Siemens
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TECHNOLOGY LICENSING TODAY

I. INTRODUCTION

A. INCREASING IMPORTANCE OF INTELLECTUAL PROPERTY RIGHTS

We are living in a "Golden Age" for intellectual property rights (IPRs). Bill Gates speaks of a new "Gold Rush." Others consider IPRs a new and different "Bull Market." Patent filings and issuances have been skyrocketing, so much so that there is talk of a patent "revolution," "explosion," and "frenzy." The U.S. Patent & Trademark Office (USPTO) is granting now almost 200,000 patents, almost three times as many as in 1980. Trademarks have experienced a similar boom. And trade secrets are said to be the "IPRs of the new millennium and can no longer be treated as a stepchild."

The American Patent System was revitalized by the creation in 1982 of the Court of Appeals for the Federal Circuit (CAFC), considerable pro-patent legislation in recent years as well as less antitrust enforcement.

"Everything under the sun made by man" is patentable according to our Supreme Court interpreting our Congress (*Chakrabarty* decision, 1980). And as of 1998 even formerly unpatentable business methods and computer programs (algorithms) are now also patentable (*State Street Bank* decision, CAFC, 1998).

More than ever companies are built around patented technology. "Innovate or perish" is the motto. In recent years, royalties obtained for licensing patents have exceeded the billion-dollar mark for companies such as TI and IBM and over $150 billion for all U.S. industries.

Courts read the riot act to infringers. Holding patents valid much more often nowadays, they award damages in the hundreds of million dollars and even exceeding a billion dollars. Preliminary injunctions and treble damages are no longer rare and permanent injunctions are no longer stayed during appeals.

Thus, we now have in the U.S. a thoroughly pro-patent climate, where patents are more enforceable and valuable and it no longer pays to infringe like before when, in the unlikely event the patent in suit was upheld, only reasonable-royalty damages were assessed.

Ronald Myrick, formerly of General Electric, put it this way: "The attraction of IP is simple; it's at the forefront of the technology that's driving the world and IP is one of the unique entities in the law where you're actually creating assets."

B. SIMILAR DEVELOPMENTS ABROAD

Similar developments and trends are afoot elsewhere on the globe. India of all places is the best example. There has been a sea change in how IP is viewed there. In the North/South debates, India had spearheaded the opposition to patents, proclaiming that technology was the "common heritage of mankind" and should therefore be made available for free. Back in 1992, when I attended a WIPO program at the University of Delhi, there were very few in attendance and I was crucified for the pro-patent views I expressed. However, a few years ago when I attended an International Conference in India on Intellectual Property Education and Training, organized by WIPO, in cooperation with the Department of Secondary & Higher Education of the Government of India and the Indian Institute of Technology, it came as a great surprise to me that they had turned decisively pro-patent and were singing a different tune.

They were saying that now that "IP is available in abundance in India," IP is being taught in "all academic schools" under government sponsorship and IP institutes are springing up all over. The Chamber of Commerce is promulgating the slogan "Patent or Perish," the phrases "IP literacy" and "IP awareness" have become buzzwords and they are trying to "bring IP from a legalistic ivory tower down to the common man." What an about-face!

C. LICENSING — A NEW BALL GAME

It will hardly come as news that we also have a new ball game in the field of technology licensing and technology transfer. Years ago there was little or none of that. All product innovation had to be home-grown technology and the NIH (not invented here) factor played a big role. And, of course, there is often an innate reluctance to license because it is more rewarding by far to have an exclusive patent position on an invention and exploit and self-commercialize it than to license it out. Also there is the concern that licensing will set up a competitor.

Westinghouse, DuPont and others until just a few years ago never licensed in nor licensed out. Ciba-Geigy didn't do so. When they were developing a product and a patent issued to a third party that had priority so that they were not going to have a patent position, they just scuttled the project. They did not even bother to inquire about the availability of a license. And licensing out and setting up a competitor — perish the thought!

Nowadays even a simple, straight-forward plain-vanilla patent, "knowhow" or trademark license is practically a thing of the past; instead, complex and sophisticated hybrid agreements, option/license agreements; joint venture, corporate partnering, co-

promotion or co-marketing arrangements; strategic alliances and consortium licensing are the order of the day.

And there are other very significant developments and trends in licensing attitudes and practices, in IP valuation and royalty setting or other *quid pro quo* choices, such as, e.g. cross licenses. And we have an entirely different antitrust climate where restrictions commonly found in license agreements are generally viewed as pro-competitive rather than anti-competitive and IP is considered property — as it should be — rather than a monopoly.

Well, this new climate, this new respect for IP, and the higher value of IP, does lead to new or greater incentives for R&D and other innovative activities because you know you can protect your IP and patent your inventions and the patents are going to stand up. The patents are going to be more valuable and we know that the patent system is a tremendous incentive to R&D and investments. Incidentally, according to the late CAFC Judge Rich, the patent system provides four incentives, namely, to invent, to disclose, to "invent around" and to invest and it is the incentive to invest, which is the most important one.

Conventional wisdom has it that the ratio of requisite investment in the three phases of product innovation from laboratory to market place, namely, invention, development and commercialization is supposed to be of the order of 1:100:1000, and this would support the thesis of investment incentive.

And of course, licensing, technology transfers and investments are ever so much easier to carry out and accomplish via patents and other IPRs as vehicles or bases. Indeed, licensing is a very effective and civilized way of forming business relationships and transferring technology and by far preferable to infringement litigation, which is very much on the increase.

This new climate has also lead to higher quid pro quos and royalties. Clearly the stakes have gone up. In fact, there has been a lot of hype and hoopla about value extraction and monetization of IPRs.

II. PATENT LICENSING — DOS AND DON'TS

A. ROYALTY SETTING

Misconceptions about royalties abound, e.g.,

- licensors can charge what the traffic will bear,
- licensors can recoup their R&D expenses,
- the cost of the development of a technology is a big factor,
- there are royalty standards within each industry to go by, etc.

None of this is necessarily true. Indeed, there is a limit to what a licensor can charge and very often it is the licensee's economics, not the licensor's that controls the royalty determination. First of all, when it comes to royalties less is more and greed rarely if ever pays off. At Ciba-Geigy several agreements turned sour over the years

because the royalties were too high, the profitability was not there and the deals could not be sustained in the end. On several other occasions, agreements had to be renegotiated for lower royalties for the same reasons.

Actually, the cost to licensor of the development of the technology is not a factor. "The research and development costs of developing the TI (Technical Information) are sunken expenses expended by the licensor whether or not the TI is licensed and, therefore, should not be considered by the licensor in arriving at a suitable royalty." (Martin Landis, "Pricing and Presenting Licensed Technology," The Journal of Proprietary Rights, p. 18, 20, Aug. 1991.) The public's interest in buying a product and, thus, "the value of a technology in the marketplace is essentially unrelated to the cost of developing it except insofar as it aids estimation of the cost in time and money of the licensee's alternative," namely, competitive development of equivalent technology. (Tom Arnold, *1988 Licensing Law Handbook*, Clark Boardman, Appendix C, p. 295, 308.)

