



PEERTO PATENT

FIRST ANNIVERSARY REPORT

The Center for Patent Innovations,
New York Law School

PREPARED BY:

Naomi Allen
Joanne Ingham
Bridgette Johnson

Joseph Merante
Beth Simone Noveck
William Stock

Yeen Tham
Mark Webbink
Christopher Wong



The Center for Patent Innovations at New York Law School
Mark Webbink, Executive Director; Beth Simone Noveck, Chair, Board of Advisors
<http://www.peertopatent.org>

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Project Summary

The Challenge

There is a crisis in the global patent system. The number of patent applications in the United States alone has doubled in the last 10 years. Examiners in the United States Patent and Trademark Office (USPTO) are struggling under a backlog of more than a million applications, and patent examiners only have about 20 hours to evaluate whether an invention deserves a 20-year grant of monopoly rights that will shape the future of an industry and fundamental research.

Even with more time and the best intentions, national patent offices around the world do not have access to the necessary information. Agency employees are assigned the responsibility of searching for and finding the relevant technological antecedents. These antecedents, known as “prior art,” are the basis against which examiners compare and assess the claimed invention. Although government patent offices subscribe to library journals and maintain databases of issued patents, these traditional sources do not always contain the information needed to determine whether an invention meets the legal requirements of novelty and non-obviousness. At present, inventors are not required to supply the Patent Office with prior art other than that of which they are immediately aware. As a result of this information deficit, the Secretary of Commerce estimates that the USPTO is “applying 55 percent of its examination resources to examining applications that do not merit a patent.” It follows that identifying more prior art to reduce the number of unjustifiably issued patents raises overall patent quality.

At New York Law School’s Center for Patent Innovations, we believe a better system is possible, a system that involves enabling and integrating citizen participation to identify and assess critical prior art. This system is Peer-to-Patent, the first governmental “social networking” Web site designed to solicit public participation in the patent examination process.

According to the results of our initial pilot of the Peer-to-Patent project, allowing informed citizens to collaborate in the examination of pending patent applications may help to improve the overall quality of patents. The burden will then no longer be on the patent examiner or the inventor alone to identify whether or not a patent application is, in fact, novel and non-obvious. Instead, numerous experts working in teams can collectively utilize their knowledge to help address that question. Rather than stand on the sidelines while low-quality patents accrue monopoly rights, communities of interest can come together to vet the patents in their industry and inform the examiner’s decision making.

Such collaboration in support of better informed decision making helps to ensure that:

- Patent examiners will have more and better information, including technical assessments, about the prior art that is relevant to the applications they review, enabling them to approve only the most worthy patent applications.
- Innovators will have greater certainty about the patents in their domain.
- Patent holders will have a more substantial basis for asserting their patents, increasing the likelihood of settlement versus litigation.
- Public participation will have the positive externality of causing inventors to draft clearer, more focused applications.
- A reduction in low-quality patents will lead to a corresponding reduction in costly, non-productive litigation, unnecessary licenses, and market disruption.
- Scientists and technologists will take an active role in the patent process.

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- This undertaking is self-consciously a model for connecting the public and its deep and wide expertise to government decision-making openly and through self-selection.
- Legitimate patents will be stronger and illegitimate patents will be eliminated before they can be leveraged, sparing resources that would otherwise be used for research and development.
- By introducing more relevant information we can improve patent quality and the overall integrity of our nation's patent system.

The Pilot

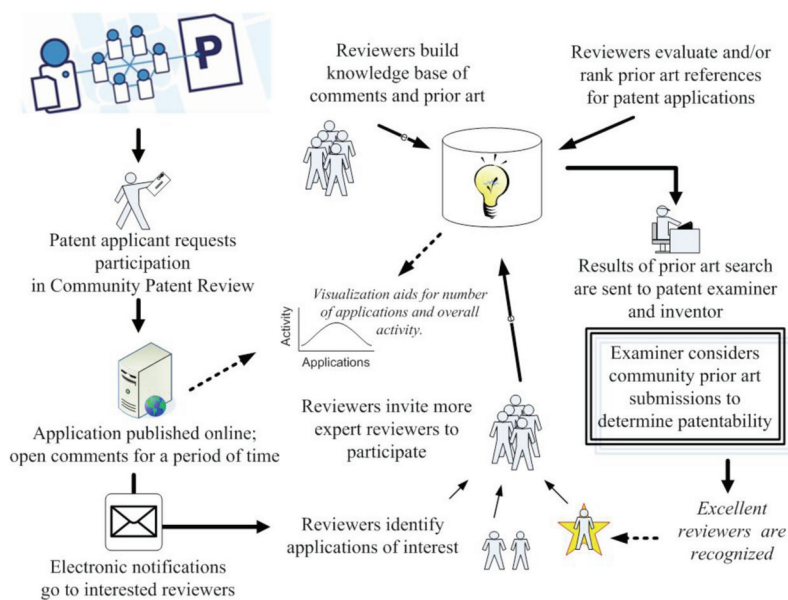


Figure 1: Peer-to-Patent Process Map

New York Law School created the Peer-to-Patent: Community Patent Review Pilot and launched the pilot in cooperation with the USPTO on June 15, 2007. Located at www.peertopatent.org, this experimental Web-based social software seeks to improve the quality of issued patents by connecting the USPTO to an open network of scientific experts online. Peer-to-Patent is the first social software project directly linked to decision making by the federal government. With the sponsorship of the MacArthur Foundation, the Omidyar Network, CA, General Electric (GE), Hewlett-Packard (HP), International Business Machines (IBM), Intellectual Ventures, Microsoft, and Red Hat, the program solicits public participation in the patent examination process via the Web. This system encourages the public to research and upload publications—known in patent law as “prior art”—that inform the patent examiner about the novelty and obviousness of a pending application and enable her to decide whether it deserves a patent. While patent examiners have ready access to prior art in the form of issued patents, they do not have the same ready access to non-patent prior art literature, such as published articles, software code, and conference presentations. It is in identifying this non-patent prior art that public participants can add the greatest value.

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With the consent of participating inventors, this initial USPTO pilot has allowed self-selecting members of the public to review software patent applications, including applications from the project sponsors as well as from other high profile software companies such as Intel, Oracle, Sun Microsystems, Yahoo!, and smaller firms. Because the law otherwise prohibits “third-party protest” against pending patent applications, express written consent of applicants was required to allow the public to comment on the prior art and explain to the examiner why it is relevant to assessing the claims of the application. The patent applications fed through the system involved a wide range of subjects (all related to claims regarding computer software), from wind farming to virtual collaboration to social networking. As an incentive for participating in this peer review process, the USPTO offered to examine participating applications first, jumping the million-application queue.

Once the USPTO published a consenting application (and inventors had been invited to publish early at no charge) and it sent the file to New York Law School, our team posted it on a Web site located at www.peertopatent.org. The Peer-to-Patent Web site hosted a four-month public consultation period during which self-selecting experts could form a team to examine an application. This team discussed the application, submitted the prior art, critiqued the submissions made by other members, and voted on the relevance of the submissions to the patent application. Only the 10 best prior art references, as judged by the online review community, were then forwarded to the patent examiner for consideration, along with annotations explaining the relevance of the prior art references.

Run by students and faculty from New York Law School, Peer-to-Patent is neither a blog nor a wiki. It does not solicit any and all commentary. Rather, it is designed to be an exercise focused on and targeted to getting relevant information from citizen-experts to the government.

Each team has a shared discussion space to deliberate about the application’s quality, decide what research needs to be done, discuss where prior art may be found, and divvy up the work of finding it, if need be. Individuals upload prior art but the group decides collectively which submissions are the most relevant. The peer group also decides which uploaded suggestions for further research merit the examiner’s attention. Such direction may help the examiner identify fruitful avenues for her search in that limited 20-hour window or, at the very least, shorten false research paths. By structuring the request for feedback and soliciting specific information, the agency avoids inviting participation it cannot use. And the public has an opportunity to participate in a way that is directly relevant to decision making. To be sure, the patent examiner still conducts a search. She has all the same information available to her as before. But now she also has the results of this “human database.”

To expand upon the work of Peer-to-Patent and develop collaborative strategies for patent examination at national patent offices and forge a culture of patent participation in scientific communities, New York Law School has now founded the Center for Patent Innovations with an \$800,000 grant from the Omidyar Network. Headed by Mark Web-bink, former Senior Vice President and General Counsel of Red Hat, Inc., the Center anticipates continuing Peer-to-Patent during 2008-09 with an extended deadline and an expanded scope that will now include “Class 705,” so-called “Business Method Patents.” In addition, the Center is engaged in discussions with patent offices in the United Kingdom and Japan regarding similar pilot projects.

Jonathan Schwartz, the CEO of Sun Microsystems, named Peer-to-Patent one of the “leading institutions promoting free software and patent reform.”

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Highlights of Pilot Results

From June 2007-April 2008, Peer-to-Patent has attracted well over 2,000 registered users and 173 items of prior art submitted on 40 applications by participants from 140 countries.

- Public submissions of prior art have been used to reject claims in first office actions coming back from the USPTO. The first 23 office actions issued during the pilot phase showed use of Peer-to-Patent submitted prior art in nine rejections, with all but one rejection using non-patent prior art literature. At least 3 additional office actions suggest that, while examiners did not use Peer-to-Patent prior art references in rejecting the application, they were influenced by Peer-to-Patent submissions in their search strategy and understanding of the prior art.
- Of the 419 total prior art references submitted by inventors during the pilot, only 14 percent were non-patent literature. In contrast, 55 percent of prior art references cited by Peer-to-Patent reviewers were non-patent literature.
- Eighty-nine (89) percent of participating patent examiners thought the presentation of prior art that they received from the Peer-to-Patent community was clear and well formatted. Ninety-two (92) percent reported that they would welcome examining another application with public participation.
- Seventy-three (73) percent of participating examiners want to see Peer-to-Patent implemented as regular office practice.
- Twenty-one (21) percent of participating examiners stated that prior art submitted by the Peer-to-Patent community was “inaccessible” by the USPTO.
- The USPTO received one third-party prior art submission for every 500 applications published in 2007. Peer-to-Patent reviewers have provided an average of almost 5 prior art references for each application in the pilot.

“We’re very pleased with this initial outcome. Patents of questionable merit are of little value to anyone. We much prefer that the best prior art be identified so that the resulting patent is truly bulletproof. This is precisely why we eagerly agreed to sponsor this project and other patent quality initiatives. We are proud of this result, which validates the concept of Peer-to-Patent, and can only improve the quality of patents produced by the patent system.”

