

A New Look at Patent Reform*

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Introduction

In the past few years, several proposals on how to rectify the perceived problems with the United States patent system have been made. Those receiving the most attention are the United States Patent and Trademark Office (USPTO)'s own *21st Century Strategic Plan*,¹ the Federal Trade Commission (FTC)'s *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy*,² and the National Research Council (NRC)'s *A Patent System for the 21st Century*.³

Many of the recommendations of these three reports are similar. The proposals all recognize that examinations are not perfect. It is simply impractical to compare the claimed invention against every printed publication in every language, everywhere in the world and everything known, used, or on sale in the United States.⁴ So they suggest some form of post-grant patent opposition to allow others to submit prior art or otherwise indicate why a patent was improperly issued.

* Copyright © 2004-2006 by Lee A. Hollaar. Special thanks go to Jeremy Tunnell, who as an intern working with IEEE-USA's intellectual property committee provided me an excellent summary of the Australian innovation patent law, and to my research assistant, John Knight, for his suggestions on how to make this version clearer.

¹ The United States Patent and Trademark Office submitted its *The 21st Century Strategic Plan* to Congress on June 3, 2002. Based on feedback from Congress and other stakeholders, the USPTO released an updated version on February 3, 2003.

<http://www.uspto.gov/web/offices/com/strat21/index.htm>.

² The Federal Trade Commission issued its report in October 2003, after 24 days of hearings from February through November 2002 involving more than 300 participants.

<http://www.ftc.gov/os/2003/10/innovationrpt.pdf>.

³ A prepublication draft of the report was released in April 2004 by the Committee on Intellectual Property Rights in the Knowledge-Based Economy established by the National Research Council's Board on Science, Technology, and Economic Policy

<http://books.nap.edu/catalog/10976.html>.

⁴ 35 U.S.C. §102(a) and (b).

I believe bolder changes may be necessary for a patent system to work in the face of today's fast-moving technologies. Post-grant opposition and ending the diversion of patent fees (another recommendation common to all three proposals) would surely help the patent system, but are not enough. In this paper, I propose the creation of a new, limited patent and much stronger examination before the issuance of a conventional utility patent.

A patent or nothing

For many technologies, and in particular for computer-based inventions and methods of doing business,⁵ a patent may be the only available means of effective protection. Copyright only protects the expression of a technique, and not the technique itself. If a competitor can determine the method of a computer-based invention and implements it without reproducing its copyrighted expression (such as producing a "clean-room" implementation based on a functional description), there is no copyright infringement. Often, a technique is self-revealing, so that once competitors are aware of it, it is not difficult for them to incorporate it into their products or services.

For example, Amazon.com first used its "one-click" technique⁶ in September 1997.⁷ By May 1998, eight months later, Barnesandnoble.com (BN) was using the technique on its web site, although there is no evidence they were infringing Amazon's copyright in the implementation of the technique. One of BN's expert witnesses, who had previously implemented a web ordering system, admitted he never considered making single-action ordering an option, but once it was in use and publicly visible, it was not difficult for competitors to come up with their own implementations.

Amazon had filed a patent application on September 12, 1997, and the patent issued on September 28, 1999. BN was using the technique during the Christmas 1998 season, an important time for online merchandizing. After the patent was granted, Amazon was able to get an injunction against BN's use of the technique during the 1999 Christmas season.⁸

That pendency was average for a patent at that time, and low for most computer-related patents. Patent pendency now average over two years, and much longer for some technologies, and pendencies continue to increase.⁹ The original goal of the USPTO plan was to reduce average pendency to eighteen months, but for fast-moving technology, that is still too long.

⁵ Many "method of doing business" patents are often just patents on computer-based inventions, since to be practical a computer must be used to process the amount of data necessary for a commercial system.

⁶ "Method and system for placing a purchase order via a communications network," United States Patent No. 5,960,411, issued September 28, 1999.

⁷ See *Amazon.com v. Barnesandnoble.com*, 73 F.Supp.2d 1228, 53 USPQ2d 1115 (WD WA 1999).

⁸ The injunction was later vacated by the Federal Circuit because there were substantial questions regarding the patent's validity. 239 F.3d 1343, 57 USPQ2d 1747 (Fed. Cir. 2001).

