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FOSTERING THE INNOVATION POTENTIAL OF SMEs IN THE
GLOBALIZATION ERA: THE ROLE OF PATENTS

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“All businesses can benefit from patent protection,
but small businesses can't survive without it”

1. The most lasting memories I have of the power of the patent system comes from work I have done for small, start-up companies. For one client in the medical instruments field, I drafted a patent application and filed it in the U.S. Patent and Trademark Office (USPTO). I visited the USPTO with the inventor to interview the examiner to resolve some issues related to the patentability of some of the claims. Following that interview, the application was deemed allowable by the examiner. On the strength of that very good news, my client was able to get a new round of funding from their investors which enabled my client to continue with product development and clinical trials.
2. I also performed patent work for another client in the medical device field which, on the basis of its intellectual property rights (and its very talented technical and business team) was able to secure about \$10 million in an initial public offering of stock.
3. The Wall Street Journal¹ reported the case of entrepreneur Herbert King from King Safety Products in St. Louis, Missouri. His idea was to isolate connectors used in electrical wiring with silicone to waterproof them. He observed a significant decline in sales which was traced to a competitor selling copies of his invention. Mr. King was successful in using his patent protection to keep his competitor off of the market. Moreover, he attributed his success to the availability of legal expense insurance, which I will discuss later.
4. These are just anecdotes. We are being called upon here today to look at a much broader phenomenon – how to foster innovation in small and medium-sized enterprises (SMEs) through the use of the patent system. For my part, I would like to examine the following areas:
 - Globalization and the Role of the Patent System for SMEs
 - The Acquisition of Patent Rights
 - Exploitation of Patent Rights – Litigation and Financing

Globalization and the role of the patent system for SMEs

5. There has been an outpouring of scientific, artistic, and technological innovation. It is not innovation limited to large companies in large countries – it is truly a global phenomenon. That said, there is a certain danger of advances in commerce and technology getting ahead of our ability to understand their effects. There is danger when the advances appear to benefit only the few and the mighty. Along with remarkable growth and prosperity, globalization has caused dislocation, alienation, and a confusion of values that now afflicts our societies. The field of intellectual property is not immune from the anxiety that globalization has generated. The nature of this problem, in the context of a discussion on intellectual property and human rights, was well stated as follows:
6. The problem we face in the present time is that the institution of intellectual property has globalized without some set of shared understanding concerning the role that that

¹ Wall Street Journal, Monday, November 25, 1996.

institution is to play in the employment, health, education and culture of citizens around the world.²

7. Just as in the case of the business world at large, SMEs are anxious about change and dislocation. Our job is to identify the source of that anxiety and find ways to address it. Concerns about globalization of the patent system expressed by SMEs typically center on the concern that the patent system is a bat used by large corporations to beat their smaller and more innovative competitors into submission. A recent book – *Rembrants in the Attic* – dispels this notion, stating that:

8. The proportion of patent recipients who are first-time patentees (small start-up firms and independent inventors for the most part) has actually been rising dramatically for more than two decades now. In 1972, barely 5 percent of patents went to start-ups and other first-time patentees. By 1992, the number had skyrocketed to 23 percent of patent recipients. In addition, research shows that although small firms spend only 3 percent of the amount that large corporations devote to research and development (R&D), they produce 15 percent of all patented innovations. It is no surprise that this dramatic surge in patenting by small companies corresponds precisely with the birth and development of the venture capital industry and the entrepreneurial high-tech sector of Silicon Valley.³

9. In the United States Patent and Trademark Office (USPTO), a distinction is made between small and large entities. This is because small entities – as well as independent inventors and nonprofit organizations – are entitled to a 50% reduction in many fees in the U.S. patent and trademark office. The most recent figures from the USPTO show a clear continuation of those discussed above in *Rembrants in the Attic*. By 2000, the share of all USPTO patent application filings by small entities was 30.49% - nearly one-third of all filings. Of that, 21.61% were domestic applicants and 8.88% were foreign. That second figure is most interesting - nearly 10% of all patent applications filed last year in the USPTO were by foreign small entities – a total of 27,689 foreign SMEs.

10. Recent research bears out this apparent trend that “the increase in patenting appears to be uniformly distributed [among both large firms and small start-ups], with the relative share of patents by new and small patentees actually increasing more dramatically than in the past.”⁴

Acquisition of patent rights

11. Why is this happening? Why do companies seek patent protection? Are the reasons different for SMEs, versus their larger counterparts? I believe that the reasons SMEs seek patent protection are no different than their larger counterparts. First (with a few notable exceptions), patent protection is not the goal of a company's research and development efforts. First and foremost, companies want to produce a product or a service. They want to be sure that once the product or service is on the market, customers purchase it, a profit is

² Drahos, Peter, *The Universality of Intellectual Property Rights: Origins and Development*, Intellectual Property and Human Rights, p. 33, WIPO Publication No.762 (1999).

