From: Mark Owen Griffith
Sent: Friday, March 15, 2013 3:33 PM
To: SoftwareRoundtable2013
Subject: Comments of David J. Jilk

To The United States Patent Office:

Attached are the comments of David J. Jilk, an individual, in the United States Patent Office proceeding USPTO-P-2012-0052: "Request for Comments and Notice of Roundtable Events for Partnership for Enhancement of Quality of Software- Related Patents."

Respectfully submitted,

Mark Griffith, Student Attorney
Tia Luber, Student Attorney
Ryan Clough, Adjunct Professor
William Hunt, Adjunct Professor
SAMUELSON-GLUSHKO TECHNOLOGY LAW AND POLICY CLINIC
UNIVERSITY OF COLORADO LAW SCHOOL
2450 Kittredge Loop Road
Boulder, CO 80309
+1 303 492 8126

Counsel for David Jilk

Before the
UNITED STATES PATENT AND TRADEMARK OFFICE
Washington, D.C.

In the Matter of Request for Comments and Notice of Roundtable Events for Partnership for Enhancement of Quality of Software-Related Patents	Docket No. USPTO-P-2012-0052

COMMENTS OF DAVID JILK

David J. Jilk
Dave@jilk.com
+1 303 499 3300

Mark Griffith, Student Attorney
Tia Luber, Student Attorney
Ryan Clough, Adjunct Professor
William Hunt, Adjunct Professor
SAMUELSON-GLUSHKO TECHNOLOGY LAW AND POLICY CLINIC
UNIVERSITY OF COLORADO LAW SCHOOL
2450 Kittredge Loop Road
Boulder, CO 80309
+1 303 492 8126

Counsel for David Jilk

15 March 2013

SUMMARY

The current examination procedures of the United States Patent and Trademark Office (USPTO) for software-based inventions can be improved. Because the universe of software prior art within USPTO's database is limited, patent examiners remain unaware of a significant number of references relevant to many software-based applications. These problems with prior art searching hinder the Constitutional goals of the patent system as applied to the software industry. However, the USPTO has an opportunity to make meaningful progress through simple changes to its examination procedures and training.

The vibrant community of technology startups in Boulder, Colorado shows both the promise of software innovations and the peril of low-quality software patents. Boulder attracts engineers, entrepreneurs, and investors from around the world. Many Boulder startups are in the software industry, and are frequently accused of patent infringement, typically by patent assertion entities. These threats of litigation inflict major harm upon the accused start-ups—for example, scaring away potential investors and customers—and can sometimes endanger their ongoing existence. Crucially, the high costs of litigation and licenses may force settlements *even when* the asserted patents are worthless. Most startups simply do not have the resources to challenge a patent's validity in court.

The experiences of David Jilk, a Boulder-area entrepreneur, illustrate this dilemma. In the mid-1990s, he disclosed a software-based invention on an online message board. Several years later, another company applied for a patent on the same technology. The applicant did not disclose Jilk's prior art, and the examiner did not discover it. Jilk later joined a start-up to commercialize this technology. By this time, the owner of the patent at issue had exclusively licensed it to one Jilk's competitors, who then notified Jilk of the similarites to his company's product, implicitly threatening an infringement action. Although it was highly likely that the

patent would eventually be invalidated in light of Jilk's prior art, the mere threat of litigation was enough to scare away a crucial potential customer, whose business would have been a major leap forward for his company. While no infringement suit was ever filed, Jilk's company was forced to operate under a fear of expensive litigation, and he continued to lose prospective customers and investors. Ultimately, the startup was acquired by a larger company for a disappointing sum—less than its last round of financing from investors. Unfortunately, Jilk's experience with software patents is typical among Boulder-area startups.

As Jilk's story shows, searches for software prior art during patent examinations can be improved. Because most software was believed to be unpatentable before the 1990s, the world of documented prior art in the field is small relative to other types of technology. This makes prior art found outside of patents and patent publications more crucial for accurate examination decisions on software applications. But because such art is more difficult to find, it is likely that a relatively high number of software patents issue despite the existence of invalidating references unknown to examiners. The USPTO can improve its search procedures by identifying reliable online resources for finding prior art for software-based inventions. Examiners should be specifically trained to use these resources and the USPTO should work to guarantee secure connections with them.

The new procedure for preissuance submission of prior art by third parties, under 35 U.S.C. §122(e), provides a further opportunity for improving the quality of software patents. In particular, the USPTO could improve examiner access to important software prior art by reviving its collaboration with the Peer to Patent initiative, or by drawing greater public attention to the Askpatents.com forum. The USPTO should also expressly require examiners to give thorough consideration to preissuance submissions in the next edition of the MPEP.

These proposals relate only to examination practices and conduct of patent examiners,

which fall directly under the USPTO's authority to regulate its own proceedings under 35 U.S.C. §2(b). Both these specific proposals and the general topic of prior art searching for software should be included in future discussions by the USPTO's Software Partnership.

TABLE OF CONTENTS

COMMENTS OF DAVID JILK

David Jilk ("Jilk") urges the USPTO to adopt examination procedures expanding the available databases for the examination of prior art of software-based patent applications to improve the overall quality of software-based patents. Current practices allow too many low quality software patents to issue, which are later asserted against productive entrepreneurs. This is contrary to the fundamental aims of the U.S. patent system. By harming startup companies without justification, these patents reduce innovation, commercialization and competition in the software industry, ultimately doing concrete harm to the larger economy. Jilk has experienced this personally: his startup was threatened with a patent claiming an identical technology that he had himself invented and disclosed, years prior to the filing of the relevant patent application. Although this problem is pervasive and severe within the software industry, the USPTO can make significant progress through minor changes to its examination procedures and training.