⁹ Statement of James E. Rogan, Under Secretary of Commerce for Intellectual Property and Director of the USPTO before the Subcommittee on Courts, the Internet and Intellectual Property, House Committee on the Judiciary, April 3, 2003.

All three reports also recommended improvement in the quality of examination, especially with regard to the determination of whether a claimed invention is obvious in light of the prior art. It is hard to see how that would not increase pendency. Because patents may offer the only meaningful protection for a technology, an applicant will likely contest any finding of nonobviousness made by the examiner.¹⁰

Patent protection: too much, too long, too late

Consider a hypothetical based on the Amazon patent. Online retailer A develops a new technique to improve the shopping experience for its customers, based on what it observed during the 1999 Christmas shopping season. By March 2000, it has completed its implementation of the technique and has deployed it on its web site. At the same time, it also applies for a patent.

Competitor B sees A's new technique, and decides to implement its own version. Eight months later, in November (just in time for the 2000 Christmas season), it also provides the technique for its customers, eliminating A's advantage.

If the USPTO were to achieve its goal of a first office action within 18 months of the filing of an application, on September 2001 A would receive an action, most likely rejecting all its claims as obviousness in light of a variety of references. A replies as fast as it can, but it is clear that even if the examiner accepts all of A's arguments, a patent will not issue until after the 2001 Christmas shopping season. So, B gets to compete using A's technique for another season.

Because A realizes that the only way it will be able to protect its technique is with a patent, it continues the prosecution of the patent in the face of the heightened scrutiny for obviousness resulting from the various patent reform proposals. Three years after filing its application, in March 2003, A finally receives a patent on the technique. Its competitor, B, finally has to stop using A's technique, although it was able to use it during the 2000, 2001, and 2002 Christmas shopping seasons. A receives little or no benefit for being the first adopter.

But after A receives its patent, it can stop others from using the technique until March 2020, twenty years after the filing of its granted patent application. And that includes not only competitors like B, who saw A's technique and used it as the basis of their own implementations, but others like C, who was

¹⁰ The statute places the initial burden of showing nonobviousness on the examiner. ("A person shall be entitled to a patent unless ..." 17 U.S.C. §102.)

Many times, an examiner simply finds a number of prior art references that seem to disclose the key aspects of the invention and asserts that the invention is obvious in light of those references. Such hindsight is clearly improper, with the Federal Circuit saying that there must be some motivation to combine the references. See, for example, *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999). Once the applicant states that the prior art references don't teach the same thing as the claimed invention or there is no motivation to combine them, the examiner often withdraws the rejections but does not look for more pertinent prior art or reasons to combine the references, and instead allows the application. Presumably, that is one of the things that those advocating better examinations would change in some way.

working on a similar technique in March 2000, when A applied for its patent, but didn't complete its implementation until a month or so after A.¹¹

Whatever you may think about Amazon's "one-click" patent, it (and the hypothetical based on it) illustrate problems with the current patent system that the proposals would not fix, and may even worsen.

- It takes too long to get patent protection, particularly for fast-moving technologies that can be readily copied once they are being used.
- Patent protection often goes beyond what is needed to prevent competitors from usurping new techniques, with protection lasting about two decades and blocking those who independently created the technology.
- Because of the requirement for nonobviousness, it should be difficult to get a patent, but the limited examination dictated by current application fees often doesn't give the examiner time to find and consider important prior art.
- No other form of intellectual property protection (copyright, trade secret) is available to protect a new computer technique or method of doing business.

An intermediate form of protection is needed

The solution to these problems is not fine-tuning the current patent statutes and rules. Instead, a new intermediate form of protection is needed that can be used in lieu of a patent, or until a patent is granted.

A number of countries have a "petty patent" or "utility model" of intermediate protection.¹² Others have proposed "useful article" protection,¹³ a form of which was enacted in the "boat hull" statute.¹⁴ But those laws or proposals are generally limited to protecting mechanical devices and other manufactured items. They do little or nothing to protect software-based inventions, methods of doing business, or other processes, which as discussed above are areas where an intermediate form of protection may be the most useful.

