Chapter 9

Firms’ Connections and Open Innovation: The Case of Innovative Spanish Firms

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ABSTRACT

The main aim of this chapter is to determine whether or not and to what extent innovative Spanish firms apply open innovation practices. Accordingly, the authors analyze microdata from the Technological Innovation Panel (PITEC) database. This study develops a methodology that focuses on the description of the existing connections between the elements that constitute a socio-economic system: they extract data belonging to firms that have declared that they apply innovation activities and then the authors analyze the links between innovative firms based on the concept of systemic innovations (vs autonomous innovations) as a means to explaining open innovation. Systemic innovations require interaction between complementary innovators through different collaboration mechanisms that reveal links between parts of the system. From this perspective, the authors depict a profile of the innovation links in innovative Spanish firms involved in open innovation practices, together with a characterization of what they call an ‘open innovator firm’.

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INTRODUCTION

Open innovation (Chesbrough, 2006) consists of the intentional use of knowledge to impulse internal innovation and, at the same time, expand markets to allow the external use of innovation. This concept opposes the traditional model of innovation (closed innovation) that in a global context of labour mobility and market internationalization must adapt to different issues (Chesbrough, 2003): firstly, the international dissemination of knowledge; secondly, the growing difficulty involved in controlling competitive advantages gained from said knowledge; thirdly, the increasing rates of technological obsolescence and the availability of venture capital for new entrepreneurial activities and initiatives; and finally, the obsolescence of traditional intellectual property right models.

The main aim of this chapter is to determine whether or not and to what extent innovative Spanish firms apply open innovation practices. Accordingly, we will use data contained in the Technological Innovation Panel (PITEC) database, a panel database that in 2008 includes a survey carried out by the INE (National Statistics Institute) on 12,813 firms in Spain. The Technological Innovation Panel (PITEC) is a statistical instrument for studying the innovation activities of Spanish firms over time. It is the most comprehensive and exhaustive survey on such topics in Spain. This database is run by the INE, which receives advice from a group of university researchers and the sponsorship of FECYT and Cotec.1

The main novelty of this work consists of a methodology that focuses on the description of the existing connections between the elements of a socio-economic system with a specific purpose in common, i.e. the intentional use of knowledge flows to accelerate internal innovation. The basic assumption is that such a structure and its evolution supports the analytical description of dynamic phenomena (Cañibano et al., 2006; Potts, 2000; Witt, 2003), i.e. the processes and practices of open innovation developed by firms.

The analysis of the links between innovative firms will be based on the concept of systemic innovations (Maula et al., 2006) -vs autonomous innovations- as a means to explaining open innovation. Systemic innovations require interaction between complementary innovators (including agents such as firms, start-ups and research centres, etc.) through different collaboration mechanisms that reveal links between parts of the system, such as external venturing practices, research programmes and industrial consortia.

Thus, assuming that one necessary condition for open innovation is the existence of a set of collaborative links -representative of systemic innovation practices- we examine whether or not there are significant connections between firms and between firms and other players in the industry. With regard to collaboration, we will extract data belonging to firms that have declared that they apply innovation activities in order to identify the companies that reveal patterns of collaboration that are compatible with open innovation.

The structure of the chapter is as follows. Section 2 discusses the relationships between open innovation, systemic innovation and connections between firms. Section 3 analyses the innovation links between Spanish firms. Accordingly, we use the sample of innovative firms included in PITEC. We depict the profile of the innovation links in innovative Spanish firms involved in open innovation practices and provide a statistical model that estimates the probability of being an open innovator depending on said links. In this section, we propose an Index of Cooperation to obtain a more precise characterisation of the intensity and quality of cooperation among firms. On this basis, we will offer a characterization of what we call an ‘open innovator firm’. Section 4 offers our concluding remarks.