I. BACKGROUND

A. The Startup Community of Boulder, Colorado

In recent decades, Boulder, Colorado has achieved national acclaim as a center for scientific and technical creativity and commercialization, attracting engineers, entrepreneurs, and investors from all over the world. Billions of dollars have been invested in Boulder and Denver-area startups, in the hopes of achieving breakthrough innovations and homerun returns.[1] Between 2007 and 2009 alone, Colorado startups received approximately $1.9 billion of financing from venture capitalists.[2] Although Colorado is only the 22nd largest state by population, it received the 9th highest amount of venture

[1] Claire Cain Miller, *Boulder, Colo., a Magnet for High-Tech Start-Ups*, N.Y. TIMES, May13, 2010, http://www.nytimes.com/2010/05/14/business/14boulder.html?_r=1&.
[2] *Id*.

financing in the country in 2010 ($483 million).[3] In 2011, venture financing for Colorado firms received grew to $600 million.[4] In the same year, public companies headquartered in Colorado that were originally venture-backed created 162,720 jobs and $45 billion in national revenue (16th and 14th in the country, respectively).[5]

A large portion of the Boulder startup community is in the software industry.[6] In 2010, software companies accounted received 18% of venture financing in Colorado, second only to the energy industry.[7] Boulder is unique among regional innovation clusters in the United States. Professor Brad Bernthal, director of the Entrepreneurial Initiative of the Silicon Flatirons at the University of Colorado, has noted that as local biotechnology, telecommunications, and data storage found success in the early 2000s, "[t]hat generation of entrepreneurs had their success, and importantly, they don't leave. Lots of places, you get your money and you go retire somewhere. This place is a destination for people."[8] According to Richard Florida, who has written extensively about communities that prosper from the development of a "creative class." "Boulder has reached this beautiful sweet spot, where it has many advantages of a university town – tech and talent and openness [the factors of a creative class] – but without many of the costs and traffic and congestion that may disadvantage incumbent centers of innovation."[9]

B. David Jilk – How a Software Patent Discouraged Innovation

Jilk hopes to supplement the record on the quality of software-related patents with an

---

[3] National Venture Capital Association, *Venture Capital and Entrepreneurship in Colorado*, 2011, http://www.nvca.org/index.php?option=com_docman&task=doc_download&gid=736&Itemid=93.
[4] Andy Vuong, *Colorado firms got $619 million in venture capital in 2011*, THE DENVER POST, Jan. 20, 2012, http://www.denverpost.com/economy/ci_19780060.
[5] National Venture Capital Association, *supra* note 3.
[6] Miller, *supra* note 1.
[7] National Venture Capital Association, *supra* note 3.
[8] Miller, *supra* note 1.
[9] Miller, *supra* note 1; Richard Florida, *The Rise of the Creative Class*, WASHINGTON MONTHLY, May, 2002, http://www.washingtonmonthly.com/features/2001/0205.florida.html.

account of his experience with a particular software patent.[10]

In the mid-1990s, Jilk posted on an online message board about a software technology that he had invented. This software, for debugging web code, had three steps: 1) recording network interactions with one version of a program; 2) separately recording network interactions with a later version of the same program; and 3) comparing the two records to identify errors in the code. In the message board post, Jilk described the above technology in the hopes of finding users to test a beta version of the program. This description was sufficiently detailed to enable someone skilled in the art to write a program performing the same function. Several years later, as a member of the Boulder high-tech community, he joined a startup company based in Boulder County, which was financed by a Colorado-based venture capital firm to commercialize this technology.

Jilk's company engaged in advanced negotiations with the startup's first and biggest prospective customer, for a purchase of approximately $300,000. This customer was a prominent national company in the travel industry, with whom Jilk was excited about establishing a business relationship. The parties had nearly signed the agreement when a competitor contacted Jilk with a notice of patent infringement that appeared to threaten litigation. Unbeknownst to him, inventors from another company had previously received a patent for technology with a remarkably similar three-step process: 1) recording network interactions with a website from one computer; 2) separately recording network interactions with the same website from another computer; and 3) comparing the two records to identify errors in the code. The application for this patent was filed years after Jilk had disclosed his invention on the online message board. However, the patent holder did not disclose Jilk's

[10] Jilk is party to a confidentiality agreement relevant to the events discussed below. In order to ensure compliance with this agreement, all identifying information, aside from Jilk's name, has been removed from this account.

posting, and the examiner never discovered it. Ultimately, the patent holder granted an exclusive license to Jilk's competitor, who then targeted Jilk's startup.

Jilk and the startup's legal counsel investigated the patent, discovering that it claimed the same three steps that Jilk had disclosed in his message board post years earlier. They believed they had a strong case to invalidate the third party's patent based on Jilk's own prior art. However, the startup had limited financial resources—nowhere near enough to cover the cost of patent litigation. After all, the company was in the process of securing its first customer. Like many high-tech companies in Colorado, it was venture funded. Although solvent, it had very little revenue and cash reserves that were believed to last only six to eight months.

Jilk disclosed the notice of infringement to the potential customer. Unfortunately, the customer had previously been sued for patent infringement based on another purchase of third-party technology, and had lost hundreds of thousands of dollars as a result. Upon learning of this notice, the customer reconsidered its prospective purchase from Jilk's company. Jilk attempted to convince the customer's representatives that the patent would eventually be found invalid, but they were fixated solely on the uncertainty of liability and the costs of litigation, regardless of its merits. Within two weeks of the allegation of infringement, the customer backed out of the deal. Any offer of indemnification by Jilk's company was futile, as the customer did not trust that the startup could afford to cover a potential judgment. Although the customer preferred the functionality of Jilk's program, and had nearly signed a purchase agreement for that reason, the general risk of infringement liability and litigation costs were enough to lead the customer to pursue other existing options to meet its needs. The startup lost the entirety of that approximately $300,000 deal, which would have provided immediate cash flow, leverage for future financing, and

credibility with other prospective customers.

Jilk also met with the competitor that had alleged infringement. During this meeting, Jilk and the startup's legal counsel made a strategic choice not to disclose Jilk's prior at that time, but instead pointed out other credible grounds for arguing that the patent was invalid. The competitor's representatives seemed surprised at the strength of Jilk's defense. Following the meeting, the competitor ceased contact, giving no indication about whether it still intended to pursue an infringement claim.

