

EBRF 2008 Conference
Research Presentation

**Growth Challenges of Small Finnish Software
Firms - Comparing Theory and Practice**

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"Research Forum to
Understand Business
in Knowledge Society"

Agenda

- Background information
- Motivation and research question
- Existing research on firm growth
- Research approach
- Results
- Discussion and future research

- Growth Forum 08¹ (01/2008 – 09/2008)
 - A joint development project initiated by *The Finnish Software Entrepreneurs Association* and *Microsoft Corp.* (Finland)
 - Objective is to promote growth and internationalization of the Finnish software industry
 - by identifying the main challenges and solutions
 - by communicating results to the top policy-makers
 - “Think tank” process: interplay between opinion leaders, entrepreneurs, top management team members and domain specialists on the field
 - The five working groups run parallel and engage approximately 70 participants; most of them are executives of software firms
- Researchers are engaged in working groups, final report as well as by doing independent research on growth and internationalization



- Growth of small firms have been studied quite extensively in the field of entrepreneurship
- Current research on focused on finding determinants and patterns of growth
 - What practitioners think about growth is understudied
 - The research focuses on issues that academics find interesting and (research) largely disregard the views of the practitioners
 - Is there bias between the beliefs of the industry and the reality?
- Research question
 - *How do the determinants of growth as portrayed by the scientific research compare to the beliefs of the industry?*
- Our research has potential impact for both research and practice
 - To correct misconceptions by practitioners
 - To propose avenues of further research that are most interesting and relevant for practitioners



Research on Firm Growth



Theories of Firm Growth

- The most notable of the various theories of firm growth is represented by Edith Penrose in her seminal book "The Theory of the Growth of the Firm" (1959)
 - Firms grow because they have underutilized resources, and because profit seeking *entrepreneurial motivation* and accomplishment seeking *managerial motivation* exists
 - Growth is a *transformation process*, and continues as long as there are underutilized resources including managerial talent
 - Two meanings for word 'growth': 1. Change in *amount* (e.g. sales), 2. Development *process* leading to change (e.g. increase in size or improvement in quality)
- Research in entrepreneurship argues that growth is driven by exploitation of entrepreneurial opportunities (Wiklund & Shepherd, 2003; Mueller, 2007)
- The current understanding is that growth as a multifaceted phenomenon can take place either organically, or through acquisitions (Delmar, Davidsson & Gartner, 2003)



- It is difficult to get a comprehensive and coherent picture by reviewing existing studies (Delmar, 1997; Storey, 1994; Wiklund, 1998)
 - Differences in research methods and settings
 - Complexity of the growth phenomenon itself
 - Heterogeneous nature of the firm level growth
- Growth studies can be further divided into two categories: one focusing on *the growth process* and the other to *determinants of growth*
 - Greater part of research seems to focus on determinants of growth
 - Existing studies are able to explain *how different determinants affect growth*. But they are often not able to explain the processes behind *why these determinants affect growth* (Davidsson et al. 2005)



- Studies on Growth Process
 - Growth seems to process through different stages separated by organizational crises
 - During the crises the configuration and management of the organization necessarily experience changes (Boeker & Wiltbank, 2005)
 - Different stages have different determinants for further growth (e.g. Hanks, Watson, Jansen, & Chandler, 1993; Kazanjian, 1988; Scott & Bruce, 1987)
 - The stage approach, however, has been criticized as too simplistic (Watts et al., 1998, Macpherson et al., 2004 and Bessant et al., 2005)
- Less studied than determinants of growth



- In the domain of entrepreneurship, scholars have identified the following factors affecting growth
 - Motivation (Delmar & Wiklund, 2008; Wiklund et al., 2003)
 - Strategy (Moreno & Casillas, 2008; Zahra & Bogner, 2000)
 - Resources (Wiklund et al., 2003)
 - Firm external opportunities (Mueller, 2007)
 - Characteristics, the educational background and business experience of firm founders (Beckman, Burton, & O'Reilly, 2007; Colombo & Grilli, 2005)
 - Social capital (Walter, Auer, & Ritter, 2006; Yli-Renko, Autio, & Sapienza, 2001)
 - Financing (Cassar, 2004), particularly in the form of venture capital
- In line with the Penrosean theory, it is widely agreed that growth occurs when motivation and opportunity exists, and when a proper strategy and resources are at place (Gilbert et al. 2006)



