Before the
United States Patent and Trademark Office
Alexandria, VA 22313

In re:)
)   Docket No. PTO–P–2014–0013
Request for Comments and Notice   )
of Roundtable Event on the Use of   )
Crowdsourcing and Third-Party   )
Preissuance Submissions   )
To Identify Relevant Prior Art   )
)

COMMENTS OF GOOGLE INC.

Laura Sheridan
GOOGLE INC.
76 Ninth Avenue
New York, NY 10011

Eric Schulman
GOOGLE INC.
1600 Amphitheatre Pkwy.
Mountain View, CA 94043

Suzanne Michel
Frank Italiano
GOOGLE INC.
1101 New York Avenue, N.W.
Washington, D.C. 20005

April 25, 2014

Introduction

Google thanks the Office for continuing its engagement with stakeholders on initiatives to identify the best prior art, which are of great importance to patent quality. The patent system can be an important driver of innovation, but only if the patents that issue are of high quality.

Patent quality is particularly problematic for software patents. There is widespread acknowledgment that many issued software patents, and especially the subset of business method patents, are of poor quality because they are obvious over prior art that was not identified during prosecution, or because their scope is overbroad and unclear.[1] The problem that poor quality claims present for software innovators is magnified by the large number of patents, often numbering in the tens-of-thousands, that are relevant to most software and high-tech products.[2] Poor quality software and business method patents have driven a litigation boom that harms innovation. Lawsuits brought by patent assertion entities (PAEs) have quadrupled since 2005 and now account for a majority of patent litigation.[3] Most of these cases—84% by one estimate[4]—involve software and Internet patents, and almost half of those are business method patents.[5] This litigation boom places a heavy burden on innovative companies.[6] Besides fueling unnecessary litigation, invalid patents deter innovation by generating unwarranted license payments and discouraging R&D investment.

---

[1] *See, e.g.*, Executive Office of the President, *Patent Assertion and U.S. Innovation*, 8 (June 4, 2013) (problems of very broad and vague claims "are especially acute for software patents"); Federal Trade Commission, *The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition*, 82-84 (March 2011) (discussing problem of poor notice provide by software claims); Government Accountability Office, *Assessing Factors that Affect Patent Infringement Litigation Could Help Improve Patent Quality*, 28 (August 2013) ("claims in software-related patents are often overly broad, unclear or both") [*hereinafter* GAO Report].

[2] *See, e.g.*, Christina Mulligan & Timothy B. Lee, *Scaling the Patent System*, 68 N.Y.U. ANN. SURV. AM. L. 289, 304-05 (2012) (noting that in order to assess infringement across the software industry, "it would require roughly 2 million patent attorneys, working full-time, to compare every firm's products with every patent issued in a given year. At a rate of $100 per hour, that would cost $400 billion. For comparison, the software industry was valued at $225.5 billion in 2010.").

[3] *See Tracking PAE Activity: A Post-script to the DOJ Review*, RPX Blog (January 23, 2013).

[4] *See* GAO Report at 22 (reporting that 84% of litigation brought by PAEs involved software patents).

[5] *See The Growing Use of Business Method Patents in NPE Litigation*, PatentFreedom Blog (September 4, 2013) (finding that 41% of NPE cases involve business method patents).

[6] *See* James Bessen & Michael Meurer, *The Direct Costs from NPE Disputes*, 99 CORNELL L. REV. (forthcoming 2014); Boston Univ. School of Law, Law and Economics Working Paper No. 12-34.

The Office's April 10, 2014 roundtable on the use of crowdsourcing and third-party preissuance submissions to identify relevant prior art ("Crowdsourcing Roundtable") fostered a productive discussion around the utility of these approaches in patent examination. Google believes that, in some cases, crowdsourcing and third-party preissuance submissions can be useful tools for getting prior art before an examiner. For instance, one useful role for crowdsourcing is to allow examiners to receive additional input on prior art for those applications that they think may benefit the most from crowd-based searching. To receive that input, an examiner could post the application to a crowdsourcing site like Ask Patents.[7] Such a process could be part of the modified Internet search guidelines on which the Office is soliciting feedback from stakeholders.

