creating and maintaining the competitive scope of markets with the defined growth potential.

4.3 The growth vector options for the scope of business

The product-market based scope of business is understood in this paper to include differentiated products in focused markets. The growth-vector options for the scope of business include the following components: (1) *Market penetration* by present products and markets, (2) *Market development* by present products in new markets, (3) *Product development* by new products in present markets and (4) *Diversification* by new products and markets (Ansoff 1965, 113).

The modified growth vector matrix for small software firms is shown in Figure 3 and the content of the business strategy of target firms in Figure 4 in connection with the concepts of momentum line and with other components of the growth vector matrix.

Products: Markets:	Present	New
Present	1. Market penetration - Momentum Line: growth by present products, customers, channels, segments and countries	2. Product development - Diversified products for current, focused markets
New	3. Market development - new customers/channels/old segments - new segments - new countries	4. Diversification - new products in new markets including the potential, new Business idea

Figure 3 The modified Growth Vector matrix for target firms

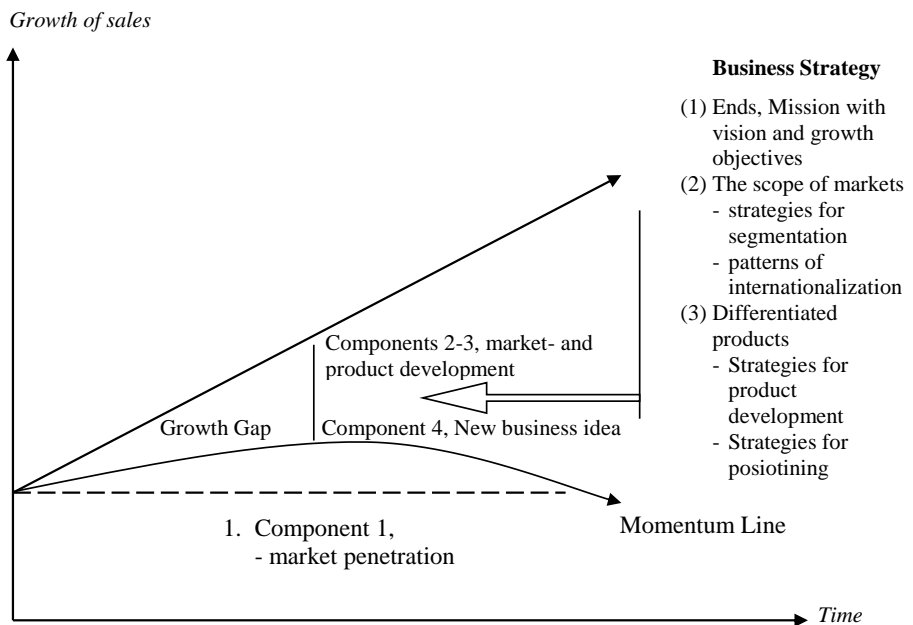


Figure 4 The content of the business strategy of target firms in connection with the concepts of momentum line and that of the growth vector matrix

The concept of momentum line, which was created by Stanford Research International (SRI) 50 years ago, is the border line between market penetration (with present products and markets) and other components of the Growth Vector. The major assumed reasons for the declining curve of the momentum line in the long run include the declining life cycle curves of present software products. Small software firms have no momentum line at their start-up phase.

The growth objective as a part of the ends of the business strategy defines the direction for the growth line in Figure 4. The growth gap is located between momentum line (market penetration) and other components of the growth vector. It is assumed that some growth is also created by means of market penetration and all the factors in Figure 4 are variables in the strategy process, including also the new business idea.

4.4 Strategies for creating the competitive scope of focused markets

The competitive scope of focused markets is assumed to include the defined growth potential. Two types of integrated strategies are needed to create growth potential by means of market development. They are strategies for the focused segments and chosen patterns of internationalization.

4.4.1 Strategies for focused segments

Segmentation means “identifying meaningfully different groups of customers and defining which segments to serve” (Perner 2012, 1). The assumed generic strategy for the business scope of small software firms is “differentiation focus”, which entails differentiated products for the scope of markets including focused segments in focused geographical areas. The purpose of segmentation in the generic “differentiation focus” strategy is “to exploit the special needs of buyers in certain (focused) segments better than broadly targeted competitors” (Porter 1985, 178).

Requirements have been well defined as “the compelling reason to buy” (Moore 1999, 109). Abell finds that technology performs a function to (enterprise) customers and “customers make their choices based on the attributes and benefits it offers”. He also sees that benefits, needs and functions are relative words (Abell 1980, 170–171). All of these and many others can be called enterprise requirements.

Enterprise markets and consumer markets are two different types of markets for software products. It can also be presumed that both have different sets of requirements. One can assume that the benefits are connected only with

enterprise customers and the generic requirement of enterprises is to yield *benefits by need solutions* together with other more specific requirements for high-tech products (McGrath 2001,168–175). The consumer market “buys goods and services for personal consumption” and the individual buyer behavior is influenced by several factors (Kotler 1994, 201). Consumer requirements have been called behavioral “wants” instead of benefits by need solutions (B2B International 2010). Also large enterprises have individuals or groups of buyers with a marketing or technological background, which assumably has an effect on the final choice.

Small software firms operate in the value chain with end users and channels. Channels are always enterprises but end customers of those *pure* software products can be either enterprises or consumers. Knowledge of requirements of both consumers and enterprises is needed in the situation, where end customers are consumers and enterprises channels.

The object of requirements is normally the product but there is also another object. That is the small software firm as a whole. Enterprises either as end users or channels are concerned about the continuity of deliveries especially at the start-up phase. The major challenge for small software firms is selling the first product and winning the beach head. According to Slatter, *“during start up- phase , establishing credibility for the company is of paramount importance since customers are reluctant to place orders, however good the product, since they are concerned that the company may not survive”* (Slatter 1992, 84). Cusumano refers to the same issue as the credibility cap (Cusumano 1994).

The focused segments can be grouped by generic types. Slatter has created five generic directions for the focused segmentation of small high-tech firms with the following product-market based categories: (a) “niche player”, (b) “market specialist”; vertically focused, (c) “product specialist;” horizontally focused, and (d) “dominant sector player”; horizontally and vertically focused (Slatter 1992, 179). Both Moore (1999) and Cusumano (2004) have given their guidelines in relation to the framework based on Slatter’s categories.

Two basic types of criteria need to be considered when choosing which segments to serve. They are (a) two types of competitive fits, as defined before and (b) the well-grounded attractive growth potential of focused segments. The investors expect that the attractiveness of growth potential is justified in the content of the business plan. (Cusumano 2004).

