

The Patent Game

It's like tennis: you need a quick return. That's nurtured by careful research of existing databases, which can help identify where opportunities lie in Japan for cross-licensing in intellectual property.

By Jim Hughes

Oh no! It's seven thirty!" my mind screams as I leap up from the futon and rush through my morning ablutions. After a torrid pace through showering and shaving, I see there's still time for a quick cereal. Left hand grabs the milk from the fridge, while the right reaches for that prized new box of genuine, made-in-the-U.S. cereal. After deftly maneuvering the milk carton, I grab both sides of the cereal bag and pull smartly. Wrong move as the bag explodes in a cornucopia of sugar-coated flakes from the plains of Iowa. If this had been a Japanese box, there would have been that convenient little snip at the top of the bag, making it ever so easy to open.

So why does Japanese packaging have a wonderful way of easing access when so many U.S. products don't? One reason may be not knowing such features exist, or it may be a reluctance to license the patent behind such convenience. From ancient times, and in a more systematic fashion from the Meiji period (1868-1912), the Japanese have been intensely interested in foreign technology. They pressed the Dutch for information on all fields of science during the Edo period (1603-1868). They bought and then copied British Naval technology in the early part of the last century. They licensed from the big guns of American industry both before and after WWII, and they still continue to expend large amounts of effort and resources to procure the newest and best technology available in every field. It is well known that the balance of payments in licensing royalties with the U.S. has been continuously and heavily in favor of the U.S. for almost half a century. What may not be common knowledge is that the balance started to swing the other way a few years ago.

In 1997, JETRO (Japan External Trade Organization) reported that the U.S. had a \$20 billion surplus in 1996 in royalties and licensing, and Japan a ¥342 billion deficit. However, there was a 28% growth in exported technology to the U.S. and only a 20% growth in imports into Japan. Further, the Ministry of Finance reported this year that the balance of payments in licensing of technology with the U.S. had finally turned a surplus.

The first questions that may come to mind are why and where is this happening, and what are the implications for American companies? The most salient point may, however, be that some U.S. firms are taking advantage of a situation that is not broadly recognized, leaving others in the dark. For the past decade, American observers have watched the economy of Japan decelerate and remain in the doldrums, while the U.S. climbed back to reclaim market share in a broad spectrum of areas. In high technology, the global share of markets grabbed by Japan in the 1980s was taken back by the U.S. in the 1990s, leading many to believe that the Japanese science and technology challenge was over.

With the Internet-driven economy of the 1990s, America's prowess in providing innovative technology in the telecommunications field, as well as in the newly liberalized area of business-method patents, seemed a given. Some even characterized the boom as a well-fed juggernaut ready to take on all comers in the foreseeable future.

Impressive progress was also recognized in biotechnology—another field that saw explosive patent and licensing activity. The implications of Japan's declining advantage in technology during a period of faster product cycles and explosive infotech development cannot be overlooked. Aren't the Japanese, with their tarnished armor, still licking their wounds, not ready to rejoin the fray? Haven't creative American innovators, coupled with the advantages provided by a constantly developing communications infrastructure, made the supremacy of U.S. high-tech almost unassailable? With the Japanese suffering from their own mistakes and a seemingly endless inability to rectify them, the technological lead of the U.S. could only grow. As recently as 1998, Bruce Alberts, president of the National Academy of Science, told the U.S. House Science Committee that America is the undisputed world leader in science and technology.

Quantitatively, there are conflicting trends. Professor R.D. Shelton of Loyola College in Maryland, who is

director of the International Technology Research Institute and a science policy analyst at the National Science Foundation, has noted that current evidence is mixed when listing a number of absolute science-and-technology indicators, most of which were led by the U.S. Yet, he found that although there is no nation that surpasses the U.S. in the aggregate sense, the U.S. may be losing leadership in some very important areas. There is actually quite a bit of evidence to back this assertion. For one, Japanese patent applications have continued to increase from near 340,000 in 1994 to 406,000 in 1999. Even more revealing is the rate of increase in patents during the same period in certain fields: 2.5 times for business methods and 1.5 times for biotech.