It is important to understand the inherent limitations of crowdsourcing and preissuance submissions, however, especially when applied to software patent applications. Although these approaches may help improve the quality of those patents in which they are utilized, they are very unlikely to have the broad impact needed to improve the quality of software patents to a level that supports innovation.[8] Therefore, we encourage the Office to add initiatives that will improve the quality of all software patents.

Crowdsourcing will not have broad impact because it is not scaleable to the tens-of-thousands of software patent applications or the 400,000 total applications filed each year. A volunteer-based crowd will not be large enough to work with a significant number of patent applications in the software area. During the Crowdsourcing Roundtable, Christopher Wong, the Executive Director of the NYU Engelberg Center on Innovation Law and Policy, discussed the inherent shortcomings of the volunteer-based crowdsourcing process.

One reaction to this problem of scale might be to limit crowdsourcing only to those patents that may become commercially significant. But it is not possible to reliably identify the subset of software applications that will issue as one of 270,000 patents a year and support a future licensing or litigation campaign. Examiners, crowdsource volunteers, and even industry participants are hamstrung in their ability to make such predictions at the

---

[7] Found at http://patents.stackexchange.com/.
[8] *See, e.g.*, New York Law School, *Peer to Patent Second Anniversary Report*, 23 (June 2009) (showing that Peer-to-Patent prior art was shared with patent examiners in 66 patent applications during its second year, and was used in an Office Action in 18 of those patent applications).

beginning of prosecution by multiple factors. The same factors limit the ability of industry participants to monitor software applications and make effective preissuance submissions of prior art to the Office. Those factors include:

- The huge number of applications filed each year. It is not feasible for software companies to review all of the applications that might be relevant to their business.
- The fast pace of development in the software industry, which limits the ability to predict which technologies will be prevalent in the future.
- The ability of applicants to broaden and morph the scope of claims over years of prosecution through strings of continuation applications and lax enforcement of the enablement and written description requirements.
- The varying and nonstandard terminology used in many software claims, sometimes without reference to the specification, that makes ascertaining their potential scope if asserted years later impossible.
- The incentive and ability of applicants to obtain claims having vague and unclear boundaries that may be asserted against later-developed technologies.

The applications most in need of the additional prior art searching and analysis that crowdsourcing and preissuance submissions supply are not those that protect the significant technological advancements that are easiest to identify when an application is filed. The applications that most need additional search and analysis are those that spawn low-quality patents disclosing little true technological advancement but containing vague or broad claims. Although such software patents are not technologically significant, they may become "commercially significant" in the hands of a PAE or other litigious owner that wields the threat of high litigation costs unconnected to any technological contribution of the patent. Of the thousands of vague, overbroad, and low-contribution patents issued each year, a few hundred currently become "commercially significant" in this way. But there is no reliable way to predict which those will be early in the life of an application and subject them to crowdsourcing or the effort of a preissuance submission.

Because crowdsourcing and preissuance submissions can only affect a relatively small number of patents, and not necessarily those that will become significant or problematic at

some later date, we encourage the Office to consider initiatives to improve the quality of all software patents. The following suggestions, discussed in detail below, would improve patent quality by expanding the corpus of software-related prior art and improving examiners' ability to identify the most relevant art: (1) the Office should lead efforts to make more software prior art accessible to examiners and the public; (2) the Office should improve its ability to identify relevant prior art by searching new repositories of technical disclosures and utilizing third party search tools; (3) the Office should seek early input relevant to prior art searches from applicants; and (4) the Office should consider how to give examiners the time necessary to conduct a thorough search and examination.[9] We look forward to working with the Office on these initiatives.

We also encourage the Office to address those problems in prosecution that generate vague and overbroad claims and that undermine the ability of industry participants to know the scope of issued patents and of crowdsourcing and preissuance submissions to be an effective tool in improving patent quality. Google has previously submitted comments related to these problems.[10]

I.   The Office Should Lead Efforts to Make More Software Prior Art Accessible to Examiners and the Public

A significant amount of software-related prior art does not exist in common databases of issued patents and published academic literature. For instance, some of the most useful software prior art may be embedded in computer code or detailed in non-digitized user manuals or technical disclosures. The Office can increase the availability of hard-to-access software prior art by encouraging industry and academia to digitize and make this prior art accessible and searchable. Leadership by the Office is needed to make this initiative successful. Although most companies will likely digitize their own materials, the Office can help match those companies and institutions that need assistance with this task and those willing to provide it.