Now what about royalty standards in industry? Are there not norms in each industry to go by? This is the common belief as there are figures often being bandied about as industry averages. In an article on "Patents for Sale: Evaluating the Value of U.S. Patent Licenses," John Romary of Finnegan, Henderson in Washington, called industry average royalty rates "folklore" and "suspect as a royalty-rate guide." (8 EIPR, 385, 389, 1995.)

He pointed out, for example, "a 5% running royalty for a non-exclusive license helps very little in evaluating an exclusive license on different but related technology, and a 1.5% running royalty on technology that can be effectively designed around is equally unavailing in pegging the value of a pioneer patent critical to the competitor."

However, Romary allows as how such averages provide additional data points, and he lists for chemicals 1-5%, electronics 1-5%, computers 3-5%, consumer products 2%, pharmaceuticals 4-15%. He also states that these figures are based on the net sales price and a non-exclusive license and — note this —that a "20 to 50 per cent premium" and "as much as a 300 per cent premium … in the pharmaceutical field" may be a reasonable average for an exclusive license.

In a licensing situation that came to my attention a while back, I came across the statement that " based on research into the matter, it can be seen that there was generally, and consistently, a ratio of on the order of (*sic*) 2 to 1 in the royalty rates, as between exclusive and non-exclusive licenses, regardless of the specific subject matter."

While it is generally realized that the exclusivity vel non is an important factor in royalty determination, quantification regarding the magnitude of this factor is harder to come by.

Anent factors to take into consideration in royalty setting, Tom Arnold tabulates and discusses "100 Factors Involved in Pricing the Technology License" in Appendix C of the above-referenced *1988 Licensing Law Handbook*. Hence, it is a handy checklist, even though not all factors play a role in a given technology license deal. He groups them under the rubrics of intrinsic quality, protection and threats of protection, values brought to the table by the licensee, IP portfolios and market, competitive, risk, legal and government regulatory considerations, and it is clear from his discussion that among the most important and weighty factors are: a) the stage of development of the subject technology (embryonic and untested v. tested and commercial), b) the strength of the IP rights (solid v. weak, easy to design around vel non), and c) the degree of exclusivity (exclusive v. non-exclusive), discussed above.

And the fact that many other operative clauses in a technology license have economic weight, as for example, grantback and grant-forward clauses, payment structures and schedules, MFL clauses, representations and warranties, etc., needs to be kept in mind, so that royalty setting is not the first task in licensing negotiations but the last one, one to be tackled after all the other have fallen into place.

B. ROYALTY-FREE LICENSES

In the lead article of the June 2003 issue of *les Nouvelles* (v. XXXVIII, no. 2, p.53), I took issue with what I called the IP value extraction and monetization craze for ignoring the fundamentals of patent and licensing law and practice by hyping licensing-out and selling patents as the best way to extract value, as if patents were *Rembrandts in the Attic* by definition and licensing-out was the only game in town. I took issue in particular with the hype and hoopla about "producing patents on demand" in "patent factories" and valuing patents "in a matter of minutes" in the millions of dollars and I deplored the disregard for the paramount value of patents for protection of, and exclusivity for, a company's products and processes, and of the importance of trade secrets in conjunction with patents and of the virtue of royalty-free licensing, because these things are difficult to monetize.

Indeed, there is significant royalty-free (yes, free!) licensing, which makes eminent business sense but would hardly be endorsed by the IP value extraction and monetization gurus. Based on my experience there is indeed great virtue in royalty-free licensing in terms of good will and good relationships, bringing about increased sales of goods and supplies and hence larger market share.

At one point in my career at Ciba-Geigy I prepared over 20 royalty-free non-exclusive licenses to carpet manufacturers under patents I had obtained in the U.S. and Canada on an important improvement in tufting carpets. This improved method had been invented by the director of the service department of the dyestuff division at our Canadian subsidiary. Ciba-Geigy was not in the business of manufacturing and selling carpets but dyestuffs. Inasmuch as Ciba-Geigy had no intention to practice this tufting method itself, licensing was the best alternative. But rather than doing it for royalties, we did it for free with the expectation that this would induce grateful carpet manufacturers to buy or buy more dyestuffs from Ciba-Geigy. Did this

happen? I don't know for sure. But it stands to reason that it did, because these carpet manufacturers were pleased to be licensed for free to practice an important new technique for tufting carpets.

A more recent example (according to *IP Law & Business*, March 2004, p.12) is the royalty-free licensing by Iridian Technologies of iris-scan patents. Iridian owns a broad patent and another two dozen patents on iris-recognition software and related technology, which is able to accurately identify people at airport security or automated teller machines. This technology may also be useful for passports, visas, and other travel documents. They licensed these patents also on a royalty-free basis, like Ciba-Geigy, after deciding that the "upside of software sales was greater than the downside of collecting royalties." Subsequently, they won contracts with Schiphol Airport and the UAE government and expected other big government contracts. Indeed, the above *IP Law & Business* article concluded that Iridian Technologies will "end up getting a lot of business" and *US Today* of August 15, 2005 (p.B1) confirms this with the cover story headline "Biometric IDS could see massive growth" and specifically referenced Iridian Technologies in the context of TSA's Registered Traveler program. Thus, this case also shows that giving away valuable patent rights for free can be a savvy business move.

Due to the rationale for, and virtue of, royalty-free licensing for creating good will and establishing or cementing good relationships and market share it stands to reason that such licensing practice is taking place in industry in considerable volumes. I believe this to be true, even though giving away valuable patent rights for free may not be viewed as a savvy business move and, in fact, may be anathema to IP monetization gurus.

Interestingly, at a recent TWST Intellectual Property Conference held in San Francisco on July 28-29, 2005 on "Maximizing Returns on Your Intellectual Property Portfolio, "one of the recited benefits of attending was the following: "Understand the propriety of giving away IP to develop relationships."

On the subject of royalty-free licensing, it is interesting to note that in the field of licensing law and practice there are other instances of, or occasions for, granting free licenses.

Per my experience, interference settlement agreements usually contain royalty-free license clauses for the benefit of the party on the loosing end of the priority issue.

Also grant-back/grant-forward provisions in license agreements often are royalty-free.

Releases of patent rights to employees, where a corporation or university has no interest in the employee's invention, always come with royalty-free rights to the corporation or university for their own use.

In order to avoid a *Brulotte* problem, hybrid patent/trade secret licenses can be structured so that the patent rights go royalty free, with royalty then based on the trade secrets, provided the trade secrets outweigh the patent rights in importance in the deal.

According to a *les Nouvelles* article (Sept. 2004, p.121) corporations owning patents that would be infringed by university research, "may be willing to grant the university a limited royalty-free license in order to generate good will."

