

## Chapter 2

# The R&D–Based Start–Up

### **ABSTRACT**

*In this chapter the concept of the difference between a technological start-up and a complete firm is introduced. The discussion explains the characteristics of the technological start-up (TSU) and the reasons these have developed as part of a strategic fit of the TSU to its specific tasks and environment. The discussion relates that the characteristics of the TSU, structure, culture, and activities have an impact on management capabilities and their development. The discussion along these three aspects also denotes the literature in the field in support of the claims made. However, the discussion is not entirely theoretical but includes also references to practical aspects.*

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## **INTRODUCTION**

Start-Ups (SU) and Technological Start-Ups (TSU) have been of interest for some time for policy makers, as they have been recognized as economic growth engines (EU, 2003).

The interest in the TSUs and the environment supporting their formation and growth have therefore also been the topic of wide research as well as of practical interest for some time (EU, 2003; Porath, 2010). However, while in former years the main obstacles for research regarded the formation of SUs and the supporting environment, with the maturing of the sector of TSUs a new issue is slowly becoming interesting – the move or transformation from a TSU to a complete firm. In order to analyze the transformation, it is first important to understand the special characteristics of the TSU, and how the TSU differs from the classical idea of a complete firm (Penrose, 1959). In this chapter, the TSU characteristics, their origin and how they relate to the environment are discussed. Thus, the foundation for the main discussion of the book is presented in this chapter.

### **Challenges the Start-Up Faces**

The TSU is a special entity in the firm group. While a mature, or fully developed firm, a complete firm, would contain the funding generation activities and units (marketing and sales), the management part (administrative, financial etc.), and the production (including services) as well as support activities sections, the TSU normally would lack some of the sections, or have them at a less developed stage than a mature firm.

There are many different ways to define a start-up, but for our discussion here, we shall define the TSU as follows: A Technology based company, focused on the development of its technology and products, supported in the main part by investment (equity or non-equity based) and not sales<sup>1</sup>.

The TSU therefore is a company, that would mean for our purposes here, a for profit organization, which however, at the current stage we are dealing with, is not showing any profit, or better defined as one that is not generating enough income to be fully supported by the sales of its product.

Imagine the classic view of such a TSU. Two guys, long haired and bearded working on a new electro-optic device in the garage of the home of one of them. They manage to convince an early-stage investor (Angel) to invest some funds and recruit another team member to write the software

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