This uncertainty hung over Jilk's head. Although he believed that he had strong defenses to an infringement suit, he knew that the competitor could revive its assertions or file a claim at any point. This clouded the startup's future. The competitor had not agreed that its patent was invalid, and Jilk had no idea if it would either demand a license or initiate immediate litigation, including a request for injunctive relief. Either of these scenarios would likely bankrupt his company. Jilk knew he would have to disclose this litigation risk to future customers, as purchase agreements typically include a representation and warranty about threatened litigation. Even in the absence of a legal obligation to disclose the risk, failing to do so would be dishonest, and would endanger Jilk's credibility with customers. Likewise, Jilk knew that the startup would have to make the same disclosure to potential investors or acquirers, who would likely adjust their offers to account for the litigation risk. This uncertainty became a major preoccupation, diverting time and resources from product development and efforts to attract new customers, investors, and employees.

Jilk's startup never recovered from the allegation of infringement. It lost its most promising customer, with no other prospects sufficient to replace it. With that customer's business, the startup would have hired new employees and invested in further product development. Without that business, it could do neither. With its future prospects dim, the

startup was eventually acquired for less than the last round of financing it had received, which was a significant disappointment for both Jilk and his investors. All of this stemmed from a patent that should never have been granted in the first place, because of Jilk's own prior art.

C. Jilk's Experience Reflects Problems Throughout the Software Industry

The USPTO has taken several positive steps in response to the growing public awareness of the controversy surrounding software patents. The most important of these is the formation of the Software Partnership, recognizing that the quality of software patents can be improved through a focus on insights from those in the industry. [11] The USPTO's study of software patent quality, as described by the USPTO expert advisors Stuart Graham and Saurabh Vishnubhakat in *The Journal of Economic Perspectives* ("the Graham Study"), is also notable.[12] Former Director Kappos called attention to this study in a speech given on November 20, 2012.[13] Its primary focus was the thirteen lawsuits involving Motorola, Microsoft, Apple, and Samsung – collectively dubbed "the Smartphone Patent Wars."[14] Out of the 133 patents asserted in those lawsuits, 21 have been the subject of court judgments.[15] Approximately 80% of those patents were found to be valid.[16]

The Graham Study also considered rates of rejection for software-enabled claims in examinations.[17] It found that the rate of rejection for software patents was comparable to the rate

---

[11] *See* Request for Comments and Notice of Roundtable Events for Partnership for Enhancement of Quality of Software-Related Patents, 78 Fed. Reg. 292-95 (January 3, 2013).
[12] Stuart Graham and Saurabh Vishnubhakat, *Of Smart Phone Wars and Software Patents*, Journal of Economic Perspectives, 27:1 Journal of Economic Perspectives, 67-86 (2013)
[13] David Kappos, *An Examination of Software Patents*, www.uspto.gov/news/speeches/2012/kappos_CAP.jsp.
[14] Graham, *supra* note 12, at 73.
[15] *Id.*
[16] *Id.*
[17] *Id.* at 76-78

of rejection for other areas of technology.[18] The study further considered the various avenues of review for patent examinations: internal audits, appeals to the Patent Trial and Appeal Board ("PTAB") and appeals from the PTAB to the Federal Circuit.[19] Based on data from all of these forums, the Graham Study concluded that examination errors are rare for software-enabled claims, and comparable to the error rate for other areas of technology.[20] From this data, the authors found no specific deficiencies in the quality of examination of software patents.[21] This view was echoed by former Director Kappos in his speech last year.[22]

The Graham Study is an excellent starting point for an examination of patent quality in software. It puts to rest much of the public concern about the smartphone patent wars through a comprehensive analysis of the patents involved. However, there is still room for further inquiry. Additional insight can be gained by looking beyond smartphone patents to the economic effects of software patents more generally. There is a substantial amount of independently collected and credible data that can supplement the findings of the Graham Study. This data suggests that the results of the smartphone cases may be atypical. It also shows that patent quality cannot be judged only by the results of fully litigated cases. The sample of patents and litigants that reach a final judgment of validity may not be representative, and unasserted patents and patent settlements can also have severely negative effects.

In addition to the high visibility and public awareness of the "smartphone patent wars," the organizations variously described as "patent trolls," "non-practicing entities" and "patent assertion

---

[18] *Id.*
[19] *Id.* at 78-80.
[20] *Id.*
[21] *Id.* at 78 ("But one explanation that the evidence does not support is that fewer final rejections reflect low-quality examination by the patent office").
[22] Kappos, *supra* note 13.

entities" have also been a recent subject of media attention and prominent commentary.[23] Arguably, patent assertion entities have attracted even more attention than the smartphone cases – for example, the popular National Public Radio show "This American Life" devoted an entire hour to the subject last year.[24] However, the Graham Study does not consider patent assertion entities at all. The study's data set for litigation was limited to the thirteen smartphone cases, while more than 2,800 infringement actions were filed in the first three quarters of fiscal year 2012 alone.[25] More than half of all infringement actions last year were filed by patent assertion entities.[26] Approximately six percent of patent lawsuits filed involved the software industry directly.[27] However, software enabled claims are present in patents in virtually every area of modern technology.[28] It is therefore safe to assume that many of the other cases filed in the last few years also involve software claims, and not just the six percent directly tied to the software industry.