In May 2001, Australia introduced a new alternative patent, which it calls an "innovation patent."¹⁵ Unlike a regular patent, the innovation patent provides only eight years of protection, with no substantive examination before issue and requiring only novelty and an innovative step with respect to the prior art. Later examination can be requested by the patent owner, as a prerequisite to filing an infringement action, or by any other party. The allowable subject matter for an innovation patent is the same as for a standard patent, although only five claims are allowed.

¹¹ Independent creation is not a defense to patent infringement. There is a prior user defense for business methods, but requires that the business method had been used at least a year before the filing date of the patent application. See 35 U.S.C. §273.

¹² See the discussion of two forms of German protection at §3.06[2] of *Chisum on Patents*, and in particular its discussion of the Gebrauchsmuster.

¹³ One group that has been advocating article protection for decades is IEEE-USA. <http://www.ieeeusa.org/forum/POSITIONS/newip.html>.

¹⁴ 17 U.S.C. §1301 *et seq.*

¹⁵ http://www.ipaustralia.gov.au/patents/what_innovation.shtml.

In the first three years of the innovation patent, approximately 2000 applications were filed. About sixty percent were granted and about eight percent fully examined.¹⁶ In contrast, about 67,000 applications for standard patents were filed, with about 40,000 granted during approximately the same period. About thirty percent of the innovation patent applications were for consumer goods, while about twelve percent were related to information technology.

Perhaps one of the reasons Australia's innovation patent has not been more widely used is the small difference in cost between it and a standard patent, particularly when the costs of preparing and prosecuting the application are considered.¹⁷ The benefits of an innovation patent may be outweighed by the decreased patent term of eight years rather than twenty. Innovation patents are primarily interesting when the invention is novel but obvious, so standard patent protection would not be available, or when quick but limited protection is necessary.

Issues for a limited United States patent

The Australian innovation patent suggests an interesting way of addressing the problems with current United States patents. Its protection comes into being without the delay of examination, solving the problem presented in the hypothetical above.

But because the innovation patent appears to simply trade-off a reduced term for a lower standard of patentability, it should not be adopted by the United States as a way of addressing the problems with current patents for fast-moving technology. Instead, a number of issues need to be carefully considered in determining the form of such a limited patent.

What to protect?

It is most logical that technology that could be protected by a limited patent would be that protected by current patents: "process, machine, manufacture, or composition of matter."¹⁸ There is an existing body of law that covers this, and exclusion of software-based inventions or business methods, as is the case with most countries' petty patents or with article protection ignores the very technologies where this protection would be most applicable.

The next issue is the required degree of creativity for protection. The three degrees of creativity found in other forms of intellectual property are originality, novelty, and nonobviousness. Originality is the criteria in both the copyright¹⁹ and the boat hull²⁰ statutes. It is the lowest level of creativity, requiring little

¹⁶ Data available at <http://www.ipaustralia.gov.au/about/statistics.shtml>.

¹⁷ The application fee for an innovation patent is \$150 if it is filed online, compared to \$290 for a standard patent. The examination fee for a standard patent is \$340 and for an innovation patent is \$290, although an innovation patent does not need to be examined until litigation is planned.

See http://www.ipaustralia.gov.au/patents/fees_index.shtml.

¹⁸ 35 U.S.C. §101.

¹⁹ "Copyright protection subsists, in accordance with this title, in *original* works of authorship fixed in any tangible medium of expression ..." 17 U.S.C. §102(a).

²⁰ "The designer or other owner of an *original* design of a useful article ... may secure the protection provided by this chapter ..." 17 U.S.C. §1301(a)(1).

more than the protected item not be copied from another. Patent protection requires that the invention be both novel, meaning it does not already exist in the prior art,²¹ and nonobvious, meaning that it is different from the prior art in a way that would not be obvious to a person with ordinary skills in the art of the invention at the time the invention was made.²²

Novelty may be the most appropriate standard for this intermediate protection. This would prevent people from receiving protection for things that are already available to the public²³ while avoiding the problems associated with trying to prove or disprove that something is “obvious” in light of the prior art. The Australian innovation patent requires novelty plus a little more – some “inventive step.” But that additional requirement would result in much litigation trying to determine what, beyond novelty, the required inventive step is.

But there should also be a limited form of nonobviousness required: that if a process or method is prior art, simply implementing that process or method on a computer or storing it on some medium does not result in a novel invention unless there is something nonobvious in the way the computer is being used or the information is being stored.²⁴

The requirements for protection?

