Journal of International Management 17 (2011) 130–142

Contents lists available at ScienceDirect

Journal of International Management

Fox School of Business
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Managerial secrecy and intellectual asset protection in SMEs: The role of institutional environment

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ARTICLE INFO

Article history:
Received 25 August 2010
Received in revised form 19 October 2010
Accepted 21 October 2010
Available online 16 November 2010

Keywords:
Secrecy
Intellectual property
Institutional environment

ABSTRACT

Although secrecy is argued to play an important role in intellectual asset protection, the evidence suggests that the use of secrecy varies significantly across countries. This study contributes to the literature on intellectual property management in R&D firms by investigating aspects of the institutional environment that are most liable to promote managerial use of secrecy. Hypotheses were tested in a sample of 297 R&D biotechnology SMEs operating in 19 countries. Results suggest that the attributes of the institutional environment explain managerial use of secrecy.

1. Introduction

We investigated the effect of institutional environment on managerial use of secrecy. Secrecy is defined as "any information that can be used in the operation of a business or other enterprise and that is sufficiently valuable and secret to afford an actual or potential economic advantage over others" (Restatement of the Law Third, *Unfair Competition*) (Brown and Prescott, 2000). In the biotechnology sector, secrecy is almost as important as patenting for intellectual property (IP) protection (Thumm, 2001). The means of IP protection are grouped into two categories: (1) formal protection, such as patents and other legal mechanisms, and (2) strategic protection, such as lead time, secrecy, complementary sales and service, and complementary manufacturing facilities and know-how (Levin et al., 1987; Cohen et al., 2000). Data from the third European Community Innovation Survey (CIS3) show that, in most countries, strategic protection is more frequently used than formal protection, and that secrecy is the most commonly used strategic protection. The rising commercial value of scientific and technical information, major reductions in the delay between basic research and its applications, and the high cost of patenting all promote secrecy. Secrecy is a highly attractive mechanism, because the holder of the secret can appropriate its returns indefinitely, and firms can exploit this competitive advantage for long periods (Hannah, 2005). Nevertheless, the use of secrecy varies significantly across countries (Thumm, 2001; Ronkainen and Guerrero-Cusumano, 2001; Cohen et al., 2002). For instance, secrecy is proportionally more important than patents in the United Kingdom compared to France (Jaumotte and Pain, 2005). Secrecy rates are 15% for the United Kingdom and 22% for Italy (Thumm, 2001). A comparative study in new European countries showed that 44% of small Slovenian firms use secrecy versus 6% in Romania (Crowley, 2004). According to Cohen et al. (2002), Japanese respondents report secrecy as a minor appropriability mechanism, in contrast to U.S. respondents, who report it as a major mechanism.

Despite these differences across countries, there is little discussion on the underlying reasons. Why do some firms make intensive use of secrecy while others do not? It has been shown that the choice of appropriability mechanisms critically depends on several exogenous factors such as the prevailing institutional environment (Teece, 1986). The present study contributes to the

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doi:10.1016/j.intman.2010.10.002

literature on intellectual property management in R&D firms by investigating aspects of the institutional environment that are most liable to promote managerial use of secrecy. We depart from the macroeconomics level to the firm level and build on previous works that examine the extent to which specific attributes of the institutional environment influence organizational behavior. According to Handelman and Arnold (1999), "The organization and its environment interpenetrate each other, in that the organization's structure and actions reflect the norms of the environment in which it is immersed" (1999: 34).

The institutional environment may be formally defined by constitutions, statute laws, common law, regulations, or contracts between individuals, or it can be informally developed over time and embodied in cultural practices, customs, and traditions (Makhija and Stewart, 2002). First, the legal system has a substantial impact on managerial activities (Bagley, 2006). Laws vary widely across countries, in part due to differences in legal origin (La Porta et al., 1998, 1999, 2002). Second, secrecy is not limited to formal trade secret protection. Anand and Galetovic (2004: 256) contend that the reason why "secrecy might be of limited practical use is that it may be difficult, even impossible, to keep secrets from employees because these secrets typically reside with the individuals and are not 'in the firm.'" Hannah (2005) shows that when employees feel they have been placed in a position of trust, they are more likely to feel obligated to protect trade secrets. Keeping a secret may also depend on attitudes toward personnel, the culture, and the firm's management style (Hannah, 2005; Liebeskind, 1997), and hence may depend on the social institutional environment. National culture differences have been mainly analyzed as an institutional determinant (Parkhe, 2003). Extending Hofstede's (1980) work, the Global Research Project (House et al., 2004) identified nine attributes that differentiate cultures. Four of these attributes appear to be closely related to secrecy in the organization: societal institutional collectivism, assertiveness, power distance, and uncertainty avoidance.

