

Antecedents and consequences of intellectual property protection in China

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Abstract

Protection of knowledge has become crucial for companies expanding into new markets. We analyze how German manufacturing companies protect intellectual property rights (IPR) in China following a case study approach. The main results indicate that these companies focus strongly on patents to protect inventions. In addition, patents are complemented in many cases by alternative protection strategies that apply different marketing-mix instruments. Although combining various intellectual property protection (IPP) strategies was discussed in academia, no further investigation of the antecedents and consequences of specific combinations was undertaken. This study aims to provide a starting point for further research on conditions under which combinations of legal and alternative protection mechanisms are likely to be applied and provides a conceptual framework with research propositions.

Keywords: intellectual property protection, patent management, emerging markets

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Introduction and literature review

In the past decades, the patenting activities have grown substantially worldwide and today the majority of new products are patented (Cohen et al. 2000). This increase in patent applications would not have been possible without the emergence of the “patent friendly era”, which is characterized by strengthening IPRs and enforcement of those rights. Especially developed countries campaigned for stronger IPRs, as they fear that their inventions and technologies were not protected to a satisfactory level. Challenges emerged in developing countries with weak intellectual property (IP) regimes, particularly in China. Over the past decade China became, besides India, the most important emerging market in the world and in 2007 the fourth largest economy in the world and the third largest trading nation. While the global economy grows slowly and the economies of developed countries such as Japan and the US remain sluggish, China is an attractive market with a huge potential domestic market and fast growth. This development creates a promising market for corporations in China. However challenges have emerged regarding IPP in China for many Western governments and firms that have “voiced concerns regarding the perceived deficiencies in the protection and enforcement of IPRs” (Tackaberry 1998, p. 1). This creates an interesting field of research on how companies can profit from their innovations in transition economies with weak IPP regimes such as China.

Research has covered IP and IPP from an economic, legal and strategic perspective. Strategic investigations concerned particularly the scope of patents and the various functions of patents as well as the management of innovations and patents within an organization. This paper incorporates existing literature from economic and legal to business-management and marketing. Three topics were of specific interest in this area: patents, alternative protection mechanisms and the Chinese IPR protection system. Within these three areas two dimensions can be deduced. One dimension is oriented towards company internal aspects relating to the areas of patents and alternative protection mechanisms. The second dimension focuses on the external market context of the company and IPP regimes in transition economies. The following literature analysis will therefore incorporate these two dimensions and show that effective IPP is impacted by endogenous and exogenous factors. Endogenous factors are mainly related to the strategic use of patents. These concern the general strategic orientation of a company and its fit with the patent strategy as well as the patent strategy itself, patent breadth and patent claims (e.g. Burr et al. 2007; Gassmann and Bader 2007; Luman and Dodson 2006; Reitzig et al. 2006; Yiannaka and Fulton 2006; Harhoff and Reitzig 2004; Lanjouw and Schankerman 2001). Only an incorporation of all factors enables a company to develop an effective patent strategy and to protect corporate IP. Due to the fact that patents do not offer effective protection under certain circumstances such as weak IPR systems, insufficient patent enforcement or industry specific requirements, alternative IPR strategies have gained importance in recent times. Those alternative strategies offer indirect protection (e.g. Hanel 2006; Cohen et al. 2000; Arundel and Kabla 1998), especially in countries with weak IPP regimes such as China. In the relevant literature a number of alternative strategies have been identified that can be an effective means of protection: fast paced strategies (Burr et al. 2007), trade secrets (Hemphill 2004; Scotchmer and Green 1990), complementary resources (Jennewein 2005; Teece et al. 1997; Porter 1996; Barney 1991), the exploitation of economies of scale and experience curve effects (Ghemawat and Spence 1985), developing complex and hard-to-copy solutions (Reed and DeFillippi 1990), establishing strong business relations (Burr et al. 2007), and creating strong brand image (Aaker 1996; Pettis 1995; Rao

and Monroe 1989; Zeithaml 1988). In addition, especially the combination of patents with other IPRs seems to be a promising way to protect IP more effectively than by using only one of these strategies separately (Burr et al. 2007). The two approaches to IPP and their combination are required to be put in context. Exogenous factors such as strength of IPP regimes or competition have strong impact on effective protection and therefore finally on corporate patenting behavior and on patent propensity. Further important factors are the configuration of legal systems and its particularities; especially the effectiveness of administrative enforcement is highly relevant due to the fact that administrative enforcement resolves patent cases faster at lower cost (e.g. Ganea 2005; Pattloch 2005; Xiaoguang 2003; Fishman et al. 2002; Hong and Chengsi 2002). However, a number of important questions regarding combinations of protection mechanisms and effectiveness still remain unanswered. The following sections will shed some light on those aspects.

