Chapter 5
Problem Finding and Solving: A Knowledge–Based View of Managing Innovation

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ABSTRACT

In this chapter the authors focus on a problem-oriented view of managing innovation. In particular, they ask what it means to manage innovation well, so that innovation outcomes are enhanced. They start by briefly reflecting on the rise in value of intangibles as an asset class (notably knowledge), and by defining terms. They then briefly review selected literature on strategic management as an example of the typical manner in which innovation has been previously approached. Looking at selected macro- and micro-organizational theories the authors reflect on several shortcomings of extant literature. They then introduce the knowledge-based view and identify a particular sub-field, the problem finding/problem solving (PF/PS) perspective, as one promising way to address these issues. They identify several challenges in the present formulation of the perspective, and discuss further research opportunities. Though the PF/PS perspective presently lacks compelling empirical evidence, it shows promise for developing into a useful logic for managing and enhancing innovation.

INTRODUCTION

This chapter briefly reviews several conversations regarding managing innovation. We seek to identify trends and promising directions for both scholars and managers. In particular, we argue for a connection between the role of knowledge in innovation, creation and management, and the emerging problem finding/problem solving literature—a recent development with strong potential for shedding light innovation management.

The transition from an industrial to an information economy has had notable effects on the ways in which companies operate and seek to establish stronger competitive positions. While the industrial economy was to a large extent driven by economies of scale, the rise of the information/services economy has made it natural to put more
emphasis on knowledge. Rapid changes, uncertainty over technological trends, emerging new markets, cultural and technical convergence, and increasing vagueness of industrial boundaries force companies to manage both external and internal knowledge (e.g., Rothwell, 1994; Tidd et al., 2005; Chesbrough et al. 2006). Deregulation and sharpened competition along with the rise of complex networks and more transparent, low-cost, high-bandwidth channels of communication (e.g., internet, GSM), require companies to continuously meet changing customer needs. This underscores the challenge of generating, obtaining, deploying and using knowledge for innovation. The nature of what comprises a valuable asset has fundamentally changed, and is increasingly determined by intangible rather than tangible assets (Sveiby, 1997; Johannessen et al. 1999). Knowledge assets may well soon overtake traditional resources such as labor, natural resources and capital stock as a primary source of long-term increasing returns.

In this context, knowledge-related processes, and decisions made by managers regarding these processes are central in determining innovation outcomes, and ultimately firm success. The constantly and rapidly changing business environment raises the minimum acceptable innovation performance level for most, if not all firms; technology-driven firms are particularly strongly affected. This type of highly selective environment creates a need for continuous search for new business opportunities and subsequent revenues. Put differently, the need exists in present day organizations to better understand finding and choosing appropriate problems to solve and economically exploit. This particular aspect of value creation, though, has not received all the attention that it deserves. One notable exception is Teece (2007, p. 13) who discusses actions like “sensing” and “seizing” opportunities—notions evocative of problem finding. Teece, while identifying the microfoundations of performance that suggest the importance of problem finding, stops short of suggesting a logic of these microfoundations.

**BACKGROUND**

Creating and maintaining competitive advantage based on knowledge assets means that knowledge needs to be efficiently and frequently generated, accessed, transferred, stored, used, modified, or otherwise deployed in the service of innovation. Consequently, activities that link innovativeness to knowledge are receiving increasing attention both in industry and academia. The focus of efforts to date, however, seems a bit skewed. Emphasis for management of innovation has frequently been on the side of managing value capture from innovation (essentially squeezing every last drop of profit out of an existing product or service) rather than value creation (see, e.g., Teece, 2006). Value creation is often pre-assumed in a substantial fraction of the existing literature (Nickerson, Silverman and Zenger, 2007). The importance of capturing value is easy to comprehend, and with many related issues currently under-studied, this aspect of managing innovation and technology naturally attracts a lot of research attention. Among prominent approaches that focus on firm performance and say something about innovation outcomes, the literature on strategic organization (macro-organizational behavior theory) is focused primarily on value capture activities, and has historically neglected discussion of value creation activities (see March, 1991, on over-focus on exploitation-related activities at the expense of exploration). Similar challenges exist for the micro-organizational behavior literature. Despite the evolutionary “flavor” offered by modern organizational theorists like Nelson and Winter (1982), an assumption persists that management of innovation is a matter of developing routines which are iteratively refined and optimized over time. Recently, for example Chesbrough’s (2003) empirical work explaining entry mode choices in the disk drive industry focuses fundamentally on exploitive innovation (disk drive refinement). Yet, as noted by Levinthal and March (1993), exploration is also vital, hinting that more research efforts
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