

## Chapter 69

# Firm–Specific Factors and the Degree of Innovation Openness

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### ABSTRACT

*This chapter investigates the topic of how open innovation is actually implemented by companies, according to a conceptual approach in which open and closed models of innovation represent the two extremes of a continuum of different openness degrees; though, these are not the only two possible models. By means of a survey conducted among Italian manufacturing companies, this chapter sheds light on the many different ways in which companies open their innovation processes. Four main models emerge from the empirical study, which are investigated in depth in order to understand the relationship between a set of firm-specific factors (such as size, R&D intensity, sector of activity, company organization) and the specific open innovation model adopted by a company.*

### INTRODUCTION

The concept of “Open Innovation” (OI) is often studied supposing an artificial dichotomy between closed and open approaches, whilst the idea of exploring different degrees and types of openness in a sort of continuum seems to provide a more interesting avenue (Chesbrough, 2003b). Prior research has highlighted that open innovation may

be pursued in different ways, which are identifiable in terms of organisational form of acquisition or commercialization, number and typologies of partners, phases of the innovation process that are actually open, the direction of openness (inbound and/or outbound) and governance (hierarchical or flat).

Moreover, previous research has also attempted to study the relationships among different OI models and several contextual factors, driven by the idea that these factors could explain or,

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at least, characterize the companies' choices in terms of degree of openness. Lastly, different OI models, defined according to this concept (i.e. degree of openness and models within their specific context), have been analysed in some preliminary work in terms of their performance (Lichtenthaler, 2008; 2009).

The objective of this chapter is thus three-fold: first, to provide evidence in support of Chesbrough's (2003b) theoretical proposition that businesses may be located along an Open Innovation Continuum, second, through the use of extensive study, to identify any potential intermediate states between the extreme points of the Continuum - Open and Closed Innovators - and, third, to identify the contextual factors that affect the choices firms make along the Open Innovation Continuum.

In particular, for the identification of the potential intermediate states in the OI Continuum, we focalized on two variables representing the openness degree, which are not still deeply investigated: (1) the number and type of partners (partners variety) and (2) the number and type of phases of the innovation process open to external contributions in and/or out (innovation phase variety). It should be noted that we assume that the innovation process is composed of different phases: idea generation (identification of a technology opportunity through scouting, monitoring, market analysis, trends analysis); experimentation (from the idea to the prototype); engineering (transforming the prototype into an industrial project); manufacturing (defining and organising the "plant"); commercialisation (planning of commercialisation and promotional activities).

The choices in terms of OI will be investigated in terms of those contextual factors whose role is still controversial (Lichtenthaler, 2008), or otherwise it can be better understood in light of the concept of openness suggested here. Our investigation was carried out in Italy, where empirical evidence about OI is still poor. However, there are many pressures, arising from institutions, too,

towards the establishment of collaborative models (Global Business Summit, 2010). Thus, investigating if, how and with what results companies work together becomes a relevant issue for both Italian scholars and practitioners.

We would also like to emphasize that our endeavour to identify any in-between states along the Open Innovation Continuum is the first attempt to research this topic and that the subject indeed requires further research in order to better characterise such intermediate states.

The following sections are divided into sub-topics: a description of the pertinent literature (so as to better understand the research questions we posed), a description of the empirical study we carried out and the methodology used, the main research results, a discussion of the results, conclusions and future research.

## **THEORETICAL BACKGROUND**

### **The Theoretical Framework and the Research Questions**

Traditionally, large firms relied on internal research and development (R&D) to innovate and, in many industries, large internal R&D labs were a strategic asset and firms could internally discover, develop and commercialize technologies. This approach has been labelled the "closed innovation model" (Chesbrough, 2003a). Although it worked well for quite some time, the current innovation landscape has changed. Due to labour mobility, increasing R&D costs, abundant venture capital and widely dispersed knowledge across multiple public and private organizations and the need for specialisation in knowledge production, enterprises can no longer afford to innovate on their own, but rather need to engage in alternative innovation practices. In this regard, Open Innovation (OI) represents an important innovation practice that can help firms to innovate without having to rely only on their in-house strengths. Since Chesbrough published his

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