4.4.2 Internationalization strategies as patterns

Firms' internationalization can be seen as the sub-segmentation variable (Moore 1999). The use of the internationalization variable for small, growth-oriented software firms in their market segmentation process is to increase the growth potential of the defined business scope.

Different kinds of models for internationalization have been created. The three traditional ones comprise: Uppsala model, Network model and INV (International New Ventures) model (Ojala 2008). The major dimensions applied in the models include the type of internationalization process, and the type of market (country) selection. One of the best-known and most cited models is the Uppsala model, which was developed in 1970s. In this model, the internationalization process is assumed to proceed stepwise and in market selection, firms are expected to enter first into nearby countries. In the Network model, internationalization proceeds through networks and market selection depends on the available networks. Connected with the classical Network model is the current Growth Engine concept, where the large, chosen channel with its global marketing network defines the focused end customers in the focused countries. In the INV model, internationalization is based on opportunity seeking through networks and the basic rule in country selection is "early to leading markets". Interestingly, only the INV model defines *product* as a dimension in the process. The explanation might stem from the fact that traditional models were mainly developed for conglomerates with their characteristic hierarchical levels in strategic planning, that is, corporate, divisional, and SBU (strategic business unit) levels.

Professor Bell is a well-known expert in internationalization. He conducted in 1995 a study of the internationalization of small computer software firms, including in his sample also Finnish small firms. In 2003 he, together with his two colleagues, wrote an often-cited article Towards an Integrative Model of Small Firm Internationalization. Because firms' trajectories are, in general, highly individualistic, situation specific, and unique, Bell therefore argues that the patterns shown in the model are intended to indicate stereotypical internationalization patterns rather than rigid "pathways". The model is based on the combination of international literature and the authors' own observations. The defined three internationalization patterns of small firms indicated in the model are: traditional, Born Global and Born Again Global (Bell 2004, 23–56). The Born Global pattern was originally introduced by an US consulting firm McKinsey and Co. in 1993 and since then by academic researchers.

There are also internationalization models called pathways such as the Organic Growth pathway, Collaborative pathway, and Born Global pathway (Äijö, Kuivalainen, Saarenko, Lindqvist & Hanninen 2005).

The internationalization model for small firms developed by Bell et al. has been mentioned in the theoretical framework of the above models. Born Globals are the same in both. Bell's traditional pattern and the Organic pathway seem to fit. The Collaborative pathway refers to the traditional INV and network models.

The internationalization process has been defined as being characterized by opportunity-seeking behaviour, which refers to the traditional INV model. When a firm behaves in an opportunistic way, it actively develops network relationships in its Business Network, including customers (OEM's VAR's) with an international sales network in order to have direct backup in the internationalization process.

4.5 Strategies for product differentiation

The competitive scope of the target firms' business is the focused, attractive scope of markets, which is linked by the competitive fit with differentiated products (Figure 2). The key goal for the competitive, differentiated software product is product superiority compared with those of competitors (Porter 1985). The superiority is created through differentiation. The basic means for product differentiation include product development guided by the product strategy, and product positioning guided by the marketing strategy.

4.5.1 Product strategy and product development

Differentiation of target firm products is assumed to be guided by the product strategy, which at the start-up phase is an idea in the entrepreneur's mind and is closely connected with the vision about the business idea. Later on, the product strategy gives guidelines for the development of "a new generation of the product to replace the current one, which is focused to current markets or to develop a new platform (plus solutions) to expand new markets". In both cases, product strategy is connected with "the core vision". (McGrath 2001, 46.)

Product development, in general, has been defined as "the transformation of a market opportunity and a set of assumptions about product technology into product available for sale" (Krisnan & Ulrich 2001). "The software development process as a part of the product development (hardware,

software, electricity) is how software is developed (Pressman 2005, Sommerville 2000). Software development is accomplished in phases. There are different kinds of life cycle (process) models that define the phases. The waterfall model is objective oriented. The objective for technical software development is based on the requirements of the focused and segmented customer groups. The phases are A) The objectives of software development: (1) requirement phase: “what the end user actually needs”, (2) specification phase: “what are the other requirements about types, and levels of the product’s capabilities and its performance and usability”; B) Phases of software development’s implementation: (1) design phase: architectural and detailed designing followed by (2) coding-, integration-, and maintenance phases (software solutions to meet customer requirements) (Schach 2002).

It has been found in the extensive study of the American Marketing Association that before proceeding into the development process, winning products have to have a clear definition of factors such as the target (focused) market with their customer needs, wants, preferences (requirements) and the product concept – what the product would do (the function). (Cooper & Kleinschmidt 1990).

The requirements posed by enterprises differ from those of consumers. The core requirement of enterprises is the monetary benefit by need solutions. Software developers take the main role in satisfying this type of requirement in the framework of product strategy guidelines.

As an example of consumers, the young users of software game products have their own unique requirements. Instead of monetary benefits, gamers demand inspiring animation and effects. Therefore designers and artists are needed to complement the work of software developers.

4.5.2 Marketing strategy and product positioning

Moore finds positioning “to be the most discussed and the least understood component of high tech marketing” (Moore 1990, 144). There are different kinds of definitions for positioning. The original was introduced by Trout (1969). Since then, several kinds of definitions have been made.

Perner sees that “segmentation, focusing and positioning comprise a three stage process where positioning refers to implementing a chosen image and appeal (of the product) to chosen segment” (Perner 2010, 1). Accordingly, this study assumes that new requirements among focused customers can be activated by promotion. In Perner’s model, the positioning is tightly linked with the four components (Ps) of the marketing mix: product, price, promotion and place (distribution).

Positioning could be characterized as the means of marketing to differentiate a product. Pricing and promotion are powerful tools to differentiate a product. In the pricing process, both the end customers and the channels have to be taken into account. As Clark (2012, 1) points out, “If a firm does not differentiate its offerings and positioning them distinctly in the minds of customers, then it must compete solely on a price basis”. Pencak (2013, 1) sees that “marketing positioning of small firms is basically the differentiation that business is offering – different or unique from its competitors”.

4.6 The findings from the field study FS 2010

Defining the importance of assumed, major, product-market based factors of target firm competitiveness is the object of FS 2010. Its assumptions, questions and results are summarized as follows:

Basic directions for segmentation

- a) *The assumption*: One can assume special directions for small target firms to be adopted in segmentation during start-up and growth phases.
- b) *Question No. 6*: From Slatter’s four options, check (x) the most suitable one for small software firms in the challenging B2B markets, in two different situations; (I) at the start-up phase with limited resources and without references, and (II) at later stages with references and a stronger financial situation.
- c) *The results* are presented in Table 2. The niche-focused segmentation is the most suitable direction for small software firms with limited resources at the start-up phase. The role of a product group specialist in horizontal industries/segments is the most suitable approach at the later stages with references and a stronger financial position.