Under current United States copyright law, nothing is required to secure copyright protection for a work beyond fixing it in a tangible medium of expression.²⁵ Before the Copyright Act of 1976, both publication and registration were required. Boat hull protection requires registration²⁶ as well as a notice on the protected hull.²⁷ Patents require the filing and examination of an application, and provide no protection until the examination has been completed and the patent is granted.

Since we are trying to provide more timely protection than patents, it is unreasonable to delay the protection during an examination period. But simply providing protection based on the marking of an item or a simple registration does not give sufficient notice to the public of the aspects of the item that are protected. If a car were marked with a protection notice, one would not know whether the protection extends to the car as a whole, the rear-view mirror, or a screw used somewhere in the car. Simple registration, such as for boat hulls, is

²¹ 35 U.S.C. §102.

²² 35 U.S.C. §103.

²³ The originality requirement for copyright allows somebody to receive their own protection for a work identical to an existing work as long as it was independently created. While it is unlikely, courts and commentators like to discuss the copyrightability of an independently-created work that ends up identical to a prior work, such as Keats’ *Ode on a Grecian Urn*.

²⁴ Amending the “all elements” 35 U.S.C. §103 to give no patentable weight to the use of a computer or storage on a commonly-available medium should also be considered. See my paper “Justice Douglas Was Right: The Need for Congressional Action on Software Patents”, *AIPLA Quarterly Journal*, Volume 24, Number 1, pages 283-305, Winter 1996, <http://digital-law-online.info/papers/lah/aipla-qj.html>.

²⁵ 17 U.S.C. §102(a). 17 U.S.C. §411 requires registration of the work in many instances before an infringement suit can be brought.

²⁶ 17 U.S.C. §1310.

²⁷ 17 U.S.C. §1306. 17 U.S.C. §1307 provides limits on the protection if the required notice is omitted, such as decreased infringement liability.

inadequate – it works for boat hulls because we know the only “useful article” in the view of the statute is a boat hull.²⁸

With patents, determining the extent of protection is straightforward, since the patent contains a number of claims indicating the scope of protection.²⁹ (Well, relatively straightforward, since disputes over the meaning of the terms of a claim are a major component of patent litigation. But it is certainly easier to determine what is protected by a utility patent than for a copyright or trade secret, or even a boat hull or design patent.) Such a claiming requirement should be a part of any intermediate protection.

Protection could come about by first filing of an application as the protected item were close to public availability, along with a nominal filing fee, around \$500. Those wanting this intermediate protection should have to describe and claim the particular aspects of their technology that they felt to be novel and therefore protectible. The registration number, issued before the first use in commerce of the technology, would provide an index into the patent office’s information on the limited patent and an indication of what is claimed to be protected.

The protection would come into being when the technology is first used in commerce within the United States, marked with its registration number. Since the primary purpose of this limited patent is to provide immediate protection for technology that could be copied by a competitor before patent protection could be secured, there is no need to provide the protection for speculative inventions or those not available to the competitors.

One of the important aspects of patents is their disclosure of the invention, not only to the public but for the prior art collection used to examine later patent applications. Software patents have been a problem because there was a period when the patent office was not accepting applications in that area (or was viewed hostile to them). Techniques from the formative time of computer applications are not in the patent office’s organized collection of past patents, making it difficult to determine if a claimed invention is novel or nonobvious. It is important that this intermediate protection be given only after its technology is adequately described.³⁰

No examination beyond a check to see that the requirements for registration were met would be performed. In particular, there would be no search to determine if the protected technology was, in fact, novel. Because there would be no administrative determination of novelty, there would be no presumption of validity for the limited patent. If electronic filing were used, it should be possible for the patent office to return a registration number immediately (if it could be later cancelled if the formalities had not been met) or within a short time.

The length of protection?

As discussed above, patent protection not only may come too late, but when it does come about it is for about seventeen years, far too long for many technologies. Copyright protection is even worse in this regard, extending

²⁸ 17 U.S.C. §1301(b)(2).

²⁹ 35 U.S.C. §112, second paragraph.

³⁰ 35 U.S.C. §112, first paragraph.

seventy years after the death of the author. Boat hull protection is for ten years, although there is nothing to indicate that a term that long is necessary.

