



900 17th Street, N.W.
Suite 1100
Washington, DC 20006
Phone: 202.783.0070
Fax: 202.783.0534
Web: www.ccianet.org

Computer & Communications Industry Association

“Legalizing Innovation”: The Need for Real Patent Reform

Brian Kahin, CCIA Senior Fellow

The roots of overpatenting in information technology

Patents are the oldest embodiment of innovation policy, and the system has changed little over the years. It remains monolithic: One size fits all, with little or no accommodation for the growing diversity of technology, innovation, and business practices.

Today, information technology has become the primary engine of innovation, productivity, and growth in our economy. Innovators throughout the economy have become increasingly dependent on IT – and will become more so in the future. The power of IT comes from combining thousands, sometimes millions, of functions to work together as an integrated product or service. Yet this power is a source of vulnerability in a system where the availability and power of patents was calibrated for a simpler era. Since IT is used widely in business and commerce, the sheer scope of downstream integration, adaptation, and use of the technology creates widespread dependencies, potential liability, and risks to mere users. For example, NTP’s patent lawsuit against RIM threatened every Blackberry user, including members of Congress, and to avoid a shutdown RIM settled for \$612.5 million, even though the patents were later invalidated by the Patent and Trademark Office.

While the problem of too many patents per product is often blamed on the technology, it is senseless to blame the technology. It is a consequence of low standards. When patent lawyers were recruited to draft the last major overhaul of patent law in 1952, they framed it so that patents were presumptive entitlements. It was up to the examiner to demonstrate that the applicant was not entitled to a patent. Obviousness was hard to show because, as the Court of Appeals for the Federal Circuit put it:

The statutory emphasis is on a person of ordinary skill, and one should not go about determining obviousness under § 103 by inquiring into what patentees (i.e., inventors) would have known or would likely have done, faced with the revelations of references. A person of ordinary skill in the art is also presumed to be one who thinks along the line of conventional wisdom in the art and is not one who undertakes to innovate, whether by patient, and often expensive, systematic research or by extraordinary insights, it makes no difference which.¹

¹ *Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 454 (Fed. Cir. 1985).

Those who do not “undertake to innovate” are irrelevant to the today’s intensely competitive global mass market for IT products. The market demands innovation, and there are millions of individuals who “undertake to innovate.” They often work on much the same problems with much the same tools and ideas. Yet patents are handed out not on the basis of what innovators would think – but based on what tens of millions of noninnovating lesser minds would not think of!

This is not peer review – the prevailing standard elsewhere in the law. And it especially inappropriate for a field as innovative and fast-moving as IT.

What does it cost to clear complex products for possible patent infringement when hundreds of thousands of patents have been granted under this low standard? This means first identifying patents that may be problematic, evaluating their validity, and assessing infringement. AIPLA figures show average figures of \$3,940 (search opinion), \$14,669 (validity opinion), and \$12,990 (infringement opinion). To get an idea of the scope of the problem, consider that Windows Vista has some 160,000 function points,² and that does not include higher levels and aggregations of functionality such as program features. How does any programmer determine what is safe and what is not without a team of lawyers at his or her side? (And, of course, a lawyer’s opinion is no guarantee.)

Conversely, it is practically impossible for a large company just to know what is in its own patent portfolio. As Texas Instruments explained at an FTC hearing:

TI has something like 8000 patents in the United States that are active patents, and for us to know what’s in that portfolio, we think, is just a mind-boggling, budget-busting exercise to try to figure that out with any degree of accuracy at all.³

And TI only holds a small fraction of the millions of active IT patents in the U.S. and other countries. How do producing companies clear vastly complex products that may infringe vast numbers of patents? The answer is that they cannot afford to – and don’t. In any case, their lawyers have long advised against looking at patents because of the risk of treble damages for willful infringement.

Even if innovators were to take the time to look at IT patents (and incur the risks), they would miss the patents in the pipeline. In all cases, there is a 18-month embargo on the patent application. If the applicant agrees to only apply in the U.S., the application remains secret until the patent is granted, often years later. Yet even 18 months is a long time in a fast-moving, innovation-driven sector such as IT. Astoundingly, the Federal Circuit encourages applicants to take

² Capers Jones, *Applied Software Measurement*, p. 281

³ Frederick J. Telecky, “Statement at FTC/DOJ Hearings on Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy,” FTC/DOJ hearings (February 28, 2002). Available at <http://www.ftc.gov/opp/intellect/020228telecky.pdf>.

advantage of this secrecy by amending of applications to ambush emerging products:

[T]here is nothing improper, illegal or inequitable in filing a patent application for the purpose of obtaining a right to exclude a known competitor's product from the market; nor is it in any manner improper to amend or insert claims intended to cover a competitor's product the applicant's attorney has learned about during the prosecution of a patent application.⁴