Lastly, in standard setting situations, assurances by patentees required by standard setting organizations (SSOs) must include disclaimers that the patentee will not enforce the patent and will license it on either royalty-free (RF) or reasonable and non-discriminatory (RAND) terms, with the former being preferred or required by some SSOs, e.g. W3C (World Wide Web Consortium).

In light of the above, the conclusion is inescapable that royalty-free licensing of valuable IP rights in preference to royalty-bearing licenses is conducive to creating good will and establishing or cementing good relationships, with attendant increases in market share.

C. CONTRACT DRAFTING

1. The Inescapable Uncertainly Principle of Contract Drafting

The definition section is, after the grant clause, the second most important section in any license agreement. Why? Because of the inescapable uncertainty principle of contract drafting, which is a two-pronged principle, based on a semantic dilemma and on human frailty. The former is due to the existence of undefined terms, terms that are incapable of definition and the fact that few terms are universally understood to have a single meaning as, for example, "public domain," "line of business," etc. An attempt at definition may often merely substitute one uncertainty for another one. Still, stiff definitions are very important.

The second prong is based on human frailty, i.e., the imperfection of human intelligence and attentiveness. Press of business is also a contributory factor. This problem which can be mitigated more easily than the semantic dilemma, leads to three defects: a) ambiguity: imprecise boundaries, two possible meanings, different from vagueness, e.g., "residence," b) excessive vagueness, e.g., "indivisible," and c) unclear modifiers, the most common and most dangerous, e.g. "a license under patent applications other than design patent applications filed before July 1, 1995."

2. Content of the All-important Grant Clause

The grant clause is the most important clause in a license agreement. A typical basic grant clause might have the following five elements:

1) ABC Corp. grants (or agrees to grant or grants and agrees to grant) to XYZ Inc.

2) a (non) exclusive (or sole) license under certain IP Rights

3) to make, have made, use, offer to sell, sell or import Licensed Products (or to practice Licensed Methods)
4) throughout the Territory
5) for the duration of this Agreement.

Typically, however, such modifiers as "indivisible," "irrevocable" and/or "non-transferable" are inserted before "(non) exclusive license" in boilerplate fashion. This is inadvisable. The term "indivisible", for instance, will take away the right "to have made," which normally is implied and included in the term "to make," when it is not specifically recited. Ambiguity may result. It might also rule out the right for subsidiaries and affiliates to operate under the license. Many a dispute and lawsuit were caused by this phraseology. Nor does the term "irrevocable" belong into the grant clause. Conditions, if any, of revocability should be recited in the termination clause. The "non-transferable" language, if found in the grant clause, would not grant any right to assign or sublicense and would be ambiguous if assignment or sublicensing rights are recited. While the phraseology "nontransferable, except for the assignability provisions of Article X hereof" would cure this defect, it still should best be left out.

As regards the bundle of rights to be granted (element 3), it is preferable to track the statutory language. Other terms that are often added, e.g. "lease," "dispose of," etc. may lead to a restrictive reading because of the general rule that inclusion of one means the exclusion of the other.

Anent the territory of the license, the right to sell in foreign countries goes with a grant of a U.S. license, as a general rule, except in countries where there are foreign counterparts. But in light of frequent litigation, this issue is still quite unsettled. In *Mid-West Conveyor Co. v. Jervis Webb Co*. (39 USPQ2d 1754 (10th Cir. 1996) the following provision was construed as a grant of a world-wide license:

> Webb hereby grants to Mid-West and Mid-West hereby accepts a non-exclusive non-transferable license to manufacture, use and sell, or have manufactured for use and sale by Mid-West, power and free conveyor systems incorporating any invention disclosed and claimed in the licensed patent (U.S. Patent No. 4,616,570) and such conveyor system being hereinafter referred to as a licensed systems.

Even the following clause was hotly contested in this regard in another case in which I was an expert witness: "Licensor hereby grants and agrees to grant to Licensee a sole license under Licensed United States Patent Rights to make, have made, use, and sell Licensed Products throughout the U.S. during the term of this agreement."

However, in *Elliott Co. v. Lagonda Mfg. Co*. (205 F.152 (W.D.Pa. Apr. 30, 1913)), where defendant was licensed to manufacture, use and sell to others "for use" throughout the U.S., the court unsurprisingly held that this language limited the defendant to selling "for use" in the U.S.

3. Better Alternatives for the Common "Best Efforts" Clause

Best efforts clauses are routinely written into agreements. A "best efforts" clause to the effect that ABC "shall exercise its best efforts to exploit the Licensed Products," is useless as a device for the protection of licensor where licensee's performance is unexpectedly low or inadequate. The above clause led to litigation once, in which I served as an expert witness. It is dubious language that courts can interpret strictly or loosely as merely stating a theme rather than a course of conduct. Use of such language as "reasonable diligence consistent with the interests of the business" or "'Best Efforts' shall mean those efforts which a reasonably prudent person knowledgeable of such matters would consider desirable, necessary or commercially reasonable to further the intentions of the Parties hereunder" would be preferable. Better yet are statements of objective, quantitative criteria of performance. Best of all is a requirement for minimum royalty payments, coupled with conversion from exclusive to non-exclusive status or termination power, if specified levels of performance or annual minimums are not maintained.

Of course, a lumpsum up-front payment would obviate the problem completely. In an assignment with installment payments, reversion of all right, title and interest to assignor is, of course, the remedy of choice for below-par performance.

In the absence of a best-efforts clause, an obligation to employ best efforts has generally been implied where the only consideration for grant of a license are royalties. The courts have found it necessary to imply a covenant to employ best efforts as a matter of law when the contract would otherwise lack mutuality of obligation and be inequitable.

However, in the *Permanence Corp. v. Kennametal, Inc.* (15 USPQ2d 1550 (6th Cir. 1990)) decision, the court held that where licensee had paid a substantial lumpsum and an advance on royalties when it took out the license and again when it permissibly converted the non-exclusive license to an exclusive license, no best efforts need be implied, because licensor had protected itself against the possibility that licensee would perform poorly.

4. Protection of Licensees from Third-party Dominant Patent Risks

Not infrequently, a licensee finds the exercise of the license blocked or impeded due to the existence or issuance of a third-party patent, mostly a dominant patent, a patent on a component or subcombination, or a patent one is aware of and rules out as being infringed but later turns into a threat due to a novel interpretation of the claims or claims scope or a novel (twisted) doctrine of infringement by the patentee (as has happened in my experience). Thus, this may occur in spite of rigorous due diligence prior to the conclusion of the license.