— Manny Schecter, Associate General Counsel for Intellectual Property, IBM

Project Summary



In addition, the Peer-to-Patent pilot has gained visibility and recognition across the United States and abroad:

- We have had buy-in by major companies, such as IBM, Microsoft, HP, Sun Microsystems, Intel, and GE, whose patent portfolios account for nearly one-third of the patents issued to the top 30 U.S. patent holders in 2007.
- The USPTO Strategic Initiative 2007–2012 names the Peer-to-Patent pilot as one of its objectives and recommends legislative reform to institutionalize third-party submissions of prior art.
- The Gowers Report in the United Kingdom further endorses the adoption of the pilot for the U.K. Patent Office. The Board of the UKIPO has signed off on the pilot, which is slated to commence in 2008.
- Peer-to-Patent has received extensive coverage on the front page of The Washington Post as well as in Forbes, Fortune, The Economist, MIT Tech Review, and countless blogs and online discussion forums (including the most widely read ones in the technology areas covered by the pilot, such as Ars Technica, Boing Boing, and Slashdot). Peer-to-Patent was also covered by CBS and NPR.
- The Peer-to-Patent: Peers Reviewing Patents clip may now be watched on YouTube.
- Peer-to-Patent founder, Prof. Beth Simone Noveck, was named one of the “Top 50 in IP” by Managing IP Today.
- Peer-to-Patent has been nominated for the Prix Ars Technica and for the Tech Museum Award.

Peer-to-Patent represents the first true opportunity for the scientific and technical public to participate directly in the patent examination process. The online Peer-to-Patent program has dramatically opened up the process, not only to lawyers but to scientists, engineers, students, and patent enthusiasts as well, creating the structure for them to work together to share useful information for the benefit of the Patent Office. Indeed, as David Kappos, Vice President and Assistant General Counsel at IBM, stated in The Washington Post, “For the first time in history [peer patent review] allows the patent office examiners to open up their cubicles and get access to a whole world of technical experts.”

Project Summary

The Design



Figure 2: Peer-to-Patent Home Page

The Peer-to-Patent program solicits public participation in the patent examination process via the Web at www.peer-to-patent.org. The public, working as teams of collaborators, research and upload publications, patents, and published application prior art, helping the patent examiner to decide whether an innovation deserves a patent. The public is not replacing the substantive work of the official patent examiner, but augmenting it by submitting information structured to tie directly into the process of patent examination. As a result, the public plays a significant role in strengthening the patent decision making process.

The Peer-to-Patent Web site is built using open source technologies. It is an Internet application implemented using Ruby on Rails with a MySQL database on the Linux operating system. The system infrastructure includes hosted Web servers and database servers, as well as load balancers for traffic management. Interactive features include threaded discussions, e-mail alerts, RSS feeds, social bookmarks, video clips, tagging, ratings, and more.

Peer-to-Patent encourages participants to add their own designations. Although the Patent Office assigns a standard but arcane classification to every patent application, the governmental schema for classifying such information does not correspond to the ways in which technical and scientific experts most affected by the patent system classify information. This imposes a linguistic barrier preventing those with the most knowledge from contributing to the process. Peer-to-Patent reviewers can use terms that are familiar and appropriate to their subject-matter areas to “tag,” label, and search for applications. Tagging is a way to assign a short (one- or two-word) label to an item of content. More than half the active users of Peer-to-Patent took the time to tag an application. This is important because it helps non-lawyers to classify patent applications. This kind of supplementary community self-tagging, called a “folksonomy,” lets users associate a patent with a familiar technology or product.

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For example, the Microsoft application for Offline Economies for Digital Media, which the Patent Office describes as “Electrical Computers and Digital Processing Systems: Support” was tagged by participants under “DRM” (digital rights management), “Micropayment,” and “Digital Media”—titles that are more intelligible to the average user. By making labeling more granular and precise, a folksonomy helps contributors self-assign to areas of interest.

Substantial effort went into designing a system that creates a sense of cohesive group participation and helps the community visualize its own efforts. “Sparkline” and “treemap” graphics provide users with an immediate, visual overview of community membership and activity. Activity for each patent application and for the site as a whole is displayed in real time. In addition, the system captures and displays feedback from the USPTO. When an examiner uses a submission from the Peer-to-Patent community, the site displays the “Prior Artist” award graphically on the home page and on the reviewer profile page.

Here is How Peer-to-Patent Works:



Figure 3: Peer-to-Patent 5-Step Methodology

Step 1: Review and discuss posted patent applications.

Step 2: Research and find prior art.

Step 3: Upload prior art relevant to claims.

Step 4: Annotate and evaluate all submitted prior art.

Step 5: Top ten prior art references forwarded to USPTO.

By displaying a visual “map” of the Peer-to-Patent process to educate the newcomer, the goal was to communicate what work is required and convey to those with no experience with open review of patent applications that there were assignments that could be undertaken in 10 minutes or 10 hours.

“I hope other patent applicants look at the processing statistics from this pilot program and realize that Peer-to-Patent review might be a win-win situation for them. We are encouraged by the initial success of the pilot, and we believe it holds potential as a source of relevant prior art.”

— John Doll, USPTO Commissioner for Patents

Project Summary

Governance

Professor Beth Simone Noveck at New York Law School's Institute for Information Law & Policy designed and developed Peer-to-Patent and has been supported in its growth, development, and operation by New York Law School. New York Law School students Will Stock, Yeen Tham, Rahan Uddin, and Christopher Wong served as Project Managers for Peer-to-Patent with the assistance of Institute for Information Law & Policy Manager, Naomi Allen, and Staff Assistant, Bridgette Johnson. The Omidyar Network and the MacArthur Foundation have funded much of the software development, directed by Eric Hestenes and designed by Pablo Aguero. The lead and founding sponsors were CA, HP, GE, IBM, Intellectual Ventures, Microsoft, and Red Hat. A steering committee comprising attorneys from the Lead Sponsors served as the project's governing board. An advisory board (listed below) of legal and technology academics and representatives from other patent offices, foundations, and the press, as well an eight-person team from the USPTO, led by Jack Harvey, provided oversight and direction.

Peer-to-Patent Advisory Board:

Tilo Bachmann

- Administrator, European Patent Office

Robert Barr

- Executive Director, Berkeley Center for Law and Technology, Berkeley Law School
- Former Vice President for Intellectual Property and Worldwide Patent Counsel, Cisco

John Bracken

- Program Officer, MacArthur Foundation

Dennis Crouch

- Patently-O
- Associate Professor of Law, University of Missouri School of Law

Sean Dennehey

- Patents Director, UK Patent Office

John Duffy

- Professor of Law, George Washington University Law School

Will Fitzpatrick

- Corporate Counsel, Omidyar Network

Alan Kasper

- Vice President, American Intellectual Property Law Association
- Partner, Sughrue Mion, PLLC

Stephen G. Kunin

- Special Counsel, Oblon Spivak
- Former Deputy Commissioner for Patent Examination Policy, USPTO

Mark Lemley

- Director, Stanford Program in Law, Science and Technology
- William H. Neukom Professor of Law, Stanford Law School

Stephen Merrill

- National Academies

Michael V. Messinger

- Director, Sterne, Kessler Goldstein, & Fox P.L.L.C.

Marcus Mueller

- European Patent Office, EPO Scenarios for the Future Project

Gideon Parchomovsky

- Professor of Law, University of Pennsylvania Law School

Arti K. Rai

- Elvin R. Latty Professor of Law, Duke University Law School

Steven S. Weiner

- Partner, Davis Polk & Wardwell

Terry Winograd

- Professor of Computer Science, Stanford University

Initial Results



Methodology

The Peer-to-Patent project set out to measure whether an online public consultation process can effectively be employed to improve the quality of issued patents.

To answer this question, we conducted qualitative and quantitative research (which is ongoing) to answer three questions:

- What is the impact of public participation on examiner decision-making?
- What is the level of expertise of public reviewers participating via an open network and how does this group-based, online participation process shape that expertise?
- What is the impact on the resulting quality of the issued patent?

We tracked the number of peer reviewers who signed up, served as active participants on teams, and submitted prior art, as well as the USPTO responses. Reviewer profiles are compiled through information that Peer-to-Patent software automatically culls. This information is further supplemented by data gathered from surveys.

The participants are invited to complete a survey after the application is closed. The online survey, administered using Survey Monkey, includes 40 questions organized into three sections:

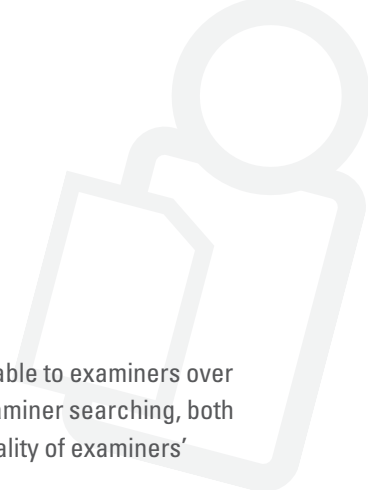
- 1) Reviewer Information (14 questions)
- 2) Application Specific Questions (15 questions)
- 3) Peer-to-Patent Format Questions (11 questions)

We assessed information gathered from:

- User-generated online profiles by participating peer reviewers
- Surveys collected from participating peer reviewers
- Activity performed on the Web site by visitors and subscribers
- Responses to “first office actions” from the USPTO in its subsequent examination of applications submitted through Peer-to-Patent
- Surveys collected from participating USPTO examiners

The sample size is relatively small and drawn from information collected up to April 2008. The results reflect the data in 2,000 user profiles, in particular, the profiles of 365 active users of the Website, as well as in 26 USPTO patent examiner surveys and 35 surveys of public contributors.

Initial Results



Summary of Hypotheses

Hypothesis 1: An open network of human searchers will improve the quality of information available to examiners over that currently available from closed databases. Public participation can and will improve examiner searching, both by providing relevant information and guiding examiner searching, thereby improving the quality of examiners' work products and the work experience.

Hypothesis 2: The public is capable of self-selecting on the basis of expertise and producing information relevant to the patent examination process.

Hypothesis 3: Public participation produces a better quality, stronger patent.

Testing the Impact on Patent Examination: The First Applications

We have assessed the impact of Peer-to-Patent in terms of how the patent examiner does her job, testing the hypothesis that an open, human network of expertise can improve examiner work and work product. We used concrete feedback in the form of the published determination of the examiner, which cites the reasons and the references for the rejection of the application. As per agreement with the USPTO and the patent examiners' union, we were able to conduct surveys of the examiners, and obtain subjective feedback as well. The USPTO also agreed to a control group whereby some examiners reviewed the public submissions prior to their own searches and others searched first and then read the public submissions. Because Peer-to-Patent is freely available on the Web, we cannot restrict examiner access with certainty but we can obtain a rough approximation of the impact of public participation on examiner work and work-product.

The first 40 applications submitted to Peer-to-Patent for four months of public participation were spread across the different technical arts eligible for participation in the pilot. Applications ranged from technology relating to wind farming to computer storage to virtual collaboration. The largest number (11 of 40) came from the Patent Office classification known as "Multi-Computer Data Transferring." Another 5 were "Database and File Management or Data Structures" applications and 4 related to "Presentation Processing of Document, Operator Interface Processing, and Screen Saver Display Processing."

Thirty-seven (37) of the initial 40 applications came from 10 companies:

IBM	9
GE	7
Intel	5
Red Hat	1
Microsoft	3
Sun Microsystems	5
Softwired AG	1
Yahoo	1
HP	4
Intension Inc.	1

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Of those 10 companies, five Lead Sponsors of the project that had committed to submit applications for review when the project was still in the planning stages, followed through. The remaining three applications came from independent inventors Roland Pulfer, Blaise Mouttet, and Jeffrey Dean Lindsay. Another five companies volunteered immediately without any formal commitment to or involvement in the project. Subsequent contributing inventors have also included Informed Control Inc., and International Characters.

