

The Adoption of New University Technology for Product Innovation: A Core Competence Perspective

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Executive Summary of Ph.D. Thesis

Firm-university linkages tend to develop when universities are considered as sources of technological innovation or sources of R&D assistance to innovative activities taking place in industry. Since these relationships tend to be examined from a public policy perspective and cover a wide variety of mechanisms, there exists a need to examine them from a firm perspective and, in particular, to examine the adoption of new technology used specifically for product innovation. This research addresses this important gap by studying, for the first time, the adoption of new university technologies for product innovation within the information and communications industry sector of Canada.

By measuring the degree of association between the new technology and the firm's core competencies, this research answers the critical question of whether or not new university technology adopted for product innovation plays a strategic role within the firm. Several important findings are made based on survey data collected for 65 examples of product innovation. Firstly, firms are more likely (N=44) to adopt new university technology that is associated with their core competencies than technology that is not (N=21). Secondly, the more closely associated the new university technology is to the firm's core competencies, the greater the new product's orientation towards being a new platform family product. In addition, the degree of association with core competencies is positively related to future market orientation, tacitness of knowledge and infancy in the technology lifecycle stage.

These findings have important implications for theory and practice. Although strategic outsourcing suggests that external technology only be adopted for supplementary purposes, new university technologies used for product innovation are found to be closely associated with firms' core competencies and therefore have strategic value to firms. These technologies tend to be used for platform family products which favour higher economic returns. This suggests a technological accumulation approach by firms and is encouraging news for public policymakers concerned with the efficacy of universities to develop new technologies relevant to industry. The findings might also be useful for individual researchers and/or university research offices in helping them form strategies for seeking industrial partners.

By highlighting the importance of management effort spent on identifying core competencies and establishing a core competence building agenda, this research offers implications for management practice. It suggests that management would do well to broaden and strengthen firm-university linkages with the aim of increasing knowledge flows into the organisation and, especially, to seek out new university technologies that are closely tied to the knowledge bases of their firm's core competencies. These stand a greater potential for being developed into new platform products which can be used to serve new emerging markets, thereby providing new sources of competitive advantage.

This research makes original contributions in a number of areas: it is the first study to examine the adoption of new university technology specifically used by industry in product innovation; it extends innovation and management theory by defining and operationalising a new construct, "core competence association," which measures the degree of association between new university technology and the firm's core competencies; and it establishes new empirical links between firm performance and the degree to which new university technology is associated with the firm's core competencies, thereby offering fresh support for the resource-based view of the firm.