

**Educational Acquisitions: The Role They Play in New Product Development in the
Global Pharmaceutical Industry**

Denise Dunlap-Hinkler*

Northeastern University
Department of Strategy and International Business
College of Business Administration
319 Hayden Hall
Boston, MA 02120 USA
Tel: 617-373-4557
Email: d.dunlaphinkler@neu.edu

Tucker J. Marion

Northeastern University
The School of Technological Entrepreneurship
College of Business Administration
305 Hayden Hall
Boston, MA 02120 USA
Tel: 617-373-2241
t.marion@neu.edu

John H. Friar

Northeastern University
The School of Technological Entrepreneurship
College of Business Administration
212 Hayden Hall
Boston, MA 02120 USA
Tel: 617-373-4784
j.friar@neu.edu

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*Corresponding Author

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1. INTRODUCTION

Roberts and Berry (1985) argued that as firms move away from their technology base, they should shift their R&D efforts from internally generated R&D to external forms of development, especially through what they termed '*educational acquisitions*'. In the global pharmaceutical industry, competition has traditionally been based on firms creating blockbuster drugs through radical innovation. Radical innovations, by definition, take companies away from their base technologies. The purpose of this study is to analyze the extent to which pharmaceutical companies use educational acquisitions to replenish their R&D portfolios with radical innovations.

1.1 THEORY DEVELOPMENT

It is well-accepted in the knowledge management literature that new ideas are created through the interaction and recombination of potentially conflicting knowledge sets (Simon, 1985). According to Leonard-Barton (1992), knowledge that is not consistently renewed can create '*core rigidities*' within the firm. Further, the strategy literature on learning suggests that innovation is fostered by diversity in experience and that the firm's ability to innovate suffers when there are repeated spirals of competition and cooperation within familiar settings. In such instances, familiarity leads to blindness and firm performance declines when firms do not regularly renew their shared experiences (e.g., Cohen and Levinthal, 1990; Leonard-Barton, 1992; 1995). In which case, firms that source-in knowledge from other industry players and institutions can enhance their technological innovation advancement (Markman, Siegel and Wright, 2008).

Radical innovations are difficult to create yet they have a profound impact on a firm's ability to generate future revenues and profits. Large established firms, in particular, have grappled with the dilemma of whether or not they should focus on internal R&D or acquire R&D through high potential new ventures. The impetus to define a winning R&D strategy is even greater in those industries where R&D investment is inherently risky and costly. Since most firms cannot support all of the relevant technical and market capabilities to generate radical or breakthrough ideas, they must often abandon the '*not-invented-here*' syndrome for a higher degree of diversity resulting from the acquisition of external R&D. Thus, when firms engage in acquisition and alliance strategies, they can augment their future learning potential.

Given that many firms are attempting to increase knowledge and innovation through acquisitions (e.g., Cisco, Siemens, and General Electric being prime examples; Desyllas and Hughes, 2008), important questions arise such as what is the optimal strategy in terms of fostering revenue producing incremental innovation and developing '*star*' radical innovations? Do established firms ultimately shift to a strategy of internal incremental innovation research and

look outside for radical breakthroughs? What is the role of new, global players in emerging economies for example?

1.2 RESEARCH APPROACH

In our paper, we address these questions by analyzing over 3,000 new drug approvals by the U.S. Food and Drug Administration (FDA) from the years 1993-2008. The global firms in our dataset range from being start-up firms to being more established, mature global firms. We argue that the role of path dependency is critical at the firm level. While there are indeed benefits to developing one's own internal R&D specializations, through a process referred to as 'learning by doing' (Arrow, 1962), firms also need to advance their learning curve and leverage their core competences (von Hippel, 1998) by recognizing emergent knowledge patterns in the industry, which may require the acquisition of knowledge that is deeply embedded in the social and cultural fabric of another firm (Polanyi, 1967). Therefore, we suggest that alliance characteristics (sizes and structure) are important. We suspect that established firms will benefit most from the acquisition of new start-up firms (Rothaermel and Boeker, 2008). Further, since cultural factors are equally important, we anticipate that domestic firms will benefit most from foreign acquisitions because they are able to access local knowledge embedded in dominant regional clusters (Coombs, Mudambi and Deeds, 2007). We also anticipate that firms from emerging economies will significantly benefit from utilizing an acquisition strategy.

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