For its protection in such a situation, licensee should negotiate a hold-harmless clause with licensor and pursuant to this clause licensor would get licensee another license, provide a non-infringing alternative or defend an infringement suit (but not open-endedly). It could also be a cost-sharing arrangement, if any royalties have to be paid by licensee to the third-party patentee or if it comes to an infringement suit. As a last resort renegotiation of the royalty provision in the first license is a possibility. We had once a 12% royalty-bearing license with Party A. When subsequently we had to pay 6% to another "dominant" patentee, we were able to renegotiate or offset the 12% royalty to 6%, so that our total royalty exposure remained at 12%.

In another case, technical people had concluded a "know-how" agreement (without the benefit of IP counsel), which was woefully inadequate for several reasons, e.g. silent on exclusivity and confidentiality obligations, and in particular on facing up to an imminent third-party patent issuance, which I was already aware of.

I, as a licensee, was then able to include a provision, which I was able to successfully assert later, that no further payments apart from the down payment would be due if the technology in question turned out to be covered by a dominant patent.

And for the benefit of Licensor, it should be pointed out that Licensor should not represent and warrant that the licensed subject matter "does not infringe any valid rights of any third party" (as was suggested in a recent issue of the *Intellectual Property Strategist)* because licensor can't foresee what licensee will do and evaluate the risk nor can licensor foresee, what submarine patents or other secret pending patents might issue. All licensor can represent and warrant is that it is not aware of any patents of others that would be infringed.

5. Trouble-free MFL Clauses

An MFL clause is a frequent bone of contention in my experience and in light of the number of lawsuits in this area. It is a very important clause in non-exclusive licenses, witness the Gould Laser Patent Case History (See F. below.). Licensees should negotiate MFL clauses to extend identical terms or to refrain from granting to subsequent licensees more generous terms, as there is no law or rule that requires licensor to do. Licensor, on the other hand, can include a so-called negative MFL clause in given situations.

A general or overly broad MFL clause, however, can be troublesome to licensor, if special circumstances arise, e.g. a license arising from a settlement or litigation. Hence, it is advisable:

- to stay away from vague phrases, such as, "other terms and conditions,"
- to include escape clauses or exceptions, e.g. settlements, and
- to give licensee the right to terminate and renegotiate the license, if a subsequent licensee has been overly favored.

Thus, it is important that an MFL provision, in order to reasonably protect licensee without excessively restricting licensor, be limited to royalty or other money terms. It is also important to provide for licensor to give prompt notice to licensee, whenever more favorable money terms are granted to a subsequent licensee and require licensee to accept such new terms within, say, 30 days.

An exemplary MFL clause can be found in the standard Patlex/Gould laser patent license. It was scrutinized by licensees but did not result in any lawsuit. It reads:

> ARTICLE XII — MOST FAVORED LICENSEE
>
> If subsequent to the Effective Date of this Agreement another manufacturer of lasers, laser systems, or Low or High Power Laser Tubes similarly situated to LICENSEE is granted a license by PATLEX which provides to said another manufacturer a combined royalty rate and royalty base materially more favorable to said another manufacturer with respect to any of the Licensed Patents than that provided herein to LICENSEE for lasers, laser systems and Low or High Power Laser tubes sold or leased in the United States, then LICENSEE may, at its option, adopt the subsequent license in its entirety, mutatis mutandis, as of the effective date of such subsequent license. PATLEX shall notify LICENSEE of any such subsequent license and provide LICENSEE an opportunity to exercise the option provided herein.

6. Additional Clauses Needing Close Attention

A typical technology license requires negotiation and drafting of several, if not many, additional explicit clauses, which are also very important and need meticulous attention. To name but a few:

•Confidentiality — crucial where trade secrets are involved but excepting situations where a) the trade secret is already in the public domain, b) enters the public domain without fault of licensee, c) is disclosed to licensee by a third-party who has a right to make such disclosure or d) was already independently developed by licensee; putting a limit of years on licensee's confidentiality obligation is a must.

•Improvements — whether to be "granted back" by licensee to licensor or to be "granted forward" by licensor to licensee where they continue their R&D, a narrow, precise definition, preferably tied to the scope of the patent claims and in non-exclusive form, is requisite.

•Sublicensing rights — especially important in exclusive licenses for practical and legal reasons because absent such a clause which cannot be implied, no further licenses can be granted by either party, even if it is desirable to do so.

•Termination — this — the third most important clause in a license — is a multipronged concept, where each prong needs to be defined separately, inasmuch as a license never terminates over night, since different rights and obligations of the parties, such as, making reports, paying accrued royalties, auditing books, returning documents, maintaining secrecy, etc., continue after termination.

D. ASSIGNMENT RATHER THAN EXCLUSIVE LICENSE

One of the more memorable and challenging licensing experiences I had in my whole career was when I had to go to Australia and New Zealand to chase down an elusive invention and an elusive inventor, owner and prospective licensor and had to come back with a signed patent application ready for filing in the U.S. and Canada, because we were running up against a publication statutory bar. And I had to bring back an executed exclusive license agreement, ready for execution by my management as well.

The invention had to do with a novel bovine parturition control method, which was invented by a veterinarian of a New Zealand dairy company and employed a pharmaceutical product of Ciba-Geigy, namely, a long-acting gluco-corticoid (dexamethasone TMA). I did come back with a finished patent application, which I promptly filed upon return home in the U.S. and Canada, the only countries where veterinary methods could be patented and grace periods still permitted us to do so. And I also came back with an assignment with a provision for installment payments based on net sales of the parturition-inducing product. Why an assignment and not a license? I don't recall why I prepared an assignment. Perhaps it was intuition, because it was not until later that I learned of Tom Arnold's suggestion in his article on licensing that:

> "what is perceived by the businessman as an 'exclusive license,' is best negotiated into the form of a patent assignment with rights to reversions of title if royalties are not paid …

> because the exclusive license differs from assignments only in areas (like who sues infringer and has authority to compromise in settlement) which may be better borne by the party actively in the business than by the passive transferor of the technology." (Tom Arnold, "Basic Considerations in Licensing," *les Nouvelles*, vol.15, p.171, 177, Sept. 1980).

Indeed, the New Zealand dairy company was merely a "passive transferor of the technology" and my company was going to have to do considerable additional R&D work to obtain the requisite government approvals for commercialization.

