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Patently Absurd - Copyright law can meet the needs of software developers

BYLINE: Timothy B. Lee

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In 1994, Claudio Ballard was an unemployed computer programmer with a great idea: a system to scan paper financial documents and store them on a secure server. Ballard built a prototype, raised venture capital, and founded a company called DataTreasury to commercialize his system. At the peak of the dot-com boom, DataTreasury had an office on Long Island with over 100 employees.

At the time, banks were still clearing checks by shipping them around the country, and Ballard knew they would save a lot of money by scanning checks and exchanging the images instead. He thought his system would be perfect for the job. But the major banks weren't interested, choosing to work with other vendors or implement digital check-clearing systems of their own.

Around 2001, DataTreasury ran out of money and had to lay off most of its staff. For most startups, that would have been the end of the story. But DataTreasury had an ace in the hole: a portfolio of broad patents. One of them covered the concept of attaching a scanner (an "imaging subsystem for capturing the documents") to a server (a "central data processing subsystem") via a "communication network."

It's hard to see how anyone could build a digital check-clearing system without infringing this patent. I suggested to a company spokesman that DataTreasury had effectively patented the concept of digital check clearing. He disputed that characterization, but he struggled to explain what specific techniques the patents covers. And he couldn't think of any kinds of electronic check-clearing systems that didn't infringe DataTreasury's patents.

In 2002, DataTreasury, by then just a shell of its former self, launched a patent-litigation campaign against the nation's banks. Those legal battles continue to this day, and have netted DataTreasury hundreds of millions of dollars in licensing fees and damages.

The banks turned to their friends on Capitol Hill for help. In 2009, Sen. Jon Kyl (R., Ariz.) proposed an amendment to that year's patent-reform bill that limited financial institutions' liability for infringing DataTreasury's patents, which the amendment listed by number. The bill didn't pass, and the banks got a lot of bad press for the stunt. So this year's patent-reform bill, known as the America Invents Act, is a little more subtle. A provision inserted by Wall Street's senator, Chuck Schumer (D., N.Y.), singles out data-processing patents related to financial services for extra scrutiny from the patent office.

The banks' response to DataTreasury is a microcosm of the broader patent debate. The banks describe DataTreasury as a "patent troll": a company that has no products of its own but earns a living by filing patent-infringement lawsuits.

The shoe does seem to fit. And DataTreasury is just one of the hundreds of patent trolls now shaking down productive companies. And the explosive growth of patent trolling is just one of the many problems created by our dysfunctional patent system.

The America Invents Act is full of such technocratic provisions that tilt the playing field toward big businesses without doing anything to address the system's deeper flaws. For example, one widely discussed change would grant patents to the first party to file for them; in the current system, the patent goes to the person who can show he arrived at the invention first, regardless of when he filed. Large companies would like such a system because they can afford to hire many patent attorneys to help them file applications quickly. But there's no reason to think the change will benefit the rest of the economy.

DataTreasury now lists its address as being in Plano, Texas. That's probably not a coincidence. Dozens of companies with names like Lodsys LLC, Gemini IP LLC, Oasis Research LLC, and Imperium (IP) Holdings, Inc., have flocked to the patent- and plaintiff-friendly court district in eastern Texas. In a recent episode of This American Life, two NPR reporters tried to visit Oasis Research in the eastern-Texas town of Marshall, and instead found corridors of empty offices adorned by the names of tech companies. None of these companies appear to produce any useful products or services; their revenue comes entirely from suing companies that inadvertently infringe their patents.

Most patent trolls target large companies such as Microsoft or Apple. But more recently, smaller firms have been hit as well. Lodsys has become famous in the mobile-software industry for threatening dozens of small developers. As with most patent trolls, there's no allegation that the defendants specifically copied Lodsys's technology. Rather, Lodsys patents, which are related to purchasing electronic content from mobile phones, are simply so broad that dozens of companies have (allegedly) infringed them by accident.

Large companies like to focus on patent trolls, but they are just one manifestation of the patent system's flaws. Large companies have been stockpiling vast numbers of dubious patents themselves. Consider the contrast between Microsoft and Google. The United States Patent and Trademark Office has granted Microsoft more than 18,000 patents. In contrast, as of August, Google has been granted fewer than 800 patents. Microsoft is an innovative company, but few people would say that Microsoft has been 20 times as innovative as Google. Rather, Microsoft had a big head start in building the large legal bureaucracy required to file dozens of patent applications each week.

Building such a bureaucracy isn't just slow and expensive; it also requires a shift in corporate culture. The time and attention of a company's most productive engineers is a scarce and valuable resource. It takes a systematic campaign of reeducation to persuade those engineers that filling out patent paperwork is a higher priority than improving the

company's products. Such a shift is much less costly for a mature company such as Microsoft, which has more money and engineers than it knows what to do with, than for a rapidly growing company such as Google over the last decade.