Research questions, methodology and results of exploratory study

Based on the literature review two research questions were developed to generate insights on the protection behavior of German manufacturing companies in China. The research questions and the results of the case study approach serve as a preliminary study and allow investigating the antecedents and consequences of combined IPP strategies. For the antecedents and consequences of those strategies a conceptual framework and propositions are presented in the second part of this paper. Both parts are part of a larger research project. It includes the following aspects: Under which conditions are companies more likely to apply combinations of legal and alternative IPP strategies than relying on one strategy solely? What are the antecedents and consequences? In the superordinate research project these questions will be addressed and empirically tested. For the exploratory study the authors conducted personal interviews with representatives of four German manufacturing companies. The interviewees are assigned with IPP and alternative strategies in China within their respective organizations. All companies manufacture and/or market products in China. Besides interviews also secondary data such as company reports, patent portfolio management and instructions on patent infringement handling were analyzed. Research question one concerned the IPP behavior of German manufacturing companies in China: *How do German manufacturing companies protect intellectual property in China, especially in the light of weak protection right enforcement?* Research question two concerns alternative marketing and management strategies other than legal IPP strategies: *Do German manufacturing companies apply alternative intellectual property protection strategies?* The companies analyzed in this investigation focus strongly on legal IPP strategies. These companies apply those strategies not only in Germany but also internationally. Especially the emergence of China as an important market and production location requires them to incorporate protection of IP in China into their corporate IPP strategy. Patents are seen as appropriate tools to safeguard inventions. The four firms entered the Chinese market due to its huge market potential and the projected growth rates – China is an indispensable market for all firms. Two companies also set up production facilities in China to leverage the lower production costs. The lower local cost structure enables these companies to compete with their products in the Chinese market. Despite the positive economic development in China, the companies identified several challenges related to their businesses in the region. Especially the IP law enforcement in China presents a huge challenge to the companies despite the modernization of the IPP system and Western standards. All companies have experienced counterfeiting in China, while three firms have filed lawsuits in China. Three companies experienced problems, especially in the fields of local protectionism. The interviews identified that patent litigations in China are far more complex than copyright litigations. Companies that have experience with enforcement

of patent rights prefer administrative enforcement rather than civil law enforcement for several reasons: administrative enforcement is less costly and faster. In addition, this process is like a mediation process, which is more accommodating to the Chinese mindset. Administrative law enforcement seems to be the preferred way of enforcement for Western companies. Although not all four companies use non-disclosure agreements, all companies have contractual agreements with their employees on secrecy issues. Some companies have specific agreements while others have added specific rules to the general contracts of employment. Especially non-competition clauses are used to impede knowledge transfer. On the other hand, experience curve effects and economies of scale did not seem to be an option to protect the businesses inventions. No company used those two alternative IPP approaches consciously. One reason might be that the reviewed companies are manufacturers of high-quality premium products, which makes quality and innovativeness a more important criterion than price. Complex and hard-to-copy solutions and materials are part of the companies' product development. However, those solutions are purely technically required and are not intended to complicate imitation. Complex solutions can therefore not be seen as an independent alternative IPP strategy at the reviewed firms, but more as part of the development and manufacturing of innovative high-quality products. In contrast, resources are an important aspect to protect an organization's IP. Although the intensity of how effective this strategy is varies among firms, the combination with strong customer relations, brand image and innovative high-quality products seems to be an effective mechanism. Within its industry every company takes a leading technological position, continuously offering highly sophisticated products and solutions. However, this technology leadership position is not seen as an effective alternative IPP strategy by the firms. Even brand image is for most companies not a method to safeguard its innovations. In general, it seems that the combination of protection strategies both legal and alternative is the best way to safeguard inventions for the four analyzed companies.