Table 2 Findings from Question 6

FR=The final ranking
 %=% of the checks (x)

Options		I	II
a) Niche player	FR	No. 1	No. 2
	%	76	16
b) Market specialist (vertical markets)	FR	No. 2	No. 4
	%	16	8
c) Product group specialist (horizontal markets)	FR	No. 3	No. 1
	%	8	64
d) Dominant sector player (vertical/horizontal markets)	FR	-	No. 3
	%	0	12

d) *Comment:* It should be noted, however, that there are good examples of the niche player approach working also at the later stages, especially on a global level.

Basic patterns of internationalization

a) *The assumption:* One can assume that some kinds of patterns of internationalization are better suited for small software firms with different kinds of backgrounds.

b) *Definition of groups I-III:* (1) Characteristics: *Financial position* (FP), *Knowledge of the internationalization process* (KIP), (2) Characteristics by group:

I: FP=weak, KIP=weak,

II: FP= strong (retained earnings), KIP= weak, and

III: FP= strong (venture capital), KIP=strong

c) *Question No. 7:* Which one of the optional patterns is the most suitable for each of the three assumed types (I, II, III) of small software firms? Check (x) the most suitable option.

d) *The results* are presented in Table 3.

Table 3 Findings from Question 7

Options	I	II	III
a) The organic three stage process (Stepwise with direct sales+agents; Uppsala model)	No. 1	No. 2	-
b) Growth engine pattern (Stepwise by OEM-VAR partners' international marketing network; Network model)	No. 1	No. 3	No. 4
c) The combination a+b	No. 2	No. 1	No. 3
d) Born global pattern	-	No. 4	No. 1
e) Born again global pattern (Bell)	-	No. 4	No. 2

Specialists claim that the combination of the organic three-stage pattern (the Uppsala pattern) together with the growth engine pattern (network pattern) is more suitable for groups I and II than the other options. The Born Global pattern (early to leading markets) is the most optimal for group III with its strong financial position and strong knowledge of the internationalization process.

Partners for internationalization

(a) *The assumption*: Partnerships are needed in the internationalization process of small target firms.

(b) *Question No. 8*: (A) Do you agree, check (x) Yes/No. (B) If you agree, please indicate where lies, in general, the value added potential of partnerships for small and young software firms in B2B markets? Prioritize options (from 1 to 3, 1=most important) and indicate some specific ways to increase the added value (c) *The results* are presented in Table 4.

Table 4 Findings from Question 8

A. The general importance	Yes	100%
	No	0%
B. Value added, where?		
a) As sales channels	FR	No. 1
	AR	1.08
b) In software development	FR	No. 3
	AR	2.24
c) Something else	FR	No. 2
	AR	1.88

The participants unanimously agreed that partners are needed in the internationalization process of small software firms. Partners add value to the process by operating as sales channels and they adopt unique methods to increase value added by such means as assistance with strategy implementation in general, assistance with increasing trust, knowledge of

markets, and assistance in creating the local network. In the interviews, the participants also thought that software should primarily be developed internally.

Trust factors

- a) *The assumption*: Customers in focused segments have to trust the offered, differentiated product, which has to meet the customer requirements, and also they have to trust the small target firm as a whole.
- b) *Question No. 9*: How does the buyer rank the optional trust factors if the (enterprise) buyer wants (a) to accept the software firm as its supplier, and (b) to buy their products? Prioritize options (from 1 to 8, 1=the most important).
- c) *The results* are presented in Table 5.

Table 5 Findings from Question 9

Optional factors	Ranking		Optional factors	Ranking	
a) The product; the competitive solution of needs	FR	No. 1	e) Promotion; the internet, marketing brochures, sales talks	FR	No. 5
	AR	1.7		AR	4.84
b) References; Pilot; "at any price?"	FR	No. 2	f) The competitive Business Strategy as the part of the Business Plan	FR	No. 6
	AR	3.44		AR	5.36
c) Financial situation; the continuation of deliveries	FR	No. 3	g) The entrepreneur with business/technical education without (d)	FR	No. 7
	AR	3.64		AR	6.2
d) The entrepreneur with business/software experience	FR	No. 4	h) The board; business/software experience	FR	No. 8
	AR	3.8		AR	6.32

It seems evident, according to the participants, a product that aims at competitive solutions to meet customer needs is the most important factor. References are also needed to prove that the goal is achievable in practice. The financial situation of the firm ensures that the deliveries continue. The fourth most important factor is the entrepreneur with his/her business and software experience. There seems to be a gap between these four and the rest of factors.

Generic types of product differentiation

- a) *The assumption*: It is assumed that benefits by need solutions for the focused customer is the major goal for product differentiation by product development for enterprise customers.
- b) *Question No. 10*: Prioritize (from 1 to 6; 1=the most important) the optional factors to differentiate software products` competitiveness in the focused B2B markets in two kinds of situations, namely (I) before a young, small software

firm has gained its first customer, and (II) when the firm has already gained references.

c) *The results* are presented in Table 6.

Table 6 Findings from Question 10

Options		I	II
a) The goal of the product = benefits by needs solutions (BNS)	FR	No. 1	No. 1
	AR	1.8	1.6
b) The reliability of the product and the continuation of deliveries	FR	No. 2	No. 2
	AR	2.52	2.6
c) Types of products	FR	No. 3	No. 3
	AR	2.9	3.2
d) Pricing	FR	No. 4	No. 4
	AR	4.0	4.08
e) Customization and other services	FR	No. 5	No. 5
	AR	4.48	4.44
f) The sophistication of software/hardware	FR	No. 6	No. 6
	AR	4.64	4.76

The participants found that the most important means to create a competitive product by differentiation is to aim at benefits by need solutions (BNS). In B2B2C markets, needs include the needs of channels, but especially the wants of the focused group of consumers. The reliability of the product and the continuation of deliveries follow as the second most important factor of differentiation. The third most important factor is the type of software products (Lassila et al. 2006, Moore 1999), followed by pricing. Customization and other services follow as the fifth most important factor. It is also noteworthy that the sophistication of software/hardware without a BNS goal is prioritize lowest among the six options.

Differentiation by positioning

a) *The assumption*: Because the benefit is the major requirement of the enterprise customer, financial calculations can be assumed to be an effective way in product positioning and it is therefore important to understand the background of the individual buyer or the group of buyers.

b) *Question No. 11*: Prioritize (from 1 to 3; 1=the most important) the optional, promotional elements for products in situations I-III. What should be emphasized and what is the order of ranking when the product is promoted by means of brochures, the internet or face-to-face contact to three different types of buyers: I) the business specialist, II) the technical specialist, and III) the team including participants both with business and technical backgrounds?

c) *The results* are presented in Table 7.