Microsoft now has so many software patents that it has become impossible to build a mobile-phone operating system without infringing some of them. Just 7 percent of consumers chose to buy phones running Microsoft's Windows Phone 7 operating system in the second quarter of 2011, compared with the 40 percent who chose Android phones. Yet manufacturers of Android phones have to pay royalties on Microsoft's patents -- and they pass these costs on to consumers.

This represents a fundamental shift in the software industry. One of the industry's traditional strengths has been its low barriers to entry. Over and over again, tiny software companies such as Microsoft, Google, and Twitter have dislodged incumbents many times their size. But while a small team of brilliant engineers can build some of the world's best software, it has no hope of keeping up with big companies' rate of patent filings. Patents threaten to turn Silicon Valley into a place where new firms must develop large legal bureaucracies before they can challenge incumbent firms.

Ironically, one of the first people to recognize this problem was Microsoft's Bill Gates. Software was originally ineligible for patent protection under a pair of Supreme Court rulings from the 1970s, but that began to change after a third, more equivocal ruling in 1981. When the Patent Office began to interpret that ruling as a green light for software patents, Gates was alarmed. "If people had understood how patents would be granted when most of today's ideas were invented, and had taken out patents, the industry would be at a complete standstill today," Gates wrote in a 1991 internal memo. Microsoft was still relatively small, and Gates worried that "some large company will patent some obvious thing," which could give the company "a 17-year right to take as much of our profits as they want."

Gates began retooling Microsoft to take full advantage of software patents, but others were more idealistic. The database vendor Oracle emerged as a leader in the fight against software patents. "Oracle Corporation opposes the patentability of software. . . . Copyright protection for computer software is sufficient to preserve the rights of software developers," the company wrote in testimony at a Patent Office hearing in 1994. "Patent protection is excessively broad and enormously expensive." Other leading software companies, including Borland, Autodesk, and Adobe, echoed Oracle's arguments.

But the industry's protests went unheeded. The Patent Office approved more and more software patents. The final straw came in 1998, when the United States Court of Appeals for the Federal Circuit decided the case of State Street Bank v. Signature Financial Group. The ruling removed all meaningful limits on patenting software and appeared to flatly contradict the Supreme Court's precedents, which allow software patents only in limited circumstances. But the Supreme Court didn't review the decision, and has not ruled on the patentability of software since.

It's impossible to know whether Bill Gates and Oracle CEO Larry Ellison still privately believe that patents are bad for the software industry. But the companies they led certainly aren't opposing software patents today. In a 2007 op-ed, Microsoft general counsel Brad Smith wrote that "protection for software patents and other intellectual property is essential to maintaining the incentives that encourage and underwrite technological breakthroughs." Oracle stopped lobbying against software patents years ago and is currently suing Google for infringing patents related to the Java programming language.

Yet grassroots opposition to software patents is undiminished. In August, investor Mark Cuban wrote that "every technology company I have is getting hit by patent lawsuits" and called for software patents to be abolished. This view is widely held among rank-and-file members of the software industry. The programmers and technologists who comment on websites like Ars Technica and Slashdot are overwhelmingly opposed to software patents, as are the entrepreneurs who read sites like TechCrunch and Hacker News.

There are at least three reasons to exclude software from patentability. First, software development is an individual, creative activity, more akin to writing a novel than designing a jet engine. A single programmer can inadvertently infringe dozens of software patents in the course of a single project. That means that virtually every organization with more than a handful of employees, including the Cato Institute and National Review, has an IT department producing potentially infringing software. We don't expect novelists to hire patent lawyers before publishing their work; nor should we expect computer programmers or their employers to have patent attorneys on retainer.

Second, software patents are especially prone to litigation. In their influential book Patent Failure, James Bessen and Michael Meurer document a startling rise in patent-litigation costs during the 1990s. Much of the rise is attributable to software patents, which are more than twice as likely to be litigated as other categories of patents.

Finally, software patents are unnecessary because software is already eligible for copyright protection. Not only is copyright law simpler and less expensive than patent law, it also doesn't have patent law's problems with inadvertent infringement. As long as programmers write their own code from scratch, they can be confident they aren't infringing others' copyrights.

Unfortunately, given the political influence of large companies with substantial patent portfolios, there's little hope of Congress's reversing the legalization of software patents by the courts. The best hope for reform is that the courts will correct their own mistake. The Supreme Court has never endorsed the lower courts' radical expansion of software patents. This means that, in principle, the Supreme Court could eliminate most software patents with a stroke of a pen, simply by reiterating that its 1981 ruling is still the law of the land, and that lower courts misinterpreted it during the 1990s.

That would be a controversial step, since it would invalidate thousands of patents worth billions of dollars. It would have been much better if the Supreme Court had overruled

the Federal Circuit's disastrous State Street decision in 1998, before it could do any damage. But fixing a mistake late is better than not fixing it at all.

Mr. Lee is an adjunct scholar at the Cato Institute. He covers technology policy for the online publication Ars Technica.