³ Rivette, K. and Kline, D., *Rembrants in the Attic*, pp. 18-19, Harvard Business School Press (2000).

⁴ Samuel Kortum and Joshua Lerner, “Stronger Protection or Technological Revolution: What’s Behind the Recent Surge in Patenting?”, working paper 98-012, Harvard Business School, Boston, Mass., 1997.

made and they can continue in business. Patents can facilitate this in two principal ways. First, companies may choose to obtain patents not for the purpose of giving them an exclusive position – but as a means to bargain with competitors or third parties to continue with their line or business or branch off into other areas. Second, patents can serve to solidify a company's competitive advantage. It does this by giving them exclusivity in exactly that area where their competitive advantage lies. For example, Dell Computer, an American company that makes computers to order, has obtained a patent portfolio covering the methods they developed that given them an edge over their competitors.

12. In securing rights, SMEs – like their larger company counterparts – confront the first hurdle: the cost of filing for and obtaining patent protection. In filing for patent protection an application must be drafted and filed in not only the SMEs home country – but in every country or region in which protection is desired. In the United States of America, these costs can be prohibitive. As indicated above, many of the fees in the USPTO have been reduced by half for small entities – independent inventors, small business concerns, and nonprofit organizations. For example, the basic fee for filing each application for an original patent is \$355 instead of \$710 for “large entities.” We all know, of course, that the filing fee is often the smallest part of seeking patent protection. In order for an independent inventor or a small business concern to file an application, one must be drafted. Given the complexity of the work and the dire consequences during enforcement of a patent if it is done wrong, the drafting is often done by an attorney or agent. In the United States, attorneys or agents may charge from \$150 to \$400 per hour, or more, for drafting patent applications. This could result in a patent application costing \$2,000 for a simple mechanical case to \$20,000 or more for complex cases – in particular those involving biotechnology or software-related inventions. These costs can be reduced if the client – including SMEs – produces good descriptions of the invention and works well and closely with the patent attorney or agent in drafting and prosecuting the patent application. Moreover, lawyers and law firms may offer alternative methods of compensation for their services – in the form of deferred payment or compensation in the form of an equity interest in a company.

13. These costs are, of course, multiplied when a patent applicant seeks protection in a number of countries or regions. Not only must the relevant filing fees be paid, but also the fees of local attorneys or agents for prosecuting the application before that national or regional authority. Moreover, the cost of obtaining multiple translations can be crippling. These costs will never be seriously dealt with until such time as significant substantive harmonization of patent systems is achieved. This work is currently underway in WIPO under the auspices of the Standing Committee on Patents. Substantive harmonization of patent systems worldwide will allow national and regional patent offices to accept the results of searches and examinations conducted in other offices.

Exploitation of patent rights – litigation and financing

14. Litigation of patent rights is not only for the large against the small. A true “David and Goliath” example is that of Fonar Corporation taking on the General Electric Company in 1997. The case was one of infringement of Fonar's patent on MRI (magnetic resonance imaging) technologies used to detect cancers and other diseases in the human body. General Electric was forced to pay \$128.7 million to Fonar – an amount equal to 10 times Fonar's annual revenue at the time. I believe, however, that the Fonar case is more the exception than the rule.

15. Studies show that SMEs perform less research and development than do large firms and patent fewer inventions per employee than large firms.⁵ Studies also show that capital constraints on SMEs play a significant role in the difference in use of the patent system due to both the financial and administrative costs connected with patent applications, as well as to the potential and actual costs⁶ of litigation to enforce rights.⁷ Other studies find that knowledge-based firms that become involved in a patent law case experience a significant fall in their market value – a phenomenon most significant for smaller firms.⁸ This differential result for SMEs may be because investors do not believe that SMEs can successfully handle the costs of litigation.⁹ Patent law cases are hence perceived to be very expense-laden for smaller firms and possibly damaging to their market value. As a consequence, studies show that “[large] corporate owners are much more likely to become engaged in a patent suit than individual owners.”¹⁰

16. I am not advocating encouraging SMEs to engage in patent litigation for its own sake. Rather, I suggest that SMEs failure to enforce their patent rights at the same rate as their large company counterparts means that they are not fully utilizing the system. Such a failure means that the R&D-enhancing nature of the patent system is not being fully realized by SMEs. If successful in reducing the cost of litigation, it is logical to presume that patenting activity among SMEs will increase. One can envision the following logical path if those costs can be reduced:

- (i) litigation costs are reduced,
- (ii) more patents will be applied for,
- (iii) patents will be renewed for longer periods of time, and
- (iv) the value of a given patent portfolio will increase (yielding a greater implicit subsidy to research and development).

17. There are several ways in which litigation costs may be reduced for SMEs. In the United States it is possible for a lawyer or law firm to elect to take a case on a “contingency basis.” That is, the lawyer or law firm will be paid contingent on the outcome of the litigation. Typically, the fee in a contingency case is taken as a percentage of the damages awarded in the case. Such an arrangement may be attractive for a lawyer or a law firm where

⁵ Economic Consequences of Legal Expense Insurance for Patents, Danish Ministry of Trade and Industry, p. 7-8 (2000) (unofficial report in possession of author, hereinafter “Danish Report”).