Table 7 Findings from Question 11

Options		I	II	III
a) Benefit for the customer (BNS) by financial calculations for B2B customers	FR	No. 1	No. 3	No. 1
	AR	1.20	2.72	1.44
b) The defined BNS without financial calculations	FR	No. 2	No. 2	No. 2
	AR	2.0	1.88	1.72
c) The defined technical content of the product	FR	No. 3	No. 1	No. 3
	AR	3.0	1.64	3.0

According to the opinions of the 25 participants, financial calculations (BNS in financial terms) constitute the most effective tools when promoting a product either to a business specialist alone or a group consisting of both business and technical specialists. BNS (benefits by need solutions) as the verbal reasoning is the second most important factor, and in a situation where financial calculations cannot be made, the most important factor. When the product is introduced to a technical specialist typically making the decision to buy technical services, the technical content is the most important factor, followed by BNS.

5 THE INTEGRATIVE, ITERATIVE STRATEGY PROCESS

The model of the integrative, iterative Strategy Process based on generic assumptions is defined in this chapter as a generic model for small software firms to understand ways in which this concept is applied in this study. Some focused assumptions are defined in the above framework about factors of small, Finnish software firms' competitiveness and they are verified against the results of the field study FS 2010.

5.1 The model

As summarized in the introduction, there are a great number of views, concepts and schools of thought about strategy processes. The model for the integrative, iterative strategy process as it is understood in this study is defined in Figure 5 and the special model for the integrative choice and monitoring process in Figure 6. Both models are verified by academic researchers.

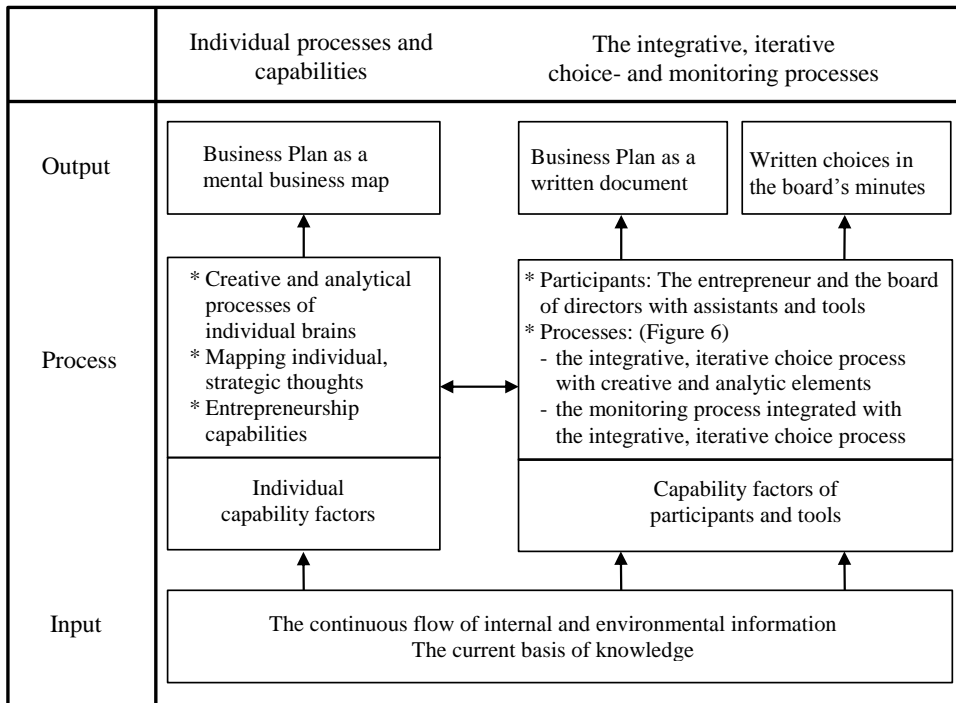


Figure 5 The integrated elements of a small software firm's iterative Strategy Process.

The model of the integrative, iterative strategy process is shown in Figure 5 as an input-process-output system. The strategy process of small software firms is understood in this study as the integrative strategic choices made and monitoring performed by the participants. The participants comprise the entrepreneur and the chairman with the board of directors, assisted by a potential advisory board and by consultants with their special tools.

Individual processes play a central role in the integrative strategy process and therefore individual processes with their individual outputs are shown separately in the model. The elements are elaborated in the following section.

The integrative strategy process is the combination of the choice and monitoring processes, both of which include creative and analytical elements (Figure 6).