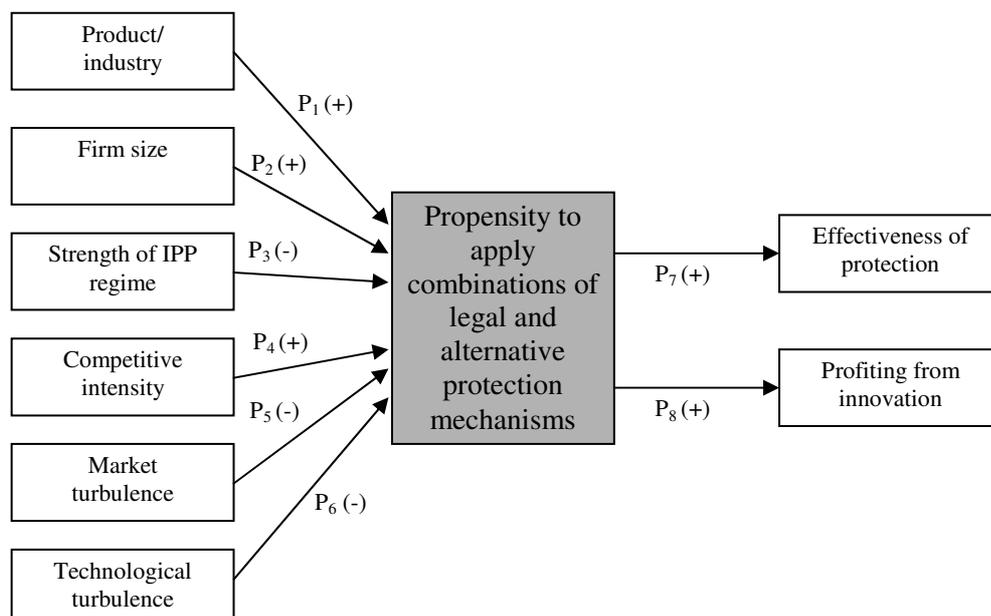
Conceptual framework

The conceptual framework developed in this section is based on the literature review presented in the beginning and the results of the exploratory case study approach. The framework focuses on the antecedents and consequences of specific combinations of legal and alternative IPP mechanisms. The case studies have shown that all companies apply alternative IPP strategies in China. However, the applied strategies varied among firms and were always combined with legal and other alternative IPP strategies. No company applied one alternative strategy solely. Some alternative strategies were not an option for the four companies, while others seemed to be more appropriate strategies to protect IP. In this study eight propositions - six antecedents (P₁ to P₆) and two consequences (P₇ and P₈) - are derived from the literature and the exploratory study that impact the propensity to apply legal and alternative protection mechanisms. The effectiveness of patents is strongly industry specific (Ernst and Omland 2003, Levin et al. 1987). Especially in pharmaceutical and chemical industries patents are an effective means of protection (Thumm 2001) while being less effective in other industries such as software or financial services. Closely related to industry specifics are product characteristics. Fast moving goods like fashion can hardly be effectively protected by patents due to the duration of the patent application process. In contrast to that patent portfolios can be an effective means of protection for products with long living technological standards (Bekkers et al. 2002). Central to both is the question, how easy products can be imitated. *Proposition 1 (P₁): The easier a product can be imitated the more likely is a high propensity to apply combinations of legal and alternative protection mechanisms.* Besides industry and product specific aspects firm size also impacts the propensity to apply combinations of legal