Relevant provisions in this assignment were as follows:

> (2) Assignor hereby sells, assigns, transfers and conveys to Assignee, its successors and assigns, its entire right, title and interest in and to the U.S. and Other Patent Rights, the same to be held and enjoyed by the Assignee for its own use and benefit as fully and entirely as this right, title and interest would have been held and enjoyed by Assignor if this sale, assignment, transfer and conveyance had not been made. At Assignee's expense, Assignor will from time to time, as and when requested by Assignee, execute, or have executed and deliver to Assignee such further instruments, make available to Assignee such further information in Assignor's possession, and do and have done such further acts as may be necessary or which Assignee may deem advisable in order to establish, perfect, or maintain in Assignee the entire right, title and interest in and to the U.S. and Other Patent Rights.
>
> …..
>
> (3)(a) In consideration of the sale, assignment, transfer and conveyance by Assignor to Assignee, and in full payment therefor, Assignee will, on or before March 31, 1983 and on or before March 31 in each year thereafter until the expiration of the last to expire of the patents included among the U.S. and Other Patent Rights, pay to Assignor, as an annual installment of the purchase price for the U.S. and Other Patent Rights, an amount equal to 1% of the Net Sales of Agreement Products made by Assignee and its licensees, if any, during the preceding calendar year; provided that in any event the amount payable to Assignor with respect to the calendar year 1984 and each subsequent year shall be not less than $10,000.
>
> …..
>
> (6) Assignee may, on 30 days prior written notice to Assignor, terminate this Agreement by reassigning all right, title and interest in and to the U.S. and Other Patent Rights to Assignor.

Interestingly, a reversion or revestment clause in such an assignment can raise the issue of whether it is primarily a security device for assignor or creates a termination

power in assignee. This happened in *Ortman v. Stanray Corp*. (168 USPQ 617 (7th Cir. 1971)) where a dispute arose over the following provision:

> "4. Assignor, on thirty (30 days advance notice to or from Stanray, shall be revested with the entire right, title and interest in and to the said patent rights if Stanray fails or refuses to make the payments to Assignor provided for in paragraph (2) hereof or if Stanray discontinues manufacturing or acquiring milling head inserts of the type disclosed and claimed in the said patent application Serial No. 812,320 for more than one (1) year."

In this case, payments were to be made for ten years or for the life of any patent that issued but assignee stopped payments after five years in the belief that the patent did not cover its product. An action for infringement and breach of contract ensued. While the lower court ruled in favor of assignee, finding the contract clear and unambiguous on its face, the Court of Appeals reversed and remanded for admission and consideration of relevant collateral evidence, proffered by assignor to show that the clause in issue was primarily a security device for assignor.

E. IMPLIED LICENSES

Licenses may be granted not only by means of an express written agreement, be it a formal document or a letter agreement — the most common and best forms — but also via an informal written agreement, an oral or parol agreement or an implied license as a consequence of conduct or relationship of the parties.

Indeed, a license may come into being by implication through conduct and/or relationship between parties. Thus, implied licenses can arise from acquiescence and laches, where patent owners sit on their rights rather than enforcing them against infringers.

The most common and best-known implied license is a so-called shopright arising from an employer-employee relationship. In a general employment and in the absence of an express agreement, requiring an employee to assign an invention made by him or her during the terms of employment (and afterwards pursuant to a trailer clause), an employer may acquire a shopright or an implied non-exclusive limited license to use such an invention for its own purposes and only for its own purposes, provided the invention was made on company time with company resources.

Even in a licensor-licensee relationship, an implied license may be acquired, although a license under one patent does not ordinarily or necessarily include an implied license under another patent. However, it may occur in the case of an unlicensed but indispensable patent as for example a dominant patent that issued to the licensor later or an earlier-issued dominant patent that is later acquired by licensor.

Likewise, in a seller-buyer relationship, where the seller sells an article or component for use in a patented method or combination, the buyer may acquire an implied

license under seller's method or combination patent, although ordinarily the sale of an element of a patented method or combination carries no implied license.

However, an implied license in a seller-buyer relationship requires clear implication, as is illustrated by the *Jacobson v. Cox Paving Co*.(19 USPQ2d 1641 (D. Arizona 1991)) decision, where Jacobson sued Cox for infringement of Jacobson's rubber-asphalt paving material patent. Cox defended on the grounds that Jacobson had given him an implied royalty-free license by virtue of Jacobson's sale to Cox of a used asphalt-rubber distributor truck, which could be used to apply the patented asphalt-rubber material. Cox's president admitted that he had paid Jacobson royalties for a single asphalt-rubber paving job recently and that the company had received a proposed patent license agreement and it had several prior discussions with Jacobson regarding the payment of royalties. According to the court, there are two requirements to support an implied license and Cox failed on both counts: 1) The circumstances of the sale must plainly indicate that a grant of a royalty-free license should be inferred, and 2) the product must have no other non-infringing uses. When an equipment purchaser is notified at the time of sale of a requirement for a patent license, such express notice precludes the grant of an implied license under the patent. It was also shown that the truck, which was sold by Jacobson to Cox, could be, and had in fact been, used by Cox to apply conventional asphalt paving materials. This in combination with Jacobson's express royalty demands, according to the court, eliminated any basis for a finding of a royalty-free implied license running from Jacobson to Cox.

Finally, in a business relationship, conduct, as for example, close cooperation on an innovative project can give rise to an implied license. Witness the recent case of *Wang Laboratories v. Mitsubishi Electronics* (41 USPQ2d 1263 (Fed. Cir., 1997)) — a case of the unwritten patent license. In this case, Wang's James Clayton invented the basic memory module, known as a SIMM (single in-line memory module). Wang was not a components manufacturer and did not want to develop and manufacture SIMMs. Rather, it wanted companies like Mitsubishi to make SIMMs in large quantities so that SIMMs could be used economically in Wang's computers. But memory manufacturers did not want to make Wang's design until they knew that the SIMM would be a general standard in the industry. Wang began to convince the Joint Electronic Device Council (JEDEC) to adopt the Wang SIMM as an industry standard, which JEDEC did. In the meantime, Wang had been talking with Mitsubishi to convince it to enter the SIMM market in a big way so that prices would come down. Mitsubishi complied and Wang began buying Mitsubishi's SIMMs. Wang then asserted its patents, which it also had obtained in the meantime, against the industry that it had created. It sued everybody, including Mitsubishi. The whole industry opted to settle rather than fight, with Wang issuing more than 40 licenses at a royalty rate of 3%. The one major holdout was Mitsubishi. Mitsubishi felt betrayed, inasmuch as Wang had induced Mitsubishi to enter the field, had encouraged it to spend millions of dollars on research and development, had hidden the fact that it was seeking patent protection, and now was suing Mitsubishi for doing exactly what Wang had asked it to do. Moreover, Wang had clearly gotten a free ride on SIMMs,

since Mitsubishi had not charged its costs for engineering SIMMs to Wang, and Wang was able to charge lower prices. Given this behavior pattern of strong inducement by Wang leading directly to Mitsubishi's entry into the field, the court concluded that Mitsubishi had an implied license under Wang's patents.

This case shows that the formerly infrequently used and often unsuccessful implied-license defense, where a court must scrutinize the entire course of conduct between the parties to determine whether a license was created in the absence of a written document, can be successful.

F. LICENSING CASE HISTORY — GOULD LASER PATENTS

This licensing story played out in the eighties. But it is not ancient history at all. Invaluable lessons can be learned from the masterful licensing scheme of the Gould laser patents, as it illustrates important licensing concepts and ingenious licensing strategies. First and foremost, it shows that one can be very creative in crafting win-win license agreements and thereby resolve intractable controversies and disputes.