Three to five years is the term often suggested for fast-moving technologies.³¹ Perhaps four years would be appropriate. It would not only provide a reasonable head start against competitors, but cover the pendency of a regular patent application covering the same technology if the inventor wanted the longer term of a regular patent. Having such a relatively short term would also reduce the impact of the protection on the aftermarket parts sector as well as fast-moving technologies.

If, in fact, the patent office can reduce the time for a first office action to eighteen months, the inventor could have about two years of marketing the invention before deciding whether to file an application for a regular patent. If the application for registration were regarded as a published patent application, the applicant would be entitled to provisional rights to a reasonable royalty for using the invention during the time the regular patent application were pending.³²

The head start over competitors could be maintained by developing new features for the technology during the four-year term of protection, each of which could qualify for its own limited patent with a new four-year term. Of course, like any patent protection, when the patent expires anybody can market the patented technology, but not improvements protected by subsequent patents until those patents expire. This encourages the development of improvements to patented technologies.

What acts violate the protection?

Once protection exists because of registration and use in commerce, what should trigger liability for violating the protection? Again, it might be best to follow the infringement formula for patents: making, using, selling, offering for sale, or importing, as well as contributing to or inducing infringement.³³

But it should protect only against those who were aware of the technology and its protected status, not independent inventors. This copying requirement for liability would reach only those producing the protected technology, not end users as can be the case with regular patents. But indirect liability, primarily inducement to violate the protection, would address those who sponsor the production of things that violate the protection.

Showing prior development and use would be an absolute defense, and also invalidate the limited patent, since novelty would be a requirement for the protection. But this would be a personal defense, much like the one currently

³¹ In response to criticism of the “one-click” patent, Jeff Bezos, CEO of Amazon and one of the inventors, proposed a three- to five-year duration for business method and software patents. That is probably not possible under present treaty commitments to technology-neutrality and a twenty-year term from filing. See *Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)*, Articles 27 and 33. But this limited patent would be an alternative to existing patents, which would still be available and continue to meet our treaty obligations.

http://www.oreilly.com/news/amazon_patents.html

³² See 35 U.S.C. § 154(d). The registration disclosure should be updated to reflect that a utility patent application has been filed that claims the same subject matter, to warn those examining the registration to determine what is being protected.

³³ 35 U.S.C. §271(a), (b), and (c).

available for users of a business method who completed their implementation before the invention leading to the patent they are infringing, but have kept it secret.³⁴

Substantial completion would also be defense. An alleged infringer that could show that their product was substantially completed at the time the limited patent protection first came into being would not violate the protection, since their product was not significantly copied but was substantially independently created. But the burden of proof would be on the alleged infringer to show substantial completion by development logs or other documentation.

That would prevent the problem to a company when another gets a patent on a technology that a company has spent a great deal of money on independently developing, and is forced to either lose its investment or fight to get the patent invalidated.³⁵ Limiting that concern to a reduced number of regular patents would take some of the risk out of technology investment and make it more available.

Prelitigation requirements?

Because there would be no examination required before protection begins, but there is a requirement that the protected item be novel, it would be desirable to impose an examination requirement as an initial step in any litigation. This would reduce the cost of litigation when a violation is alleged and provide for a faster resolution of the novelty issue.

At the time an infringement suit is filed, the proceeding would be stayed pending a novelty examination by the patent office. This would be less time consuming than a regular patent examination, because nonobviousness would not be considered and the alleged infringer would be aware of the examination (because of the suit) and be able to provide prior art for the examiner to consider. The limited patent owner would pay a nominal examination fee (perhaps \$500, recognizing that the examination would be somewhat simpler than for a regular patent), much as it paid a filing fee for the suit.

In addition, examination could be requested by any party by the payment of the examination fee and the submission of prior art showing the protected item is not novel.

Because there was no initial examination, there would be no presumption of validity. But after examination, the limited patent would be presumed valid with respect to the prior art considered, and the defendant would be estopped from bringing new prior art before the court. If new prior art was discovered by the defendant, the suit would again be stayed and the defendant would have to pay for another examination, based on the newly-discovered prior art. This will shift the determination of novelty from a judge or jury, inexperienced in the particular technology, to the patent office and its technically-trained examiners.

³⁴ 35 U.S.C. §273.