Valid measurements

Japan's Economic Planning Agency (now the Council on Economic and Fiscal Policy) evaluated 101 technological items expected to have the greatest overall impact from the 1990s to 2010. It found 29 items where Japan leads and 24 items where Japan shared the lead with either the U.S. or EU (European Union).

The Japan Patent Office (JPO) conducts a continuing evaluation of technology that can be accessed from its homepage. It has found that although the U.S. has a formidable lead (over 70%) in patents related to processing architectures and CAD (computer-aided design) in the field of large-scale integration (LSI), for example, Japan holds well over 20% of patents in related device manufacturing and testing/measuring.

Of course, there are voices that continue to suggest quantitative indicators are not always valid. Assessing prowess in R&D (research & development) by counting up patents, tech papers, R&D investments, etc. may be flawed, giving the appearance of productivity without the reality. Shelton has continually pushed for evaluating leadership in science and technology by using experts to review technological fields. He contends that the lead of, say, researcher A over researcher B can only be evaluated by an unbiased researcher C in the same field. Using that approach, his institute has discovered some of the disturbing aforementioned trends.

Many Japanese innovations worth monitoring by U.S. engineers were identified in 1995, pointing to rapid advances in Japanese science and technology. Even the U.S. Navy is looking to Japan for key innovations in miniaturization, sensors, propulsion and cryogenics, to name just a few, for use in missile technology.

Where does this ongoing drive in science and technology emanate, even when Japan is showing significant distress in other areas? Remembering that there is a higher R&D expenditure relative to GDP (gross domestic product), there is also the fact that the U.S. spends a significant portion of such R&D funds on niche government needs, such as in defense, whereas Japan can devote more towards mass-market directed technologies.

Furthermore, Japan doubled government R&D in 2000, while U.S. government policy may be to reduce R&D in real terms after 2001. Nonetheless, some view government-sponsored R&D, particularly joint R&D, as having a poor track record anyway. However, something is happening out there. Whether it be continuous increases in R&D, the steady flow of engineering and science students out of Japanese universities, or the unrelenting push to stay above water, undoubtedly Japanese science and technology has been enjoying a long, steady increase in output.

Here I am sitting at raceside during the Shimano Mountain Bike Festival, watching competitors huff past on a variety of MTBs. Here before me are a bunch of crazy people spending a fine day grunting and sweating around a mountain course on what looks like two wheelers straight from the more fashionable areas of Tokyo. First looks are deceiving, however, as these MTBs are a repository of continuously evolving high tech: from titanium and carbon-fiber frames to long travel suspensions, tubeless tires and disc brakes. The amount of R&D, patenting and licensing among bike makers would make NASA (the U.S. National Aeronautics and Space Administration) proud.

It is pleasing that no maker of mountain bikes has a distinct advantage, which drives those in the industry to at least stay level with the competition by either designing new products, participating in joint development or cross-licensing. This is one area of the leisure industry that cannot rest on its laurels because of the large number of discriminating customers. My riding buddies have memorized whole catalogs or know where the updated offerings from the whole panoply of manufacturers are, in order to enhance both their riding pleasure and competitiveness (surely more of the latter).

The Japanese technical arena is similar, with participants in most fields caught up in the endless struggle to stay level. A company needs to have the right tools to track the rapid developments emanating from the labs as a result of these battles. So, in the face of all this output, how can a U.S. company find the magic No. 51: the

technological equivalent to the Seattle Mariner's Ichiro Suzuki, something that may add spark to an already proficient team in the hopes of building an impressive lead over the competition? The right choice can save development costs, complement and speed up an ongoing project, and, perhaps, minimize risk. Michael Kelly—attorney and resident partner in the Tokyo office of the patent firm Finnegan, Henderson, Farabow, Garrett & Dunner, LLP—says that companies such as IBM Corp. start to identify the gems by defining areas where they have a package to offer, thereby staying away from single patent searches. They also address areas covered by industry standards, such as USB (universal serial bus for PCs), DVD (digital versatile disc) and SDRAM (synchronous dynamic random access memory). Of course, Japanese companies are also aware of the value of industry standards, such as recent offerings of patent portfolios by Yamaha Corp. for one.