Whereas the public had reviewed 40 applications through Peer-to-Patent by April 2008, the USPTO completed the subsequent examination of 23 of those applications.

Of those 23 applications, in nine cases (1 GE, 2 HP, 1 IBM, 1 Intension, 2 Microsoft, 1 Sun, 1 Yahoo!), the USPTO relied directly on submissions by eight public members of the Peer-to-Patent project to issue final or non-final rejections of the application. In two cases (1 Intel, 1 Sun), the USPTO relied indirectly on Peer-to-Patent submitted prior art. In at least one case, the examiner made and mailed his determination prior to reviewing the Peer-to-Patent submission.¹ From a comparison of the Information Disclosure Statements, identifying references submitted by the inventor and references submitted by the public via Peer-to-Patent, examiners seem to be more than twice as likely to use a Peer-to-Patent-submitted reference than an applicant-submitted reference.

For example, in a GE application (20070174746) on “Tuning Core Voltages of Processors,” the Peer-to-Patent public cited 3 references, while the applicant cited 10 references. The examiner used 1 reference each from the Peer-to-Patent project and the applicant in rejecting the claims for lack of novelty and non-obviousness. In other words, for this application, 1/3 of Peer-to-Patent references were found to be material to the claims, and 1/10 of applicant references were found to be material.

Another example is patent publication 20070118658 for “User selectable Management Alert Format.” The public cited 9 references while the applicant cited 22 references. The examiner used 1 reference from the Peer-to-Patent project. For this application, 1/9 of Peer-to-Patent references were found to be material to the claims, and 0/22 of applicant references were found to be material.

“Comparison of models of a complex system” (20070162496) garnered 2 submissions of prior art from Peer-to-Patent and 2 from the applicant. The examiner used 1 reference from the applicant but none from the Peer-to-Patent community. For this application, 0/2 of Peer-to-Patent references were found to be material to the claims, and 1/2 of applicant references were found to be material.

¹ The first office action for U.S. patent application 11/291,378, “Stack tracker to identify memory communications,” was mailed by the examiner on 4/17/2007. The applicant responded to the first office action on 7/17/2007. A final office action was mailed on 2/11/2008. The examiner lists a search strategy and results dated 4/12/2007 and another search strategy and results dated 1/9/2008. The Peer-to-Patent references were submitted on 10/2/2007. The examiner’s signature and date on the Peer-to-Patent references indicate that he considered the Peer-to-Patent references on 2/8/2008. The examiner did consider the references prior to mailing out the final office action on 2/11/2008. However, the examiner was not able to consider the references prior to the first office action mailed on 4/17/2007. Furthermore, the examiner did not consider the references before performing a search on either 4/12/2007 or 1/9/2008.

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There are a number of possible reasons for the disparity. Applicants have an incentive to focus on references intended to prove rather than disprove the novelty and non-obviousness of their applications. They do not want to provide information to defeat their own applications, after all. Also, they may be focusing on quantity rather than quality in submitting references. The Peer-to-Patent project's selection process may result in submitting higher quality references more targeted to defeating the application. The examiners may spend more time reviewing references submitted by the public. The examiners may feel that applicant-submitted references are of low quality.

In the examination of the first 40 Peer-to-Patent applications, peer reviewers cited non-patent prior art literature 55 percent of the time. In contrast, applicant references for the same patent applications cite non-patent prior art literature 14 percent of the time. The examiners' own searches are even narrower. Bhaven Sampat, a professor at Columbia University and co-author of the article "What To Do About Bad Patents", states that patent examiners are only citing non-patent prior art 10 percent of the time. In a recent study of 502,687 utility patents, examiners were found to account for 41 percent of the citations to previous U.S. patents but only 10 percent of references to non-patent prior art in the issued patent. With regard to the first 23 office actions, examiners used Peer-to-Patent submitted prior art in rejecting 9 applications. All but one of these rejections used non-patent prior art literature submitted by the community.

Testing the Impact on Patent Examination: Patent Examiners

The USPTO administered a 32-question, Web-based survey of 26 participating patent examiners. The survey was coordinated with the Patent Examiner Union to ensure confidentiality and compliance with workplace procedures. Below is a summary of survey findings, as well as quotes taken from individual examiners' comments.

59 percent of examiners thought that prior art submitted by Peer Review was helpful.

"The art was much better than what I would see in a normal IDS."

"Art was somewhat relevant."

24 percent of examiners felt that information provided by Peer Review did not turn up in their search.

36 percent of examiners used prior art submitted by Peer Review in their rejections.

89 percent of examiners felt that the presentation of prior art submitted by Peer Review was clear and well formatted.

"There was a good description of the prior art and how it could be useful."

Of the examiners queried, 19 percent had received the prior art before the initial examination began. Of those, 54 percent indicated that the submission assisted in their search.

21 percent of examiners stated that prior art from Peer Review was inaccessible through the USPTO.

"Some Non-Patent Literature (NPL) art that was submitted would not be easily found using the USPTO resources."

"It would have taken much longer to find such art."

85 percent of examiners felt that annotations on prior art were clear and well formatted.

"There was a good description of the prior art and how it could be useful."

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21 percent of examiners indicated allowable subject matter in the first office action.

“Hopefully, with more public participants, the submitted IDS will provide a lot of help to examiners.”

“I think that, like the many tools examiners use throughout the examination process, Peer-to-Patent would be another tool to help examiners find pertinent art.”

92 percent of examiners would welcome examining another Peer-to-Patent application.

73 percent thought that the Peer Review process would be helpful if implemented in regular Office practice.

“At least with Peer-to-Patent IDS, the art has notes that aid an examiner in better determining if the art is useful.”

“More relevant than the normally submitted IDS.”

“I think it would be helpful as a whole; it seems that peers interpret claims and references differently than examiners do. That is, their interpretations seem much broader than an examiner might see them.”

“While it may not always produce useable art, it’s clear that it has that potential, especially if more people participate and provide more art.”

In their comments to the surveys, examiners also said:

“I thought the annotations were helpful to see how the public mapped the art. It was in a way like asking another examiner how they interpreted a claim.”

“I found all aspects (of the pilot) somewhat useful. The discussions gave me an insight as to how peers view patent claims and how they interpret references. Once seeing the references, it helped focus on another search.”

“It was nice to see that the art submitted could be evaluated, given thumbs up or thumbs down.”

“Even though the claims were not explicitly mapped to the prior art, the discussion on what the peers thought gives an insight on how others interpret the claim and prior art.”

Testing the Expertise of Public Peer Reviewers

A challenge repeatedly brought up by observers of Peer-to-Patent was whether qualified experts would have the time and motivation to participate voluntarily, and whether they could marshal their technical knowledge to meet the extremely specific tasks posed by patent research. Initial results of the USPTO pilot indicate that expertise is indeed available and can be successfully applied.

Steve Pearson, a senior software engineer at IBM based in Portland, Oregon, who designs and implements features in IBM’s DB2 database platform running on Linux, UNIX and Windows, is a Peer-to-Patent volunteer-expert. He made tangible contributions by submitting prior art that was referenced by the USPTO in its examination and rejection of claims in an HP patent application. Steve is a co-inventor and holder of a patent for a way to improve the protection of information stored in databases.

Our hypothesis was to test whether people like Steve would get involved and be able to provide information relevant to patentability determinations. Just as Wikipedia’s two million entries are actually maintained by a few thousand knowledgeable and dedicated die-hards, we were interested not in the mere quantity of participation but in attracting

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enough of the “right” people. To get at the expertise of reviewers, we needed to measure a number of criteria about the public reviewers. Much of this data was collected automatically via the Peer-to-Patent software by culling user profiles, while other data was gathered through surveys.

In addition, the Peer-to-Patent team set out to study whether or not working in teams or groups on patent applications made a difference in the quality of the participation. The program was intentionally designed to foster a community to work on an application together. The site used visualization techniques to display the membership of each application community, the level of activity for the group, and its participation activity over time. A close, qualitative study of the nine applications for which the examiner cited Peer-to-Patent submitted references reveals the positive impact of “groupiness.”

The first ten months of the pilot confirmed the hypothesis that the public is capable of self-selecting on the basis of expertise and producing information relevant to the patent examination process.

Peer-to-Patent attracted over 40,000 visitors in its initial months of operation and converted over 2,000 of those into registered users who signed up for a patent application community. In other words, people do not simply sign up for the project as a whole. Instead, they register to join a group responsible for the open review and examination of a specific application.

The two thousand reviewers we attracted during the initial months of the pilot did not comprise as big a community as initially hoped. But with no budget for outreach or marketing, we quickly learned that we needed to enlist the help of charismatic community leaders — bloggers with a following, online newsletters with readers, organizations with members — to make people aware of the project and the opportunity to participate.

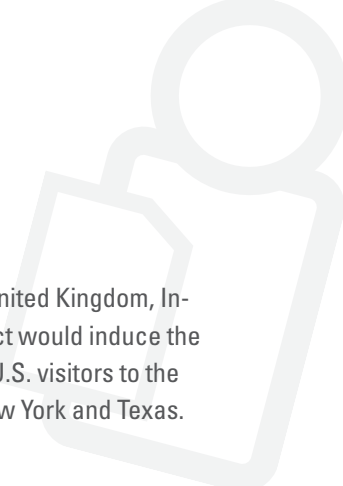
The success of a network is not necessarily measured by average engagement over time but by its “burstiness,” increases in network traffic and rates of participation with the posting of a particularly interesting application that draws people out and puts them to work.

- Average of 12 members in each collaborative community (high of 46)
- Average of almost 5 prior art references forwarded per application (high of 15)
- More than 10 prior art references posted for only 2 applications

A focus on small groups is not a weakness but a conscious part of our strategy. We do not want all the direction coming from the center; instead, we want the community to generate itself based on its own enthusiasm. We are learning that “crowdsourcing” useful information does not actually demand a crowd. We do not need a flood of participants so much as we want to attract those few individuals who know and care about wind farming or battery optimization or storage allocation, who can then work together to refine their knowledge collectively.

Given the diverse technologies at issue, such that there was no one natural and exclusive “public” to invite, along with the relative infrequency of applications posted (only 40 in the first 10 months), the participation rates exceeded expectations.

Initial Results



Visitors came from 140 different countries, with English-speaking countries—the United States, United Kingdom, India, Canada—topping the list, followed by Germany and Japan, bolstering our hope that the project would induce the beginnings of an international scientific dialogue about patents. Perhaps less surprisingly, of the U.S. visitors to the site, the overwhelming number came from highly technological regions: California followed by New York and Texas. IBM, one of the primary sources of reviewers, has offices in all these locations.

As with Wikipedia, where the visitor count far exceeds the number of editors who actually write the encyclopedia entries, only 365 (18 percent) of the 2,000 peer reviewers who have registered on the Peer-to-Patent Web site are considered to be “active” participants who did the work of submitting prior art in connection with the public review of the first 40 applications.