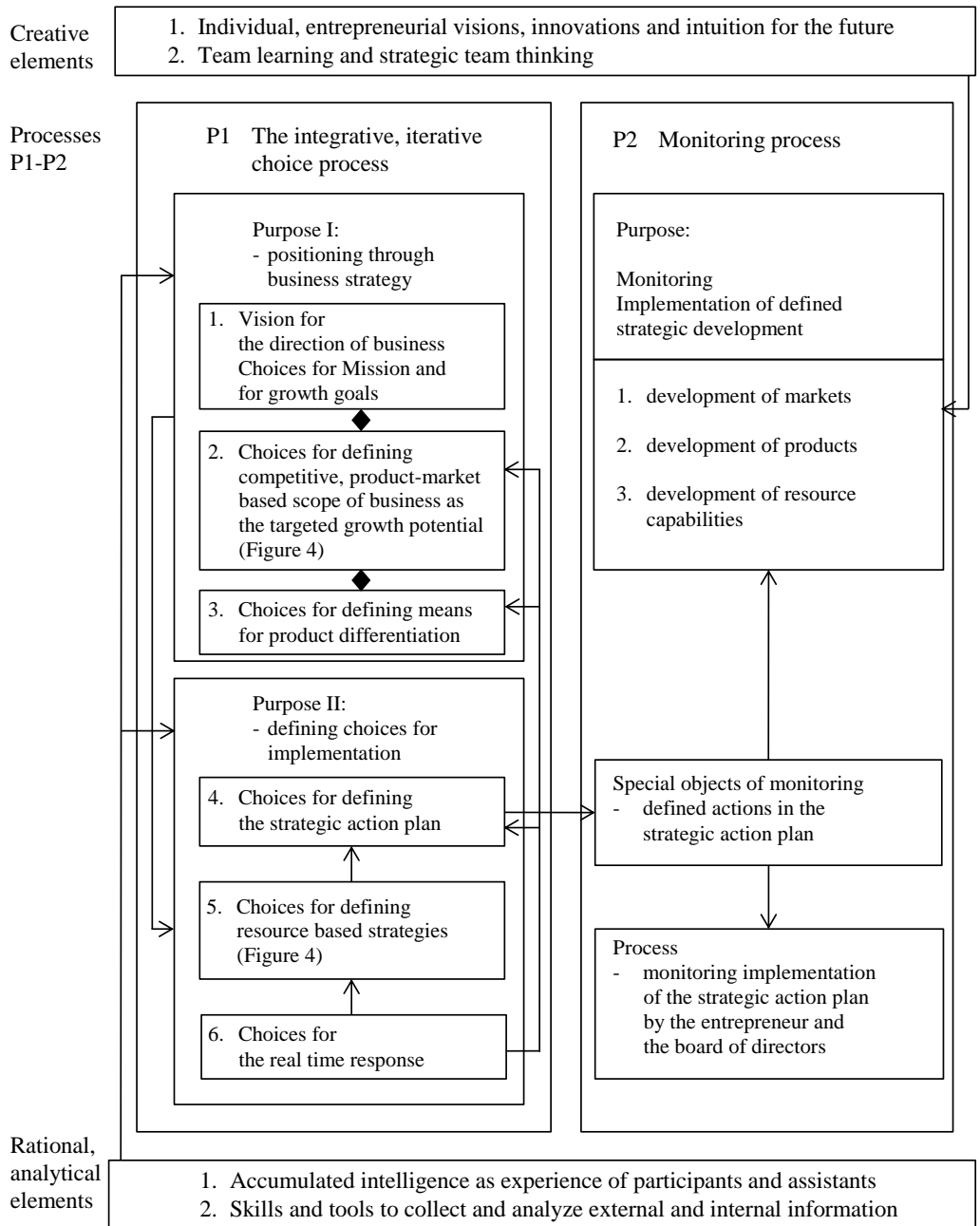


Figure 6 The framework of small, growth-oriented software firms' integrative, iterative choice and monitoring process

The input for processes originates from the continuous flow of internal and environmental information together with the current basis of managerial knowledge. Capabilities are needed for competitive processes.

There are three types of outputs. Outputs of individual processes are individual business maps including the assumed business plan in the minds of the entrepreneur and other participants (Weick 1985). The written strategic choices in the board minutes and the written business plan are outputs of the integrative choice process, in which individual processes play a key role. The assumption is that the content of the competitive business plan should be registered in the minds of the participants but it should also be in written form especially for investors (Cusumano 2004).

5.2 Individual processes

The entrepreneur and the chairman with the board of directors are individuals contributing to the target firms' integrative choice process with analytical and creative elements. In case of a weak board, choices are assumably made only individually by the entrepreneur. Both the entrepreneur alone or with the board can be assisted by advisory boards and by consultants with their special tools (Harju 2003).

Individual processes as an essential part of the integrative strategy process will be seen from three different viewpoints; the creative and analytical processes of individuals, mapping strategic thought, and entrepreneurship.

Creative and analytical processes of individuals

It is assumed that individual brains are employed in the strategic choice process and business maps are registered in individual minds. Understanding the relationship between the mind and the brain is a challenge (Churchland 1989). Three major schools of thought strive to address this challenge: dualism, idealism and materialism, but materialism is the only one with scientific evidence. Materialism means that mental phenomena – minds – are identical with neuronal phenomena – brains (Lacey 1996).

The special role of human brains in the strategic choice process was emphasized not until 1970s (Minzberg 1976). Minzberg (1994, 394) hypothesizes that the left hemisphere of the brain manages the analytic process and the right one the creative process, such as visioning and (generative) learning. Generative learning has been defined as “learning that enhances our capacity to create” but there is also adaptive (“survival”) learning without this capacity (Senge 1990, 14).

Visions, which are created by the right hemisphere of the brain, are assumed to be a central part of individual business maps and those of written business plans. A practical definition of a small firm's vision statement is "A vision statement is your ticket to success, a photograph in words of your company's future. Without a vision statement effective business planning is impossible. It's the vision statement that provides the destination for the journey, and without destination, how can you plan the route" (Ward 2012, 1). The vision as a business idea (Karlöf 1986, 29) gives small firms a framework for more focused segmentation, for internationalization and for product differentiation.

Innovation is connected with creativity and in that way with the right hemisphere of the brain (Minzberg 1994, 299). Innovation in small firms is more needed than in large firms because they have constantly to adapt to changing environments (Mazzarol 2004). Market orientation is one of the key elements required for successful innovation. Innovation is associated with the development of new products (Baker & Hart 2007, 198), which aim to satisfy the current needs of customers. However, there might be potential new needs, which have not yet been realized by customers. In case this potential has not been realized by competitors, either, one can assume that it creates an opportunity and challenge for the innovative development of a software product (Juneja 2011).

Mapping strategic thought

Individual business maps, including the content of the business plan is the output of the process called Mapping Strategic Thought. This process is explained by the 21 writers in the book. (Huff 1990) Below you will find a short summary of its key message.

Strategic mental maps created by the brain are cognitive and often causal. Since 1930s, social psychologists have had an understanding that a map is not a territory. (Korzybski 1933). Humans live in two worlds: "the world about events and things – the territory, and the world of words about events and things – the map" (Postman 1986, 229).

Assumably the distinction between maps and territory is made by the left hemisphere of the brain (Bateson 1979, 30). There is also another assumption that the definition between the map and the territory sometimes disappears in managerial life. If the right hemisphere of the brain drives creative activity (Minzberg 1994), it can be hypothesized that maps constitute in this case the territory and "it really makes sense to talk about strategic mapping" (Weick 1998, 3). One of Weick's (1985, 127–128) specific conclusions argues that mental maps in peoples' heads are strategic plans, which are important as the "binding mechanism".

As in Figure 2, the causal maps display an integrative web of elements (Axelrod 1976). The content of individual, mental, business maps can be shown as a causal, conceptual scheme (Naraynan & Fahey 1990, 113).

Entrepreneurship capabilities

Entrepreneurship among small firm owner-managers has been the object of researchers' interest. Different views abound to entrepreneurs' basic characteristics and processes and to those of the typical owner-manager. Both of them are key decision makers. The entrepreneur of a small, competitive, growth-oriented software firm is the key person facing the challenges both at the strategic and operational levels, especially at the start-up phase. In micro software firms, the entrepreneur performs the duties of the managing director and the chairman or a member of the board simultaneously, heads marketing and sales while being the sole salesman in the company, and leads software development while being a member of the software team. (Bartels 2011)

Entrepreneurs are typically characterized by need for achievement, calculated risk-taking ability, high internal focus and control, creativity, innovativeness, need for autonomy, tolerance for ambiguity, visionariness and self-efficacy (Deakins & Freel 2009, 10). Entrepreneurs employ (analytical) strategic management practices and they are leaders towards profitable growth (Carland et al. 1989, 25). "Innovation ability for an entrepreneur is important especially in product development (Mazzarol 2004, 2–4, Quinn 1985, 74).

