TIT Symposium
IP Management Strategies
Tokyo
December 2, 2003

INTELLECTUAL PROPERTY MANAGEMENT STRATEGIES IN U.S. CORPORATIONS

I. Introduction

This is a "golden age" for Intellectual Property Rights (IPRs). Bill Gates speaks of a new "Gold Rush." More than ever companies are built around patented technology. "Innovate or perish" is the motto. Patent filings and issuances are skyrocketing, so much so that there is talk of a patent "revolution," "explosion," "frenzy". In 2002 the USPTO issued almost 200,000 patents. Trademarks experience a similar boom.

The courts are pro-IPRs as is legislation; even the Antitrust Division of the U.S. Justice Department is pro-IPRs. In fact, courts read the riot act to infringers. Billion dollar damages have been awarded. Treble damages, once rare, are now the order of the day. Injunctions are normal and not even stayed during appeals. Thus, patents now are more enforceable and it no longer pays to infringe as in the 60's and 70's when, in the unlikely event the patent in suit was upheld, only reasonably-royalty damages were assessed.

"Everything under the sun made by man" is patentable according to our Supreme Court. As of 1998, formerly unpatentable business methods and computer programs (algorithms) are now also patentable. General Electric filed over 400 patent applications on business methods in 2000. Banks are establishing patent departments.

Royalties obtained for licensing IPRs have exceeded the billion dollar mark for companies such as TI, IBM ($1.8 billion) and over $100 billion for all U.S. industries. Hence, IPRs are most valuable corporate assets or crown jewels.

And universities, not to be left out, have jumped on the bandwagon and by now are living in a "golden age" of their own for technology transfer.

According to the most recent Annual Survey of the Association of University Technology Managers (AUTM), universities reported for 2001 receiving 13,569 invention disclosures, filing 6,812 new U.S. patent applications and obtaining 3,721 U.S. patents.

Furthermore, 4,058 new licenses and options were executed and 22,937 licenses and options were active in 2001. Product sales were reported from 22% of these active agreements and 9,707 licenses and options yielded income, amounting to $1.071 billion. Ninety-five institutions indicated that no fewer than 358 new products were commercialized under license agreements with corporate partners and since 1998 a total of 1,507 new products were introduced to the market place by 164 universities. Examples of significant licenses are: Gene Splicing — Cohen-Boyer (Stanford), Cisplatin

(Michigan State), Gatorade (University of Florida), Synthetic Vitamin D and Warfarin (Wisconsin), Synthetic Penicillin and Magnetic Core Memory (MIT), etc.

Moreover, at least 494 new companies were founded in 2001. Of the 3,870 new companies created since 1980, 2,514 were still in business as of the end of 2001. Also, universities obtained an equity interest in 70% of their startups in 2001.

II. 2003 IPO Survey on Strategic IP Management

In a program on "Managing Corporate IP Today" of the Intellectual Property Owners Association (IPO) in Washington on November 10, 2003, Professors Iain Cockburn of Boston University and Rebecca Henderson of MIT unveiled the findings from a survey on "Strategic Management in America's Corporations," sponsored by IPO.

It was astonishing to the presenters that the survey results were "not at all what one might expect" and that common perceptions about strategic IP management were "based on anecdotes."

On Question 1 — What is the role of the IP function within corporations today? — their overall conclusions were:

> We find only limited evidence for extensive integration of IP management with other aspects of the organization, and significant diversity in the processes and structures used to develop and implement IP policy. Our interpretation of these results is that in nearly every company in the survey there is a movement towards tighter integration of IP with the business, but that this integration is very much a "work in progress."

On Question 2 — Do companies today really react strategically in obtaining and exploiting IP? — their overall conclusions were:

> IP is viewed with some ambivalence in terms of overall competitive strategy. Companies report that strong and actively defended IP positions are connected with the ability to get superior financial returns from investment in technology, yet in the majority of cases this recognition of the strategic value of IP does not carry through into a reported willingness to use IP forcefully or proactively to establish market position. For many companies patents may be most valuable as a defensive measure. And while licensing appears to be an important activity for many companies, it is certainly far from being a dominant why of realizing value from IP, or even one that has (as yet) been fully exploited.

On Question 3 — What is the significance of "freedom to operate" to corporate practice? — they found that "maintaining freedom to operate in core technologies and businesses" is of utmost importance.