Those 365 people posted:

- 401 discussion comments
- 173 pieces of prior art
- 189 prior art ratings
- 55 annotations of prior art posted by others
- 221 tags to describe a patent application
- 39 items of research relating to a specific patent application
- 76 research resources for the site as a whole

In addition, those active users, in turn, sent out 107 invitations to other users.

Of these “active” users, all appear to have given a genuine e-mail address. 201 affirmatively identified themselves in their user profiles by listing an affiliation. This active peer review community spanned 91 organizations with which the active participants chose to identify themselves as having an affiliation. Of the 365, 104 came from IBM, which developed an organized program for employee participation on the job. The rest were scattered, with one or only a handful of people from any single organization. Participation, however, was overwhelmingly corporate. While too many use a Gmail, Hotmail, or AOL address to draw a conclusive statement, 18 percent of the site’s total registered users signed up under an “.edu” domain.

The value of creating open dialogue in patent law can be seen in the diversity of the community. Reviewers are asked to complete a profile and answer questions about educational and professional expertise. Although the first year of the Peer-to-Patent pilot was limited to applications concerning computer technologies, less than half (39 percent) of the peer reviewers classified themselves as a “Computer Professional/Technologist.” This seems to support the idea that members of the community, regardless of their actual area of practice, are knowledgeable and, perhaps most importantly, willing to contribute.

Early contributors held a wide variety of degrees. According to their self-reporting via the personal profiles on the Web site, while the majority held engineering or computer sciences degrees, they also reported having training in everything from comparative literature to applied mathematics, from the bachelor through doctoral level.

Initial Results

The size of the communities ranged from 2 to 42 (not counting members of the Peer-to-Patent team who also participated). Approximately 7 active participants on average (ranging from 1 to 29 people for any given application) submitted a comment to the discussion, an item of prior art, a research suggestion or an annotation and worked on each application. The application with the highest participation included 42 members of the community and 29 active participants, who submitted 15 items of prior art in connection with the application for a “Method, apparatus and computer program product for providing status of a process.”

Patent applications reviewed between 6/15/07 and 4/19/08	40
Patent applications for which one or more prior art references were forwarded to examiner	36
Total # of prior art references submitted for applications through 4/19/08	173
Average # of prior art references submitted per application	4.3
Total # of prior art references forwarded to the examiner through 4/19/08	168
Average # of prior art references forwarded to the examiner per application	4.2
Total # of discussion postings for applications through 4/19/08	395
Average # of discussion postings for patents finished being reviewed	9.9
Total # of community annotations of submitted prior art	55
Average # of annotations per patent application	1.4
Total # of research items submitted for applications through 4/19/08	39
Average # of research items per application	1

Table 1 - Activity Summary through April 19, 2008

By April 2008, 10 months into the pilot, Peer-to-Patent had engaged the public in the review of 40 applications for which prior art was submitted and forwarded to the USPTO in 36 out of those 40 cases. On those 36 applications, the public submitted 173 items of prior art, an average of 4.8 references per application. For each application, they have been posting an average of 10 discussion comments. The rates of annotating third-party prior art are lower, with an average of 1-2 annotations per application and only 1 suggestion for further research.

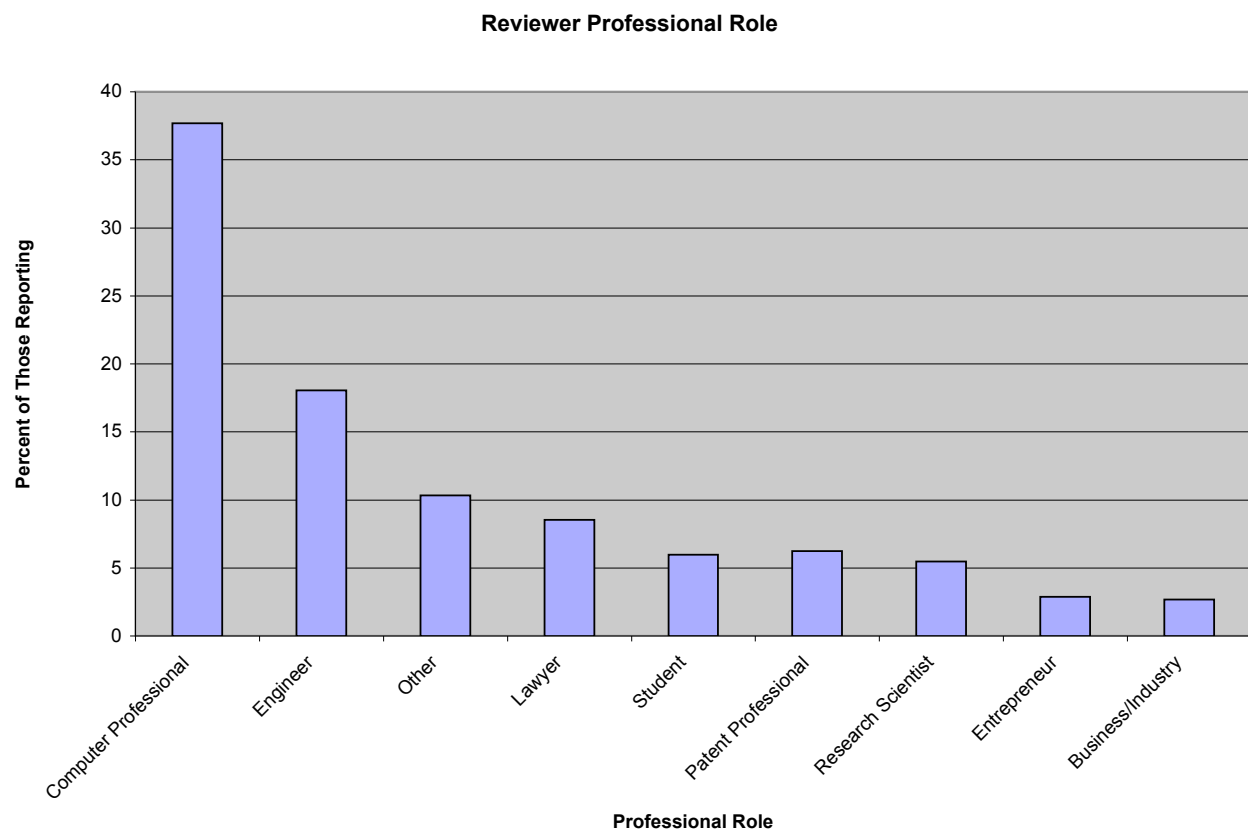
While Peer-to-Patent is allowed to submit up to 10 prior art references to the USPTO, the average number is far lower. Many factors influence (and, to a degree, dictate) the amount of prior art submitted. “The relative size of a particular field, the extent to which certain subject matter permeates the mainstream, and the degree of difficulty involved in reading a particular application all contribute to the number of prior art references that may be uncovered,” writes Project Manager Chris Wong. Furthermore, because the pilot depends upon inventor consent, it is entirely likely that participating companies are giving Peer-to-Patent their best applications. The failure to attract numerous prior art submissions can, potentially, be credited to the quality of the applications instead of any shortcomings of the community. In any case, the submissions, while not numerous, are useful because they have led to the rejection of 9 out of the 36 applications on which they appeared.

Initial Results

Part 1: Reviewer Information Based on Users Completing Profiles

Of the more than 2,000 reviewers registered on the Peer-to-Patent Web site, 68 percent (1,396) completed a personal profile. The profile asked questions about educational background, professional experience, and job affiliation.

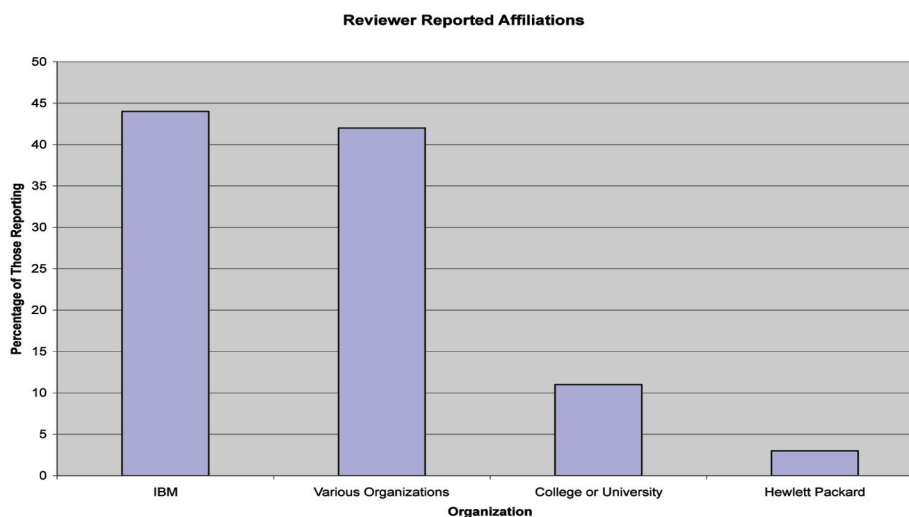
Not surprisingly, of those completing the question about professional role, the plurality chose computer professional (38 percent) or engineer (18 percent). However, some filled other professional roles, such as lawyer, entrepreneur, or research scientist. Reviewers from a variety of professional backgrounds registered to participate in the Peer-to-Patent program.



Initial Results

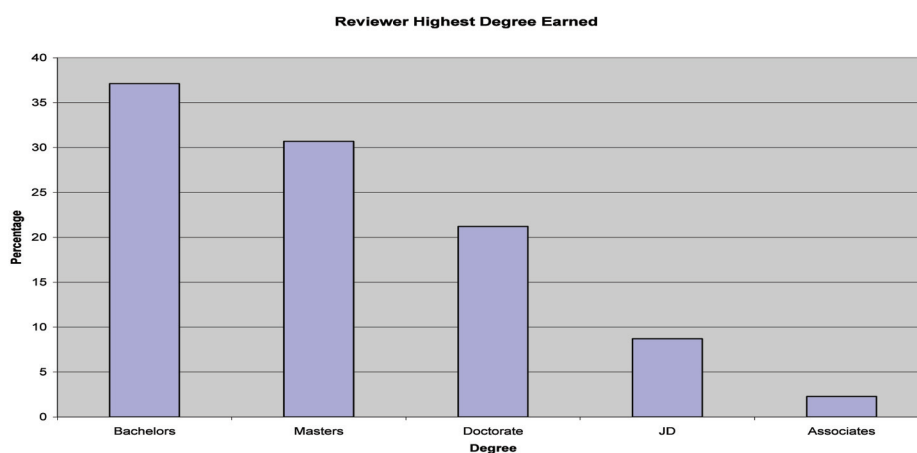
Organizational Affiliation

The reviewers hailed from many different organizations. Of the 834 (41 percent) who indicated an affiliation, 44 percent were from IBM, 11 percent were affiliated with a college or university, and 3 percent were from Hewlett Packard. The other 42 percent were affiliated with a variety of different organizations, such as Motorola, various laboratories, law firms, the military and hospitals.