However, it has been also found that owner-managers do not necessarily fit any of the current, popular definitions of an entrepreneur (Schailer 1994, 34). There is also a hypothesis that entrepreneurs with all their special characteristics are in one end of the continuum and owner-managers without them are in the other end, but the actual management found in small firms is somewhere in between. It has been found that owner-managers without the characteristics of an entrepreneur are "highly task focused, good hands-on manager, or skilled tradesperson, also oriented maintaining a lifestyle rather than seeking to undertake ambitious and potentially risky growth". (Mazzarol 2004, 2–4.) It has been found by several researchers that if owner-managers overemphasise only the technological side of high-tech firms' factors of competitiveness, it will run small high-tech firms into difficulties in the long run (Monck et al. 1988, Dogson & Rothwel 1990).

Without making any difference between the individual and participative or strategic and operational choice processes, an extensive field study with 100 participants showed that there are fast, analytic and bold styles in the managerial choice process of small high-tech firms (Slatter 1992, 18–22). One can assume that especially fast and bold decisions are typical choices of an entrepreneur. Bold decisions and innovative approaches are needed in

environments undergoing radical change and bold decisions require willingness to take risks (ibid, 20). The bold decision is called “a high risk, low data decision which needs informed intuition rather than analytic reasoning” (Moore 1999, 89).

5.3 The integrative, iterative choice and monitoring processes

The basic modules of the integrative, iterative strategy process are summarized in Figure 5. The integrative, iterative strategy process is understood in this study to be the integrative, iterative choice process which is combined with the monitoring process (Figure 6). Both of them include individual processes with creative and analytical elements.

The logic in this study for the integrative choice process as defined in Figure 6 is based on the original paradigm of strategic management and on the defined purpose and ends of strategic management. The basic hypothesis is “the essence of strategy is choice” (Porter 1991, 101), but in this model choices are integrated with visioning. According to the paradigm of strategic management, the tasks of the strategic manager include goal formulation, environmental analysis, strategy formulation, strategy evaluation, strategy implementation, and strategic control (Schendel 1994). Strategic management is “a systematic approach for managing strategic change”; it consists of positioning the firm through the (business) strategy and of strategic implementation by capability planning and by the real-time strategic response (Ansoff 1984, iv).

The integrative, iterative choice process in Figure 6 serves two purposes: positioning through the business strategy and defining choices for implementation of the defined business strategy with the targeted growth potential. The integrative, iterative choice process is connected both with the creative and analytic elements.

For the purpose of positioning through the business strategy, the following visions and choices are made: (1) vision for the long-term direction of the firm and choices about mission and growth goals, (2) choices for defining competitive, product-market based scope of business as the targeted growth potential in the framework of the vision, mission and objective of profitable growth, and (3) choices for defining means for product differentiation. The targeted output is the competitive content of business strategy.

The core choices for implementation are those for the strategic action plan. These choices are guided by choices for resource-based strategies, by choices for positioning through the business strategy and also by choices of real-time response in order to ensure the integrative, iterative choice process. There is a

logic for actions. (Minzberg 1994, 362–363.) The need for the strategic action plan is substantiated in the following way: “You’ll first develop broad strategies. Then you need to support those strategies with specific steps to accomplish each. That’s what action planning is all about” (Birnbaum 2014, 1).

In the original paradigm of strategic management, the monitoring process means control of implementation, i.e. the last of six tasks of the strategic manager. Implementation is assumed in this study to include both operational implementation, which is connected with momentum line – current markets, products and resources – and strategic implementation. The purpose of strategic implementation is the strategic development of markets, products and resources according to the defined strategies in order to fill the growth gap between the growth and momentum lines (Figure 4).

The purpose of the strategic monitoring process is monitoring the implementation of the defined strategic development. The special objects for the strategic monitoring include the defined actions in the strategic action plan. The monitoring process is followed by the entrepreneur and the board.

5.4 Creative and analytical elements

The background

In 1950s, Simon defined phases of the managerial, rational, analytical decision making. The three phases are: intelligence as the information to be analyzed, design of options, and the choice (Simon 1955). Since then, the debate has centred on the rational, analytical choice process of management. The concept of bounded rationality was created in 1960s. Because the information needed for choices is never complete, managers satisfy, not maximize (Cyert & March, 1963). There were doubts in 1980s whether managerial strategic decision making is even boundedly rational (Minzberg & Waters 1985). As a result, Minzberg attacked against the design school with the rational, analytic approach (Minzberg 1990). Ansoff counterattacked (Ansoff 1991) and three years later Minzberg published his book *Rise and Fall of Strategic Planning* (Minzberg 1994). As summarized in the introduction, Minzberg stood in this book with over five hundred references against formal planning in general, against design school as an analytic choice process, against planning with planners, and against pitfalls made in planning.

It can be assumed that Minzberg’s spearhead against the analytical design school, which includes also Ansoff’s model, was focused “on the missing detail – how to create the strategy”. According to Minzberg’s thinking, creativity is missing in the analytical approach of Design School. Minzberg

emphasizes the importance of creativity in visioning and in generative learning, and prefers innovation and intuition instead of the analytic approach. (Minzberg 1994, 66, 209, 311.) They all are individual capabilities, which are not typically included in large, global firms' models of strategic processes.

Creative and analytical elements in the model

The model in Figure 6 is especially defined for small, growth-oriented software firms, but of course the elements are valid for any small firms which strive to create and maintain profitable growth. The basic assumption is made that both creative and analytic elements are needed in the iterative choice process and in monitoring the implementation of its results.

The creative element of the model includes both individual concepts and concepts typical for teams. Entrepreneurial visions of the future and individual innovations and intuition are all defined as individual capabilities, which all are explained in Section 5.2. Team learning and strategic team thinking have been defined in the model as creative capabilities, which are typical for teams.

Two basic theoretical concepts for the creative participative capabilities are team learning and strategic thinking. Senge argues that the success of the dialogue in team learning depends on the capacity of the members to suspend assumptions and enter into genuine thinking together. The Greek word dialogos means free flowing through a group, i.e. allowing the group to discover insights not attainable individually. (Senge 1990, 10.) One can argue that based on the above general hypothesis, target firms' boards and management teams can create innovative ideas.

The concept of participative strategic thinking means "to seek innovation and imagine new and very different futures that may lead the company to redefine its core strategies and even its industry" (Graetz 2002, 456). Connected with the concept of strategic thinking, Liedtca (1998, 30–35) argues that strategy is the gap between today's reality and intent for the future that is critical, and therefore scenario planning is a practical tool for strategic thinking. Also Moore's (1999, 90) argument is that the adoption of scenarios for firms with technical products is the right way in the "high risk, low data" decision making.

