Patent Litigation and Prosecution Trends in the Semiconductor Industry

Executives and engineers who know and understand the ever-changing patent landscape of the semiconductor industry are in a unique position. They sit atop it all, able to see their company in relation to others, what everybody is doing, and where best to go to protect and enhance the value of their company. This article discusses the industry’s patent litigation over the last 10 years—how many suits and when, who was involved and where—and offers insight into the future. The article similarly discusses trends in patent prosecution by examining what has been patented, how often, and by whom since 2000.
LITIGATION TRENDS: FEDERAL DISTRICT COURT

In the United States, almost 900 patent lawsuits involving the semiconductor industry have been filed in federal district court since 1997, with the number of filings increasing each year. Indeed, there have been more suits filed halfway through 2007 (53 suits) than in all of 1997. Basically, in the last 10 years, suits have doubled.

As one could surmise, many different companies have been involved in these suits over the last decade. There are, of course, some frequent players. They are: Intel (some 6.5 percent of the time); Broadcom Corp. (3.6 percent); Texas Instruments Inc. (3.4 percent); Samsung Semiconductor, Inc. (2.5 percent); LSI Corp. (2.3 percent); and International Rectifier Corp. (2.2 percent); with Applied Materials, Micron Technology, STMicroelectronics, and Atmel Corp. each at roughly 2.0 percent. Intel has been involved in about eight cases a year since 1997, with the exception of 2005 (20 cases) and this year (zero cases). In 2003, Broadcom was involved in 10 cases, followed by seven the next year. Texas Instruments has seen a steady decline since it was involved in 13 cases in 1998.

In general, the propensity of large semiconductor companies to enforce their patent rights through litigation has remained stable during the last two decades. Hall and Ziedonis, An Empirical Analysis of Patent Litigation in the Semiconductor Industry, January 2007, at 1, 5. In contrast, smaller chip-design firms have been quite litigious. To establish proprietary rights in niche markets, these firms have been said to be so bold as to enforce roughly four out of every 100 patents they own. Id. at 3. While the majority of suits are between rivals, there has been a rather dramatic increase in suits brought by outside patent owners or non-rivals. These entities, sometimes pejoratively referred to as “patent trolls,” see a target within the industry and go after it, with the goal of obtaining license revenue. Relatively well-known entities that fit this bill include Acacia Technology (more than 140 patents directed to the “V chip” technology used in television parental control systems), Burst.com (patents directed to buffering techniques used in video and audio streaming), Asure Software—previously Forgent Networks (U.S. Patent No. 4,698,672, directed to JPEG compression, said to bring in more than $105 million in licensing revenue), NeoMagic Corp. (patents directed to mobile TV technologies), and Patriot Scientific (patents directed to the design of advanced microprocessors, digital signal processors, embedded processors, and system-on-chip devices). Patriot Scientific and the TPL Group have formed Alliacense. This outfit has sent notice of alleged patent infringement to no fewer than 485 companies; at least 18 capitulated halfway through 2007.

Almost 50 percent of suits in the last decade have been filed in the Ninth Circuit, primarily in courts located in California. The Patent Local Rules in the Northern District of California and the physical locale of many in the semiconductor industry help account for such filing statistics. The Fifth Circuit, with its Eastern District of Texas, has seen roughly 18 percent of the filings. Next comes the Third Circuit, which includes Delaware, with 13 percent. The next circuit, the Fourth Circuit, drops dramatically down to around 4 percent. In 2005, 97 percent of cases were filed in only two circuits: the Ninth Circuit (60 percent) and the Fifth Circuit (37 percent). In 2006, filings decreased to some extent, with the Ninth and Fifth Circuits coming in at around 50 percent and 27 percent, respectively.

It follows that the judges who have been hearing the most cases over the last decade are situated in the Ninth, Fifth, and Third Circuits. Judges Ward and Davis, both in the Eastern District of Texas, are first and second, with 31 percent and 3.0 percent, respectively. Judges Fogel and Seeborg, both in the Northern District of California, are tied for third with Judge Robinson of the District of Delaware, at 2.8 percent. Judges Whyte and Trumbull, both of the Northern District of California, are tied for fourth at 2.7 percent.

**TOP 10 COMPANIES INVOLVED IN SEMICONDUCTOR LITIGATION**

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<th>2006</th>
<th>HALFWAY THROUGH 2007</th>
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<td>Intel</td>
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<td>Micron Technology</td>
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<td>Altera Corp.</td>
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<td>Analog Devices, Inc.</td>
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<td>AmberWave Systems Corp.</td>
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As illustrated in Figure 1 (below), there have been 50 United States International Trade Commission (‘ITC’) Section 337 investigations alleging infringement of patents involving the semiconductor industry over the last decade. The chart shows a notable change in the number of investigations recently (nine halfway through 2007) compared to a decade ago (four in 1997). This increase may be a reaction to eBay Inc. v. MercExchange, L.L.C., 126 S. Ct. 1837 (2006). With this landmark unanimous decision, the Supreme Court put an end to the “general rule” that a permanent injunction should follow a finding of infringement of a valid patent in a district-court proceeding. Whether an injunction should issue is now within the trial court’s discretion. In contrast, in the ITC, the primary remedy is still the almighty exclusion order.

Over the last decade, the primary players in these investigations have been Toshiba Corporation (six investigations); Samsung Electronics Co., Ltd. (five); and Fujitsu Limited, Gateway, Hewlett-Packard Company, Hynix Semiconductor Inc., and Qualcomm Incorporated (each with three).

