Introduction

Techno-entrepreneurship is a recent field which has its roots in the now established field of entrepreneurship. Its aim is to study the specificities of entrepreneurial activities in technology-intensive environments. Why is that important? Techno-entrepreneurship combines the risk factors associated with entrepreneurship with the ones due to the highly uncertain nature of technologies development. This ‘squared risk’ is a real challenge for new high-tech ventures.

As an emerging field, it was important to consolidate the early writings and this is the aim of the present Handbook. Since the inception of this project almost three years ago, it has been decided to be as open as possible in terms of contributions to allow any researchers to feel that they are working in techno-entrepreneurship to contribute to the Handbook. The result is a diverse yet focused collection of contributions: diverse as it ranges from questioning the reality of the field to the study of processes of techno-entrepreneurship, including the role of clusters, incubators and technology transfers and to applications in two of the most techno-entrepreneurial industries of the moment: biotechnology and electronic commerce.

The first part of the Handbook is dedicated to the foundations of the field. The first contribution, by Sylvie Blanco, shows that the concept of technological opportunity recognition is important to resolving part of the uncertainty related to techno-entrepreneurship. Igor Prodan, in Chapter 2, builds a model of technological entrepreneurship in the perspective of regional development by emphasizing key characteristics derived from the literature in entrepreneurship and technology policy. To end this part, Helena Yli-Renko casts light on exchange relationships in entrepreneurship research by mapping the various streams of research on the external relationships of entrepreneurs and entrepreneurial firms in a high-tech context.

The second part focuses on the specific underlying processes in techno-entrepreneurship. Diane Isabelle studies the commercialization of science and technology and the supporting mechanisms. Annaleena Parhankangas and David L. Hawk, using evidence from five new-to-the-world technologies studied over three decades, discuss the balance between exploration and exploitation for high-tech ventures. Behrend Freese, Thomas Keil and Thorsten Teichert focus on radical innovation and how corporate venture capital can help to address the challenges it presents. Finally, Khairul Akmaliah Adham and Mohd Fuaad Said highlight the importance of mentoring in the pre-seeding phase in the case of Malaysian high-tech entrepreneurs.

The third part of the volume is dedicated to incubators and technology transfers. Christian Lendner explores the growing phenomenon of business incubators in universities to help technology transfers and influence on start-ups. Rory O’Shea develops a conceptual framework of university spin-off activities and suggests that university heads and policy makers can encourage and develop university entrepreneurship by using a comprehensive systems approach for the identification, protection and commercialization of university intellectual property. To close this part, Michael Bernasconi and Dominique Jolly present spin-off activities in the case of Sophia-Antipolis, one of the first technopoles in
France, and trace the history of the development of the techno park and the characteristics of its different phases of development.

The fourth part focuses on the specificities of techno-entrepreneurship in e-business with three contributions. Tobias Kollmann describes what is e-entrepreneurship, positions the net economy among the other economies and shows that the electronic value chain and the value-oriented processing of information serve as the starting point for every net economy venture. Antonio Padilla-Meléndez, Christian Serarols-Tarres and Ana Rosa del Águila-Obra study the profiles of e-entrepreneurs in terms of demographics and motivations in the case of Spain. Finally, Lalit Manral focuses on virtual alliances in the Internet context and presents their dynamics compared to traditional alliances.

The fifth and last part of the volume is dedicated to another industry replete with techno-entrepreneurship: the biotech industry. Edward L. Bayham, Jerome A. Katz, Robert Calcaterra and Joseph Zahner make an in-depth study of the St Louis BioBelt and its success factors and present factors complementary to the earlier chapter on Sophia Antipolis. Finally Nicola Dellepiane studies the strategies of small business in the part of the biotech industry dedicated to DNA–RNA.

After reading one or several of these contributions, the reader will realize how vast and yet mostly unexplored the field of techno-entrepreneurship is. There is a definite need for the exploitation of existing findings and their integration into readable frameworks and for the exploration of the numerous aspects of entrepreneuring in technology-intensive industries. As the high-tech of today is the commodity of tomorrow and as the start-ups of today are the multinationals of tomorrow, no doubt this field will become of interest in the near future to more and more researchers, policy makers and practitioners.