

Timothy B. Lee notes that New Zealand has just abolished software patents. Should this be a worldwide policy?

What's wrong with the patent system? Most people cite problems with patent trolls or low patent quality. But a recent study by the Government Accountability Office makes it clear that the real problem is more specific: Patents on software don't work.

Of course, the GAO doesn't quite come out and say that. The study, released last week, has the bland title "[Assessing Factors That Affect Patent Infringement Litigation Could Help Improve Patent Quality.](#)" But the study is chock-full of evidence that most of the patent system's problems are really problems with software patents.

The number of software patents has soared in the past two decades. In 1991, software-related patents (using a broad definition adopted by the GAO) accounted for fewer than a quarter of all patents issued by the U.S. Patent and Trademark Office. In 2011, for the first time ever, software patents accounted for the majority of all patents issued:

The rise in patent litigation is a more recent phenomenon. "The overall number of defendants in [patent] cases increased from 2007 to 2011 by about 129 percent over the 5-year period," the GAO reports. "Lawsuits involving software-related patents accounted for about 89 percent of the increase in defendants during this period."

Interestingly, while trolls get a disproportionate amount of press, the GAO found little evidence that they're responsible for the growth in patent litigation. The proportion of lawsuits initiated by trolls ("patent monetization entities") and non-trolls ("operating companies") hasn't changed much over the past five years.

In other words, both trolls and non-troll companies have been enforcing their patents more aggressively in recent years. What's changed is that there are a lot more patents on software than there used to be. And software patents are much more prone to litigation than other patent categories.

One software is used so widely. For example, retail businesses have suddenly started facing software-patent lawsuits:

One representative from a retail company noted that historically, all of the patent infringement lawsuits brought against the company used to be related to products they sold. However, as of mid-2012, the representative said that half of the lawsuits against the company were related to e-commerce software that the company uses for its shopping website — such as software that allows customers to locate their stores on the website... City public transit agencies have been sued for allegedly infringing patents by using software for realtime public transit arrival notifications, according to a few stakeholders we interviewed.

The GAO says that “many recent patent infringement lawsuits are related to the prevalence of low quality patents; that is, patents with unclear property rights, overly broad claims, or both. Although there is some inherent uncertainty associated with all patent claims, several of the stakeholders with this opinion noted that claims in software-related patents are often overly broad, unclear or both.”

Why is software-patent quality so low? The GAO speculates that “language describing emerging technologies, such as software, may be inherently imprecise because these technologies are constantly evolving.” Also, it says, “claims in software patents sometimes define the scope of the invention by encompassing an entire function — like sending an e-mail — rather than the specific means of performing that function.”

Another problem: the complexity and rapid development cycle of software makes patent research impractical. “Representatives from a software start-up company we spoke with told us that searching for relevant patents before developing new products is unrealistic and diverts already scarce resources, particularly because their product development process can be as short as 2 months,” the GAO says.

“A few representatives of venture capital and software start-up firms told us that they do not always apply for patents until their companies are well established because patent attorneys are expensive, and the process is time-consuming. They told us that the cost of R&D is low relative to the cost of applying for a patent, so there is minimal incentive in the software industry to patent in order to recoup R&D costs.”

That’s very different from the pharmaceutical industry. The GAO says that “several representatives from the pharmaceutical industry told us that patents are actually critical to their ability to recoup the costs of developing a new drug, which can cost as much as \$1 billion and take from 10 to 15 years.”

The GAO suggests some modest changes to improve the quality of software patents, such as amending the law to “require more detail for algorithms” in software patents. But policymakers should consider a more radical option: eliminating software patents altogether. There’s little evidence that patents promote innovation in software, and a great deal of evidence that they hinder it.

And this is more than an abstract possibility. New Zealand voted to ban software patents. The European Union has been debating whether to allow patents on software for more than a decade, with a strong grass-roots movement pushing to disallow them.

In the United States, the Supreme Court issued three decisions that could be read to exclude most software from patent protection. The

lower courts adopted an extremely permissive interpretation of those precedents in the 1990s, leading to the subsequent rise in software patents. But in theory the older Supreme Court precedents are still good law, and the Supreme Court could overrule the lower courts and revive the more restrictive approach of the 1970s.