Educational Background

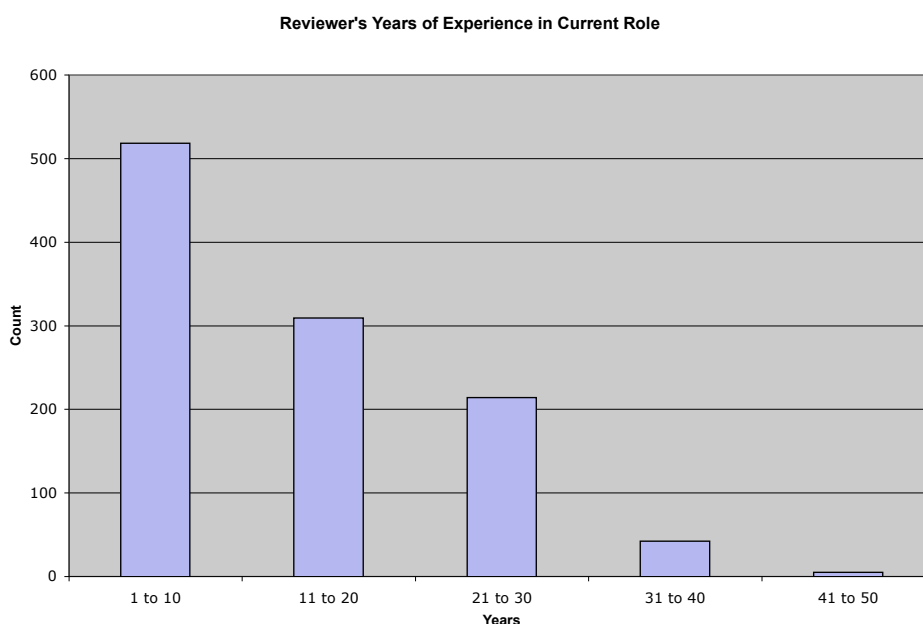
Almost two-thirds (61 percent) of the reviewers indicating level of education earned post-secondary degrees. Only 24 percent of reviewers (490) indicated the highest academic degree they earned. Of those providing information on their educational backgrounds, the largest group (37 percent) holds bachelor's degrees. Thirty-one (31) percent hold master's degrees. Others hold doctorates (21 percent), J.D.s (9 percent), and associate's degrees (2 percent).



Initial Results

Years of Experience

Of the 2,092 reviewers, 1,088 reported the number of years of experience in their current professional roles. The mean number of years of experience was 14 years (sd = 9.6), and the median was 12 years, ranging from 1 year to as many as 46 years. Over 30% of the reviewers who indicated their years of experience had 20 or more years in the role.



Part 2: Reviewer Information Based on Users Completing Surveys

At the close of each application review period, participants who worked on an application were asked to complete a survey describing their experiences with the Peer-to-Patent project. Thirty-five (35) completed surveys were returned from those reviewers who had subscribed to at least one of the first 40 applications, yielding a 10 percent response rate. While it would be desirable to generate a higher response rate, ten percent will permit us to at least get a current snapshot of responders' reactions. The survey collection process is ongoing, and as participants continue to work on new applications, new survey responses will be collected and tallied.

Of participating peer reviewers who responded to the survey:

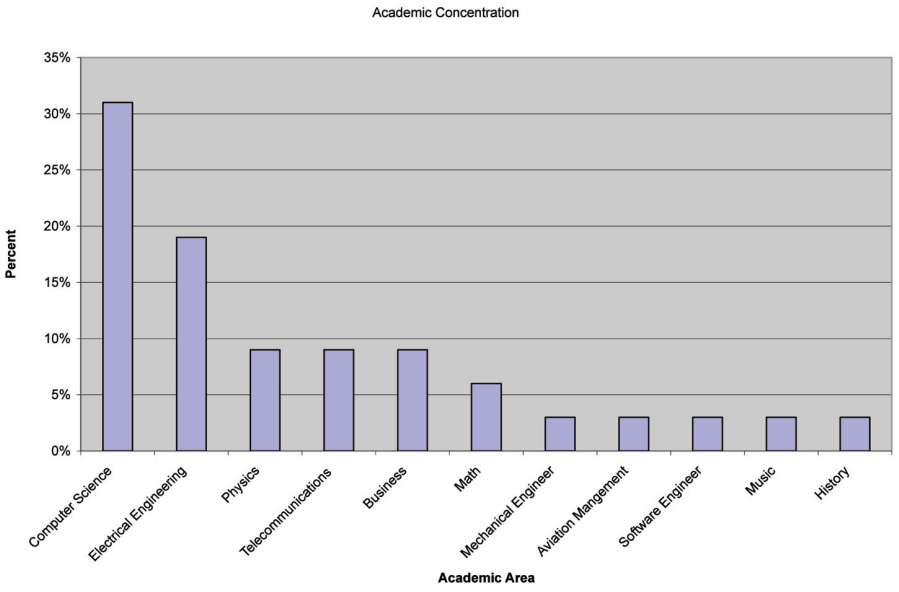
- 95 percent are men
- 71 percent hold master's or Ph.D. degrees
- Average total time spent reviewing and commenting on an application was 6 hours

Of the 35 reviewers who completed surveys after reviewing an application, 95 percent are men. The majority of the group has been working in their current positions for 10 years or more, ranging in duration from less than one year to as many as 40 years. Their roles in the companies vary. Approximately one-third are executives or senior staff, another third are engineers, and the balance indicated a variety of roles ranging anywhere from sales to programmer to consultant. Two indicated that they were patent agents.

Initial Results



More than one-half of the responders (53 percent) hold master’s degrees as their highest degree earned. One-quarter completed a B.A. or B.S. degree (23 percent), and one-quarter hold advanced degrees, Ph.D. (18 percent) and J.D. (6 percent). These degrees were in computer science (30 percent), electrical engineering (19 percent), physics (9 percent), business (9 percent), math (6 percent), and a variety of other subjects, including music and history.



Of those responding, 95 percent indicated that they were experts or had some professional familiarity with the patent subject area. Only 6 percent indicated that they were hobbyists. More than 80 percent reported they were expert or knowledgeable with the patent process, whereas 17 percent had some or no prior knowledge. Only 3 percent were not comfortable with patents and patent applications. Fifty-six percent found the patent review hard work, but doable, and 41 percent found it easy. Prior to and after participating in this process, all the participants (100 percent) understood the meaning of prior art.

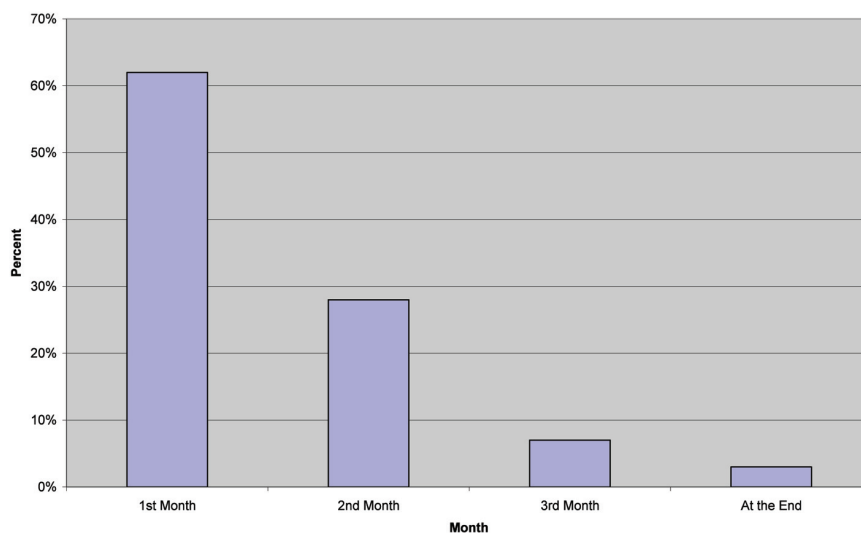
Initial Results

Part 3: Application Specific Questions

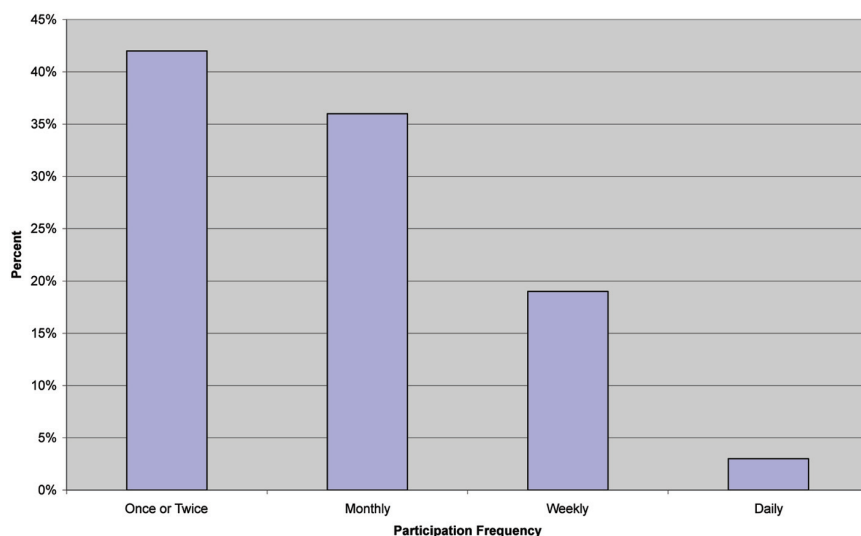
A patent application is posted and available for review for a four-month period. At the end of the four months the application is closed. At the end of the review, we were interested in learning about the participants' activity levels and the nature of their participation in the review process.

The majority of the peer reviewers who completed a survey indicated that they joined the process the first month (62 percent). Twenty-eight percent joined during the second month, 7 percent during the third month, and 3 percent toward the end. Once they joined the process, 42 percent contributed only once or twice and left. Thirty-six percent participated monthly, 19 percent weekly, and 3 percent daily.

When Did You Join the Patent Review Process?

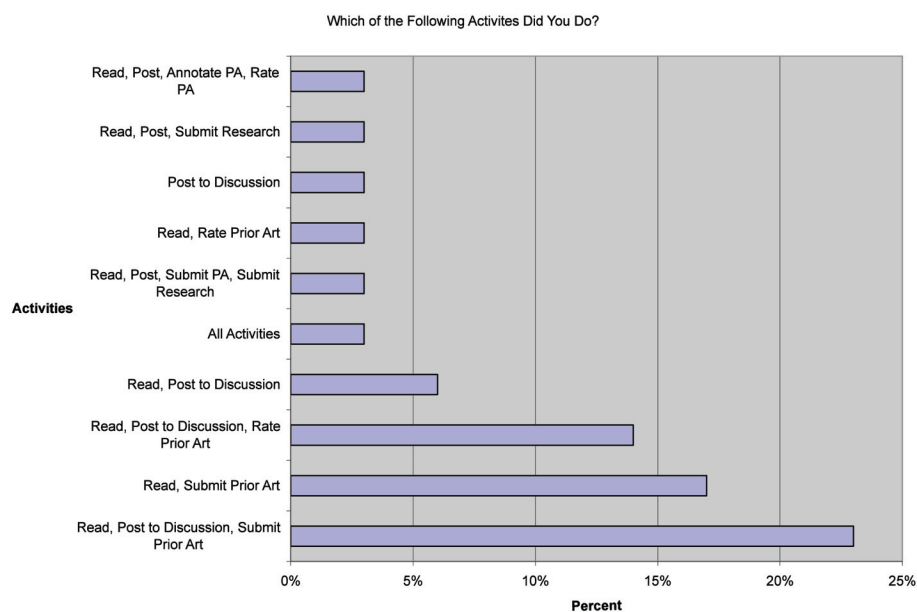


How Often Did You Participate?



