Open Innovation in Entrepreneurships: Taxonomies of Innovation in Knowledge-Based Economy

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ABSTRACT

Efforts have been given to gain knowledge from a meager collection of empirical studies on various taxonomies of innovation and their effects on open innovation strategies for the development of entrepreneurship, despite abundance of studies and researches that are available on the broader aspect of open innovation categorization. Based on a longitudinal literature review with three time series, this study has tried to deduct patterns of innovation among business sectors, during pre-concurrent-post periods of popularization of the term ‘open innovation’, emphasizing their implications on entrepreneurship development. However, efforts have been given to emphasize on prominent taxonomies that exists among small and medium enterprises (SMEs). Thereafter, it has tried to develop a framework on taxonomies of innovation focusing the emerging knowledge economy and the prevailing global economic crisis. The paper is an exploratory literature review and assists in knowledge acquisition.

Keywords: Innovation, Open Innovation, Open Innovation Strategies, Pattern of Innovation, Small and Medium Enterprises (SMEs)

INTRODUCTION

In recent years, the concept of open innovation has gained widespread attention. It is becoming an essential strategy of entrepreneurship as many firms are trying to implement open innovation, despite the difficulties associated with managing these activities (Lichtenthaler, 2011a). However, definitions those are available in the market range from simple concept, acceptance, maturity, and dissemination of open innovation strategies promoting business. But the business is not exactly a value addition process in terms of economical gain. In the era of knowledge economy and the global competition, including the overwhelming financial crisis, it incorporates a value addition process in the form of economic gain in a shorter term, thereafter a value addition process in the medium term in the form of knowledge gain and as a sustained value addition process in the longer term, the process should incorporate economy, knowledge, human capital, and intellectual property of the business following a ratified open innovation framework.

Though there are not many approved frameworks available in the extant literature, and their characteristics are not well defined,
Lichtenthaler (2011a) identified three characteristics of the open innovation framework, which may allow for developing important theoretical and empirical contributions in future open innovation research. Firstly, the open innovation framework integrates inward and outward knowledge transfer, whereas most prior work addressed only one direction of opening up the innovation process. Thus, open innovation research highlights that firms may open up knowledge exploration, retention, and exploitation at the same time. Secondly, the open innovation literature emphasizes the complementary character of internal and external innovation related activities in firms. In contrast, earlier work often assumed ‘either-or’ decisions related to either internally or externally pursuing innovation activities. Thirdly, the open innovation framework contributes to the integration of the research streams on innovation management and technology management. In contrast, many prior studies focused on technology issues without considering other innovation related activities or vice versa (Lichtenthaler, 2011c).

However, evidently majority of open innovation researches are inclined towards larger or corporate businesses due to the fact that those establishments are stable, well executed within their planning strategies, and performance indicators are easily evaluated. In contrast, the firms belonging to the small business, which is the target business sector of this research, are in lack of financial support to conduct R&D, incentive to promote open innovation and foremost reluctant on any radical changes or transformation due to many other reasons. Among them, apart from the economic issue, local issue in terms of culture is also prominent for carrying out any changes in their behaviors.

Furthermore, the behaviors of small firms vary substantially due to resource constraints, global competencies and innovation acquisitions. Current economic crisis has also lead this business sector to navigate around diversified channels of organizational sustenance and occupational challenges. In addition, due to many reasons seen or unseen, small and medium enterprises (SMEs) take different paths to be innovative as their business strategies. This paper has tried to find out taxonomies of pattern of innovation among SMEs in European region. Based on a longitudinal literature review (available research topics from the mostly available search engines and the integrated library search) from the most relevant extant literatures (Hsu & Lin, 2006; Weerakkody, Dwivedi & Irani, 2009), this paper uses non-hierarchical cluster analysis (finding a general trend among the period of observations in the study) to categorize the studied cases from various countries. The purpose of this cluster analysis is to cluster observations into similar groups (Schonlau, 2004).

After providing a definition of open innovation in the context of its characteristics or patterns, an overview of prior research on taxonomy is given, which identifies the following important topics of earlier open innovation research, such as technology exploration, technology exploitation, Schumpeterian categorization, and classical-and-neo-classical context of open innovation taxonomies. In light of current controversial debates about the value of the open innovation framework within the business, this research has evaluated the literature and tried to find out a sustained pattern of open innovation, especially focusing the current economic crisis and the emerging knowledge dynamics (Lichtenthaler, 2011a). Following non-hierarchical cluster analysis (Gerstengarbe, Werner and Fraedrich, 1999), the literature review has been conducted in three stages; one before the popularization of the term ‘open innovation’ that is before 2003 (this includes classic research papers from the early concept of open innovation till 2003), the second phase of literature review confines to research papers in between 2003 and 2006, and the third phase incorporates distinguished research papers from 2006 and onwards. In fact, by popularization of ‘open innovation’ this study emphasizes the coining of the terms by Prof. Henry Chesbrough (2003) after which this term got huge attention from both researchers and practitioners across the globe. The study finally presents a conceptual framework that provides the foundation for discussing critical open in-
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