HORIZONTAL AND VERTICAL KNOWLEDGE SPILLOVERS: IMPACT ON FIRM EXPLORATION (INTERACTIVE PAPER)

Siri Terjesen  
*Indiana University, USA & Lund University, Sweden, terjesen@indiana.edu*

Maksim Belitski  
*Henley Business School, University of Reading, UK*

Pankaj C. Patel  
*Ball State University, USA*

Recommended Citation
Terjesen, Siri; Belitski, Maksim; and Patel, Pankaj C. (2014) "HORIZONTAL AND VERTICAL KNOWLEDGE SPILLOVERS: IMPACT ON FIRM EXPLORATION (INTERACTIVE PAPER)," *Frontiers of Entrepreneurship Research*: Vol. 34 : Iss. 11 , Article 23.  
Available at: https://digitalknowledge.babson.edu/fer/vol34/iss11/23

This Interactive Paper is brought to you for free and open access by the Entrepreneurship at Babson at Digital Knowledge at Babson. It has been accepted for inclusion in Frontiers of Entrepreneurship Research by an authorized editor of Digital Knowledge at Babson. For more information, please contact digitalknowledge@babson.edu.
Principal Topic

The importance of spillovers from research and development (R&D) expenditure to firms' innovation efforts (Jaffe, 1986, 1988; Griliches, 1991) is widely acknowledged. Firms' investments in knowledge-related activities leak into the environment where these spillovers can be appropriated by other firms. Existing literature focuses on intra- or inter-organizational exploratory search efforts; however, we have limited understanding of how knowledge spillovers (hereinafter spillovers) from within (horizontal) and across (vertical) industries impact firms' decisions to engage in exploration -- that is, activities related to new search, risk-taking, and experimentation (March, 1991). We investigate: do horizontal and vertical spillovers in the environment facilitate or deter firm exploration efforts?

We posit that firms operating in environments with high levels of horizontal spillovers have limited incentives to pursue exploration as knowledge from this activity will flow to competitors. We also consider the impact of vertical spillovers from upstream and downstream firms which require the focal firm to adapt its technology portfolio based on the knowledge pools in the vertical value chain. As vertical restraints limit the scope of a firm's strategic actions (Rey and Tirole, 1986), vertical spillovers may dissuade the focal firm from engaging in exploratory search.

Method

We merged data on 10,313 UK manufacturers from 2002 to 2010 using the UK Community Innovation Survey, Business Survey Database, and Business Enterprise Research and Development surveys. We collated data at the Virtual Micro-data laboratory at the Office of National Statistics. We included traditional manufacturers with more than 10 employees. We tested our hypotheses with four cross-sectional datasets for 2002-2004, 2004-2006, 2006-2008, and 2008-2010 pooled together, controlling for endogeneity and unobserved heterogeneity across sector, time, and region.

Results and Implications

We find that firms operating in environments characterized by higher levels of horizontal and vertical spillovers engage in fewer exploration activities. Managers must consider how the availability of spillovers could subsidize innovation efforts by lowering costs of exploratory search. For policy makers, the findings indicate that the private sector's innovation decisions are conditional on the availability of spillovers. While greater knowledge spillovers are important policy outcomes, these spillovers could dissuade firms from undertaking radical innovations.

CONTACT: Siri Terjesen; terjesen@indiana.edu; (T): 812-855-2769; 650D, 1309 E. 10th St., Bloomington, Indiana 47405.