These are not the only reasons why patents undermine certainty in IT. There is little ambiguity in claim language for molecular compounds, but there is plenty for more abstract subject matter with evolving vocabularies, such as software functionality. Patent claims are designed to provide notice of outer boundaries, and if they do not do so, reading them raises more questions than answers.⁵

What are the risks? Unfortunately, it is especially difficult to determine the value of patents when they cover minor aspects of complex products. Apple's Chief Patent Counsel recently observed at an FTC hearing:

We routinely see two and three orders of magnitude difference in the valuations that are espoused by an expert for one side and an expert for the other side in front of a jury.... There's a real problem in the law that permits that kind of uncertainty to be carried forward into a civil litigation context and then presented to a lay jury.⁶

This uncertainty translates into real costs. The same panel spoke of a rule of thumb value of around \$1 million in market for a "great patent" in IT,⁷ a figure far in excess of the average IT patent, but still hardly worth fighting about when average costs of litigating exceed \$900,000 per side!⁸

This is not how the patent system is intended to work. Patents were designed to disclose knowledge to the public in exchange for the power to exclude others – even those who come up with the same idea independently. But in information technology, vast overpatenting has led to a common practice of *ignoring patents*.⁹ Despite the benefits of being able to show copying to a jury, very few infringement complaints actually allege copying – only 2.6% in the case of software.¹⁰

⁴ Kingsdown Medical Consultants v. Hollister, 863 F.2d 867, 874 (Fed. Cir. 1988):

⁵ The failure of the notice function due to fuzzy boundaries is documented at length in James Bessen and Michael Meurer, *Patent Failure*, Princeton University Press, 2008.

⁶ The Evolving IP Marketplace, May 4, 2009, Berkeley, CA, transcript at 172. <http://ftc.gov/bc/workshops/ipmarketplace/>

⁷ *Ibid.*, transcript at 150,

⁸ AIPLA figures for cases when the amount in controversy is less than \$1 million. AIPLA Report of the Economic Survey 2009.

⁹ Mark A. Lemley, Ignoring Patents (July 3, 2007). Stanford Public Law Working Paper No. 999961; Michigan State Law Review, Vol. 2008, No. 19, 2008. Available at SSRN: <http://ssrn.com/abstract=999961>. Research undertaken

¹⁰ Mark A. Lemley and Christopher A. Cotropia, Copying in Patent Law, 87 N.C.L. Rev. 1421 (2009); Stanford Public Law Working Paper, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1270160. Here, too, there are great variations among industries. Copying is part of the regulatory framework for pharmaceuticals, but it is rarely alleged in other technologies. In software, the authors found allegations of copying in only 2.6% of infringement cases. Their evidence belies claims that big companies steal from independent inventors (e.g., Pat Choate, Patent Theft as a Business Strategy, Huffington Post, March 23, 2010)

While overpatenting in IT can be attributed to the functional complexity information technology, products, and markets – IT was disproportionately affected by mutually reinforcing factors that affect patents generally.

- Decisions of Court of Appeals for the Federal Circuit in the 1980s and 1990s that made patents easy to get, more powerful, and available for an apparently unlimited range of subject matter;
- A newly fee-funded PTO that for many years primed demand for patents and proclaimed a mission of “helping customers get patents” (and so was naturally seen by Congress as a profit center); and
- The natural self-interest of the professional bar in expanding the scope and volume of the system and promoting ever greater demand for patents and patent services.

In short, legal institutions have played a big part in making innovation in IT more “legal.”

The Market Responds – Second and Third Order Effects

A one-size-fits-all patent system cannot adapt to the needs of particular technology.¹¹ However, industry has adapted to overpatenting in ways that avoid the costs and uncertainties of find, evaluating, and litigating patents. As long as portfolio size was commensurate with stake in the market, firms did not assert patents against each other. Whether explicitly through cross-licenses or implicitly under the specter of mutually assured destruction, portfolios neutralized each other and gave producing companies needed freedom of action. In short, producing firms have bargained their way out of the exclusivity that patents are designed to provide – and into a regime of nonexclusivity and reciprocity.

This equilibrium inevitably unravels. Cross-licenses have increasingly included “balancing payments” that reflect the bargaining power of the larger portfolio and greater capacity for litigation. Led by IBM and Texas Instruments, companies began to exploit large portfolios as a source of revenue that could be claimed against those with smaller portfolios or no portfolios. Microsoft followed in IBM’s footsteps by hiring the architect of IBM’s licensing program and upping patent applications to 3000/year.¹²

While there is a crude justice in licensing portfolios on terms that bear a relationship to past inventive activity, this is quite different from the paradigm of patents as protection. Portfolios allow large incumbents to tax newcomers or to compromise the exclusivity of the few patents that newcomers have.