For cases filed in industries whose patents most often involve software claims, the rate of success in litigation is lower than other industries: below 25% in cases involving software,

---

[23] *See e.g.* Ed Black, *Patent Trolls: the Innovation Hijackers*, Forbes, www.forbes.com/sites/edblack/2013/02/28/153/ (Feb. 28, 2013); Jordan Weissman, *Death to Patent Trolls: How a New Bill Could Slay Tech's Worst Parasites*, The Atlantic, www.theatlantic.com/business/archives/2013/03/death-to-patent-trolls-how-a-new-bill-could-slay-techs-worst-parasites/273610 (Mar. 1, 2013); Jacob Sugarman, *When Patent Trolls Attack*, Salon, www.salon.com/2013/02/07/when_patent_trolls_attack/ (Feb. 7, 2013); Kent Walker, *Patent Trolls Abuse System, Stymie Innovation*, Politico, www.politico.com/story/2013/02/patent-trolls-abuse-system-stymie-innovation-87269.html (Feburary 6, 2013); Glen Tickle, *Patently Ridiculous: Obama Calls Out Patent Trolls in Fireside Hangout*, Geek-O-System, www.geekosystem.com/obama-calls-out-patent-trolls/ (February 15, 2013).

[24] *441: When Patents Attack!*, This American Life, www.thisamericanlife.org/radio-archives/episode/441/when-patents-attack (Jul. 22, 2011).

[25] *Cumulative Caselist*, www.patstats.org/Cumulative_Caselist_thru_3Q12.xls

[26] Colleen Chien, *Patent Trolls By The Numbers*, www.patentlyo.com/patent/2013/03/chien-patent-trolls.html (Mar. 14, 2013).

[27] *2012 Patent Litigation Study: Litigation Continues to Rise Amid Growing Awareness of Patent Value*, Price Waterhouse & Cooper, www.pwc.com/us/en/forensic-services/publications/assets/2012-patent-litigation-study.pdf, at 13 (2012) ("2012 Litigation Study") "Success rate" refers to cases where the plaintiff proved both validity and infringement. This data is based off of statistics from patent litigation in the years 1995-2011.

[28] *See* Graham, *supra* note 12 at 74-75; Timothy F. Bresnahan, Manuel Trajtenberg, *General Purpose Technologies: 'Engines of Growth'?*, 65:1 Journal of Econometrics, 83-108.

telecommunications, and business and consumer services.[29] This further suggests that the litigation results considered by the Graham study may not have been typical. It is also important to note that the corporations involved in the smartphone patent wars are large companies that are far better able to bear the costs of fully litigating patent lawsuits.

Even a survey taking into account every final judgment on a software patent would not shed any light on the validity of patents in settled litigation. This is significant considering that the rate of settlement is very high in patent cases – estimated to be around 86% in recent years.[30] Settlements prevent a judicial determination of whether an asserted patent is valid, and due to their typical confidentiality, little information is available about whether the terms of various settlements favor the plaintiff or the defendant. One possible explanation for why a patent case settles is that the defendant was, in fact, an infringer. However, another possibility is that the plaintiff fears that their patent will be invalidated if they are forced to litigate it to final judgment. While firm conclusions are impossible, there is some circumstantial evidence that suggests the latter possibility is a common occurrence.

In a 2008 study ("the Berkeley Study"), the Berkeley Center for Law and Technology sent surveys about patents and litigation to startup companies in a variety of industries.[31] One of its most intriguing findings was related to settlement and licensing. When asked about licenses, around 25% of information technology firms who have licensed patents reported that their most recent license was taken solely to avoid litigation, not to gain access to the technology covered by the patent.[32] At least one executive interviewed in the study reported that his company paid for a

[29] 2012 Litigation Study, *supra* note 27, at 17.
[30] Jay P. Kesan, Gwendolyn G. Ball, *How are Patent Cases Resolved? An Empirical Examination of the Adjudication and Settlement of Patent Disputes*, 84:2 Wash. U. L. Rev., 237 271-74 (2006).
[31] *See* Stuart Graham, *et all*, *High Technology Entrepreneurs and the Patent System: Results of the 2008 Berkeley Patent Survey*, 24:4 Berkeley Technology Law Journal, 1255, 1264-74 (2010).
[32] *Id.* at 1318.

patent license despite his belief that the asserted patent was invalid.[33] This executive noted that his company was threatened just as it was preparing for its initial public offering.[34] The Berkeley Study also indicated that venture-backed companies entered into these sorts of licenses more frequently.[35] The authors suggest that this is consistent with a pattern of patent holders targeting companies at times of particular vulnerability, such as immediately before a funding event.[36] There is some empirical evidence that the mere threat of patent litigation can have a substantial effect on a company's market valuation.[37] Because of this, a startup seeking funding has a strong incentive to settle with a patent holder, and will pay for a license even when the patent is most likely invalid.

Even when funding is not at risk, a startup company may have other controlling incentives to license an asserted patent. The high cost of patent litigation, estimated at three to six million dollars through appeal is a major burden for any small company, especially those without steady cash flows.[38] The duration of litigation can also motivate settlement – a typical patent lawsuit takes more than two years to bring to trial, let alone appeal, which is an eternity in the software industry.[39] Given these considerations, paying for a license to avoid litigation may be the most rational option for a startup company, even if the asserted patent is completely worthless.

A recent outcome involving the patent assertion entity Soverain Software and the online retailer Newegg.com further supports the conclusion that many licenses entered through settlement

---

[33] *Id.* at 1319.
[34] *Id.*
[35] *Id.* at 1320-22.
[36] *Id.* at 1320.
[37] James Besson, *et all*, *The Private and Social Cost of Patent Trolls*, CATO Institute Working Paper, www.cato.org/pubs/regulation/regv34n4/v34n4-1.pdf (2012) (finding a correlation between the threat of patent lawsuits against publicly traded companies and non-transitory loss of stock price, for an average loss of 80 billion dollars a year over four years).
[38] *Report of the Economic Survey 2009*, Am. Intellectual Prop. Law Assoc. (2009), www.aipla.org/learningcenter/library/books/econsurvey/2009/Pages/default.aspx
[39] 2012 Litigation Study, *supra* note 27, at 21.

are for invalid patents.[40] In this case, Newegg was the only defendant out of eight sued by Soverain who did not settle.[41] Yet, on appeal to the Federal Circuit, Soverain's patent was held to be wholly invalid.[42] This case may be representative of patent litigation in the software industry. Given that only 14% of asserted patents are litigated to final judgment, it is likely that many companies have licensed invalid patents instead of continuing to litigate, to substantial economic effect. The data on success rates in litigation, the findings of the Berkeley study and the results of the Soverain litigation all show that Jilk's story is not an isolated incident. The problems caused by software patents are not limited to patents that are asserted or fully litigated. Rather, an invalid or likely invalid patent can cause substantial, dead-weight losses by forcing companies into licenses for worthless patents, devaluing companies through the threat of litigation, and deterring transactions with customers and investors that would have been made but for the cloud of an infringement suit.