and alternative mechanisms. This aspect is closely related to the resources of a company, both in terms of financial resources and technological knowledge. Small companies are less willing to apply patent protection than large corporations (Arundel 2001). Small companies lack the resources and market power to apply such combinations. *Proposition 2 (P₂): The larger a firm, the higher is the propensity to apply combinations of legal and alternative protection mechanisms.* The strength of the IPP regime has the strongest influence on corporate propensity to apply legal and alternative protection mechanisms together. The number of patent applications varies heavily among countries. Especially countries with strong IPP regimes like the US, the EU or Japan show a high patent propensity (Gassmann and Bader 2007). In contrast to that emerging countries with weak IPP regimes require companies to apply combined strategies. *Proposition 3 (P₃) describes the positive influence of the weakness of an IPP regime on a company's propensity to apply combinations of legal and alternative protection strategies. Legal protection solely does not provide sufficient protection. Proposition 3 (P₃): The weaker an IPP regime, the more likely it is that companies apply combinations of legal and alternative protection mechanisms to safeguard their innovations.* The competitive intensity also impacts a company's propensity to apply legal and alternative IPP mechanisms. There is a positive correlation between competitive intensity and the propensity to apply combinations. Companies in competitive markets show a higher motivation to safeguard their innovation to maintain their competitive position and finally their competitive advantage. *Proposition 4 (P₄): The higher the competition in a market the more likely it is that companies do not rely solely on legal protection mechanisms but apply combinations of legal and alternative protection mechanisms more often.* Environmental turbulences are also of great importance for corporate protection behaviour (Gerpott 1999). Especially in markets with strong technological turbulences companies are less likely to apply combinations of legal and alternative protection mechanisms. Technological turbulences simply describe the rate of technological change (Jaworski and Kohli 1993). *Proposition 5 (P₅): When technological turbulences are high, companies are unable to profit from innovations for a longer period of time, which reduces their propensity to apply combinations of legal and alternative strategies. They rather do not use protection mechanisms.* Besides technological turbulences also market turbulences can arise and influence demand (Jaworski and Kohli 1993). Market turbulences can reduce market demand and have therefore a negative influence on the propensity to protect innovations. Firms are only interested in safeguarding innovations that are successful in the market. *Proposition 6 (P₆): The higher the market turbulences, the lower the propensity to apply combinations of legal and alternative protection mechanisms in combination.* The propensity to apply combinations of legal and alternative protection mechanisms has also consequences regarding corporate performance. *Proposition 7 (P₇): The combination of legal and alternative protection mechanisms impacts positively the possibility of a company to profit from innovation. Companies that apply combinations of mechanisms are expected to profit to a greater extent from innovations than companies that rely solely on one protection mechanism. Proposition 8 (P₈): Also the effectiveness of protection is influenced positively by the propensity to apply legal and alternative protection mechanisms in combination. Combinations of legal and alternative mechanisms increase the effectiveness of protection especially in emerging countries like China stronger than one strategy solely.* Although academic literature has discussed that combining various IPP strategies could help innovators to benefit from inventions (Burr et al. 2007), no further research was undertaken to provide a clearer picture. Finally both consequences, effectiveness of protection and profiting from innovation, impact corporate performance.

Conclusion

This paper showed that IPP plays an important role for companies producing and/or marketing products in China. Without protection the firms' innovations and technologies would be easily imitated and counterfeiting competitors would produce innovative products without bearing the costs of inventing and developing them. This would thwart innovators competitive position and success. German manufacturing companies view patents among legal protection mechanisms as most effective. This is in line with existing academic literature that stated that "patents are, however, perceived as more effective than other legal IP mechanisms" (Hanel 2006, p. 900). The companies apply for patent protection in China despite challenges related to IP. However, focusing on legal protection strategies only is insufficient if companies aim at effectively protecting IP in China. This is also consistent with the literature reviewed in this paper. Especially the research of Cohen et al. (2000) support the view that alternative strategies are highly important to safeguard innovations, especially in manufacturing industries and in countries with weak IP regimes. The combination of patents with alternative IPP strategies provides an even more effective protection in China than legal or alternative strategies solely. The use of one single legal or alternative protection strategy does not provide a sufficient level of protection. Although combining various IPP strategies was discussed in academia (Burr et al. 2007), no further investigation of the antecedents of specific combinations was undertaken. This study aims to provide a starting point for further research and is part of a larger research project on the combination of legal and alternative IPP strategies in transition economies such as China. In the research project a quantitative evaluation will be carried out based on the findings of this study, the research propositions and the conceptual framework. The evaluation will provide quantitative data on the antecedents and consequences of specific combinations of legal and alternative IPP strategies. The propositions (P₁ to P₈) developed in this study shed some light on the antecedents and consequences of companies' propensity to apply combinations of legal and alternative protection mechanisms. Some limitations to this paper should be noted. The sample size of the empirical part is relatively small due to the exploratory nature and qualitative approach of the study. Quantitative research could close this gap. Another limiting factor is that the system of IPRs includes a variety of legal protection mechanisms. This paper focuses on patents, while other legal IPP strategies like utility models, designs, trademarks and copyrights are not covered.



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