³⁵ Only after being sued for patent infringement, or if sufficiently threatened by the patent owner so that they can seek a declaratory judgment of invalidity. While they could ask for the patent to be reexamined, that is only possible if they have prior art and their own substantial completion may not qualify. If the patent owner does not sue or threatened, the patent hangs as a Sword of Damocles over the company that independently developed the patented technology.

Better examination for regular patents

One problem not discussed by the advocates of better examination for regular patents is the effect on fees. A better examination will necessitate an increase in fees, perhaps a substantial one, to pay for the increased time spent by the examiner reviewing prior art and addressing the arguments of the applicant, as well as a “second pair of eyes” review as is now the case for business method patents,³⁶ if that idea were extended to other arts. But even though patent application fees are a small part of the cost of filing for a patent,³⁷ any substantial increase will likely lead to a reduction in patent filings, especially by cash-strapped small companies and inventors.

We saw the effect of discouraging the filing of applications when the USPTO’s policy was not to grant patents on software-based inventions, or at least make it difficult for applicants to get such a patent. Software developers didn’t file applications on their advances because they didn’t believe that patent protection was available, resulting in a gap in the USPTO’s prior art collection corresponding to the formative years of software systems³⁸ and a stretching of copyright protection by the courts to fill the gap left by not having patent protection available.³⁹ We are still paying for that gap in the prior art collection in terms of patents being issued on old techniques, and we cannot afford to have that happen again.

An intermediate form of patent protection would fund substantially strengthening of the conditions for getting a regular patent. Instead of a single examiner spending about twenty hours on an application, an increase in application fees by a factor of twenty⁴⁰ could pay for a team of examiners, led by a senior examiner, spending on the order of 400 hours searching prior art and assessing the obviousness of an invention.

Such a fee increase could also reduce the workload on the patent office since many inventors might opt for the lower-cost, and immediate, protection of the limited patent and not go for a full patent.

Conclusion

While a number of reports have made suggestions for improving the United States patent system, improving the quality of examination may have

³⁶ See <http://www.uspto.gov/web/offices/com/sol/actionplan.html>

³⁷ The current application fee is \$770, and is half that for “small entities.” (That obviously doesn’t pay for a lot of examiner time.) If the patent is allowed, there is a \$1330 issue fee, also discounted by fifty percent for small entities. In contrast, patent attorneys may charge \$5000 or (often) more to prepare a patent application.

³⁸ A personal example: In 1969, working for the Chicago software company Datalogics, I developed a new way for composing complex, multicolumn page (such as the yellow pages) and producing an output for a phototypesetter that only required forward motion of the film. The technique was at least ten times faster than other systems, and allowed Datalogics to become a leader in computer typesetting systems. (At one time, about two thirds of law reviews, for example, were composed using Datalogics software.)

The technique remained a trade secret of Datalogics, since copyright would not protect the technique itself and patents seemed unavailable. As far as I know, a description of the technique has never been available to the public and so the technique has been essentially lost.

³⁹ See, for example, *Whelan v. Jaslow*, 797 F.2d 1222, 230 USPQ 481 (3rd Cir. 1986).

⁴⁰ From \$770 to about \$15,000, with a suitable reduction for small entities.

unexpected consequences. The increased examination fees may discourage the filing of patent applications, thereby hurting the prior art collection needed to properly examine applications. Heightened scrutiny for nonobviousness will likely increase pendency, particularly for inventions where patents are the only available form of protection and so the applicant must continue prosecuting an application until a patent is granted.

For fast-moving technologies, current patent protection is too much, too long, and too late. The creation of a limited patent could provide the necessary protection while allowing substantial improvements to the quality of the examination of regular patents.

Comparison to other suggested approaches

Since I first wrote this, two particularly noteworthy suggestions have been published. But neither really addresses the problems I noted above, and one would likely cause problems with copyright while not substantially helping patents.

“Gold-plated patents”

In their paper “What to Do about Bad Patents?,”⁴¹ Profs. Mark Lemley, Doug Lichtman, and Bhaven Sampat suggest a tiered patent system. Their proposal recognizes that very few patents are actually litigated, or even asserted against another party.⁴² There is little point in improving the examination for every patent if there could be some way of identifying important patents, and they propose to do that by seeing if somebody has enough interest to pay for a better examination.