There is no question that the Graham study is a valuable addition to the body of knowledge about software patent quality. However, more study is needed before conclusions can be drawn about the effects of patents on the software industry as a whole. The Office should consider the data presented in this Comment, and pursue a broader inquiry into software patent quality. This is not intended to suggest that patent examiners are doing their jobs poorly. There is no doubt that examination is a difficult process, and no matter how well it is conducted, it is always possible to miss prior art. However, the USPTO can make simple changes to its examination practices and training, which will reduce the likelihood of poor quality patents for software enabled claims. Several specific proposals to do so are described in detail below.

---

[40] *See Soverain Software, LLC v. Newegg Inc.*, No. 2011-1009, 2013 WL 216406 (F. Cir. Jan 22, 2013).
[41] Joe Mullin, *How Newegg Crushed the 'Shopping Cart' Patent and Saved Online Retail*, ArsTechnica, www.arstechnica.com/tech-policy/2013/01/how-newegg-crushed-the-shopping-cart-patent-and-saved-online-retail/
[42] *Soverain Software*, see *supra* note 40.

II. THE QUALITY OF SOFTWARE PATENTS MAY BE IMPROVED BY MODIFYING EXAMINATION PROCEDURES ON PRIOR ART

A. The USPTO Has Exclusive Authority to Implement the Recommended Procedures

The USPTO has the authority to implement the procedures recommended in this Comment. The agency has exclusive authority over examination procedures for applications pending before it.[43] The following proposals are for software-based inventions only.

B. Privately Created Online Resources Should be Made More Accessible to Examiners and Specifically Included in Examiner Training

Empirical evidence shows that examiners rely heavily on the records of United States patents and patent publications when searching for prior art.[44] One study found that patent examiners failed to identify a single piece of non-patent prior art in approximately 70% of examinations.[45] While this is not as problematic in well-established industries, some fields of invention may not have a deep pool of patent literature.[46] This is especially true for software. Based on the Supreme Court's decisions in *Gottschalk v. Benson* and *Parker v. Flook*, software was long believed to be unpatentable.[47] Software patents were not widely approved by the courts

---

[43] 35 U.S.C. 1 §2(b) ("(b) Specific Powers. The Office...(2) may establish regulations, not inconsistent with law, which (a) shall govern the conduct of proceedings in the office...").
[44] Susan W. Graf, *Improving Patent Quality Through Identification of Relevant Prior Art: Approaches to Increase Information Flow to the Patent Office*, 11 Lewis & Clark L. Rev. 495, 503 (2007); Robert P. Merges, *As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform*, 14 Berkeley Tech L. J. 577, 589 (1999).
[45] Bhaven N. Sampat, *Determinants of Patent Quality: An Emperical Analysis*, http://immagic.com/eLibrary/ARCHIVES/GENERAL/COLUMBIA/C050902S.pdf, at 11 (2005).
[46] Graf, *supra* note 44 at 503; Merges, *supra* note 44, at 589.
[47] *Gottschalk v. Benson*, 409 U.S. 63 (1972) (Holding that a computer program, a mathematical formula without substantial practical application except in connection with a digital computer, was not a patentable process); *Parker v. Flook*, 437 U.S. 584 (1978) (Computer algorithm not rendered patentable by "mere postsolution activity", where software program was sole point of novelty); *see also Le Roy v. Tatham*, 55 U.S. 156, 175 (1852) ("A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right.")

until the Federal Circuit's decision in *In Re Lowry* in 1994.[48] As a result, there is virtually zero coverage of software developments in the patent literature from the early years of computing.

One possible explanation for the dominance of patents in examiner citations is that the patent literature is simply more accessible to examiners than other resources are.[49] This could be because of the confidentiality limitations imposed by 35 U.S.C. § 122: while examiners are free to search the Internet once an application is published, unrestricted searches of outside resources prior to publication are not permitted if the examiner cannot obtain a secure connection.[50] With limited time to handle each application, this may prevent examiners from using privately created resources that are not integrated into the USPTO's internal database for non-patent prior art, the Scientific and Technical Information Center ("STIC").

Another possibility is that examiners are simply unaware of outside resources for locating non-patent prior art. The USPTO has conducted software specific training in the past, and has reached out to the software industry for technical expertise, through the Patent Examiner Technical Training Program.[51] However, the nature and extent of that training is not publically available. If examiners are not specifically trained to use outside resources, they should be. Examiners are far more likely to use resources if they are included in training, rather than having to discover them on their own.

It is also important that software related training be provided to all examiners, not just those who are expected to deal with software regularly. Computer software is a general purpose

---

[48] *In Re Lowry*, 32 F.3d 1579 (F. Cir. 1994) (Holding that a method for organizing data in computer memory was not analogous to printed materials, and therefore patent eligible).
[49] Sampat, *supra* note 45, at 11
[50] MPEP 904.02(c).
[51] *Patent Examiner Training*, http://www.uspto.gov/about/stratplan/ar/2004/0602_patexamtrain.jsp (2004); *Patent Examiner Technical Training Program*, http://www.uspto.gov/patents/pettp.jsp (2010).

technology.[52] Because of this, software claims are present in patent applications from almost every industry.[53] Even generalized knowledge of software can improve an examiner's ability to find prior art. Consider the generation of search terms – knowing synonyms and related terms is essential for a comprehensive search. For example, an examiner unfamiliar with software might not know the meaning of the term "applet," its synonyms, or related terms. In an article discussing strategies for prior art searching, Stuart Stoffer of iPriori has suggested the following terms related to "applet": module, layer, program, server, client, application, and abstraction.[54] None of these terms are intuitive. An examiner without basic software knowledge would be at a significant disadvantage if they came across the term "applet" in a patent specification or claim. Since examiners in almost all areas of technology may be required to evaluate software enabled claims, they all should receive training on such basic knowledge.