As was stated by Tom Arnold:

> "(T)he various clause concepts are as keys upon a piano. Each may be played loudly, softly, staccato or with lingering resonance; and each may be played in solo melody or in chords with the others in infinite variety; they constitute a piano upon which infinite varieties of transactions can be played." (Tom Arnold, *ibid.*)

Gould invented the laser during the late 1950's while a graduate student at the University of Columbia, but he was not taken seriously for decades. Now with hundreds of licensees and possibly more than $100 million in gross licensing revenue, he is recognized as a laser pioneer.

Gould's early efforts to obtain patent protection for his invention were consistently rebuffed by the USPTO. Interferences were declared between his applications, the first of which was filed on April 6, 1959, and the applications of other companies.

A number of U.S. patents were, however, eventually issued to Gould, and three of these were broad, basic patents and commercially very significant. The first was U.S. Patent No. 4,053,845, entitled "Optically Pumped Laser Amplifier," which was issued on October 11, 1977. This patent covered most solid-state lasers but before this patent could be licensed or asserted, three reexamination requests were filed in 1982 and in 1983. The reexamination certificate, confirming the patentability of all claims, was not issued until 1987, following protracted legal proceedings. Earlier filed patent infringement litigation against Control Laser Corp. in the Middle District of Florida, had been stayed pending the outcome of the reexaminations.

The second commercially significant patent that issued to Gould on July 17, 1979, U.S. Patent No. 4,161,436, was entitled "Method of Energizing a Material," and covered most uses of commercial lasers. As was the case with the preceding patent,

multiple reexamination requests were filed in late 1982 with the patentability of all claims not confirmed until 1988. Again, extensive court proceedings were required before this favorable result was achieved.

U.S. Patent No. 4,704,583, entitled "Light Amplification Employing Collisions to Produce a Population Inversion," the third major Gould patent, did not issue until November 3, 1987. This patent, covering gas discharge lasers was only issued after a favorable CAFC decision the preceeding June.

The licensing effort for the Gould patents had initially been undertaken by Refac Technology, a New York City-based invention brokering and licensing company, with notable lack of success. It was not until Patlex Corp. took over this effort in the early 1980's that the licensing effort took off. Patlex secured public funding and engaged Richard Samuel, who had been working extensively on the Gould laser patents while a partner at the law firm of Lerner, David, Samuel et al, to take over active management of Patlex.

Since efforts to license the '845 Patent were relatively stymied by initially unfavorable decisions in the reexamination proceedings in the USPTO, coupled with a general unwillingness of lasers manufacturers to take a license before the Control Laser suit in Florida was completed, much effort was directed to licensing the '436 Patent to laser users. While a number of early user licenses, such as AT&T, GE, GM, and IBM involved conditional payments, payment schedules, payments based on laser usage, minimum and maximum payments and other non-standard features, the user licensing program quickly evolved into a standard format in which the laser user paid to Patlex a 6% royalty on the purchase price of all infringing lasers purchased from an unlicensed laser manufacturer. The licensed laser user paid nothing to Patlex for lasers purchased from a licensed laser manufacturer.

This effort to license laser users was designed to provide revenue to Patlex, but more importantly, to encourage the laser users to prevail upon the laser manufacturers to take a license directly from Patlex at a maximum royalty rate of 5%. Until, however, the outcome of the Control Laser litigation, this strategy had only limited success.

The Control Laser suit proceeded to trial in September of 1987 following the favorable conclusion to the reexamination of the '845 Patent earlier that year. In October 1987, the jury found that the '845 Patent was both valid and infringed. During the damages phase of the trial, which immediately followed, Patlex reached settlement agreements with Control Laser, and also with Quantronix, which had previously agreed in separate litigation to be bound by the outcome of the Control Laser suit.

The terms of these two substantially identical licenses, which became standard agreements, besides having significant payments for past infringement, included a 5% royalty for lasers infringing the '845 Patent. Lasers covered by the '436 Patent required a 3% royalty until reexamination of the '436 Patent was completed (which

occurred in April 1988) and a 5% royalty rate thereafter. A step-up royalty rate was provided for gas discharge lasers under the '583 Patent with each licensee having the opportunity to select two gas discharge laser competitors to trigger royalty rate increases from the initial royalty rate of 2% to the final royalty rate of 5%. When one of the named competitors, namely, Coherent or Spectra-Physics, the two largest laser manufacturers and hold-outs, was either licensed or sued by Patlex, the rate increased to 3.5% and the final rate became effective when both named competitors were either licensed or sued. A multiple patents provision prevented the payment of more than one royalty where the royalty bases overlapped and another provision limited the royalty rate on foreign sales to 2%.

Following the licensing of Control Laser and Quantronix, the licensing activity began to accelerate and many other laser manufacturers and laser users quickly became licensees. Coherent and Spectra-Physics (then a subsidiary of Ciba-Geigy) remained out of the fold until the fall of 1988.

The breakthrough came, first with Coherent, followed closely by Spectra-Physics, with the negotiation of volume breakpoints (or descending royalty rates), at which the royalty rates would be reduced from the standard rates as sales volume increased, as follows: $0-$15 million, 5.0%; $15-$20 million, 3.0%; $20-$25 million, 1.0%; and $25 million and above, 0.5%. Spectra-Physics' sales volume was far in excess of $25 million. These same volume breakpoints were, of course, offered to all existing licensees in accordance with the usual most favored licensee (MFL) provision of the licenses.

Most licensees paid a 5% royalty, since most licensees had U.S. sales under $15 million. Spectra-Physics' effective royalty rate was about 1.7% due to the volume breakpoint scheme. Since Spectra-Physics further negotiated caps on royalties and a lump-sum payment on "present value" terms, their total royalty obligations were discharged by a check in an amount of less than $10 million. This contrasted very favorably with litigation cost exposure of over $5 million. And, in case of defeat, a total royalty exposure of about $50 million. Although other licensees insisted on getting the "same effective rate" under the MFL clause rather than just the "same terms," no litigation ensued about this issue. In fact, when Amoco was allowed to partially "pay-up" their license and this deal was offered to other licensees, there were no takers.

This case history clearly illustrates the dynamic interplay of step-up royalty/MFL clauses and a descending royalty scheme, with the former inducing the smaller players to sign up when the bigger competitors — here Coherent and Spectra-Physics — are holdouts and thus have an additional competitive edge by not paying any royalties. And the descending royalty schedules entice the holdouts to take out licenses, inasmuch as their total royalty exposure is significantly reduced, e.g. down to about 1.7% in the case of Spectra-Physics.

G. CONCLUSION

The above discussion of key elements in technology licenses, such as, patent, trade secret, or most often, hybrid patent/trade secret licenses, has demonstrated, on the one hand, that truly lasting win/win agreements can be crafted to solve even completely intractable situations by combining available licensing clauses in ingenious ways or designing and fashioning novel clauses, like playing music on a piano.