Initial Results

Participants who completed the surveys made contributions in a number of different ways. The largest percentage (30 percent) read the application, posted to the discussion, and submitted prior art. Twenty-two percent read the application and submitted prior art. Additionally, 18 percent read the application, posted to the discussion, and rated prior art. The balance completed one or more of the activities, and 23 percent did not respond to the question.



The peer reviewers were willing to spend a number of hours working on different tasks for each patent application. Reviewers invested an average of three hours posting to the discussion, three hours reviewing and reading the application, and five hours annotating and rating submissions. Reviewers are not required to participate in all of the activities. Therefore, the average total time spent reviewing each patent application was six hours.

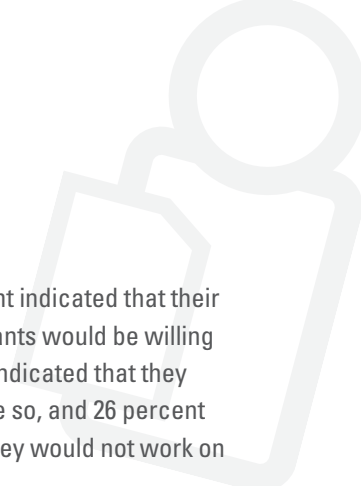
If prior art was submitted, 52 percent knew the sources, but had to go find it; 17 percent knew about the source, but had to check the citation; 17 percent researched the prior art, and 13 percent had the reference handy.

The survey results indicated that all (100 percent) of the participants found the application understandable or easier than most patent applications. The applications were not difficult to read or understand.

The participants often consulted with a variety of tools or Web sites to conduct their research. The most frequently mentioned sites were Google and USPTO. Others mentioned (in order of frequency) were Delphion and Way Back Machine. Other sites were mentioned once: Google Patent search, logmein.com, vendor sites, university sites, IBM internal, personal files, and ISO/IEC document repository.

When evaluating the expertise of other project members, 88 percent of the participants reported that the expertise level was mixed. Twelve percent reported a high level of expertise, and none reported a low level of expertise. With respect to an assessment of the quality of the discussion, the prior art submissions, and the prior art annotations, the participants' ratings for quality averaged 7 on a scale of 1 to 10, ranging from a low of 2 to a high of 10.

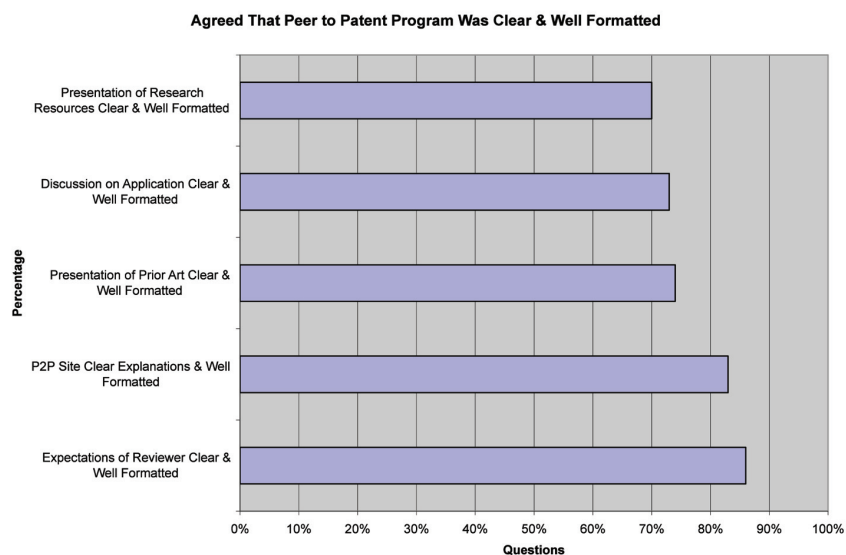
Initial Results



When assessing the relevance of their work to the examination process at the USPTO, 71 percent indicated that their work experience was somewhat (34 percent) or highly (37 percent) relevant. Half of the participants would be willing to spend more time on the application, while 34 percent said they would not. Eighty-six percent indicated that they would work on another application, 60 percent indicated they would sign up but had not yet done so, and 26 percent indicated that they had already signed up. The bottom line is that only 3 percent indicated that they would not work on another Peer-to-Patent application.

Part 4: Peer-to-Patent Format

The vast majority of participating reviewers indicated that the Peer-to-Patent format was clear and well formatted.



“Bottom Line” Questions

Do you think that a third-party submission of prior art program like Peer-to-Patent should be incorporated into regular USPTO practice?

— 83% yes, 6% no, 11% no response.

Is there value to public participation in patent examination?

— 89% yes, 11% no.

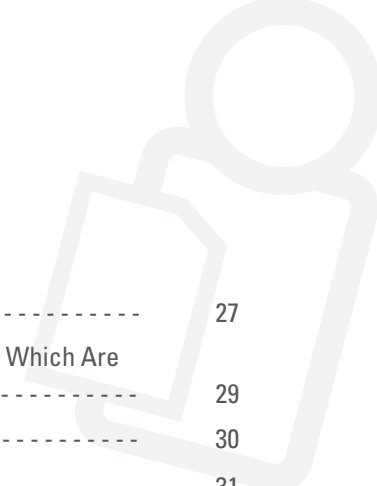
Overall, were you satisfied with the experience of Peer-to-Patent?

— 83% yes, 6% no, 11% no response.

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First Office Actions



1. Honey Monkey Networking Exploration

PEER TO PATENT ACTIVITY

Discuss Patent Applications 14 comments posted Size of Community: 12	Research Prior Art 6 research notes	Annotate and Evaluate Prior Art 3 prior art ratings 3 citations
	Upload + Explain Prior Art 3 submitted	

Table 2: Honey Monkey Activity Map

According to this Microsoft patent application: “a network can be explored to investigate exploitive behavior. For example, network sites may be actively explored by a honey monkey system to detect if they are capable of accomplishing exploits, including browser-based exploits, on a machine. Also, the accomplishment of exploits may be detected by tracing events occurring on a machine after visiting a network site and analyzing the traced events for illicit behavior. Alternatively, site redirections between and among uniform resource locators (URLs) may be explored to discover relationships between sites that are visited.”

The community comprises 12 participants of whom 5 self-identify as students, 3 as computer professionals, 3 as engineers, and 1 as a laborer.

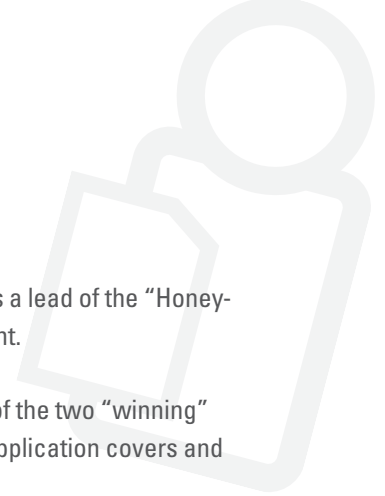
Two of the members self-identified as students from Kent State, working on this as a class project. One active member is a technologist from Finland. Another two technologists and an engineer were from IBM, two in Canada and another in the US. The other two engineers worked for MITRE Corporation. The “Laborer” was a New York Law School research assistant, keeping an eye on the discussion.

The community identified three items of prior art submitted by two of the members. None of the items were patent prior art. In addition, three different people submitted ideas for research. The patent application contained 20 claims. But the members successfully narrowed the relevance of prior art to a handful of those claims.

The patent examiner subsequently used two of the three references from different contributors through Peer-to-Patent to reject the application. Of those two references, both also had explanatory annotations from another member of the

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community. One of the submitters of these two references, Kathy Wang of MITRE Corporation, is a lead of the “Honey-client Development Project,” which is listed by Microsoft on its Information Disclosure Statement.

The discussion included 14 comments by 6 of the participants over the course of a month. One of the two “winning” submitters participated directly in the conversation. In this dialogue, they discussed what the application covers and referred to its specific claims.

The first two sets of interchanges involved a discussion of the business implications of the patent, followed by replies exhorting the participants to focus on patentability, not on commercial implications. In other words, participants helped one another to understand the issues at stake here. Then came an interchange about the exact nature of the technology at issue:

Steve Pearson: “By my reading, this uses a number of machines running browsers to try and determine if a Web site that a browser may visit performs an exploit, not if a browser itself ‘has’ an exploit. The browsers pretend to be ‘dumb’ but actually record whether the site makes/attempts any changes to the browser’s system. This also records some information on the relationships among URLs, which may be useful in later remediation steps taken with respect to any found exploits.”

Fabian Fagerholm: “Interesting. I have to reread the application; I might indeed have misinterpreted whether the system is supposed to check for malicious Web sites or if it tries to determine whether a browser is vulnerable or not.

If the purpose is to check for malicious Web sites, then I believe there is plenty of prior art to be found.”

What follows this thread is a discussion among four of the users about what the invention actually covers. As the discussion proceeds, it gets more specific with regard to the claims of the application itself.

The submitter of the prior art used by the USPTO did not participate in the discussion in this case.

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2. Method and Apparatus for Selectively Executing Different Executable Code Versions Which Are Optimized in Different Ways

PEER TO PATENT ACTIVITY

Discuss Patent Applications 13 comments posted Size of Community: 12	Upload + Explain Prior Art 3 submitted	
	Annotate and Evaluate Prior Art 3 prior art ratings 3 citations	Research Prior Art 0 research notes

Table 3: Executable Code Activity Map

One embodiment of the present invention provides a system that selectively executes different versions of executable code for the same source code. During operation, the system first receives an executable code module which includes two or more versions of executable code for the same source code, wherein the two or more versions of the executable code are optimized in different ways. Next, the system executes the executable code module by first evaluating a test condition, and subsequently executing a specific version of the executable code based on the outcome of the evaluation, so that the execution is optimized for the test condition.

The application comes from Sun Microsystems in response to which 12 people submitted 13 comments, 3 items of prior art, and an additional 3 annotations of that art pertaining to this 21-claim application. Of the three prior art submissions, one is a patent but, again, the non-patent prior art was used by the examiner.

In the discussion, in which the submitter of the relevant art used by the USPTO participated, team members referenced the specific claims of the application. Eight members of the group participated in the discussion. In this back-and-forth, they discussed the scope of the technology, identified prior art, encouraged one another to submit it via the proper channel, and debated the relative novelty of the claims of the application.

One participant commented: "As a particular example, FFTW (www.fftw.org) does exactly as the patent described. In FFTW's terminology, the source code contains a series of codelets, different codelets are optimized for different input sizes and different architectures, and the sequence of codelets to use is constructed in a plan. FFTW automatically

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selects the (optimal) plan for each given input on each given architecture. In some cases, it involves running many small codelets on a system and then choosing the best ones to use. ‘FTW: An Adaptive Software Architecture for the FFT,’ M. Frigo and S. G. Johnson, 1998 ICASSP conference proceedings (vol. 3, pp. 1381-1384); ‘A Fast Fourier Transform Compiler,’ Matteo Frigo, in the Proceedings of the 1999 ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI ‘99).” When he doesn’t post this as prior art, another participant does.