However, generalized expertise alone is not enough. There are several private sector resources that could provide powerful tools for examiners to search for software prior art. A database maintained by the Software Patent Institute ("SPI") is one of the most useful software specific resources currently available. This database was created expressly to compensate for the lack of patents on early software innovations.[55] It is a collection of the "lore" of software: user manuals, old textbooks, journal articles, conference proceedings, computer science theses, and other material that is not otherwise readily available online.[56] Due to the lack of patents on software innovations from the early days of computing, the SPI database should be part of every prior art search an examiner makes when faced with a software enabled claim. Yet the USPTO has not integrated SPI into the STIC, making it much less likely that an examiner would know to

[52] *See* Graham, Bresnahan, *supra* note 29.
[53] *Id.*
[54] Stuart Soffer, *10 Secrets to Locating Non-Patent Prior Art*, Patently-O, www.patentlyo.com/patent/2013/02/10-secrets-to-locating-non-patent-prior-art (Feb. 25, 2013).
[55] SPI.org/about-spi.jsp.
[56] *Id.*

look to it. Even though it is not a conventional database of books or journals, the SPI database should still be integrated into the STIC to facilitate examiner access and awareness of it.

Another potential resource the USPTO should consider is open source software and source code. The Linux Foundation has begun an initiative called the "Open Source as Prior Art" project ("OSAPA").[57] This effort attempts to make it easier to locate source code from open source software projects for use as prior art.[58] Unfortunately, the value of source code as prior art is questionable. There is no requirement that patent applicants disclose their own source code, so there is little basis for a direct comparison between a patent application and source code. Even if the source code that enables a given claim is available, it may not be useful for comparison. Depending on the programming language or even the style of an individual programmer, two software applications with near identical functionality can have source code with little or no overlap. However, open source databases remain useful for locating software prior art. Most open source projects document the purpose and method of implementation of the resultant software. Thus, searching open source databases for the problem solved by a software enabled invention, or its method of enablement, can turn up open source projects that are directed towards the same problem or a similar approach. Such searches could be an easy way to find open source solutions that are relevant prior art for a software enabled claim. The USPTO should work with organizations like the Linux Foundation to guarantee secure connections with open source repositories, and train examiners how open source repositories can be useful for prior art research.

A newer resource than either SPI or open source development is the "find prior art" tool integrated into Google's patent database. Currently, the algorithm associated with this button will automatically generate keywords based on a patent's specification and use those terms to search all

[57] www.linuxfoundation.org/programs/legal/osapa
[58] *Id.*

of Google's databases, such as Google Scholar and Google Books. Examiners are clearly experienced at selecting their own search terms. However, the one-click functionality of this search tool can streamline and supplement that process, while also generating useful terms that may not have occurred to a particular examiner. As such, examiners should be aware of this tool and use it for searches in fields like software where locating prior art can be more difficult. The USPTO should work to ensure that patent examiners have secure access to Google Patents, and refer to it specifically in examiner training to encourage the use of this tool.

All of these resources can be integrated into patent examinations easily and without legislation. All examiners should receive software related training, and all examiners should be made aware of the private databases discussed above. To facilitate examiner access, the SPI database should be integrated into the STIC. The USPTO should work to guarantee secure connections with open source repositories and Google's databases. At minimum, better tools for finding software prior art during examination should be a topic of discussion in future Software Partnership events and initiatives. The software community, through SPI, OSAPA, Google Patents, and similar projects, has already started developing such tools. If they are actively embraced by the USPTO, it will encourage the community to continue expanding and improving resources for finding prior art.

C. Simple Changes to the MPEP Combined with the Revival of Peer to Patent or Promotion of the Askpatents Site Will Increase the Value and Effectiveness of the New Preissuance Submission Procedure

The USPTO has experimented with crowd sourced peer review through its collaboration with Peer to Patent, an initiative of New York University Law School.[59] The Peer to Patent pilot showed that members of the public are willing and interested in participating in the process of

[59] *Pilot 1 Results*, dl.dropbox.com/u/2541719/First%20Pilot%20Final%Results.pdf; *Pilot 2 Results*, www.slideshare.net/acasillas11/peer-to-patent-pilot-2

patent examination, and can locate relevant prior art that patent examiners will not find on their own. The new preissuance submission procedure, under 35 U.S.C. § 122(e), has the potential to continue the benefits of community based peer review. However, as implemented, preissuance submission is unlikely to have the same level of results as Peer to Patent. There is insufficient public awareness of the preissuance submission process, there is no effective filtering mechanism to reduce the volume of preissuance filings, and there is not an adequate incentive for patent examiners to consider community submitted prior art thoroughly. To resolve these issues, the USPTO should consider reviving Peer to Patent or at minimum publicize the Askpatents forum as a mechanism for generating preissuance submissions. In addition, the next edition of the MPEP should place an express duty on patent examiners to consider third party generated prior art as long as the volume of submissions is limited to a manageable number of references.