- Studies on Growth Process
 - Growth seems to process through different stages separated by organizational crises
 - During the crises the configuration and management of the organization necessarily experience changes (Boeker & Wiltbank, 2005) and learning occurs
 - Different stages have different determinants for further growth (e.g. Hanks, Watson, Jansen, & Chandler, 1993; Kazanjian, 1988; Scott & Bruce, 1987)
 - The stage approach, while dominant in this stream, has been criticized as too simplistic (Watts et al., 1998, Macpherson et al., 2004 and Bessant et al., 2005)
- Less studied than determinants of growth



Growth process

Growth is often characterized as a staged process where organizations experience periodical crises and changes

Growth is often a learning process, both on the organizational and personal level

Determinants of growth

Growth occurs when opportunity and willingness are present and the firm has appropriate resources and strategy

The effect of different resources is context dependent

Opportunity is difficult to operationalize in research, only willingness seem to have universal support



Empirical study



- Qualitative material from Growth Forum '08
 - Active participation in working groups and seminars
 - Interview material to support the work at the working groups
 - Main data analysis method content analysis
- Supportive analyses performed by the National Software Industry Survey –project
 - Survey data from Finnish software industry
 - Analyzed with multivariate methods
 - Reported in detail elsewhere



Rich data were collected

- Seminars, meetings, working groups interviews

Informants were highly experienced

- CEOs, entrepreneurs, directors
- Experience from many high-growth firms

| Type of event | Number attended | Description of data |
|----------------------------|-----------------|--|
| Steering committee meeting | 4 | Field notes |
| Seminar | 3 | Field notes about presentations and informal discussions |
| Working group | 6 | Field notes, minutes, and presentations |
| Interview | 6 | 245 minutes of tape and 23 pages of field notes |



- Qualitative data analyzed using content analysis techniques with MS Excel
 - Single growth determinant candidates were identified from the research materials
 - Each determinant was attached a number indicating its frequency in materials (frequency ~degree of attention)
 - Data was reorganized by classifying the identified determinants into meaningful categories derived from data and theories of firm growth
 - Qualitative data were quantified by attaching each category a number reflecting the member frequency in the category
 - Categories were sorted in descending order by frequency (ranking)
- Data summarization with tables
 - The evidence (categories of determinants) was tabulated against the current theories
 - Two matrices were created
 - Practice vs. theory and Theory vs. practice
 - Matrices were inspected compare theory and practice (finding from research studies and beliefs in the industry)



Growt Determinants

Analysi KF08-projektin työryhmistä per 16.5.2008

 = identifiotu kirjallisuudessa.¹

| Order | Type | Category of the determinant | Determinant in detail | Internal / external factor | Description in more detail | Gr 1 | Gr 2/1 | Gr 2/2 | Gr 2/3 | Gr 3 | Total # of instances | Order | Bundled Factor(s) | Priority Index |
|-------|------|--|--|----------------------------|---|------|--------|--------|--------|------|----------------------|-------|---|----------------|
| 1. | | Growth motivation | Kasvuhalukkuus | Internal | Motivation, education, management experience, number of founders (team size) and functional skills all have positive influence on growth | 1 | 1 | 3 | 1 | | 6 | 1. | Competences, Functional skills and Operational Efficiency | 21 |
| 2. | | Managing growth ("Managerial Capabilities") | Kasvunhallinta ("kasvuosaaminen") | Internal | Pienet yritykset eivät osaa varautua kasvuun ja hallita siihen liittyviä ongelmia. | 1 | 1 | | 2 | 1 | 5 | 2. | External forces and opportunities | 13 |
| 2. | | Education | Koulutus | Internal | seuraa teollisuuden tarpeita, mikä johtaa resurssipulaan; opetustekniikat ovat vanhentuneita. ...education, ...all have positive influence on growth. | 1 | | | 1 | 3 | 5 | 3. | Charasteristics, Educational Background & Business Experience | 11 |
| 2. | | Subventions for firms (incl. Financing, Taxation etc.) | Yhteiskunnan tuki (avustukset, verotus etc.) | External | Yhteiskunnan tuki alan yrityksille a) on liian pientä, b) on epäyhtenäistä (monen tavoitteen sekoitus); ei kohdistu kasvun kannalta oikeisiin asioihin. | 1 | 2 | 1 | 1 | | 5 | 4. | Resources | 9 |
| 3. | | Management experience | Johdon kokemus | Internal | Motivation, education, management experience, number of founders (team size) and functional skills all have positive influence on growth | | 4 | | | | 4 | 4. | Growth Motivation, Communicated Vision and goals, Attitude | 9 |
| 3. | | Networking | Verkostoituminen | Internal | | | 1 | 2 | | 1 | 4 | 5. | Financing including the subventions from the government | 8 |



