The Role of Open Business Model in Technology Commercialization

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ABSTRACT

Purpose: This paper has examined the impact of open innovation business model in technology commercialization with the data from 30 companies of manufacturing firms in South Korea.

Methods: The findings provide support for distinguishing five hypotheses relating to development time, IP management, sales, firm size and R&D intensity. To test the hypotheses, data were collected using via e-mail and fax. Small and medium-sized (less than 300 employees) and large industrial firms were chosen for this study.

Results: The result shows that openness in its business model is positively associated with successful technology commercialization.

Conclusion: The major findings and the implications are: First, as the business model gets more open, development period of technology will be more favorable which gets benefit from rising costs of innovation. Second, as the business model gets more open, large portion of sales are created from new products. Thus, the problem of shorter product life in the market which affects large portion of market revenue can be solved through an open business model. Third, in general, R&D intensity, firm size and the level of IP management affect determination of business model types. The findings also suggest that companies need to increasingly address their external technology exploitation process instead of focusing on their internal innovation processes.

Key Words: Open Innovation, Business Model, Technology Commercialization, Intellectual Property Management, Closed Innovation, R&D Investment
1. Introduction

Technology commercialization is not an option in R&D for survival in today’s competitive markets. The capability of commercializing technology depends on the competence of the firms, which refers to the competence of the firms to use technologies in products across a wider range of markets, incorporate a greater breadth of technologies in products, and get products to market faster (Nevens et al., 1990). The question is how. Innovation activities have frequently been shown to be a key element for increasing the market share, market value as well as the long-term survival prospects of firms (e.g. Banbury and Mitchell, 1995; Brockhoff, 1997; Brockhoff, 1999). According to the 2008 EU industrial R&D Investment Scoreboard\(^2\), based on data collected from 1,000 EU companies and 1,000 non-EU companies, all 2,000 companies increased R&D investments by 9% in 2007/8, compared to 10% in past year’s Scoreboard and 7% in the year before\(^3\). Moreover, in Japan, a study by the Cabinet Office (2005) found that the efficiency of private-sector R&D declined during the 1990s. It seems that the overall output from investment in innovation doesn’t reflect the large amount of inputs. Why? As a matter of fact, everyone says innovation is important, but almost no one agrees on the best way to profit from it and remains for many companies an irksome mystery.

Indeed, firms have long faced concerns on how to obtain returns to innovation, particularly when they lack the resources to fully exploit or appropriate the returns (Teece, 1986). From the BCG Innovation 2008 survey, when asked what they thought was preventing their companies from achieving higher returns, based on 3,000 global executives, executives most commonly cited a risk-averse corporate culture (36%), as well as overly lengthy development times (36%). Companies have historically relied on large investments in internal research and development (R&D) to drive innovation and provide sustainable growth. This vertically-integrated model, however, is eroding due to a number of factors. A more open and transnational approach, which Henry Chesbrough named ‘open innovation’, is emerging as an effective alternative to the closed innovation model. In fact, the open innovation framework helps explain how firms have used the rise of open-resource to develop new forms of innovation strategies. The key tenet of open innovation is that not all good ideas will emerge from inside the organization and not all good ideas generated within the organization can be successfully commercialized by the same firm. Chesbrough (2003a) suggests that many innovative firms have shifted to an ‘open innovation’ model, using a wide range of external actors and sources to help them achieve and sustain innovation. Indeed, from the survey result\(^4\), in 2006, 53 percent of innovative firms have shifted to an ‘open innovation’.

To date, open innovation concepts and practices have been explored primarily in the U.S., with comprehensive case studies covering numerous American companies such as P&G, IBM, Intel and Lucent (Chesbrough, 2003b: 2006). Nevertheless, there is a need for empirical study that has examined the degree.

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\(^2\) The EU Industrial R&D Investment Scoreboard is published annually by the European Commission (JRCIPTS/DG RTD) as part of its Industrial Research Investment Monitoring and Analysis activity (IRMA). Company data were collected by Company Reporting Ltd.

\(^3\) For more information on R&D investment date, please look at “The 2008 EU Industrial R&D Investment Scoreboard”

\(^4\) Bain & Company, Management Tools and Trends, 2008