There is no spam or irrelevant chatter. Three computer professionals, three engineers, an academic scientist, two students, one not specified, and one research assistant participated.

3. Methods of Enhancing Media Content Narrative

PEER TO PATENT ACTIVITY

<p style="text-align: center;">Discuss Patent Applications 5 comments posted</p> <p style="text-align: center;">Size of Community: 8</p>	<p style="text-align: center;">Research Prior Art 0 research notes</p>
<p style="text-align: center;">Upload + Explain Prior Art 4 submitted</p>	<p style="text-align: center;">Annotate and Evaluate Prior Art 0 prior art ratings 4 citations</p>

Table 4: Enhancing Media Content Activity Map

This 40-claim application assigned to Intension Corporation covers: “a method of enhancing a viewer’s experience of a video program.” As the application describes it, “a plurality of selectable alternative video program scenes are provided for a video program being viewed on a display. The selectable alternative program versions are pre-rendered video scenes. A user is prompted to select at least one of the selectable alternative video program scenes for viewing.”

The application attracted a community of eight participants—two computer professionals, an engineer, a student, a lawyer, and one participant from an unspecified background. Those who signed up and chose to identify themselves came from Schlumberger and IBM. The so-called student actually appears to have been a research scientist from MIT.

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They submitted four items of prior art, none of which was a patent or patent application. Instead, the forwarded submissions included a PC-based video game product, a paper describing a video editor, video editing software, and a description of academic research conducted at MIT. None of the submissions received a rating.

Four of the members of the community carried on a conversation discussing the nature of the technology covered by the application and what else is already out there that might defeat novelty. In this conversation, they discussed what the application covers and referred to its specific claims. The discussants submitted prior art though the item used by the USPTO was not from someone who actively participated in the conversation.

The patent examiner relied on one of the prior art submissions. Posted by a lawyer from IBM, it did not receive any additional community annotations.

4. Smart Drag-and-Drop

PEER TO PATENT ACTIVITY

<p>Discuss Patent Applications 15 comments posted</p> <p>Size of Community: 23</p>	<p>Upload + Explain Prior Art 10 submitted</p>
<p>Annotate and Evaluate Prior Art 18 prior art ratings 10 citations</p>	<p>Research Prior Art 0</p>

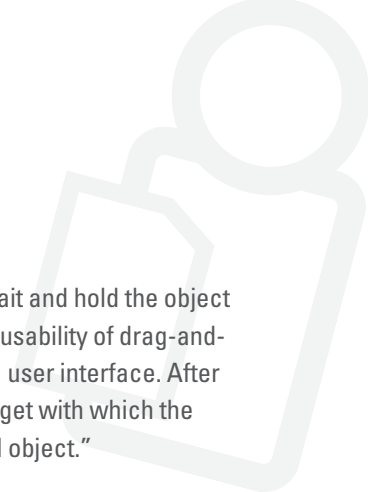
Table 5: Smart Drag and Drop Activity Map

Yahoo’s Smart Drag-and-Drop application attracted a larger than usual community due to the popular topic of a technology that touches on general Internet usage and an active outreach strategy by the Peer-to-Patent team to alert people to the posting of this application for public review.

As the Peer-to-Patent team described this application: “The ability to drag-and-drop objects in a user interface has been around for some time. It does, however, have shortcomings. When dragging an object to a drop target in a remote part of the interface, a user can often expect to make multiple gestures with the mouse or touchpad to get to the

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desired location. Similarly, if the drop target is in a part of a list that is offscreen, the user must wait and hold the object while the list scrolls to the target. The claimed invention provides mechanisms for improving the usability of drag-and-drop functionality. The application provides methods and apparatus for manipulating objects in a user interface. After a user selects an object to move, at least one additional interface object, representing a drop target with which the selected object may be associated, is presented in the user interface in proximity to the selected object.”

The community of 23 participants submitted 10 items of prior art and 18 community annotations of that art. Of the 10, all but two were patent prior art in this case. But the examiner used one of those prior patents to make the rejection. The submitter, an Indian professional patent searcher, took the time to explain the specific relevance of the prior art to each of four claims of the patent application.

There was an active conversation with 15 postings by members of the community, including the poster of the “winning” art, in which they discussed with each other what constitutes prior art and what the relevant technology at issue was. As with the other applications, they referenced specific claims in their discussion. None of the postings were off-color or off-topic.

5. User Selected Management Alert Format

PEER TO PATENT ACTIVITY

<p>Discuss Patent Applications 30 comments posted</p> <p>Size of Community: 30</p>	<p>Upload + Explain Prior Art 9 submitted</p>
<p>Annotate and Evaluate Prior Art 22 prior art ratings 9 citations</p>	<p>Research Prior Art 6 research notes</p>

Table 6: User Selected Management Alert Activity Map

One of the earliest applications, this HP application attracted 30 participants to submit 9 items of prior art over a two-month period, 22 ratings of those submissions, and 6 additional research notes.

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As the Peer-to-Patent Web site describes: “This application relates to electronic computing, and more particularly to a computing system that implements user selectable management alert format. When a system manager remotely accesses or controls a computer system with devices attached to it, the devices may be able to alert the system manager of problems in a number of formats, with each format requiring a separate program to read the alert. For example, network interface cards (NICs) or other computing components may be operable in accord with the alert standard format (ASF) protocol or with the active management technology (AMT) protocol. In many instances, the devices may use common hardware, and the device is configured to operate in accordance with a specific management alert protocol though software or firmware installed onto the device. This application describes a system for improving efficiency of remote access by displaying to the user a list of formats available (as determined from the devices attached to the computer system being remotely accessed) and allowing the user to select a single format for all of the devices to use.”

Discussion here was very lively, with 30 postings and a great deal of highly responsive back-and-forth. The submitter of the prior art used by the USPTO participated in the discussion. Among the 30 people, 13 were computer professionals, 4 were engineers, and 5 self-identified as lawyers. The two students were Peer-to-Patent research assistants. One participant chose not to specify his professional role.

In this HP application, the USPTO relied on a submission by an IBM engineer. His was one of two non-patent pieces of prior art.

6. Cipher Method and System for Verifying a Decryption of an Encrypted User Data Key

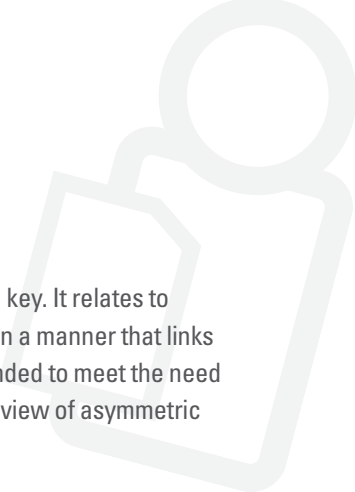
PEER TO PATENT ACTIVITY

<p>Discuss Patent Applications 18 comments posted</p> <p>Size of Community: 8</p>	<p>Upload + Explain Prior Art 3 submitted</p>
<p>Annotate and Evaluate Prior Art 7 prior art ratings 3 citations</p>	<p>Research Prior Art 1 research notes</p>

Table 7: Cipher Method Activity Map

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This IBM application describes a cipher method for verifying a decryption of an encrypted user data key. It relates to methods for checking the validity of a decrypted user data key upon restore of encrypted user data in a manner that links the user data key and a key used to decrypt an encryption of the user data key. The invention is intended to meet the need for a secure and reliable method for verifying a correct decryption of the encrypted user data key in view of asymmetric key-based cipher methods.

The community submitted three items of prior art, none of which were patents or patent applications. In addition, one member submitted a PowerPoint presentation as background research. Four people participated actively in the discussion, including all of the submitters of prior art as well as the person who submitted the art used by the examiner.

This application attracted a smaller community with eight participants, of whom five were people outside the Peer-to-Patent community. Those five, however, were able to come up with art relevant to the examination of the patent application and relied upon by the examiner. The participants included a professor, a computer scientist, a student, an engineer, and one unspecified contributor.

7. Tuning Core Voltages of Processors

PEER TO PATENT ACTIVITY

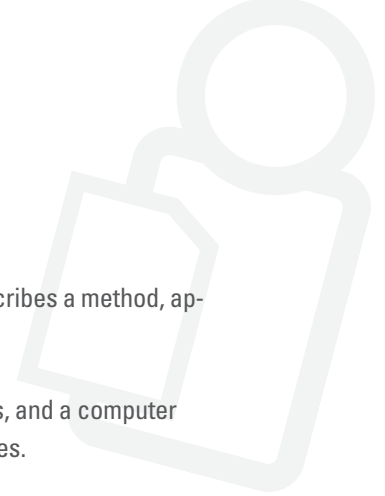
<p>Discuss Patent Applications 14 comments posted</p> <p>Size of Community: 9</p>	<p>Upload + Explain Prior Art 3 submitted</p>	<p>Annotate and Evaluate Prior Art 1 prior art ratings 3 citations</p>
<p>Research Prior Art 0 research notes</p>		

Table 8: Tuning Core Voltages Activity Map

Many computer systems involved in mission critical activities (such as banking, telecom, and stock markets) depend upon a high level of computer reliability. In order to achieve reliable, fault-tolerant computing, many computer systems utilize multiple processors. Processors operate at core voltages set by the manufacturer. When multiple processors are

Appendix 1

First Office Actions



used, the resulting nondeterministic behavior can lead to system failures. This HP application describes a method, apparatus, and system for tuning core voltages of processors in order to avoid failures.

The non-Peer-to-Patent participants comprised four engineers, two professional patent searchers, and a computer professional who submitted three items of non-patent prior art literature but no research references.

The discussion led to 14 comments, including one by the submitter of the “winning” art used in the examination. Again, people in the group helped each other to refine their understanding of the application, identify prior art, and taught each other how to submit it. For example, one participant commented to another member of his team: “These look like great references. If you can upload copies to the prior art section, then we can start matching them up to the specific limitations of the claims.”

8. System and Method for Retaining Information in a Data Management System

PEER TO PATENT ACTIVITY

<p>Discuss Patent Applications 4 comments posted</p> <p>Size of Community: 10</p>	<p>Annotate and Evaluate Prior Art 4 prior art ratings 7 citations</p>
<p>Upload + Explain Prior Art 7 submitted</p>	<p>Research Prior Art 1 research notes</p>

Table 9: Data Management System Activity Map

Many data management systems are implemented as a single centralized application, which users access via the World Wide Web, the Peer-to-Patent team posted about this GE Medical Systems Information Technology application. It goes on to say that: “Advantageously, this implementation minimizes a burdensome need to provide individualized application service, maintenance, and upgrading at local levels. If, however, an application server, Web server, or the like associated with a centralized application needs to be restarted for some reason, then it is likely that at least some of its users may endure information and data loss or session termination, which are undesirable, inconvenient, and commonly require

Appendix 1

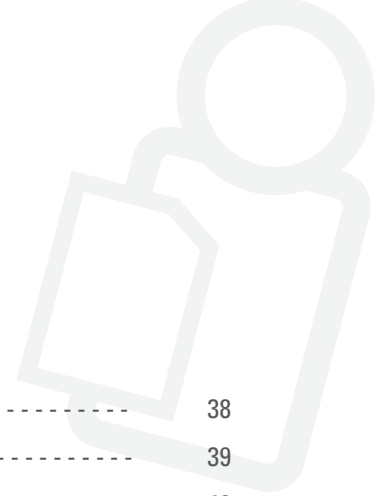
First Office Actions

users to re-log into the application in order to continue use. This application describes a system and method whereby information is still stored on an external database but is retrieved into a memory associated with a server. The user is then able to access the memory through an interface. Users are able to maintain user sessions and prevent information and data loss or session termination resulting from service interruptions to a data management system.”