The analytic element includes individual skills together with tools of the firm and those of consultants. Skills and tools collect and analyse internal and external information. Information and its analysis are understood as intelligence of the rational, analytic choice process (Simon 1955). Also included in the analytic element is the accumulated intelligence as the knowledge of participants about the choice process and that of their assistants.

5.5 The integrative, iterative process of the human brains

As defined in Section 5.2, the human brain with its analytical and creative hemisphere plays an essential role in the above-defined strategic choice and monitoring process. As assumed, targeted, individual outputs, the process yields competitive business plans with competitive business strategies as business maps in participant minds.

As shown in Figure 6, integration is needed in order to create and maintain the targeted growth potential defined by the multidimensional, competitive content of the business strategy and to define and monitor its implementation. All this needs integrative work of the human brain, assisted by some analytical tools. Integration is needed between 1) the generic ends and strategies, 2) the business strategy with the targeted growth potential and resource strategy, 3) strategies and actions, and 4) actions and monitoring.

The integrative choice process is also an iterative process. The real-time response (Ansoff 1984, iv) in Figure 6 is understood in this study to include fast and bold choices made by the entrepreneur and his board in order to take corrective action in the rapidly changing environment towards either survival or growth. Choices of real-time response are assumed to be connected with business resource strategies and with the action plan.

5.6 The findings from the field study FS 2010

Defining the importance of assumed, major, product-market factors of target firms' competitiveness is the object of FS 2010 in this chapter. Assumptions, questions and results are summarized in the following.

Comparison of outputs

a) *The assumption:* According to the model in Figure 5, the outputs of a strategy process are: the individual, integrated, mental business maps, the single, documented decisions in board minutes, and a comprehensive, documented business strategy in the business plan.

b) *Question No. 2:* Prioritize (from 1 to 3; 1=the most important) the above-mentioned options, if the firm wants to survive and later on to grow in two different situations I=at the start-up phase, II=at the later phases.

c) *The results* are presented in Table 8.

Table 8 Findings from Question 2

Options		I	II
a) Individual, integrated, mental business maps	FR	No. 1	No. 2
	AR	1.21	1.92
b) Single, documented choices in board minutes	FR	No. 2	No. 3
	AR	2.5	2.38
c) A comprehensive, documented business strategy in the business plan	FR	No. 2	No. 1
	AR	2.29	1.70

According to the participants, the most important outputs of a strategy process at the start-up phase include the individual, integrated, mental business maps in the minds of participants of the strategy process. At the growth phase, the participants considered slightly more important (1.70–1.92) the comprehensive, documented business strategy in the business plan. The single, documented decisions in board minutes have been ranked as the third most important factor in both phases.

The capability factors in the individual process

a) *The assumption:* The content of the business plan is registered as business maps in the minds of participants but the business plan is also in a written form. Business maps are updated by choices of real-time response. Therefore one can assume that the updated business maps in the minds of participants are more important compared with the written business plans.

b) *Question No. 3:* Prioritize (from 1 to 7; 1=the most important) the options of the capability factors, if the purpose is to develop a competitive, individual business map. (Examples of options for this question and for other following questions were defined in the questionnaire.)

c) *The results* are presented in Table 9.

Table 9 Findings from Question 3

Options		
a) Capabilities in the integration of business maps to combine the comprehensive, competitive, up-to-date business map	FR	No. 1
	AR	2.08
b) Current business experience	FR	No. 2
	AR	3.04
c) Traits such as innovation and creativity	FR	No. 3
	AR	3.44
d) The continuous business information	FR	No. 3
	AR	3.44
e) Individual learning as part of team learning	FR	No. 4
	AR	4.32
f) Current technical/Business education/training	FR	No. 5
	AR	5.68
g) Information provided by tools in strategic planning	FR	No. 6
	AR	5.72

Capabilities in the integration of business maps has been ranked as the most important resource-based factor in building a comprehensive, competitive and up-to-date business map. This capability is assumed to be linked with systems thinking, making the ability to perceive the whole as the most important factor. The second most important ability factor in the individual process is current business experience, which is based on adaptive learning. Traits such as innovation/creativity, which are linked with generative learning, were ranked as the third most important capability factor. The rest of the factors (c–f) are based on adaptive and team learning.

Tools in the participatory process

- a) *The assumption:* Some analytic tools can assist in the rational, analytic choice process, but there is also at least one tool – the scenario process by team thinking – which can assist in the creative process.
- b) *Question No. 4:* Prioritize (from 1 to 7; 1=the most important) optional tools to be applied in small software firms` participative strategy process.
- c) *The results* are presented in Table 10.

Table 10 Findings from Question 4

Options		
a) Market research/segmentation	FR	No. 1
	AR	1.84
b) Critical success factor analysis	FR	No. 2
	AR	3.56
c) Competitor analysis	FR	No. 3
	AR	3.72
d) SWOT	FR	No. 4
	AR	3.84
e) Benchmarking products	FR	No. 5
	AR	4.28
f) Scenario planning	FR	No. 6
	AR	5.52
g) Benchmarking the firm	FR	No. 7
	AR	5.84

Market research connected with segmentation has been ranked as the most important tool. A close group of three (3.56–3.84), including critical success factor analysis, competitor analysis, and SWOT, follow but there is a clear difference between the importance of market research and the abovementioned group of three factors.

d) *Comments:* In discussions with participants, SWOT has been understood as the integrative tool for understanding. Compared with Moore's view (1999), scenario planning received an extremely low ranking among the participants.

Who is "the strategist"?

a) *The assumption:* Because of the entrepreneurial capabilities, one can assume that the entrepreneur is the target firm's strategist, especially at the start-up phase.

b) *Question No. 5:* Prioritize (from 1 to 4; 1=the most important) options in four different situations A I-II, B I-II. Options were given to the participants for evaluation. The participants were asked to consider the options in four different situations. They consist of two basic situations: the firm A) at the start-up phase, B) at the later stages. The two contexts for both A and B are: I) the board with a business angel (a venture capitalist) as the chairman, and II) the board without a business angel.

c) *The results* are presented in Table 11.

Table 11 Findings from Question 5

Options		A		B	
		I	II	I	II
a) The entrepreneur	FR	No. 1	No. 1	No. 3	No. 2
	AR	1.64	1.36	2.16	2.04
b) The board as the team with the entrepreneur	FR	No. 2	No. 2	No. 1	No. 1
	AR	2.24	2.16	1.88	1.64
c) The chairman of the board	FR	No. 2	No. 3	No. 2	No. 3
	AR	2.24	2.64	2.08	2.44
d) The consultant	FR	No. 3	No. 4	No. 4	No. 4
	AR	3.88	3.84	3.88	3.88

According to FS 2010, the strategist in the participative strategy process at the start-up phase is the entrepreneur, regardless of whether the entrepreneur or the business angel is the chairman of the board. During the growth phase, the strategist is the board with the entrepreneur as a board member. Still, in both situations, A and B, the power of the chairman is stronger if the chairman is the business angel. The participants also thought that in both situations, the role of the consultant is to assist in the decision-making process, but not to make the actual decisions.