On the other hand, lessons to be learned from the above cases are that it is risky to copy boiler-plate clauses from different agreements blindly and to rely on implication when it comes, e.g., to best efforts or MFL clauses, representations and warranties, rights to have made rather than merely make, rights to sell in foreign countries, sublicensing rights, etc. Express provisions that, e.g. sublicensing rights are or are not granted, an MFL clause is or is not included, are by far preferable, if not requisite.

III. HYBRID LICENSES — THE ROLE & VALUE OF TRADE SECRETS

A. INTRODUCTION

In our knowledge-based high-tech era it is important as a matter of management policy and strategy to exploit the overlap between IP categories, especially between patents and trade secrets, for dual or multiple protection. Patents and trade secrets are not incompatible but dovetail: the former can protect patentable inventions and the latter, the volumes of collateral know-how, resulting in synergistic integration and securing invulnerable exclusivity. Trade secret protection operates without delay and without undue cost against the world. And most technology licenses are hybrid licenses covering patents and trade secrets, inasmuch as licenses under patents without access to collateral know-how are insufficient for commercial use of patented technology.

B. INTEGRATION OF IPRS

Literature and presentations on IP strategies, IP valuation and other IP topics that I have read and heard almost always speak to patents and patent portfolios. However, doing so overlooks the fact that legal protection of innovation of any kind, especially in high-tech fields, requires the use of more than one IP category, i.e. dual or multiple protection.

Professor Jay Dratler in his *Intellectual Property Law: Commercial, Creative, and Industrial Property* (1991), was the first one to "tie all the fields of IP together." According to him, from former fragmentation by specialties, IPRs are now a "seamless web," due to progress in technology and commerce.

And in 1997 the authors of *Intellectual Property in the New Technological Age* also "avoid the fragmented coverage…by approaching 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, worse, amounts to "malpractice," per Professor Dratler.

Especially for high-tech products, trademarks and copyrights can supplement patents, trade secrets and mask works for the products' technological content. One IP category, often patents, may be 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 in litigation, standup if a primary IPR becomes invalid and thus provide synergy and optimize legal protection.

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

C. IMPORTANCE OF TRADE SECRETS

Deep–seated misconceptions about the relationship between patents and trade secrets are very prevalent. Trade secrets are treated as the orphan in the IP family, or the black sheep in the IP barnyard. They are maligned as flying in the face of the patent system, the essence of which is disclosure of inventions to the public. Keeping inventions secret is, therefore, supposed to be reprehensible. After I gave a talk on the patent and trade secret interface in a South American capital, the local Commissioner of patents testily commented that it was preposterous to talk up trade secrets and outright absurd to speak of complementariness of patents and trade secrets, because "trade secrets don't need protection because they are secret." (What naiveté? What sophistry?) And one noted IP professor in Washington went even so far as to say: "Trade secrets are the cesspool of the patent system."

Nothing could be further from the truth. Trade secrets are the "crown jewels" of corporations. "Trade secrets are the IP of the new millennium and can no longer be treated as a stepchild," per Mark Halligan. Indeed, trade secrets are now gaining greater reverence as a tool for protection of innovation. And the stakes are getting higher. Injunctions have become a greater threat in trade secret misappropriation cases and damage awards have been in the hundreds of millions in recent years. For instance, in a trial in Orlando, in which two businessmen were seeking $1.4 billion in damages from Walt Disney Co., accusing the company of stealing trade secrets for the sports complex at Walt Disney World, the jury awarded them $240 million. And misappropriation of trade secrets of Pioneer Hi-Bred International on genetic corn seed materials by Cargill, Inc. cost the latter $300 million.

Anent the importance of trade secrets, James Pooley proclaimed recently: "Forget patents, trademarks and copyrights…trade secrets could be your company's most important and valuable assets." It is also interesting to note that Henry Perritt believes that trade secrets are "the oldest form of intellectual property protection" and that "patent law was developed as a way of protecting trade secrets without requiring them to be kept secret and thereby discouraging wider use of useful information." That makes patents a supplement to trade secrets rather than the other way around.

Indeed, according to a 2003 IPO Survey on Strategic IP Management, patents are often not viewed as a panacea but as a side show inasmuch as patents have limits, such as, early publication, invent-around feasibility and patentability requirements but proprietary technology is highly rated as a key source of competitive advantage and the really important intellectual assets are skills and knowledge (88% of responses), which implicates trade secrets. Another finding of this Survey is that while some companies dominate an industry by controlling key patents, others do so by holding important technology as trade secrets.

Moreover, 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. Bob Sherwood, an international IP consultant, calls trade secrets the "work horse of technology transfer."

Finally, and very importantly, trade secret protection operates without delay and without undue cost against the world, while patents are territorial and so expensive to obtain and maintain that they can be taken out only in selected countries.

D. THE PATENT/TRADE SECRET INTERFACE

Trade secrets are the first line defense: they come before patents, go with patents, and follow patents. As a practical matter, licenses under patents without access to associated or collateral know-how are often not enough for commercial use of the patented technology, because patents rarely disclose the ultimate scaled-up

commercial embodiments. Hence, data and know-how are immensely important. 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, Professor Emeritus of Franklin Pierce Law Center).
- "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, a free lance writer).
- "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, author of "Patent Law Fundamentals").
- In technology licensing "related 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 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, former LES and LESI president).

Another very telling case about the criticality of proprietary know-how comes from abroad. Brazil learned a quick and startling lesson when they decided some years ago to translate important patents that issued in developed countries for the benefit of the Brazilian industry. They believed that that was all that was necessary to enable their industries to practice these foreign inventions without paying royalties for licenses. Needless to say, this scheme was an utter failure.

Patents and trade secrets are not mutually exclusive but actually highly complementary and mutually reinforcing; in fact, they dovetail. In this context it should be kept in mind that our Supreme Court has recognized trade secrets as perfectly viable alternatives to patents: "The extension of trade secret protection to clearly patentable inventions does not conflict with the patent policy of disclosure" (*Kewanee Oil v. Bicron* (1974)) and further strengthened the bases for trade secret reliance in subsequent decisions (*Aronson v. Quick Point Pencil* (1979)) and *Bonito Boats v. Thunder Craft Boats* (1989)). Interestingly, in his concurring opinion in the *Kewanee Oil* decision, Justice Marshall was "persuaded" that "Congress, in enacting the patent laws, intended merely to offer inventors a limited monopoly (*sic*) in exchange for disclosure of their inventions (rather than) to exert pressure on inventors to enter into this exchange by withdrawing any alternative possibility of legal protection for their inventions." Thus, it is clear that patents and trade secrets can not only coexist, but are in harmony rather than in conflict with each other. "(T)rade secret-patent coexistence is well-established, and the two are in harmony because they serve different economic and ethical functions." (Prof. Donald Chisum).