That would come about in one of two ways. Either the patent owner may pay a substantially-larger fee for a more comprehensive examination, or another party may require a reexamination of the patent. As the authors write, “applicants should be able to ‘gold-plate’ their patents by paying for the kind of searching review that would merit a presumption of validity.”⁴³

The proposal does nothing to reduce the long pendency without protection that is a special problem for fast-moving technologies, unless the patent office decides to further reduce the quality of its examinations because there is no

⁴¹ *Regulation*, Vol. 28, No.4, Winter 2005-2006, pp 10-13, available at <http://www.cato.org/pubs/regulation/regv28n4/v28n4-noted.pdf>.

⁴² They point to recent bad patents: “obvious inventions like crustless peanut butter and jelly sandwiches, ridiculous ideas like a method of exercising a cat with a laser pointer, and impossible concepts like traveling faster than the speed of light.”

⁴³ There are two aspects to the statutory presumption of patent validity. The first is the “burden of persuasion” which requires that the challenger of a patent must put forth evidence of invalidity, rather than the patent owner having to prove validity as part of its infringement claim. This only makes sense, because it is impossible for a patent owner to show that there is no prior art anywhere in the world that would render the patent invalid. This concept is illustrated by a court finding a patent “not invalid,” rather than “valid,” if the defendant is unsuccessful in proving invalidity.

The second aspect is the “burden of producing evidence,” which establishes the sufficiency of the evidence required to prove invalidity. Patents now enjoy the heightened requirement of clear and convincing proof, more than the normal civil litigation standard of the preponderance of the evidence.

longer a strong presumption of validity for patents that have not been “gold-plated.”

Until the patent has been “gold-plated,” patent owners’ rights are in limbo because they must either have another examination or confirm the patent through litigation before they are sure of the scope of their rights. A patent would become simply a notice that there may be some rights that could be asserted after it has been further examined. And because the scope of the patent could change substantially when it is being further examined, any notice provided is uncertain.

In contrast, the limited patent proposed here provides immediate, but limited, rights based on registration and use in commerce. There is no need to further reduce the quality of examination to reduce the backlog of applications. And the lower application fee encourages more disclosures for the patent office’s prior art database, improving the quality of both regular and limited patents when they are examined.

Copyrights, not patents, for software

In his book *Math You Can’t Use*,⁴⁴ as well as two articles published in *IEEE Spectrum*,⁴⁵ Ben Klemens calls for the ending of patent protection for computer software. In his view, software should be protected only by copyright.

This proposal will certainly play well with the people who are against software patents, but experience shows that it will cause more problems than it solves. Before it became clear through a series of court decisions that software-based inventions were patentable, we had the system that Klemens proposes. For those cases where an infringer simply made a literal copy of a computer program, there was little problem. The problem came when a new program was written using techniques from an existing program. To what extent should such “non-literal” copying be an infringement?

The high-water mark in non-literal copyright protection for computer software came in *Whelan v. Jaslow*,⁴⁶ which held that the “structure, sequence, and organization” of a computer program was protected by its copyright. We don’t know how far courts would have continued to stretch copyright beyond literal infringement because about the time *Whelan* was decided, the Supreme Court had found a algorithm-based invention that it felt was patentable⁴⁷ and the Federal Circuit had completed its embrace of software patents with *In re Alappat*.⁴⁸ As software patents became the preferred means for protecting a new technique, copyright reverted to protecting against the literal copying of a computer program.

⁴⁴ Brookings Institution Press, 2005, ISBN 0-8157-4942-2.

⁴⁵ “Software Patents Don’t Compute,” July 2005, and “New Legal Code,” August 2005.

⁴⁶ 797 F.2d 1222, 230 USPQ 481 (3d Cir. 1986).

⁴⁷ *Diamond v. Diehr*, 450 U.S. 175 (1981). But software patents had issued well before then. For example, see U.S. Patent 3,568,156, “Text Matching Algorithm,” granted in 1971. (The inventor, Kenneth Thompson, is also one of the creators of the Unix operating system.)

⁴⁸ 33 F.3d 1526, 31 USPQ2d 1545 (Fed. Cir. 1994).