Preissuance submissions have the potential to improve access to prior art for software patents. However, when a technology is cutting edge, the knowledge of relevant prior art may be limited to two or three people in the world.[60] Under these circumstances, it is entirely possible, even likely, that the only people who are aware of the relevant art are competitors of the patent applicant.[61] Unfortunately, there are substantial incentives for competitors to refrain from preissuance submissions. Some legal scholars expect that it may be better for competitors to withhold prior art instead of submitting it, to preserve its usefulness in settlement talks or litigation.[62] If the prior art in question is included in the prosecution history, the examiner is presumed to have taken it into consideration.[63] This presumption will apply even if the examiner

[60] Graf, *supra* note 45 at 504; Jay P. Kesan, *Carrots and Sticks to Create a Better Patent System*, 17 Berkely Tech L. J. 763, 766.
[61] *Id.*
[62] *See* Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 Nw. U. L.R. 1495, 1500, n. 17 (2001).
[63] *Pre-Issuance Submissions*, Patently-O, www.patentlyo.com/patent/2012/09/pre-issuance-submissions.html (Sep. 15, 2012); Timothy J. Bechen, Allison S. McGeary, *Changes in Pre-Grant*

has given the reference only cursory examination.[64] For this reason, at least some lawyers are advising their clients not to submit prior art against their competitor's patent applications.[65] Because of this, the third parties who are best positioned to take advantage of the preissuance submission procedure may not use it.

Community based peer review provides a solution to this problem, by reaching out to the technology community at large. Peer to Patent has now run programs in coordination with the patent agencies of several different countries, including the United States, Australia, the United Kingdom, and Japan.[66] The project showed that members of the public have substantial interest in reviewing patents: the website for the first United States pilot averaged 2,400 page views per month, 2,800 individuals registered as reviewers, and around 700 community members actively participated in patent review.[67] There is strong evidence that this public interest continues today. For instance, the website Askpatents.com was created to reproduce the benefits of the Peer to Patent pilot.[68] Askpatents is constructed as a question and answer forum where any member of the

---

and Post-Grant Challenges at the U.S. Patent Office, www.williamsmullen.com/news/changes-pre-grant-and-post-grant-challenges-us-patent-office-uspto (Sep. 9, 2012) ("issues remain as to whether it is advisable to prepare such submissions due to the deference that can be given to USPTO examination and the potential prejudice to raising the same prior art in a later proceeding.")

[64] *Id.*

[65] Jilk has received similar advice not disclose prior art against a pending patent application in order to preserve its usefulness in future litigation. The specific details are not disclosed here for confidentiality reasons. *See also* Bechan, *supra* note 61.

[66] *Pilot 1 Results*, *Pilot 2 Results*, *supra* note 59; *Report on the Peer to Patent Pilot*, www.ipo.gov.uk/p2p-report.pdf; *Peer to Patent Australia 1st Anniversary Report*, eprints.qut.edu.au/39350/1/39350_P2PAU_1st_Anniversary_Report.pdf ("Peer to Patent AU"); *Peer to Patent Japan*, www.iip.or.jp/e/e_p2pj/.

[67] *Pilot 1 Results*, Supra note 59, at 12, 24

[68] Joe Spoisky, *Askpatents.com: A Stack Exchange to Prevent Bad Patents*, Stackexchange Blog, blog.stackoverflow.com/2012/09/askpatents-a-stack-exchange-to-prevent-bad-patents (Sep. 20, 2012); Timothy B. Lee, *Patent Office Tries "Stack Overflow for Patents" to find Prior Art*, ArsTechnica, arstechnica.com/tech-policy/2012/09/patent-office-tries-stack-overflow-for-patents-to-find-prior-art/ (Sep. 20, 2012).

public can submit any question pertaining to patents and patent law.[69] Members of the community are then free to propose answers to the question, and other members may vote each proposed answer up or down.[70] In theory, Askpatents could function like the Peer to Patent program: a question may be directed towards the validity of a patent application, members can then identify possible prior art in answers, the best prior art will be voted to the top of the thread, and ultimately a member of the community can submit these references under the new preissuance submission rules. Currently, there are more than 2,000 registered members of the Askpatents forum.[71] This indicates that many members of the community remain interested in participating in patent review.

There is also clear evidence from the Peer to Patent pilot that community members can find relevant prior art that examiners will not. In a follow-up survey of examiners, twenty percent reported that community located prior art would have otherwise gone undiscovered.[72] Twelve percent of examiners reported that peer generated prior art was not only undiscovered, but was completely inaccessible from the Patent Office.[73] Many of these references were found to be relevant. Forty-one references were cited as the basis for rejection in thirty-eight participating applications.[74] A further thirty-two references were recognized as "pertinent" to the rejection of an application.[75] The Australian pilot, while smaller in scope, reported even greater success: in around a third of the participating applications, examiners reported that peer reviewers submitted useful prior art that they would not have discovered on their own.[76] Despite these results, the USPTO discontinued the second pilot and has yet to issue its own findings on the merits of the effort.

---

[69] *Id.*
[70] *Id.*
[71] *Users – Ask Patents Beta*, patents.stackexchange.com/users?tab=reputation&filter=all
[72] *Pilot 1 Results*, *supra* note 59, at 29.
[73] *Id.*
[74] *Pilot 1 Results*, *supra* note 59 at 28.
[75] *Id.*
[76] Peer to Patent AU, *supra* note 66 at 29.

As currently implemented, Askpatents and preissuance submissions will not achieve the same level of success. At least two elements of Peer to Patent's success are absent from Askpatents as it is currently constructed. First, Peer to Patent had focus. It was devoted to finding prior art against specific patent applications. The Askpatents forum lacks such focus. A quick glance at the postings shows that much of the traffic is unproductive – many questions are directed towards issued patents or appear to seek free legal advice. In the first seventy days that Askpatents existed, less than half of the questions submitted were directed towards prior art.[77]

Even when prior art is identified and submitted by Askpatents members, there is no guarantee that the examiner will give it meaningful attention. One study of examiner citations found that almost 90% of citations in rejections were to examiner identified art.[78] This suggests that examiners give applicant or third party submitted art only cursory consideration.[79] In practice, the MPEP does not require more – while the examiner "must consider" applicant submitted prior art, this requirement is satisfied by initialing every page of the applicant's disclosure form.[80] This means an examiner can satisfy his duty to consider applicant submitted art by flipping through the pages of submissions and initialing each page without reading even the titles of applicant's citations. This is understandable given time constraints on examination.[81] Unfortunately, under these circumstances, preissuance submissions are not likely to achieve their potential. No matter how much high quality prior art is generated through the new procedure, it will have little effect if