Results



Summary

- The results from empirical study seem to be in line with the existing theory
- Willingness to grow identified as a key determinant in existing theory, qualitative data and survey data
- Human resources was the most significant resource category
- Financing was less emphasized than expected, particularly public financing



| Determinants of growth in theory | Key references | Opinions by practitioners | Rank by Qualitat. Data ana | Survey results (OSKARI 08) | Conclusion |
|---|--|--|----------------------------|--|---|
| Growth motivation communicated vision, goals and risk taking attitude | Delmar & Wiklund, 2008; Baum & Locke, 2004; Wiklund & Shepherd, 2003; Baum, Locke & Kirkpatrick, 1998; | Motivation to grow is among the most critical factors to either catalyst or inhibit firm growth. | 4. | Strongly supported (Willingness to grow the strongest determinant) | Supported |
| Characteristics, education & business experience of founders | Beckman, Burton, & O'Reilly, 2007; Colombo & Grilli, 2005; Wiklund et al., 2003 | Shift of experienced executive level persons from other industries to software domain would catalyst growth. | 3. | Partially supported (Founders are often managers; managerial experience has positive effect) | Supported |
| External forces and opportunities | Mueller, 2007; Carroll & Hannan, 2000; Davidsson & Delmar, 1997, 2001; Jovanovich, 1982 | Finnish 'climate' does not encourage to entrepreneurship. Distant location from markets, global competition for workforce makes growth harder. | 2. | Partially refuted (Degree of competition positively affects growth) | Inconclusive: Practitioners and theory consider different issues |
| Resources | Wiklund et al., 2003 | The lack of skillful and educated workforce limit growth, especially in marketing and sales. | 4. | Partially supported (Human resources has positive effect, effects of financing inconclusive) | Partially supported, practitioners mentioned mainly human resources |
| Strategy | Moreno & Casillas, 2008; Wiklund & Shepherd, 2005; Zahra & Bogner, 2000; Bamford, Dean & McDougall, 1997 | Low competence to build strategies. Successful growth requires appropriate strategy. | 8. | Supported (Clarity and perceived competitive advantage have a positive effect) | Partially supported |
| Competences, Functional skills and Operational Efficiency | Storey, 1994 | Universities and educational institutes does not assure enough practical skills (e.g use of commercial tools, etc.) | 1. | Not tested | Inconclusive |

| Challenges of growth according to practitioners | Sample quotes | Existing theory | Key references | Survey results | Conclusion |
|---|---|---|--|--|--|
| Growth motivation | "The general climate for entrepreneurs in Finland does not courage firms to grow" | Willingness to grow considered a significant determinant | Lumpkin and Dess 1996, 2005; Covin and Slevin; Davidsson, 1989) | Strongly supported (Willingness to grow the strongest determinant) | Supported |
| Managerial Capabilities | "Competences in managing growth helps to succeed..." | Managerial capability is one of the cornerstones of Penrose's theory and also has received attention later | Penrose, 1959; Boeker and Wiltbank, 2005; Lockett, Wiklund, and Davidsson, 2007 | Not fully analyzed, seems inconclusive | Partially supported |
| Education | "Universities do not teach enough practical skills (e.g use of commercial tools, etc.)" | Mixed results. Some studies find that education of founder is linked to growth while others refute this effect. It is probably very context dependent. | Colombo and Grilli, 2005; Santarelli and Vivarelli, 2007; Zimmerman, 2008 | Not tested | Inconclusive |
| Subvention for firms and financing | "Governmental subventions for firms are too small & targeted us of money does not support growth" | Venture capital is broadly studied and it is agreed that it has positive effect on growth. Public financing receives less attention | Bertoni, Colombo, and Grilli, 2007; Davila, Foster, and Gupta, 2003; Merito, Giannangeli, and Bonaccorsi, 2007 | Not fully analyzed, seems inconclusive | Supported, VC facilitates growth, but public funding has mixed effects |
| Management Experience | "Software industry need to have more experienced executives" | Founder business and industry experience have generally positive effect on early growth. Top management team considered one of the main determinants of subsequent growth | Macpherson and Holt, 2006; Colombo and Grilli, 2005; Barringer, Jones, and Neubaum, 2005; Kor, 2003 | Supported | Supported |

Contributions of this study

- We identified that the existing research and opinions of the practitioners are largely in line
- Developing human resources, marketing competence and building market orientation perhaps under-present in the growth literature

Limitations

- One have to be careful with generalization because research sample is small and study concentrates only on one industrial field

Tasks for further research

- Further research in entrepreneurship should expand to two directions
 - Building marketing and sales competencies
 - Investigate building "growth capability" in organizations



Thank you!

Questions and comments are welcome