Patent brokers

One tool to assist the burgeoning market in IP (intellectual property) trading are the patent brokers. They offer a marketplace for buyers and sellers of IP, and most can now be accessed on the Internet. A recent addition is yet2.com Inc., sponsored by an impressive array of international corporate names in various fields. The menu of services offered by yet2.com includes a market that provides non-intuitive connections to buyers, licensing tips and insights from professionals, and a recently established Japanese-language page.

Another broker—the Patent & License Exchange, Inc., pl-x.com—recently opened an office in Japan. This company also provides a number of tools for licensing, including a unique means for evaluating IP assets and risk, as well as licensing insurance. The LPS Group, which is the IP consulting and licensing division of Information Holdings, Inc., has a similar list of services, including Patex and Micropatent. The PatentCafe.com, Inc., on the other hand, links several sites. The JPO, with their National Center for Industrial Property Information (NCIPI, but now the independent national Center for Industrial Information), is also actively involved in promoting patent distribution. They have set up a related database, offer services for providing patent maps in specific fields, identify patents with high commercial potential, provide patent transfer consulting and information on IP traders, etc. Much of this is available on the Internet.

Attorney Kelly feels that such services may be worthwhile as they help open up the market and may be more useful to larger corporations, since they are geared for developed, market-ready technology and not for single or small inventive entities. He also sees that the gain in efficiency helps expedite bringing parties together.

There are somewhat more traditional search services, such as Derwent Information, a part of Thomson Scientific, that offers information on worldwide patenting, including Japanese patent abstracts and full translations. Services such as provided by Aurigin Systems, Inc. may be the most efficient approach for those needing to do a more comprehensive search for competing or complementary technology, or to identify new trends in certain fields. Aurigin uses a massive database and proprietary software to construct a wide spectrum of patent maps, which can be minutely tailored to the needs of the client. Their 3-D topographic maps convert patent activity into mountain ranges with technological peaks, identified as such by patent holder and patent right, and leading to other maps and graphs. This allows a client to pursue various themes revolving around one or more technologies in an impressive display of data analysis. As noted by Judith Lamont, author and research analyst at Zentek Technology, Inc., Aurigin helps you see in a timely fashion the details of individual patents, as well as an overall patent landscape.

A look through most of these, however, failed to find many services that utilize more than English-language abstracts, such as the Patent Abstracts of Japan (PAJ). When delving into the huge volume of Japanese patent activity, you are at the mercy of the translator, which can be a precarious situation. Michael O'Keeffe of Kroll International Inc. and present co-chair of the ACCJ Intellectual Property Committee, worked for Derwent in their Japanese operations. Derwent does all its Japanese work in-house without relying on JPO abstracts, he says, because of the English-language problems. The contents of an abstract can also lead a technology analysis astray or, worse yet, hide the true value of a patent from a searcher. "Give me an abstract and give me a graphic," says O'Keeffe—and for good reason.

Abstract information

For example, let's say there is an abstract of information from a search service that is seemingly devoted to the mounting of a tip in a pressure sensor. However, a read through the Japanese and a look at the drawings reveal that this is not a tip, but rather a chip—a mistake arising from the transliteration into katakana (Japanese syllabary).

With this and other mistranslated or poorly drafted portions, a searcher for semiconductor pressure sensors could easily overlook this patent. To avoid such miscommunication, much of the work at Derwent is machine translated and reviewed by Indian professionals with Japanese-language ability, he points out. Still, O’Keeffe’s motto is, “There is nothing perfect in searching.” He singles out emerging fields as a case in point, where terminology is not yet well defined, making reliance solely on word searches dangerous. O’Keeffe also suggests using the NRI (Nomura Research Institute, Ltd.) Cyber Patent Desk, which offers full-text Japanese searches and hot links to corresponding international patents, or Dialog Corp.’s DIALOG, a service using old mainframe technology, yet enabling sophisticated search-set handling.