¹¹ Language in TRIPS appears to argue against adapting to the characteristics of particular technologies. This was inserted to assure worldwide protection for pharmaceuticals and has never been debated in the U.S. as matter of general principle. Scholars have argued that the operating term, “without discrimination,” should not be read to mean no differentiation.

¹² Randall Stross, Why Bill Gates Wants 3000 New Patents, New York Times, July 31, 2005

Worse, portfolio-scale patenting feeds the problem of navigating the patent landscape and the opportunities and incentives for ambush. With the failure of the patent law's disclosure function, patents become a source of unforeseeable liability instead of being a source of knowledge – a weapon instead of a form of protection. In an environment where freedom of action, cooperation, and interoperation are essential to the creation of new products and services, the ability to surprise and block becomes very potent indeed.

A lucrative business model of “being infringed”¹³ induces companies to shift from producing products to asserting patents – minimizing liability while attacking those still producing for the market. This strategy has been pursued by several iconic U.S. companies, but it becomes increasingly attractive for small non-producing entities who can assert patents without fear of retribution or reputational damage. It favors aggressive, costly, lawyer-driven behavior at the expense of product creation and commercialization. It encourages trivial “inventions” at the expense of major innovations. It creates legal weapons at the expense of economic results.

Needed reforms

The managers' substitute amendment recently proposed for S.515 as a “compromise” offers virtually nothing to slow these failings and incentives, despite the problems they already present throughout the IT-enabled economy. Opening up and extending the original examination process is of little practical value to producing companies in IT. The provision on damages is merely procedural and fails to address the principle of proportionality. The proposed bill does nothing to address the practical failure of notice and disclosure functions, the rise of opportunistic assertions against producing companies, or the acceleration of patenting that moving to first-to-file will trigger. Nor is there anything to monitor the legislation's effectiveness so that future Congresses will have a baseline for further legislation.

Given the importance of innovation to the economy, much could be done to ensure that the patent system promotes innovation rather than more patents. At the very least, reform legislation should:

- *Provide alternatives to litigation.* Extending and enhancing an examination process that is generally ignored will have little practical effect in IT. There is a clear need for cost-effective alternatives such as the expanded *inter partes* reexamination in the House bill, HR 1260. Yet the Senate managers' amendment moves in the wrong direction by putting new limits on the practice of *inter partes* reexamination.

¹³ Markus G. Reitzig, Joachim Henkel, and Christopher Heath., On Sharks, Trolls, and Other Patent Animals - 'Being Infringed' as a Normatively Induced Innovation Exploitation Strategy. (2007) Available at SSRN: <http://ssrn.com/abstract=885914>

- *Grant PTO the power to set fees* Fees should be based on the costs borne not only by the PTO, but by other innovators.¹⁴ This is sound administrative policy and an essential step in ensuring that the patent system works as intended – and that strategic behavior is disciplined by the costs it imposes.¹⁵ Given the backlog and budgetary crunch that PTO faces, this is an essential reform that is needed regardless of what happens to the contentious parts of the reform legislation.
- *Ensure ongoing oversight*, not only in the examination process but in how patents work (or do not work) to promote innovation in the market. The PTO has taken a needed step in this direction by hiring its first chief economist. HR 1260 proposes three studies. The legislation should make clear that Congressionally mandated studies are key priorities with schedules but that oversight is an inherent cost of the patent system and needed to help future Congresses make adjustments as needed.
- *Avoid further undermining the value of patent information*. The Senate managers' amendment moves in the wrong direction: Eliminating the best mode requirement will encourage applicants to withhold valuable information. Allowing a new custom procedure ("supplemental examination") for laundering inequitable conduct will encourage up-front demand for overbroad patents and further gaming of the system. These changes would further undermine the integrity and functioning of the system as a whole.
- *Encourage judicial flexibility*. As recommended in the CCIA White Paper and consistent with the recommendations of Dan Burk and Mark Lemley in their book, *The Patent Crisis and How the Courts Can Solve It*, the legislation should encourage reasoned judicial decision-making that takes technological and market differences into account.¹⁶
- *Adopt prior user rights*, at least on a trial basis. Prior user rights are widely accepted as an essential safety valve in first-to-file regimes. The acceleration of patent applications demanded by a move to first-to-file will play out dangerously for IT – unless prior user rights are adopted or standards of patentability (inventiveness) are raised.

¹⁴ For example, maintenance fees, which must be paid every four years, can be justified on the basis that existence of patents, even trivial or worthless patents, impose information costs on others. This helps ensure that only patents of some threshold value are kept in force.

¹⁵ This need not preclude cross-subsidies such as reduced fees for small entities, but all cross-subsidies should be explicit.

¹⁶ Language such as the following should be considered: "In applying the provisions of this Act, courts shall give due deference and weight to the characteristics, circumstances, and practices of different areas of innovation to ensure that outcomes promote innovation in all fields of technology."