---

[9] *See also* *Comments of Google Inc.* (March 14, 2014) (responding to the Office's Request for Comments Regarding Prior Art Resources for Use in the Examination of Software-Related Patent Applications, and providing some of these suggestions on improving software patent quality).

[10] *See* *Comments of Google Inc.* (April 15, 2013) (responding to the Office's Request for Comments and Notice of Roundtable Events for Partnership for Enhancement of Quality of Software-Related Patents); *Comments of Google Inc.* (October 23, 2013) (responding to the Office's request for comments on glossary use in defining claim terms).

Leadership by the Office is also needed to help identify those categories of prior art that are most likely to be relevant during examination and to provide guidance on what formats will be most useful to examiners. Open source software represents a category of prior art that is not always accessible in a format that is conveniently searchable by examiners. In their comments on the Office's December 5, 2013 roundtable on prior art resources for use in examination of software patent applications ("December Roundtable"), Public Knowledge, the Electronic Frontier Foundation, and Engine Advocacy also recognized the importance of open source software as a valuable prior art resource.[11] Previous work has been done in this area[12] that supplies a platform on which to build, but much remains to be done. This could include making searchable the design documents and technical algorithm descriptions for these prior software projects, as well as the comment fields for the source code. The Office should bring together interested companies and parties to make open source software usable as a source of prior art. Google would welcome the opportunity to support the Office and collaborate with other companies in building a corpus to facilitate this.

One source of prior art that is not always accessible is the corpus of printed Ph.D. theses in university libraries. Through the Google Books project, Google has made searchable hundreds of thousands of Ph.D. theses from numerous academic libraries, and we are continuing this work. The theses are available through Google Books, and also can be surfaced by searching with Google Scholar and Google Prior Art Finder.

Finally, we suggest that the office expand the body of software prior art accessible to examiners by creating its own searchable collection to which examiners can contribute prior art received from applicants through Information Disclosure Statements that is not otherwise available to the examining core. Such prior art received through third-party submissions and crowdsourcing could also be added to the collection. Other than in the specific application for which it was submitted, such prior art is not currently readily available for application to cases by other examiners. The Office should also explore whether it could make this collection searchable by the public in a format that

---

[11] *See* Comments of Public Knowledge, the Electronic Frontier Foundation, and Engine Advocacy, 3-4 (March 13, 2014).
[12] *See* Open Source as Prior Art (OSAPA) initiative, described at http://www.linuxfoundation.org/programs/legal/osapa.

accommodated copyright concerns. Christopher Wong also made this recommendation at the Crowdsourcing Roundtable. And given the potential importance of non-patent literature in software patent examination, we agree with the suggestion made in IBM Corporation's comments in response to the December Roundtable, asking the Office to make searching such documents mandatory, at least for software patent applications.[13]

II.   The Office Should Improve Its Ability to Identify Relevant Prior Art

The office should improve its ability to identify the most relevant software prior art by including more prior art sources in its searches and by increasing its use and understanding of third-party search tools.

A. Additional Prior Art Sources

Repositories of technical disclosure documents can be a good source of software prior art and should be fully utilized in patentability searches. Technical disclosures publish descriptions of technology that a company decides to disclose publicly without pursuing a patent application. For instance, a company may view an invention as too incremental to be patented, but may publish it to share the idea with the public while preventing patenting by others. The Office recognizes the value of technical disclosures through its inclusion of IP.com as one of the databases for patentability searches.[14]

We encourage the Office to include additional sources of technical disclosures in its prior art searches. One such resource is a relatively new and growing defensive publication repository developed by the Brooklyn Law School Incubator & Policy (BLIP) Clinic: FirsttoDisclose.org. FirstToDisclose.org is a free, community-powered online repository for inventors to disclose their inventions to the public. BLIP submitted its own comment in response to the December Roundtable, sharing further information on FirsttoDisclose.org and its potential effectiveness as a prior art source.[15] Sources like this could prove fruitful in examining software patent applications. By including these sources in patentability searches, and citing to them in Office Actions, the Office will demonstrate to the public the

---

[13] *See IBM Corporation comments in response to "Request for Comments Regarding Prior Art Resources for Use in the Examination of Software-Related Patent Applications"*, 4 (March 7, 2014) ("IBM Comments").