Consequently, search services should be chosen with care when dealing with Japanese patents. In fact, you should ensure that Japanese staff with technical proficiency in the field of interest are positioned somewhere in the loop, instead of relying on a service that only performs searches or analyses based on English-language abstracts of dubious quality. The best search may be a sweep through the Japanese patent database in the original language, such as that offered by PATOLIS (Patent On-line Information System), then an analysis of the findings, followed by a translation of pertinent information into English. Such an approach requires an efficient relationship with the searcher in order to ensure that proper technologies are being addressed and resulting information is correctly analyzed. Also, you should never rely on just one database, advises O’Keeffe, as there is a risk of missing patents.

Steps required

Many see a great untapped pool of licensable technology in Japan. The head of pl-x.com estimates that there is over \$6-trillion worth of non-performing IP assets in the U.S., the EU and Japan, and that perhaps 67% of Japanese patents, or about 390,000, were non-performing. There are also some new developments at universities in Japan, following the U.S. model, that may open up a novel avenue of approach for U.S. firms seeking licensable technology. For example, Economy Trade and Industry Minister Takeo Hiranuma wants to encourage universities to reform and cooperate in the creation of 1,000 venture firms aimed at transferring high technology from academia to industry. Others are interested in creating Web-related start-ups, with Softbank Corp. recently setting up a \$1.3 billion venture capital fund, for example.

Once a desired technology is identified, a search is conducted to determine who the players are and if there are any potential licensing partners. Then, contacts are made and licensing negotiations hopefully initiated. Although the licensing environment may be novel to many, there are a number of seasoned veterans available to help you understand present conditions. Jinzo Fujino has been employed at NGB Corp. for over 22 years and worked for an American law firm for six years. He is now a manager at the NGB IP Research Institute and has been active in the Licensing Executives Society (LES) for many years.

There is a disparity present depending on the technical field in question, Fujino contends. For matured technical fields, for example, licensing has generally developed into a win/win situation, with mutually satisfactory contracts generally the rule. The story is different for emerging fields, where there is a difference in technical levels. This usually calls for a new approach to reaching a contract. He has also been witness to a gradual change in licensing philosophies in both the U.S. and Japan. In the 1980s, Japan was in a learning mode without comprehensive knowledge of the field when it went up against tough, experienced American negotiators. From about 1990 to 1995, there was a rapid change in philosophy, as soured negotiations led to court cases in the U.S., which is an onerous task most Japanese tried to avoid.

However, from 1996, the Japanese became tougher negotiators, learning from years of advice dispensed by U.S. attorneys, from experiences shared through associations, and from publications (including those of LES) and readily available databases that facilitate searches. Fujino feels that this may have led to the current win/win situation. He also suggests that recent changes in the legal area—including new Japanese licensing guidelines, significant deregulation and moves toward harmonization by the U.S., the EU and Japan—may have substantial impact here.

Attorney Kelly concurs that there has been a change in Japanese licensing philosophies, with increased emphasis on licensing and a more aggressive presence in U.S. courts and the United Nations ITC (International Trade Centre). Still, as NGB’s Fujino explains, even with an increase in human resources, at least five years of on-the-job training are required for international licensing. Also, at least ten years are recommended to become a sophisticated negotiator, leaving Japan at a disadvantage in contrast to the broad field of experienced negotiators in the U.S.

The Patent Game

With Japanese patent applications on the rise, utilization rates at a relatively low level and corporations struggling to find a way out of the long economic morass, opportunities must be rife.

Once the technology is located, appropriate approaches should be made, keeping in mind both the strengths that you may have to offer for cross-licensing and so forth, and the inherent gap that still exists between U.S. and Japanese negotiators (albeit a distance that is closing fast). For those new to the licensing game, a proper approach to licensing, says Fujino, may be to view it as a game of tennis, with its own set of playing tactics. Specifically, don't wait on the ball, as a quick return is important. For those wanting to tap into the bed of gems awaiting discovery, this game strategy may be the most rewarding.

Jim Hughes has worked at the international patent and trademark firm S. Soga & Co. for 19 years and is currently the director of the International Liaison Department. He is also a former chairman of the ACCJ's Intellectual Property Committee.