6 SUMMARY OF THE MAJOR ASSUMPTIONS AND FINDINGS

It has been concluded in this study that both the business strategy and the strategy process are multidimensional concepts with controversial views. Therefore generic assumptions of models have been adopted to define how these concepts are understood in this study. Generic assumptions have given the framework for focused assumptions about some potential, specific factors underlying the competitiveness of small, Finnish software firms as measured as their profitable growth. The focused assumptions are verified against the results of the field study. The purpose of this final chapter is to summarize both the generic and focused assumptions together with the findings from the field study FS 2010.

6.1 The competitive business strategy

1 The generic assumptions

The four integrated elements of the competitive business strategy as grounded assumptions are: 1) the generic ends for profitable growth, 2) the attractive scope of targeted markets with the focused growth potential, 3) the differentiated products and 4) the scope of business, which refers to the integrated combination of attractive scope of markets and differentiated products. It is assumed that generic ends give growth and profitability objectives together with the framework for defining means of the scope of business. Therefore it is also assumed that a balanced fit between generic ends and means of the business scope is required.

The attractive scope of targeted markets includes attractive growth potential, which is assumed to be defined by means of the segmentation strategy and by patterns of internationalization in the internationalization strategy. Differentiated products are assumed to be differentiated by defined means in product development and positioning strategies.

The generic strategy for the competitive scope of business is the differentiation focus, which in the target firms is assumed to mean differentiated products for customer groups in focused segments of focused geographical areas. The criteria for the competitiveness of the scope of business and at the same time for the small, growth-oriented software firm is

the competitive fit between needs, wants and other requirements of focused customer groups and means of product differentiation.

There are also criteria about the competitive fit between generic ends and means of implementation, including resource-based means and the action plan (Figure 2). However, these elements are not focused on in this study.

II Focused assumptions

In the framework of the above-defined generic assumptions, one can make specific assumptions to be tested against the results of FS 2010. Specific assumptions are focused on in four modules: segmentation, internationalization, product development, and positioning.

Segmentation

One can assume special directions for small target firms to be adopted in segmentation during start-up and growth phases. Customers in focused segments have to trust the offered, differentiated products, which have to meet customer requirements. Customers also have to trust the small target firm as a whole.

Internationalization

One can assume that special types of internationalization patterns are more suitable for special kinds of small, Finnish, growth-oriented software firms. Partnerships are needed in the internationalization process of small target firms.

Product differentiation by product development

It is assumed that benefits by need solutions of the focused customer constitute the major goal for product differentiation by product development for enterprise customers.

Product positioning

Because the benefit is the major requirement of the enterprise customer, financial calculations can be assumed to be an effective way in product positioning, and it is important to understand the background of the individual buyer or the group of buyers.

III Some specific findings

Segmentation

The most suitable direction for the segmentation of small software firms at the start-up phase is the niche player, but during the growth phase it is the product

group specialist in the horizontal markets. The most important trust factors for enterprise customers include at least the following two criteria: the product meets the needs of the enterprise customer competitively, and there is a guarantee for the continuation of product deliveries.

Internationalization

The most suitable pattern of internationalization for small software firms with little knowledge of the internationalization process is the combination of the organic three-stage pattern and the growth engine pattern. For firms in a strong financial situation and with strong knowledge of the internationalization process, the Born Global pattern is the optimal pattern. Small software firms need partners in their internationalization process.

Product differentiation by product development

Benefits by need solutions as the goal for the development of software products is the most important factor in product differentiation.

Product positioning

Financial calculations are the most important way to promote a software product to a buyer with a marketing background as well as to a team with participants from different backgrounds. A technical buyer, however, should be presented with the technical aspect of the product.

6.2 The integrative, iterative strategy process

I The generic assumptions

The target firms' business plan with the competitive business strategy is the output of the integrative, iterative strategy process. The content of the business plan is registered as business maps in the minds of participants but the business plan is also in a written form.

The participants of the target firms' strategy process include the entrepreneur, the chairman together with members of the board of directors, and assistants with their special tools. Input to the strategy process is given by the continuous flow of internal and external information and by the current knowledge of participants.

The strategy process in the target firms is understood in this study to be an integrative, iterative choice process, which is created by individual processes and assisted by some special tools. The core factors of individual processes are general creative and analytical capabilities of individual brains, special

entrepreneurial capabilities of the entrepreneur, and individual capabilities in mapping strategic thoughts. (Figure 5)

The first purpose of the integrative strategy process is positioning through the business strategy by integrated choices and by visioning in order to create the competitive business strategy. The positioning through the business strategy means choices and visioning to define generic ends. In this framework, choices to define strategies for the competitive scope of focused markets and those to define means of product differentiation. The second purpose of the strategy process is to create a way of implementing by means of choices regarding the resource strategy and about the strategic action plan. The target firms' Strategy Process has also to be iterative in the constantly changing environment. Therefore choices of real-time response are needed. (Figure 6.)

The monitoring process is needed to ensure the successful implementation of the competitive business strategy with the focused growth potential. The strategic implementation means strategic development according to choices defined in product, market, and resource strategies. They are the basis of choices in the strategic action plan. The strategic action plan is the link between the integrative, iterative choice and monitoring processes.

II Focused assumptions

Individual processes create the core of the strategy process in the target firms. Individual capabilities are needed in the integrative choice process.

The content of the business plan is registered as business maps in the minds of participants but the business plan is also available in a written form. Business maps are updated by choices of real-time response. Therefore one can assume that the updated business maps in the minds of participants are more important compared with the written business plans.

There are analytic tools, which can assist in the rational, analytic choice process but there is also at least one tool – the scenario process by team thinking – which can assist in the creative process.

Because of the entrepreneurial capabilities, one can assume that the entrepreneur is the strategist in the target firms, especially at the start-up phase.

III Some specific findings

The most important outputs of a strategy process at the start-up phase are the individual, integrated, mental business maps in the minds of participants in the strategy process. At the growth phase, slightly more important is the comprehensive, documented business strategy in the business plan.

Capabilities in the integration of business maps has been ranked as the most important resource-based factor in building a comprehensive, competitive and up-to-date business map, followed by current business experience and by traits such as innovation and creativity.

Market research connected with segmentation has been ranked as the most important tool followed by critical success factor analysis, competitor analysis and SWOT. Compared with Moore`s view (1999), scenario planning received an extremely low ranking from the participants.

In the participative strategy process at the start-up phase, the strategist is the entrepreneur. During the growth phase the strategist is the board with the entrepreneur as a board member.

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