[77] *Preissuance1*, www.patentspostgrant.com/wp-content/uploads/2012/12/preissuance1.jpg. This is a USPTO chart showing statistics for preissuance submission usage between September 16 and November 30. These figures do not appear to be currently available directly through USPTO, and are not currently reflected on the "Patents Dashboard."
[78] Christopher A. Cotropia, *Do Applicant Patent Citations Matter? Implications for the Presumption of Validity*, Second Annual Research Roundtable on the Empirical Studies of Patent Litigation, http://www.law.northwestern.edu/searlecenter/papers/Cotropia_paten_citations.pdf (2010), at 11-12.
[79] *Id.* at 23.
[80] M.P.E.P. §§ 707.05; 609.05(b).
[81] David Popp, *Time in Purgatory: Determinants of the Grant Lag for U.S. Patent Applications*, NBER Working Paper, http://www.nber.org/papers/w9518 (2003), at 14, 27-28.

examiners are not required to give it meaningful consideration.

The current version of the MPEP was released one month before the implementation of the new rules. As a result, it refers only to the old third party submission rules of 37 C.F.R. 1.99, a regulation that was eliminated when the new rules took effect.[82] This timing provides an opportunity for the USPTO to improve the use of preissuance submissions in the future. The next edition of the MPEP should place an express duty on examiners to actually consider prior art submitted through the new rules. At minimum, examiners should be required to issue a brief explanation of each submission's relevance or irrelevance.

Concerns that examiners will be overwhelmed by the volume of submissions can be easily solved. During the Peer to Patent pilot, its staff would identify the top ten submissions uncovered against each patent, and submit only those ten references for the examiner's consideration.[83] In practice, this resulted in even greater restraint – less than three references were referred to the examiner for most participating applications.[84] This filtering mechanism collectively disciplined the community, limiting the total number of documents that were generated for each application. The current version of the preissuance submission rules does not have such a limiting force, because the fee imposed on submissions of more than three documents places limits on individual community members, but not on the community as a whole. However, if examiners are ordinarily required to actually consider third party submissions, this duty can be limited to a maximum number of references, such as ten or fewer – the same maximum imposed in the Peer to Patent pilot. If more than ten pieces are submitted, the duty to consider could be either limited or eliminated. This simple change would create an incentive for the collective community to limit submissions to the most relevant art available.

---

[82] M.P.E.P. 1134.01 (Aug., 2012); The Preissuance Regulations, *supra* note 27, at 42,153.
[83] *Pilot 1 Results*, *supra* note 59, at 6.
[84] *Id.* at 26.

Finally, the USPTO should act to increase awareness of the preissuance submission procedure as well as complementary forums like Askpatents. The Askpatents beta has not reached the same level of interest and involvement as the Peer to Patent pilots did. Many interested members of the public may simply be unaware of the new procedure or the Askpatents website.

Ideally, the USPTO will revive Peer to Patent or a similar organized initiative. The self-filtering mechanism of the pilot program was an invaluable element to limit submissions to the most relevant prior art. In many ways, the preissuance submission rules seem built for synergies with a revived peer review initiative. Like these rules, Peer to Patent required that submissions include an explanation of each reference's relevance, and attempted to limit submissions to a manageable number of highly relevant references.[85] It would be easy for a new Peer to Patent initiative to submit documents through this procedure, especially if the USPTO gives it public support, which will help attract more community members. A revived program would build on the publicity and momentum of the previous pilots and increase the value of the preissuance submission procedure.

Failing that, however, there would even be a significant benefit to raising the public profile of Askpatents as it currently exists. Peer to Patent experienced consistent spikes in public interest when the program was covered by the media.[86] It is likely that Askpatents would benefit from increased media coverage in the same way. If more people are made aware of the forum, it will receive more traffic, generate more discussion, and lead to the production of more and better prior art. Askpatents would also benefit from specific promotion of its potential for generating preissuance submissions. This would help concentrate discussion on the site towards generation of prior art, and away from less productive topics.

---

[85] *Pilot 1 Results, supra* note 59, at 6.
[86] *Id.* at 12.

Peer to Patent showed that community based peer review can be a powerful tool for locating prior art that examiners may not find on their own. However, this success was largely because the program had a mechanism for self-filtering community generated prior art, was narrowly focused on the task of identifying prior art, and received substantial media attention. Currently, Askpatents and the preissuance submission procedure are not well positioned to replicate the success of Peer to Patent. Preissuance submissions do not have an effective limiting mechanism to force the community to submit only relevant art. Askpatents does not have adequate publicity or focus. Finally, there is no duty on examiners to give community generated prior art significant consideration. To make the procedure more effective, the USPTO should consider reviving its support for Peer to Patent, or at minimum publicizing Askpatents as a mechanism for generating preissuance submissions. In addition, the next edition of the MPEP should place an express duty on patent examiners to consider third party generated prior art.

CONCLUSION

For the foregoing reasons, Jilk urges the USPTO to adopt the recommended additions to the examination of patent applications for software-based inventions, including training examiners to use privately created resources to locate software prior art, facilitating access to those resources, reviving support of the Peer to Patent initiative, and expressly requiring examiners to give third-party submitted art thorough consideration.

Respectfully submitted,

David J. Jilk
Dave@jilk.com
+1 303 499 3300

Mark Griffith, Student Attorney
Tia Luber, Student Attorney
Ryan Clough, Adjunct Professor
William Hunt, Adjunct Professor
SAMUELSON-GLUSHKO TECHNOLOGY LAW AND POLICY CLINIC
UNIVERSITY OF COLORADO LAW SCHOOL
2450 Kittredge Loop Road
Boulder, CO 80309
+1 303 492 8126

Counsel for David Jilk

15 March 2013