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# **ESSAYS ON ENTREPRENEURIAL TEAMS IN INNOVATIVE HIGH-TECH START-UPS**

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## SUMMARY

This dissertation is a study of how entrepreneurial teams in innovative high-tech start-ups are created and evolve over the life of the venture. Today, more than ever, people take an interest in the diversity and complexity of entrepreneurial teams because of their potential to shape venture growth. In particular, curiosity surrounds the question of what entrepreneurial teams should look like in order to allow innovative high-tech ventures to be formed and to ensure their growth. This focus makes sense since, in comparison to other determinants of new venture performance, a venture's management has much more control of the composition of its entrepreneurial team. Despite the importance of this topic, there is limited knowledge on entrepreneurial teams. In particular, we still know very little about: "How do entrepreneurial teams evolve over the different stages of the life of the venture?"; "How do the relationships between team members shape venture growth?" and "How do key stakeholders influence team composition?". Addressing these questions is the objective and focus of this dissertation.

In this doctoral research entrepreneurial teams are studied in innovative high-tech start-ups. First, because research indicates that the majority of new ventures are created by an entrepreneurial team instead of one single entrepreneur. Next, the complexity and dynamic character of the innovative high-tech environment are expected to bring about more outspoken team dynamics. Innovative high-tech start-ups are new ventures that develop and commercialize new products or services. In these innovative high-tech start-ups a distinction can be made between independent innovative ventures and ventures with a link with a university or public research institution, like academic spin-outs that are a particular group of innovative high-tech start-ups.

There has been considerable debate as to what exactly is understood by the term "entrepreneurial team". Part of the definitional confusion may be related to the fact that entrepreneurial teams are too often studied around the time of formal incorporation of the new venture. However, there is abundant evidence in the new technology based firms and

spin-out literature that the team that legally establishes the venture is already the outcome of a long process of team formation. Even when teams are considered around and after the time of formal establishment of the new ventures, the evolutionary aspects of entrepreneurial team formation and development have only recently received some attention. Changes in the composition of the team are considered to be a reflection of the venture's adaptive mechanism towards changes in its environment. Some evolutionary theorists suggest that this adaptive mechanism is developed through a path-dependent process. Studying how team members come together to form a team and its evolution over the life of the new venture, is the focus of this doctoral research project.

Three major research questions are pursued: "How do entrepreneurial teams evolve over the different stages of an academic spin-out process?"; "How do the relationships between team members in pre-founding teams shape venture growth?", and "To what extent do changes in the power tensions between the key stakeholders induce team addition?". The first essay (Chapter 1) explores the entrepreneurial team formation process and its dynamics over the venture's life cycle. Since academic spin-outs are a particular group of innovative high-tech start-ups, the first essay focuses on entrepreneurial teams in academic spin-outs. Entrepreneurial teams are studied in-depth over the different stages of the spin-out process in order to better understand how entrepreneurial teams come into existence and evolve over the different stages in the life of a new venture. The process of team formation means that people are brought together and imply interpersonal processes and relationships. In the second essay (Chapter 2) a grounded model of interpersonal relationships in pre-founding teams and venture growth is developed. In particular, the relationships between members of the pre-founding and their potential to shape venture growth are assessed. The third essay (Chapter 3) of this dissertation provides insights into the influence of power tensions between key stakeholders on team entries. In particular, team entry is looked at through the lens of different theoretical perspectives on power tensions.

For each selected case in this study the contacts were highly personalized, leading to first-hand data on the entrepreneurial team and its venture. In this study the primary data

collection instrument is a structured questionnaire, which allowed for the reconstruction of the venture's life and the identification of the venture's resources, products, market characteristics, and employees. In addition, archival data sources were used to double-check information. This was the starting point for a reconstruction of the life histories of the innovative high-tech start-ups during personal semi-structured in-depth interviews with the founders. During the interviews, data were collected on the different members of the entrepreneurial team and the changes in the team and its evolution up to its present state. Further, the interviews focused on the different team members, their background and expertise, how they got involved in the team as well as their level of involvement. The combination of detailed archival and survey data, and in-depth interview based qualitative data makes it possible to gain new insights in the evolution of entrepreneurial teams over the life of new ventures.

This study explores the dynamics of entrepreneurial teams in a particular subgroup of innovative high-tech start-ups, academic spin-outs, as they evolve through the different stages of their spin-out process. An in-depth analysis of the heterogeneity of team members' experience and perception of the strategic orientation needed to attain different milestones in the spin-out process is performed. At the start of the venture formation, a new team role is introduced, the privileged witness, potentially specific for spin-outs. Analysis of the teams indicates that the team's heterogeneity changes as it evolves through the different stages of the spin-out process. In particular, the analysis shows that new team members brought in different kinds of experience, however, they did not introduce a different view on doing business from the initial team members.

This study contributes to the growing body of research examining the impact of teams on venture growth. This dissertation develops a grounded model of interpersonal pre-founding relationships and venture growth. The relationships between members of the pre-founding team and their potential to shape venture growth is assessed. Propositions are developed to initiate further research into the relationships in teams and their potential to shape venture growth. The in-depth case analyses indicated that growing ventures are a heterogeneous group and that ventures can show different kinds of growth paths. More in

particular, a distinction between sustained growers and non-sustained growers was made, followed by a comparison with non-growing new ventures. The study indicates that pre-founding teams showing strong instrumental and non-instrumental relationships have the potential to create a sustained growing venture. Weak non-instrumental relationships combined with strong instrumental relationships in pre-founding teams bears the risk to create a non-sustained growing venture or a non-growing venture. Solo entrepreneurs and family teams, both showing weak non-instrumental relationships in their pre-founding teams, tend to create non-growing ventures.

Finally, this dissertation provides insights into the team entries over the life of innovative high-tech start-ups. More in particular, the extent to which team entries are induced by key stakeholders are studied in-depth. Team entry is looked at through the lens of different theoretical perspectives: agency, resource dependence, institutional, and social network theories. These theoretical perspectives are related to the power tensions between the key stakeholders in a venture. The relative power of key stakeholders appears to be reflected in the team composition. The main point is that team entry has different drivers depending on the power tensions between the different key stakeholders at play at different stages in the venture's life cycle. As such, will the prevalence of different theoretical perspectives on team entry vary accordingly.

This dissertation offers several contributions to the current literature in entrepreneurship. This study advances our knowledge about the formation of entrepreneurial teams in the different stages of the life of new ventures. In particular, this study has led to several insights on how entrepreneurship is infused into ventures through the evolution of teams as they take a venture from research to an independent company. A new role was introduced that may be specific for spin-outs: the privileged witnesses. This study indicates that entrepreneurial teams evolve over the life of the venture and cannot be studied as immutable entities. The introduction of new members to the team changed the heterogeneity of the team but did not introduce a different view on how to do business. A model on the extent to which interpersonal relationships between pre-founding team members shape venture growth was developed and propositions for future research are

put forward. Next, different kinds of growing ventures are identified. Besides, insights in how key stakeholders influence team entry are developed.

Finally, this research offers several practical implications. Entrepreneurs get useful insights from this study regarding to what extent the formation of their entrepreneurial team will evolve over the life of the venture and shape its potential of venture growth. For investors, this study offers insights into the composition of entrepreneurial teams in terms of the influence of the complementarity and the history of the team members on growth. Finally, policymakers may benefit from a better understanding of how entrepreneurial teams are created and evolve during the life of innovative high-tech start-ups. This study can help policy makers to develop support programs that address the specific needs of the entrepreneurial teams in the different stages of their lives in order to help these entrepreneurial teams to realize their full potential.