Chapter 14
Knowledge Development and Protection as Competitive Advantage

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ABSTRACT
This chapter explores the different circumstances facing firms and industries regarding knowledge development and knowledge protection. Contrary to the view that more aggressive knowledge management aimed at knowledge development is always good, the authors take a more balanced approach by weighing knowledge development potential against the increased vulnerability resulting from such assets being spread more widely. By identifying industries falling into different development and protection circumstances, they explore what knowledge characteristics (tacitness, complexity, specificity) might characterize those different circumstances. As a result, strategists will be better able to plan investments in knowledge management, in knowledge protection, and in competitive intelligence operations while scholars can better understand when and why to do so.

BACKGROUND
Theory development in the field of knowledge management (KM) has long suggested that better management of knowledge assets could lead to sustainable competitive advantage. From precursors in the resource-based view of the firm (Wernerfelt, 1984), KM scholars advanced a knowledge-based view of the firm (Teece, 1998; Grant, 1996). The knowledge-based view proposed that knowledge can be a differentiating resource resulting in sustainable competitive advantage. Indeed, at the extreme, proponents claimed it was the only differentiating resource given the ubiquity of general labor and capital, the traditional factors of production. What was in employees’ heads might be the only unique asset a firm possessed.

The view that unique value might exist in intangible assets, in general, and knowledge, in particular, grew from a number of sources including Schumpeter’s (1934) depiction of innovation as an accumulation of knowledge, Penrose (1959)
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and organizational knowledge stocks, and even Drucker’s (1991) knowledge workers. Once Penrose’s stocks of knowledge were extended to flow concepts and the possibility of growth (Nelson & Winter, 1982; Dierickx & Cool, 1989), scholars and practitioners saw the potential for purposefully managing knowledge, explicitly growing knowledge assets so as to gain competitive advantage (De Carolis & Deeds, 1999; Grant, 1996; Gupta & Govindarajan, 2000; Zack, 1999). It’s this competitive advantage that can result in the superior financial performance (Winter, 1987) promised by the knowledge-based view of the firm.

In order to strategically grow knowledge assets, managers need to understand them. The field of intellectual capital (IC) seeks to define and measure knowledge assets. The most common components described in the literature are human capital (job performance knowledge), structural capital (more permanent organizational knowledge such as corporate culture, information systems, etc.), and relational capital (knowledge from/about relations with external entities) (Bontis, 1999; Edvinsson & Sullivan, 1996). Various approaches to measuring these facets of intellectual capital have been proposed, including the original Skandia Navigator (Edvinsson & Malone, 1997) and the well-known Balanced Scorecard (Kaplan & Norton, 1992), with the goal of better management through better metrics and understanding.

The better management side of things is found in knowledge management (KM) scholarship and practice. Part of the approach again began with defining the field. One critical early distinction was between tacit and explicit knowledge (Nonaka & Takeuchi, 1995), applying social science theory (Polanyi, 1967) to this new interest in business applications. Based on the type of knowledge and what organizations might do with it (e.g. turn tacit knowledge to explicit), different approaches and applications were developed (Boisot, 1995; Choi & Lee, 2003; Schulz & Jobe, 2001). These approaches included such specific tools as IT-driven knowledge markets (Matson, Patiath & Shavers, 2003), communities of practice (Wenger 1998) and storytelling (Brown & Duguid, 2000). Factors contributing to knowledge exchange and growth, such as social capital (Nahapiet & Ghoshal, 1998) were also studied. Finally, and importantly for this study, researchers also examined aspects of knowledge beyond tacitness, including complexity, specificity, absorptive capacity of the firm, and others (McEvily & Chakravarthy, 2002; Kogut & Zander, 1992; Zander & Kogut, 1995).

All of this creates a sense that management of these intangible assets is complicated but potentially rewarding. The issue of defining knowledge assets is still unsettled, even with the variety of approaches we’ve covered. The term intellectual capital is an intentional play on intellectual property, suggesting a value in assets not as easily defined as those protected by standard intellectual property mechanisms such as patents, copyrights, trademarks. Know-how is a term often used but even that can be nebulous. Many in the field gravitate to Zack’s (1999) definitions of data being measures without meaning, information being data with organization, and knowledge being information subjected to reflection.

From those definitions, things become a bit clearer, especially with the understanding that reflection takes place over time and can include learning. But the definitions also make an important point that data and information are precursors of knowledge and, as such, can also be valuable. Indeed, as the concepts of big data, business analytics, business intelligence and related terms gain more and more currency, there is a case to be made that “pre-knowledge”, softer intangibles than even hard-to-define knowledge assets, could also lead to competitive advantage. Operational and transactional data and information, subjected to reflection, are critical intangible assets in and of themselves. Potential value exists in data, information, knowledge, and intellectual property.

Another extension to the basic theory concerns the field of competitive intelligence (CI). At a similar time that firms and scholars were
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