

# Chapter 35

## Online Communities and Open Innovation: The Solar System Metaphor

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### ABSTRACT

*Online communities are becoming an important way to support firms towards an open innovation approach. However, knowledge shared in an online community represents only a potential for firm's innovation aims. The effectiveness of exploration and exploitation of this knowledge depends on firm's absorptive capacity. In this work the authors focus on the time an idea, shared within an online community, takes to be transformed from a 'potential' into a 'realized' innovation by a firm. In particular, conceiving knowledge as a trajectory across pole of attraction rather than a linear process, the authors develop a model inspired by the solar system metaphor. Preliminary results from a case study are presented. They suggest firms may improve the effectiveness of absorptive capacity exploiting the mediation role of a software tool.*

### INTRODUCTION

The importance to integrate different sources of knowledge for firm's innovation purposes is well recognized in literature (e.g., Rigby & Zook, 2002; Chesbrough, 2003, 2007; Christensen et al., 2005). Traditionally firms have focused primarily on knowledge creation using internal sources of knowledge, usually through R&D activities. How-

ever, to be able to set up a broad knowledge base, firms may open their boundaries to gain knowledge from many kinds of sources, not just internal, but also external (Chesbrough, 2003, 2007).

There is currently a great deal of attention around the concept of open innovation. "The future lies in an appropriate balance of the open innovation approach, where the company or the institution uses every available tool to cre-

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ate successful products and services faster than their competitor and at the same time fosters the building of core competencies and protects their intellectual property” (Enkel et al., 2009, p.312). Procter and Gamble (Huston & Sakkab, 2006), Philips and Siemens (as cited by Enkel et al., 2009), and Deutsche Telekom (Rohrbeck et al., 2009) are examples of firms that have successfully adopted the open innovation.

There are three core processes in open innovation: the outside-in process, the inside-out process and the coupled process (Chesbrough, 2003, 2007; Enkel et al., 2009). In this work we focus on the former and on the customer community integration (Piller & Fredberg, 2009). However, firms need to develop or strengthen their competencies to understand, decode and use external knowledge which is accessible through the outside-in process. We refer to the absorptive capacity (ACAP) as the ability of a firm to recognize the value of new, external knowledge, assimilate it, and apply it to commercial ends (Cohen & Levinthal, 1990).

We argue online communities and information technology (e.g. software tools) can be used by firms to support the set of routines and processes to collect, identify and assimilate knowledge. Over time this set is capable of generating opportunities of knowledge exploitation for commercial ends.

Our research question is: How can a firm make use of a software tool to manage the inflow of ideas and knowledge from an online community for innovation purposes?

Taking a pragmatic approach, our aim is to light-up part of the process that starts with innovation inputs from an online community and ends with their exploitation by a firm. In this way, we also try to explore the role of a software tool to speed-up and improve the overall process. We develop an exploratory model, empirically tested through a case study, inspired by the metaphor of the solar system. The metaphor is merely instrumental to depict our reasoning and certainly it is not meant as an objective representation of the ‘reality’, a ‘law’ able to depict the complex

social dynamics surrounding the emergence of innovations in specific social groups as those that arise within online communities.

The rest of the paper is organized as follows. We briefly recall the conceptualization around open innovation, online communities and ACAP, and then we adopt the solar system metaphor to introduce our model. In the third section we present the model, its components and the hypotheses. Then, we describe the method used to collect data, and the context of analysis. Preliminary results are presented in the fifth section. The last section contains a brief summary and a set of directions for future research.

## **BACKGROUND**

Innovation is recognized as a primary means for organizational renewal (Dougherty, 1992) and a key lever for sustainable competitive advantage (Brown & Eisenhardt, 1995). Various types of innovation can be highlighted: market (Levitt, 1962), technological (Utterback, 1971), organizational (Daft, 1978), product (Dougherty, 1992), process (Davenport, 1994), service (Frambach, Barkema, Nooteboom, & Wedel, 1998), and strategic (Tushman & Anderson, 2004). Studies on innovation have been developed primarily within the conventional context of organizational hierarchies. However, innovation scholars from various perspectives suggest that knowledge creation for innovative products and services can occur also in a highly distributed way outside the boundaries of the firm. Part of the open innovation approach involves the building of relations with customers or users. Users or peers outside the firm are recognized as important sources of knowledge for innovations (von Hippel, 1988; 2005). Sawhney and Prandelli (2002) have argued the innovation locus may lie across the traditional firm’s boundaries, between the closed hierarchical model of innovation and the open market-based model, in locus where technical knowledge, marketing ex-

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