[14] IP.com manages a Prior Art Database, described at https://publish.ip.com/.

[15] *See BLIP Comments* (March 14, 2014).

effectiveness of publishing technical disclosures as a viable alternative to the patent process.

B.   Third Party Search Tools

During the Crowdsourcing Roundtable, the Office solicited stakeholder insight on its Internet search policy, which according to the Office was last updated in 1999. Given the tremendous change in Internet search technology and tools during the last fifteen years, we appreciate the opportunity to provide suggestions as to how the Office can modify its policies to make sure that the most relevant prior art is uncovered, in a way that addresses confidentiality concerns.

Along these lines, the Office should expand its prior art search capabilities by promoting the use of third-party search tools in its search policy. Third-party search tools can provide information from larger and different corpora, as well as different search approaches, which may provide better search results in certain circumstances. This is especially important in searching for non-patent literature, which is often the most relevant prior art in the software space, as well as providing ranked search results that blend both patent and non-patent results.

The Office and public would benefit from the collection and publication of metrics that show how often patent examiners use the various search tools available to them, and how the results compare across different tools. For instance, how often do examiners use internal search tools versus third-party search tools? And how many invalidating references are found using each tool? Additional granularity would also be beneficial, including the art unit and experience level of the searcher, the field of search and the time spent. By collecting and sharing this data, the Office could improve its internal search tools and help the providers of third party tools to improve also.

One available third party search tool is Google Prior Art Finder. Google is working to improve the Prior Art Finder as we develop a better understanding of how to analyze patent claims and how to make results more useful to patent searchers. We welcome the Office's feedback to help improve this tool.

To the extent that the Office is concerned about maintaining the confidentiality of unpublished applications when subjecting them to third party search tools, Google would

welcome the opportunity to advise the Office on how best to address this concern while still taking advantage of third-party tools like Google Prior Art Finder.[16] One possible solution is for a third-party tool to provide code to be hosted at the Office. The code would generate a query from an unpublished application. The relevant patent examiner would be able to modify the query to remove or edit any information that is considered too revealing. Once the examiner has modified the local query, it can then be sent to the third-party servers for analysis. Using an approach like this, the Office can benefit from the use of third-party search tools for unpublished applications, while still maintaining those applications in confidence.

III. The Office Should Seek Input Relevant to Prior Art Searches from Software Patent Applicants

To make prior art searching more efficient and effective, the Office should encourage examiners to interact with applicants early in the examination process and preferably prior to a first action on the merits. Important tools for facilitating that interaction include requests for information under Rule 105 and interviews. Increased technical training of examiners in cooperation with industry will also support examiners' ability to conduct effective prior art searches.

Applicants often have information and expertise concerning the state of the prior art beyond what they must disclose under Rule 56 that could improve the prior art search and examination. For example, applicants may have technical expertise and knowledge that may be pertinent to the claimed subject matter and that may help focus the examiner's search on what the applicant considers to be novel over the prior art.

Applicants may also be aware of potential sources of relevant non-patent prior art (such as commercial databases, industry and academic conferences, experts in the field, etc.) and have general knowledge about the state of the art at relevant points in time.

Early interaction between examiners and applicants can draw out this information. This can help examiners grasp the technology at issue and understand applicants' claim terminology. Early interaction between examiners and applicants will also provide an opportunity for an examiner to clarify what an applicant believes distinguishes the claims

---

[16] *See, e.g.*, MPEP 904.02(c) on Internet Searching.

from the prior art. With that better understanding, an examiner can identify relevant search terms and prior art sources that he might not otherwise consider. IBM made a similar suggestion in its comments on the December roundtable, encouraging examiners to reach out for help in formulating a search strategy.[17]

An important but under-utilized mechanism to facilitate early interaction between examiners and applicants is 37 CFR 1.105.[18] Rule 105 provides the Office broad authority to seek information outside the ambit of Rule 56. Rule 105 requests could be particularly useful in helping examiners understand an application's terminology and formulate relevant search terms. An examiner could also use these requests to obtain other information on potential sources of prior art. The Office should encourage examiners to use Rule 105 and publish statistics on its usage to improve transparency of the examination process and help the Office improve its processes.