More detailed findings are given in the Appendix.

How are these survey results to be interpreted? Nirvana of a perfect IP strategy in terms of the last of the five levels of value hierarchy, described in "Edison in the Boardroom," has not yet been reached or too many corporations are still anchored in an old outdated mindset or there is resistance to the hype and hoopla of the Big Five accounting firms (and their "accounting hocus-pocus"), web-based service providers and consultants about IP value extraction and monetization.

III. Other Notable Developments

Speaking of breaking news and latest developments anent the topic at hand, it is noteworthy that a "National Innovation Initiative" is being created by the Council on Competitiveness. It will be led by Samuel Palmisano, IBM's Chairman, President and CEO, and G. Wayne Clough, President of the Georgia Institute of Technology. Within a year this initiative is to produce a strategic U.S. policy agenda and a framework for innovation leadership, with recommendations for generating innovation and offering the most fertile, attractive environment for innovation.

Another relevant and recent event is the issuance of a report by the Federal Trade Commission (FTC) under the title "To Promote Innovation: The Proper Balance of Competition and Patent Law & Policy." It is based on FTC and DOJ (Justice Department) Hearings in 2002 and contains 10 balanced recommendations for rather positive legislative and rule changes.

IV. Corporate Patent Management Process

There are three distinct stages in corporate IP management, each with its own set of special strategies. These stages are:

- Harvesting Inventions
  by extracting and processing Invention Disclosures,
- Patent solicitation
  by preparing, filing and prosecuting Patent Applications and
- Patent Exploitation
  by employing, licensing, enforcing Patents

Rationales for management strategies in these stages can be gleaned from illustrative policy statements of Caterpillar and Microsoft:

> Achieving Caterpillar's goal of providing quality products and services requires more than superior engineering skills. It also requires the protection provided by patents. Without this protection our competitors would soon duplicate our inventions, and the features that differentiate Caterpillar machines worldwide would no longer be unique. Our return on research and development would quickly be eroded, and our mission of

producing above-average returns for our stockholders would become increasingly difficult.

Caterpillar's continued growth and prosperity depend not only on our ability to protect our own inventions, but also on our ability to avoid infringing upon the patent rights of others. With courts regularly awarding damages in the millions of dollars, one case of patent infringement could have a significant impact on our ability to compete effectively in the marketplace. As Caterpillar employees, we all share the responsibility of ensuring that this doesn't happen. (Donald Fites, Chairman and CEO of Caterpillar)

…..

Our emphasis is first and foremost about the quality of innovation and then the subsequent and logical protection of that innovation. We will be investing some $6.9 billion in R&D annually. It would be foolish if we did not do everything we could to protect the output of such a large investment….This type of investment is going to generate a healthy stream of intellectual property. As with others in the IT industry, our most important IP strategy is to protect our innovations and our substantial investment in the area of R&D, through IP laws and, in some instances, to seek compensation for this investment through licensing of third parties or engaging in technology transfers with other innovators. (Marshall Phelps, VP & Deputy General Counsel for Intellectual Property of Microsoft)

V. Strategies for Harvesting Inventions

Invention Disclosures or Invention Reports, which are very important as legal documents and to start the patent process, do not automatically happen or "rain down." It takes efforts — "beating bushes" — to extract them from inventors who often are reluctant to come forward, believing that their ideas are not inventive and patentable. It helps immensely to utilize some or all of the following strategies to foster cooperations:

- Having a simple, easy Invention Disclosure system — policy, procedure and forms
- Establishing rapport with inventors — "hand-holding"
- Practicing MBW — "Management by Wandering Around" (*Harvard Business Review)*

"The best inventions come from patent people walking around R& D locations and striking up conversations with inventors." (AT&T Counsel) — "Walking the halls to get invention disclosures" is policy of the Gillette
Patent Department

- Making periodic trips to other R&D sites — busy technologists "think patents" when one visits
- Making presentations on IP topics to R&D personnel to create and foster IP awareness
- Distributing IP bulletins on IP developments to R&D personnel

- Reading R&D's technical reports regularly
- Attending R&D meetings
- Having written procedures for cooperation between R&D and IP Departments
- Having patent liaison people at R&D sites
- Having a reasonable standard employment/ invention agreement with all R& D personnel
- Reviewing the Invention Disclosures in patent committee meetings
- Conducting IP audits
- Instituting an inventor award or incentive system.