In fact, they are inextricably intertwined, because the bulk of R&D data and results or associated, collateral know-how for any commercially important innovation cannot and need not be included in a patent application but deserves, and requires, protection which trade secrets can provide.

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. Anent this choice, the respective advantages and disadvantages, e.g., in terms of duration and scope of protection, are considered controlling. However, on scrutiny the perceived differences are not there. The patent life may be more or less than twenty years from filing and a garden-variety type of trade secret, far from being indefinite, may last but a few years. Nor is there a difference as regards the scope of protection with "everything under the sun made by man" being patentable. And while a patent does, and a trade secret does not, protect against independent discovery, a patent leads to efforts to design or invent around and a trade secret, properly guarded and secured, may withstand attempts to crack it.

E. THE PATENT/TRADE SECRET COMPLEMENTARINESS

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 applications are published and patents issued, 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, if available, 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. 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 some of the data are not disclosed in subsequent separate applications. Complementary patenting and padlocking is tantamount to having the best of both worlds, especially with respect to complex technologies consisting of many patentable inventions and volumes of associated know-how.

F. BEST MODE REQUIREMENT

The conventional wisdom that because of the "best mode" and "enablement" requirements, trade secret protection cannot coexist with patent protection, is a serious misconception. These requirements apply only at the time of filing and only to the knowledge of the inventor(s) and only to the claimed invention.

Patent applications are filed early in the R&D stage to get the earliest possible filing or priority date and the patent claims tend to be narrow for distance from prior art. Therefore, the specification normally describes in but a few pages only rudimentary lab experiments or prototypes and the best mode for commercial manufacture and use remains to be developed later. The best mode and the enablement requirements are thus no impediments to maintaining the mountains of collateral know-how developed after filing as trade secrets.

In this regard the recent holding in *CFMT v. Yieldup International* (Fed. Circ. 2003) is highly germane: "Enablement does not require an inventor to meet lofty standards for success in the commercial marketplace. Title 35 does not require that a patent disclosure enable one of ordinary skill in the art to make and use a perfected, commercially viable embodiment absent a claim limitation to that effect…. (T)his court gauges enablement at the date of the filing, not in light of later developments." Such reasoning applies of course equally well to the best mode requirement.

In Peter Rosenberg's opinion, "(p)atents protect only a very small portion of the total technology involved in the commercial exploitation of an invention….Considerable expenditure of time, effort, and capital is necessary to transform an (inventive concept) into a marketable product." In this process, he adds, valuable know-how is generated, which even if inventive and protectable by patents, can be maintained as trade secrets, there being "nothing improper in patenting some inventions and keeping others trade secrets." And Tom Arnold asserted that it is "flat wrong" to assume, as "many courts and even many patent lawyers seem prone" to do, that "because the patent statute requires a best mode disclosure, patents necessarily disclose or preempt all the trade secrets that are useful in the practice of the invention." (*1988 Licensing Law Handbook*).

Gale Peterson also emphasizes that "the patent statute only requires a written description of the *claimed* invention and how to make and use the *claimed* invention." He advises therefore that inasmuch as allowed claims on a patentable system cover:

> "usually much less than the entire scope of the system, that the disclosure in the application be limited to that disclosure necessary to 'support' the claims in a § 112 sense, and that every effort be taken to maintain the remainder of the system as a trade secret."

Besides as shown by case law, manufacturing process details, even if available, are not a part of the statutorily required best mode and enablement disclosure of a patent. And it is in this process area where best modes very often lie.

G. EXEMPLARY TRADE SECRET CASES

Of course, it goes without saying that technical and commercial information and collateral know-how that can be protected via the trade secret route, cannot include information and know-how, which is generally known, readily ascertainable or constitutes personal skill. But this exclusion still leaves masses of data and tons of know-how which are the grist for trade secrets and often also for additional improvement patents. In this regard GE's industrial diamond process technology comes to mind as an excellent illustration of the synergistic integration of patents and trade secrets to secure invulnerable exclusivity.

The artificial manufacture of diamonds for industrial uses was very big business for GE and GE also had the best proprietary technology for making such diamonds. GE patented much of its technology and some of the patents had already expired, so that much of the technology was in the technical literature and in the public domain. But GE also kept certain distinct inventions and developments secret. The Soviet Union and a Far Eastern country were very interested in obtaining licenses to this technology but GE refused to license anyone. Getting nowhere with GE, the Far Eastern interests resorted to industrial espionage and a trusted fast track star performer at GE, a national of that country, whom nobody would have suspected, was enticed with million dollar payments to spirit away GE's crown jewels. But after a while the GE employee got caught, tried and jailed.

Since 1942 Wyeth has had an exclusive position on Premarin, the big-selling hormone-therapy drug. Their patents on the Premarin manufacturing process (starting with pregnant mares' urine) expired decades ago, but they also have held closely guarded trade secrets. On behalf of Barr Laboratories, which had been trying to come out with a generic Premarin for 15 years, Natural Biologics stole the Wyeth trade secrets. Wyeth sued and prevailed, getting a total injunction, as it was an egregious case of trade secret misappropriation.

These cases illustrate so well the value of trade secrets and, more importantly, the merits of marrying patents with trade secrets. Indeed, these cases show that GE and Wyeth could "have the cake and eat it." Were GE's or Wyeth's policies 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.

Other recent decisions, such as, *C&F Packing v. IBP and Pizza Hut* (Fed. Cir. 2000) and *Celeritas Technologies v. Rockwell International* (Fed. Cir. 1998) also demonstrate that it is now well established that dual or multiple protection for intellectual property is not only possible but essential to exploit the IP overlap and provide a fall back position.

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 and unenforceability reasons and many other potential patent attrition factors, such as:

- doubtful patentability due to patent-defeating grounds,
- narrow claims granted by the PTO,
- "only about 5% of a large patent portfolio" having commercial value " (per Emmett Murtha, ex-IBM and former LES president),
- the average effective economic life of a patent being "only about five years" (Emmett Murtha),
- enforcing patents being a daunting and expensive task,
- only very limited or no coverage in existence in foreign countries,

as well as others.

H. CONCLUSION

In conclusion, it bears reiteration that trade secrets are a viable mode of protection in the intellectual property field. They can be used in lieu of patents but, more importantly, they can and should be relied upon at the same time and side by side with patents to protect any given invention as well as the volumes of collateral know-how, because far from being irreconcilable, patents and trade secrets in fact make for a happy marriage as equal partners. Hence, it is patents and (not "or") trade secrets.

With patents and trade secrets it is clearly possible to cover additional subject matter, strengthen exclusivity, invoke different remedies in litigation and have one standup when the other becomes invalid or unenforceable. Exploiting the overlap between patents and trade secrets and utilizing both routes for optimal protection is a most important and practical, profitable and rational IP management strategy.

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