⁶ Litigation costs should also be taken to include the internal costs of administering litigation. SMEs bear disproportionate administrative expenses for patent litigation due to the higher percentage of time that technical and management personnel have to spend on litigation versus their large company counterparts.

⁷ Small high-technology firms in the United States say that problems with enforcing patents discourage them from seeking patent protection. See U.S. Small Business Administration, 1999. (www.sba.gov/advo/research). Litigation in the United States of America, through trial, can be very expensive. Litigation is a time-consuming process and with legal fees ranging from \$150 to \$400/per hour, the cost of patent litigation through trial can easily exceed \$1 million.

⁸ Danish Report

⁹ Danish Report

¹⁰ Lanjouw, J. and Schankerman, M., Characteristics of Patent Litigation: a Window on Competition, p. 20 (2000) (manuscript in the possession of author) (“[T]here is evidence that corporations have both lower settlement costs and strategic incentives to litigate, and that the latter effect dominates for domestic corporate patentees in the United States.”)

money damages are the remedy sought. It is not attractive, however, where the remedy sought is an injunction or where the client is defending against a claim of patent infringement. Moreover, such an arrangement is not possible where the laws or regulations governing the legal profession prohibit them.

18. Another way to reduce litigation expenses is through insurance. In the United States – and to a lesser extent other countries – insurance is available for patent holders who wish to assert their rights and those who wish to defend against patent litigation. Even in the United States, patent-related insurance remains limited and is relatively expensive. There are two types of patent infringement policies – defensive and offensive.

19. A “defensive” type policy is one issued to pay the costs connected with defending against a charge of patent infringement. Those costs may include both the costs of conducting the litigation and any damages awarded. Premiums for defensive patent infringement policies typically run between \$20,000 to \$50,000 per year for \$1 million in coverage, with deductibles (or co-payments) ranging from 15% to 25%. Most policies require a favorable opinion by outside counsel before payment in a particular action will be authorized.

20. “Offensive” patent infringement insurance is offered to pay the expenses of asserting a patent against another. The most common policies cover 75% of enforcement costs up to a fixed amount, with \$500,000 being fairly standard coverage. Annual premiums run between \$3,000 to \$4,000 for \$500,000 in coverage. Before a policy will issue, an opinion letter from a qualified intellectual property attorney on the validity of the patents subject to the insurance will be required. Moreover, an insurer typically requires detailed information about prior patent enforcement actions. Offensive patent infringement insurance gives the patent holder the financial power to assert patents against infringers. Indeed, as in the case of Mr. King cited at the beginning of this paper, offensive patent insurance may be critical.

21. As you can see from the above-cited figures, patent-related insurance can be expensive. Part of the reason for the expense is a lack of information as to the risk factors involved in patent litigation.¹¹ These risk factors include the technology covered by the patent, the quality of the drafting of the application, and the quality of the examination. One service to SMEs would be to undertake additional work to identify and understand these risk factors better. Having a better understanding of risk factors will help insurers to more accurately forecast losses and, presumably, bring down insurance rates.

22. The benefits of patent protection go beyond being able to assert rights against others. Increasingly, banks and venture capital firms are looking at intellectual property as an important element in making a decision on whether to invest in a company or not. Certainly this is particularly true when the company is technology based – the value of which is inextricably connected to the creativity of its people. Indeed, I gave the example above of a company in the medical instruments field that was able to attract funding through an initial public offering of shares.

¹¹ Id., p. 5 (“The market for intellectual property insurance could be made more efficient if insurance companies were better able to identify the risk associated with different “profiles” of patents and set prices accordingly.”)

Conclusion

23. Innovative SMEs need the patent system to survive. Rather than patents being viewed as a club wielded by large corporations to the disadvantage of the small – patents should be viewed as a strategic tool for large and small alike. There are problems to be overcome before the patent system will be of greater use to SMEs. As discussed in this paper, capital constraints on SMEs play a significant role in the difference in usage of the patent system in comparison to their larger counterparts. This is due to both the financial and administrative costs connected with patent applications, as well as to the potential actual and administrative costs of litigation to enforce rights. The paper has suggested some ways in which these costs can be reduced – through the reduction of the costs of seeking patent rights globally and enforcing those rights.

24. We cannot, however, let these problems overshadow the reality that use of the patent system by all – including SMEs – is increasing dramatically. This reflects the reality that domestic economies and world trade depend increasingly on the value of the knowledge component of goods and services. This is no less true for SMEs as for larger companies. It is the patent system that captures and stimulates that value. If we want to continue to encourage SMEs to undertake risky research and development, to encourage them to add “knowledge” to their goods and services, we must make the patent system more efficient. We must work to make the patent system work for SMEs, rather than have it perceived as a barrier or hindrance to their activities.

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