VI. Integration Strategy For IPRs

From former fragmentation by specialties, IPRs are now a "seamless web, "
due to progress in technology and commerce, per Professor Jay Dratler.

Professor Dratler was the first one to "tie all the fields of IP together."
(Intellectual Property Law: Commercial, Creative, and Industrial Property — 1991)

In 1997 the authors of "Intellectual Property in the New Technological Age" also

- avoid the fragmented coverage
- approach IP as a unified whole and
- concentrate on the interaction between different types of IPRs.

Thus we now have a unified theory in the IP world, a single field of law with subsets and significant overlap between IP fields. Several IPRs are available for the same IP or different aspects of the same IP. Not taking advantage of the overlap misses opportunities or, at worst, amounts to "malpractice." (Professor Dratler).

Even for high-tech products, trademarks and copyright protection may supplement patents, trade secrets and mask works for the product's technological content. One IPR category is normally the center of gravity and more important than others.

Other IPR categories are then supplementary but very valuable to

- cover additional subject matter
- strengthen exclusivity
- invoke additional remedies
- standup if primary IPR becomes invalid

and thus provide synergy and optimize legal protection.

Multiple forms of protection are especially important in the fields of biotechnology and computer.

The most important strategy is exploiting the overlap between patents and trade secrets.

Illustrative examples are:

General Electric's industrial diamond process technology and the Pizza Hut Decision, described below.

VII. Complementariness of Patents & Trade Secrets

Patents are but the tips of icebergs in an ocean of trade secrets. Over 90% of all new technology is covered by trade secrets and over 80% of all license and technology transfer agreements cover proprietary know-how, i.e. trade secrets, or constitute hybrid agreements relating to patents and trade secrets. As a practical matter, licenses under patents without access to associated or collateral know-how are often not good enough for commercial use of the patented technology. Bob Sherwood calls trade secrets the "work horse of technology transfer."

In this regard, let me cite the following persuasive comments:
"In many cases, particularly in chemical technology, the know-how is the most important part of a technology transfer agreement." (Homer Blair)
"Acquire not just the patents but the rights to the know-how. Access to experts and records, lab notebooks, and reports on pilot-scale operations, including data on markets and potential users of the technology are crucial." (Robert Ebish)
"Trade secrets are a component of almost every technology license…(and) can increase the value of a license up to 3 to 10 times the value of the deal if no trade secrets are involved." (Melvin Jager)
"It is common practice in industry to seek and obtain patents on that part of a technology that is amenable to patent protection, while maintaining related technological data and other information in confidence. Some regard a patent as little more than an advertisement for the sale of accompanying know-how." (Peter Rosenberg)
In technology licensing "(r)elated patent rights generally are mentioned late in the discussion and are perceived to have 'insignificant' value relative to the know-how." (Michael Ward, Honeywell VP Licensing)

Trade secrets are the first line defense: they come before patents, go with patents, and follow patents. Patents and trade secrets are not mutually exclusive but actually highly complementary and mutually reinforcing; in fact, they dovetail. Thus, it is clear that patents and trade secrets can not only coexist, but are in harmony rather than in conflict with each other. Indeed, they are inextricably intertwined, because the bulk of R&D data and results for any commercially important innovation cannot and need not be included in a patent application but deserve, and require, protection.

In the past — and even today — if trade secret maintenance was contemplated at all, e.g. for manufacturing process technology, which can be secreted unlike gadgets or machinery, which upon sale can be reverse-engineered, the question always was phrased in the alternative. E.g., titles of articles discussing the matter read "Trade Secret vs. Patent Protection", "To patent or not to patent?" "Trade Secret or Patent?" "To Patent or to Padlock?" etc.

I submit that it is not necessary and, in fact, shortsighted to choose one over the other. To me the question is not so much whether to patent or to padlock but rather what to patent and what to keep a trade secret and whether it is best to patent as well as to padlock, i.e. integrate patents and trade secrets for optimal synergistic protection of innovation.

It is true that patents and trade secrets are at polar extremes on the issue of disclosure. Information that is disclosed in a patent is no longer a trade secret. As pointed out above, however, patents and trade secrets are indeed complementary, especially under the following circumstances.