The Office should also encourage examiners to use interviews, preferably prior to a first action under Rule 133[19] and Section 713.02 of the MPEP,[20] to facilitate early interaction between examiners and applicants and make prior art searching more effective. The Office should encourage examiners to initiate such interviews with applicants.[21] The full first action interview pilot program provided another mechanism for examiners to interact with applicants early in the examination process. The Office may wish to consider making that program permanent in light of the efficiency that it provided for those applicants who took advantage of it. In that case, examiners should be instructed to use the

---

[17] *See* IBM Comments at 4.

[18] 37 CFR 1.105 states, "In the course of examining or treating a matter in a pending or abandoned application . . . the examiner or other Office employee may require the submission, from individuals identified under § 1.56(c), or any assignee, of such information as may be reasonably necessary to properly examine or treat the matter . . . ."

[19] 37 CFR 1.133(a)(2) states, "An interview for the discussion of the patentability of a pending application will not occur before the first Office action, unless the application is a continuing or substitute application or the examiner determines that such an interview would advance prosecution of the application."

[20] MPEP 713.02 states, "A request for an interview prior to the first Office action is ordinarily granted in continuing or substitute applications. In all other applications, an interview before the first Office action is encouraged where the examiner determines that such an interview would advance prosecution of the application. . . ."

[21] *See* Memo from Peggy Focarino to Patent Examining Corps issued August 31, 2010, "FY 2011 Examiner-Initiated Interviews" (noting that "Since early interviews often lead to early allowances and fewer actions per disposal, this policy is intended to encourage examiners to reach out to applicants, resolve issues and work toward indicating allowable subject matter earlier in prosecution.").

interview opportunity to obtain information that would make a prior art search more effective.

Technical training provided by industry and academia is another way that applicants can help examiners be prepared to conduct efficient and effective prior art searches. A deeper understanding of the prior art technology obtained through training sessions will help examiners fashion searches in particular applications and put the art they find in the proper context. Therefore, we applaud the recent White House and Patent Office Executive Action[22] to make technical training for examiners more robust and systematic. Google looks forward to participating in the Office's training efforts. The office may wish to explore additional mechanisms for helping examiners to obtain input from third party expert technical advisors.

Rule 105 requests, questioning relevant to prior art searches during interviews, and additional examiner training will make the Office's prior art searching more efficient and effective and result in higher-quality patents. These results, achieved early in examination, also support the Office's goal of compact prosecution.

IV. Examiners Should Be Given the Time Necessary to Conduct a Thorough Search and Examination

To achieve the needed improvements in patent quality, we encourage the Office to examine a root cause of many quality problems: examiners do not have enough time to conduct a thorough prior art search and properly examine a patent application. We believe that the Office can achieve positive results by providing examiners with more time to effectively search for prior art and examine software patent applications. It has been reported that over several years of pendency, an examiner has as little as 18 hours to examine a given patent application.[23] Although providing more time to perform this critical function would likely increase the fees for each application, that cost would be more than offset by the increased value to the patentee of a higher quality patent that would face fewer validity challenges and withstand those it did face. Other innovators and society

---

[22] *See* White House, Office of the Press Secretary, *Fact Sheet - Executive Actions: Answering the President's Call to Strengthen Our Patent System and Foster Innovation* (February 20, 2014).

[23] *See, e.g.,* Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 Nw. U. L. Rev. 1495 (2001).

would benefit dramatically from decreases in business uncertainty, unnecessary licensing, and high litigation rates. An invalid patent that issues can inflict high costs on productive companies - many orders of magnitude higher than the resources put into preparing and considering the patent in the first place - and this is a drain on innovation.