Determining what is protected

Klemens points to the ease of getting a copyright compared to a patent. A copyright comes into being at the time of fixation of a work, and a simple registration form must be filed before an infringement suit can be brought. But such simplicity comes at a price – as cases like *Whelan* show, it is hard to determine just what is protected by a copyright, making it difficult for a person wanting to produce a new implementation of a computer program.⁴⁹ Because of the claiming requirement for patents, it is far easier to know in advance what a patent covers than what a copyright covers, especially if copyrights were to expand again to cover more and more non-literal aspects of a computer program because patent protection is not longer available.

In his book, Klemens recognizes that it might be necessary to go beyond protection for literal copying if copyright were to replace patents. “The correct breadth recalls the rule of thumb that protecting the interface is detrimental but protecting the implementation from theft is essential, but using that rule in the copyright realm requires new considerations: copyright can be interpreted too narrowly, since a program with the variable names changed is still the same program.” But he gives little guidance of how that line can be drawn in practice.

More troubling, in an example he indicates that a situation where an “imitation would likely be infringing,” he is troubled that applying the same test to software “becomes equivalent to a patent on an interface, and ... such breadth is economically detrimental.” Presumably, he would like to see copyright law for software develop on a different track from current copyright law, increasing the uncertainty about the breadth of protection until suitable case law develops and is generally accepted.

Disclosure is important

Also lost in Klemens’ proposal is the disclosure requirement that forms such an important part of the patent system. Even with “open source” software, it is difficult to find how a particular function is performed unless that function is an obvious part of a known program.

In fact, since adoption of the Copyright Act of 1976, there is no longer a requirement that the protected work even be published. A trade secret, written down or other fixed in a tangible medium of expression, is protected to the same extent as a book on sale,⁵⁰ even though its protected expression is unavailable except through a trade secret agreement. This is the case for most proprietary computer software.

In contrast, a patent concentrates on one particular technique, and that technique must be described fully in the published patent, so that a skilled person can implement and use the technique without undue experimentation. The disclosure is also manually placed within a classification system so that it can be readily located.⁵¹ The limited patent proposed in this paper would

⁴⁹ Linux is a new implementation based on Unix operating system. Many programs have been reimplemented by “free software” advocates to “liberate” them from their proprietary status.

⁵⁰ Perhaps even more, since the term of a work made for hire is 95 years from its first publication, or 120 years from the date of its creation, whichever ever comes first. 17 U.S.C. § 302(c).

⁵¹ When there are too many patents within a particular class and subclass, the patent office breaks the subclass (and related subclasses) into more specific subclasses or

continue this disclosure requirement and the classification of techniques by the patent office, and would enhance it by encouraging more filings because of the lower fee and simplified registration procedure.

Independent creation as a safe harbor

But there is a reason why software developers are less concerned about copyrights than patents, including their longer term. To infringe a copyright, you have to have based your work on the copyrighted work. No matter how similar your work is to another, if you can show that you independently created your work, you are not an infringer.

There is no such safe harbor for a patent infringer. If what you are doing meets all the elements of any claim of a patent, you are an infringer. It makes no difference whether you have ever seen the patented thing or are aware of the patent. As some recent high-profile cases have shown, a software developer can plow millions into development of a new system, but can be stopped by the owner of a patent that is not even producing a product or licensing the technology to a manufacturer.

This scares most software developers, especially when the quality of some patents is considered. And that is why the limited patent proposed here provides for a “substantial completion” defense as well as a showing that the infringement is based on the patented thing.

Copyright is not the solution

Klemens spends little time on another problem with copyrights – their term of protection. Many people think the twenty-years-from-filing term for patents is far too long for computer software. Patents for Microsoft’s Windows 95 are now just expiring. But copyright lasts seventy years beyond the death of the last author or, in the case of a published work made for hire, 95 years. The copyright on Windows 95 will not expire until the end of 2090!

Eliminating software patents and going to copyright as the only protection is likely to cause new distortions in copyright. It is better to look at those aspects of copyright protection, such as the defense of independent creation, combine them with the best parts of patents (enabling disclosure and required claiming), and set an appropriate term of protection (four years, rather than 20 years for patents and 95 years or more for copyright). That is what the limited patent proposed here does.

sometimes a new classification. For example, software-based inventions were initially a subclass within the class for computers. They later became their own class. Now, they span a number of classes, with an entire class for database techniques and another for artificial intelligence.