In the critical R&D stage and before any patent applications are filed and also before patents applications are published or patents issue, trade secret law particularly "dovetails" with patent law (see *Bonito Boats*). Provided an invention has been fully described so as to enable a person skilled in the art to make and use it and the best mode for carrying out the invention has been disclosed, as is requisite in a patent application, all associated or collateral know-how not divulged can and should be retained as a trade secret. But the "enablement" and "best mode" requirements apply only to the knowledge of the inventor(s) at the time of filing and only to the claimed invention. All the massive R&D data, including data pertaining to better modes developed after filing, whether or not inventive, can and should also be maintained as trade secrets, to the extent the data are not disclosed in subsequent separate applications.

The enablement and best mode requirements are actually no impediments to maintaining the mountains of related know-how developed after filing as trade secrets. Why? Because patent applications are filed early in the R&D stage to get the earliest possible filing or priority date, the specification normally describes in but a few pages only rudimentary lab experiments or prototypes, with the best mode for commercial manufacture and use remaining to be developed later. Also, patent claims tend to be narrow for distance from the prior art. Besides, as shown by case law, manufacturing process details are, even if available, not a part of the statutorily-required best mode disclosure of a patent.

And especially with respect to complex technologies consisting of many patentable inventions and volumes of associated know-how, complementary patenting and secreting is tantamount to having the best of both worlds. In this regard GE's industrial diamond process technology comes to mind as an excellent example of the synergistic integration of patents and trade secrets to secure invulnerable exclusivity. Was GE's policy to rely on trade secrets in this manner or, for that matter, Coca Cola's decision to keep their formula secret rather than to patent it, which could have been done, damnable? Clearly not.

It is now well established that dual or multiple protection for intellectual property is not only possible but essential. Such protection exploits the IP overlap and provides a fall back position. Recent decisions such as, *C& F Packing v. IBP and Pizza Hut* (Fed. Cir. 2000) and *Celeritas Technologies v. Rockwell International* (Fed. Cir. '98) demonstrate this. In the *Pizza Hut* case, for instance, Pizza Hut was made to pay $10.9 million to C&F

for misappropriation of trade secrets. After many years of research C&F had developed a process for making and freezing a precooked sausage for pizza toppings which had the characteristics of freshly cooked sausage and surpassed other precooked products in price, appearance and taste. C&F had obtained a patent on the equipment to make the sausage and also one on the process itself. It continued to improve the process after submitting its patent applications and kept its new developments as trade secrets.

Pizza Hut agreed to buy C&F's precooked sausage on the condition that C&F divulge its process to several other Pizza Hut suppliers, ostensibly to assure that backup suppliers were available to Pizza Hut. In exchange, Pizza Hut promised to purchase a large amount of precooked sausage from C&F. C&F disclosed the process to several Pizza Hut suppliers, entering into confidentiality agreements with them. Subsequently, Pizza Hut's other suppliers learned how to duplicate C&F's results and at that time Pizza Hut told C&F that it would not purchase any more sausage from it without drastic price reductions.

IBP was one of Pizza Hut's largest suppliers of meat products other than sausage. Pizza Hut furnished IBP with a specification and formulation of the sausage toppings and IBP signed a confidentiality agreement with Pizza Hut concerning this information. IBP also hired a former supervisor in C& F's sausage plant as its own production superintendent but fired this employee five months later after it had implemented its sausage making process and Pizza Hut was buying the precooked sausage from IBP.

C&F then brought suit against IBP and Pizza Hut for patent infringement and misappropriation of trade secrets and the court found, 1) on summary judgment that the patents of C& F were invalid because the inventions had been on sale more than one year before the filing date and 2) after trial that C&F possessed valuable and enforceable trade secrets, which were indeed misappropriated.

What a great example of trades secrets serving as a fall back position where the patents fail to provide any protection! Indeed a patent is a slender reed in light of the existence of three dozens of invalidity or unenforceability reasons and many other potential patent attrition factors.

Karl F. Jorda
David Rines Professor of Intellectual Property Law and
Industrial Innovation
Director, Kenneth J. Germeshausen Center for the
Law of Innovation & Entrepreneurship
Franklin Pierce Law Center
Concord, N.H., USA

KFJ/Ruh/1.20.04