We tested the relationship between specific attributes of the institutional environment on the use of managerial secrecy using a survey sample of 297 SMEs in nineteen countries. Our main findings suggest that the social institutional environment better explains managerial use of secrecy than the legal origins of the laws may do.

The remainder of this article is organized as follows. The next section presents the research hypotheses. The research method is outlined, and the statistical estimations and empirical results are presented and analyzed. A discussion and conclusion follow.

2. The legal institutional environment and secrecy

Property rights can be appropriated and/or dissipated by suppliers, buyers, rivals, and employees. This issue is addressed by Teece (1986) in conjunction with "weak appropriability regimes." Formal rules embodied in constitutions, statutes enacted by legislatures, judicial decisions rendered by courts, and regulations put in place by administrative agencies establish the rules of the game (North, 1990) for managers striving to create value and to capture some or all of it for the firm (Bagley, 2006). Adequate legal institutions enable firms to engage in complex transactions with anonymous parties and provide the framework to control resources and distribute them equitably (Dickson, et al., 2006).

Regarding trade secrets, Article 39 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (WTO TRIPS) covers what in intellectual property parlance is called "proprietary information," or confidential information that is otherwise not protected by patents, copyrights, designs, or models. Because the TRIPS agreement does not specify a particular format for national trade secret protection laws, protection varies widely across countries. In some countries, trade secrets are protected under separate laws governing information disclosure. In the United States, for instance, the civil law of trade secrets is governed by state law, and draws from the common law. Some states have also adopted the *Uniform Trade Secrets Act* (UTSA). States that have not enacted the UTSA—such as New York, Michigan, and Texas—have no state civil statute, and sometimes no criminal statutes either, to cover trade secrets. Trade secret protection in Europe takes on added importance because of the differences between the American and European patent systems and application procedures. Nevertheless, some distinctions are notable: in the United Kingdom, trade secret protection is based on the common law concept of breach of confidence, whereas in Germany and France it is based on civil and criminal codes.

The duty to safeguard confidential information is generally inherent in a contractual relationship between the owner of the trade secret and the person(s) to whom the trade secret is communicated. Examples of these relationships are an employment contract, a licensing agreement, or a contractual partnership. Confidentiality agreements protect the firm from dangers such as an employee with secret information who changes jobs and discloses that information. Courts play a critical role in private ordering, because the alternative to private dispute resolution is often the courts, with bargaining typically taking place "in the shadow of the law" (Bagley, 2006). Hence, as noted by Klein and Leffler (1981), market forces alone are inadequate to ensure contract performance.

La Porta et al. (1998, 1999a,b) argue that the core issue in enforcing property rights and contracts is the legal origin of the national laws. They identified four major families of legal systems: (1) English common law, (2) French civil law, (3) German civil law, and (4) Scandinavian civil law. Common law countries have the strongest protection, while French civil law countries tend to have particularly poor protection and are relatively more corrupt (La Porta et al., 1998). Corruption is a sign of poor enforcement of the rules (La Porta et al., 1999). Scandinavian and German civil law countries rank in the middle. For example, Dickson et al. (2006) show that SMEs in English common law and Scandinavian civil law countries tend to be less concerned about opportunism than SMEs in French civil law countries.

Given the role of contracts and the importance of respecting the clauses that they generally contain to protect secrets and trade secrets, the origins of the laws in the country where the SME operates may influence managerial use of secrecy. The arguments presented above suggest that the greatest concerns about confidential information disclosure would be found in countries whose laws are derived from French civil law. Consequently,