In 2006, the investigations involved BIA Corp. (against Philips and 2Wire, Inc.); Fluke Corp. (against Altadox Inc., et al.); Lexar Media, Inc. (against Toshiba); Linear Technology Corp. (against Advanced Analogic Technologies); Microsoft (against Belkin Corp.); and Qualcomm (against Nokia).

The 2007 investigations involve Tessera (against ATI Technologies, Freescale Semiconductor, Motorola, Qualcomm, Spansion, and STMicroelectronics); Toshiba (against Hynix); Samsung (against Renesas); Toshiba (against Daewoo Electronics America, et al.); Topower Computer Industrial Co. (against Xion/Axptec Inc., et al.); Callpod, Inc. (against GN Netcom); St. Clair Intellectual
Property Consultants, Inc. (against Eastman Kodak); Global Locate (against SiRF Technology, et al.); and SiRF Technology (against Global Locate).

**EXPECTATIONS**

In the next decade, absent legislation or other dramatic reform, expect to see another twofold increase in patent litigation in the industry, if not more. We should see the same steady rate of enforcer litigation by the large semiconductor companies. We should continue to see aggressive enforcement by smaller chip-design companies, and we should see many more lawsuits as a result of more and more outside patent owners/nonrivals seeking to cash in on licensing fees. Such lawsuits may come as a result of the greater ease with which an accused infringer can now file suit for declaratory judgment, per the Supreme Court’s *MedImmune, Inc. v. Genentech, Inc.*, 127 S. Ct. 764 (2007). Or they may come as preemptive filings, i.e., as a result of the patentee affirmatively seeking to sue first in its chosen forum and then initiating contact with the accused infringer to negotiate a license. Moreover, an accused infringer may be more willing to sue for declaratory judgment of invalidity in light of the Supreme Court’s *KSR International Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007), which may make it easier to prove obviousness, and in light of *eBay*, which makes it much more difficult for a nonrival to obtain an injunction. Due to the latter reason alone, expect to see more ITC investigations, as these quick proceedings offer an exclusion order as the primary remedy.

Assuming the litigation takes place in federal district court, the Ninth Circuit should continue to be the primary go-to circuit, with its Northern District Court and Central District Court seeing the most action. The Eastern District of Texas should continue to be a favored forum for patentees. However, expect to see this forum’s shine diminish somewhat, as trial dates are being pushed farther and farther into the future due to backlog, coupled with the knowledge that at least some defendants are coming away victorious, as evidenced by recent summary-judgment motions in favor of the accused infringer and jury findings of invalidity. Indeed, at trial, the patentee’s win rate for 2007 is 20 percent. Also expect to see more suits filed in the increasingly popular, speedy Western District of Wisconsin. The Northern District of Texas, Northern District of Georgia, and Western District of Pennsylvania, each of which has now enacted local patent rules, should also see increased filings.

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effectively prevented Chinese generic-drug companies from obtaining marketing approval to sell their competing products because a Chinese patent is treated as valid until the invalidation decision has become final and nonappealable, and the State Food and Drug Administration (“SFDA”) of China will not grant marketing approval to generic drugs while a valid patent exists for the original product.

Pfizer won the first-instance lawsuit on June 2, 2006, when the court ruled that the facts had been wrongly determined and the law erroneously applied in the PRB’s invalidation decision. The court remanded the case to the PRB for further examination of the invalidation arguments that had not been addressed by the PRB.

This case was then appealed to the Beijing High People’s Court by 10 of the 13 petitioners. The September 7, 2007, decision of the Beijing High People’s Court is the final ruling regarding the invalidation ground of insufficient disclosure. Unless the petitioners withdraw their invalidation requests, the PRB now has the task of deciding whether Pfizer’s claim lacks support from the specification and lacks inventive step. Any such decision by the PRB is again subject to appeal and thus triggers another round of court proceedings.

Lessons Learned About Patent Protection of Pharmaceuticals in China

From its genesis in 1984, patent protection in China has evolved by leaps and bounds as China’s economy has become integrated with the rest of the world. Recent statistics show that China has the world’s third-busiest patent office (after Japan and the United States) in annual patent filings. More significantly, more patent infringement lawsuits were filed in China than in the United States in 2005 and 2006, and most of these lawsuits were between Chinese parties. This phenomenon has emerged despite a lack of formal discovery and the low level of damages granted by Chinese courts.

The Viagra patent story shows that a patent can be as effective in China as elsewhere in rewarding innovation and blocking generic competition. It is imperative that innovative pharmaceutical companies, such as Pfizer, take proactive steps in China to improve the quality of patent prosecution, gain sophistication with patent invalidation, and enforce patents against infringers. Enforcement of intellectual property rights in China will improve more visibly when more parties exercise their legal rights in the courts.

In the meantime, the world awaits the PRB’s decision on the remaining invalidation arguments involving Viagra.

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With regard to patent prosecution, Micron Technology, IBM, and Samsung should continue to be the dominant players receiving United States patents in the coming years. Philips and AMD should be the major filers of PCT applications. Semiconductor Energy Laboratory should continue to be an aggressive filer, as it has been since 2005. Expect patent activity in the area of active solid-state devices to remain dominant, followed by process protection in semiconductor device manufacturing. 

TODD R. MILLER
Los Angeles  II  1.213.243.2310  II  trmiller@jonesday.com

ENDNOTE

1 Almost 75 percent of the value of publicly traded companies in the United States comes from intellectual property assets, up from around 40 percent in the early 1980s. Around $45 billion is collected annually in the United States from technology licensing alone; $100 billion is collected worldwide, and that figure is rapidly increasing. The Economist, Issue 950, October 22, 2005.