This application attracted seven items of non-patent prior art literature and one suggested avenue for research from eight participating community members (plus two Peer-to-Patent assistants). The group included six computer professionals and two engineers, but no lawyers. Discussion here comprised only four postings, but again, included a posting from the individual whose art was eventually chosen by the USPTO. The discussion references the claims of the patent. The conversation again zeroes in on what is not inventive about the technology at issue, and the participants talk explicitly about ideas for prior art to disprove novelty and non-obviousness.

Appendix 2

Surveys



Examiner Questionnaire

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Reviewer Survey

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Examiner Questionnaire

1. Examiner Background

Please Note: Did you examine more than one peer review pilot application? If so, please provide a separate survey response for each of the pilot applications.

*** 1. Please click on your areas of technical expertise (click on all that apply):**

380

712

700

713

703

714

706

715

707

717

708

718

709

719

710

726

711

*** 2. Please briefly describe your work experience prior to working at the USPTO.**

Examiner Questionnaire

2. Application-Specific Questions

Please Note: Did you examine more than one peer review pilot application? If so, please provide a separate survey response for each of the pilot applications.

*** 1. Did you find the art submitted by the peer reviewers during the examination of this application helpful?**

- Yes
- Somewhat
- Neutral
- Not at All

Please Explain

*** 2. What information tools did you use to conduct your search (e.g., EAST, WEST, PLUS, Dialog, Internet, ... etc.)? Please list all resources considered.**

*** 3. Was any prior art submitted by the peer reviewers inaccessible by PTO resources?**

- Yes
- No
- Don't Know

Please Explain

Examiner Questionnaire

3. Peer to Patent Information Disclosure Statement (IDS) Questions

Please Note: Did you examine more than one peer review pilot application? If so, please provide a separate survey response for each of the pilot applications.

* 1. When was the Peer-to-Patent prior art submission provided to you?

- Before Initial Examination
- After Initial Examination

2. If before, did the Peer-to-Patent prior art submission provide you with any information to aid with your search?

- Yes, very helpful
- Yes, somewhat helpful
- No, not helpful
- It was irrelevant
- Other, please describe

3. If before, did the Peer-to-Patent list of research resources assist with your search?

- Yes, very helpful
- Yes, somewhat helpful
- No, not helpful
- It was irrelevant
- No research resources were provided
- Other, please describe

4. If after, did the Peer-to-Patent prior art submission contain information, that you used in an Office Action, that was not turned up during your search?

- Yes
- No
- Other, please describe

Examiner Questionnaire

*** 5. Which aspects of the Peer-to-Patent prior art submissions did you find helpful?
[Check all that apply]**

- Peer to Patent Prior Art IDS
- Peer to Patent Annotations on the Prior Art
- Peer to Patent Research Resources
- Peer to Patent Discussion

Please Explain

*** 6. Did you apply prior art references from the Peer-to-Patent prior art submission (whether or not turned up in your own searches as well)?**

- Yes
- No

*** 7. Which references were used to reject any claims in the examination of this patent application?**

*** 8. Were any claim(s) indicated allowable?**

- Yes
- No

If yes, during which stage of the prosecution were they indicated allowable? [e.g., first office action, after amendment, etc.]

Examiner Questionnaire

4. Peer-to-Patent Format

Please Note: Did you examine more than one peer review pilot application? If so, please provide a separate survey response for each of the pilot applications.

*** 1. Was the presentation of the Peer-to-Patent Prior Art submission clear and well formatted?**

Yes

No

Please Explain

*** 2. Was the presentation of Peer-to-Patent Annotations on Prior Art clear and well formatted?**

Yes

No

Please Explain

*** 3. Was the presentation of Peer-to-Patent Research Resources clear and well formatted?**

Yes

No

Please Explain

*** 4. Was the presentation of Peer-to-Patent Discussion on the application clear and well formatted?**

Yes

No

Please Explain

Examiner Questionnaire

*** 5. Were the Prior Art references complete?**

Yes

No

Please Explain

*** 6. How helpful was participation in this pilot program?**

Very helpful

Somewhat helpful

Not very helpful

Not helpful at all

Please Explain

7. If helpful, what part of the Peer-to-Patent program did you find particularly helpful?

8. What suggestions do you have to improve the Peer-to-Patent pilot?

*** 9. Would you welcome examining another Peer-to-Patent application?**

Yes

No

Indifferent

Please Explain

Examiner Questionnaire

*** 10. Do you think that a program like Peer-to-Patent (third-party submissions of prior art) would be useful if it were incorporated into regular Office practice?**

Yes

No

Please Explain

*** 11. Would the Peer-to-Patent program be helpful in doing your job?**

Yes

No

Please Explain

Peer to Patent Reviewer Survey

1. Reviewer Information

Thank you for your participation in the Peer-to-Patent Pilot Program. [The application on which you participated](#) is now before the USPTO for examination and we will share with you the results of that process when they are handed down. We ask you to please take a few more minutes to complete the following questionnaire about the pilot. This will help us to improve the system. It will also help the Patent Office to determine if the patent examination process should be opened up for greater public participation. There are forty-four questions but none are required. We ask, however, that you provide us with as much feedback as possible. You are welcome to complete the survey anonymously but if you wish to receive a Peer-to-Patent commemorative t-shirt, you will need to provide us with your address. [New applications have been posted](#) and we hope that you will sign up to participate again as well as forward to friends. Please feel free to email us at info@peertopatent.org.

1. Name

2. Gender

Male

Female

3. Organization or Firm

4. Professional Role / Job Title

5. How many years in this position?

6. Please briefly describe the work you perform at your job:

7. Please list (separated by commas) your areas of technical expertise:

8. Please list (separated by commas) your areas of legal expertise:

Peer to Patent Reviewer Survey

9. Please tell us about your academic degrees and concentrations. Use commas to list multiple concentrations within a degree.

BA	<input type="text"/>
BS or equivalent	<input type="text"/>
Master's	<input type="text"/>
MD	<input type="text"/>
JD	<input type="text"/>
PhD	<input type="text"/>
Additional Information	<input type="text"/>

10. Please assess your training in the subject matter of this patent application:

- Expert Some Professional Familiarity Hobbyist No Prior Knowledge

11. Please assess your experience with the patent process:

- Expert Knowledgeable Some Knowledge No Prior Knowledge

12. Please assess your comfort level with patents and patent applications:

- I am not at all comfortable with this subject matter Hard Work but Doable Easy Reading

13. Prior to participating in this process, did you understand the meaning of "prior art"?

- Yes No

Explain

14. Subsequent to participating in this process, do you understand the meaning of "prior art"?

- Yes No

Explain

Peer to Patent Reviewer Survey

2. Application - Specific Questions

15. When did you join the review process?

- First Month Second Month Third Month Towards the End

16. How often did you participate over the course of the public review?

- Daily Weekly Monthly Once or Twice and Never Came Back

17. On this application, which of the following did you do? (check all that apply)

- Read the Application Submit Research
 Post to the Discussion Forum Annotate Prior Art
 Submit Prior Art Rate Prior Art

Other (please specify)

18. Tell us how you spent your time on each facet of this application.

Time

Total time spent on patent application

Time spent reviewing/reading the application

Time spent discussing the application in the discussion area

Time spent annotating/rating submissions from others in the community

19. If you submitted prior art, did you have to research that reference or was it something you already knew of and had handy?

- Researched the prior art
 Knew about the source but had to go find it
 Knew about the source but had to check the cite
 Had it handy

Peer to Patent Reviewer Survey

20. How difficult was this application to read and understand?

- Impossibly difficult to understand
- Understandable
- Easier than most patent applications
- Among the easiest to examine that I've seen

Explain

21. What informational tools or websites did you consult? (i.e. USPTO website, Google Patent Search, Way Back Machine, LexisNexis, Westlaw, etc.)

22. How would you assess the expertise of other members of the team of reviewers?

- High Level
- Mixed Levels
- Low Level

Explain

23. On a scale of 1 (not at all informative or relevant) to 10 (highly informative or relevant), how would you rate the following on this application:

	1	2	3	4	5	6	7	8	9	10	N/A
Discussion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prior Art Submissions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prior Art Annotations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Explain

Peer to Patent Reviewer Survey

24. How would you assess the relevance of your work to the examination process of the USPTO?

- Highly Relevant
- Somewhat Relevant
- Not Likely to be considered
- I don't know

Explain

25. Would you have been willing to spend additional time on this application?

- Yes
- No

Explain

26. Would you participate in the examination of another Peer-to-Patent application?

- Yes, I am already signed up for an additional application
- Yes, but currently I am not signed up for another application
- No

Explain

Peer to Patent Reviewer Survey

27. Why did you participate in Peer-to-Patent?

- | | | |
|--|---|---|
| <input type="checkbox"/> Competitive Interest | <input type="checkbox"/> Desire to be part of a community of practice / Conversation in a particular area of innovation | <input type="checkbox"/> Desire to weaken a patent by finding prior art to narrow its claims or defeat the patent |
| <input type="checkbox"/> Interest in ensuring good quality patents in general | <input type="checkbox"/> Interest in and desire to contribute to patent reform / Improving patent quality | <input type="checkbox"/> Desire to strengthen a patent by finding prior art to hone the claims |
| <input type="checkbox"/> Interest in ensuring good quality patents in this area of science | <input type="checkbox"/> Interest in (positive or negative) a particular patentee / assignee | <input type="checkbox"/> Academic credit |
| <input type="checkbox"/> Desire to distinguish myself professionally / Develop reputation | <input type="checkbox"/> Desire to contribute to open decision-making and encourage more of the same | |

Other (please specify)

28. How helpful was participation in this pilot program to achieving the goals you selected in the previous question?

- Very Helpful Helpful Somewhat Helpful Not Helpful

Explain

29. Please add any other general comments about your participation:

Peer to Patent Reviewer Survey

3. Peer-to-Patent Format

30. Did the Peer-to-Patent site clearly explain what to do?

Yes

No

Explain

31. Did you know what was expected of you?

Yes

No

Explain

32. Was the presentation of [prior art submissions](#) clear and well formatted?

Yes

No

Explain

33. Was the presentation of [research resources](#) clear and well formatted?

Yes

No

Explain

34. Was the presentation of [discussion on the application](#) clear and well formatted?

Yes

No

Explain

35. What suggestions do you have to improve the format of the Peer-to-Patent website?

Peer to Patent Reviewer Survey

36. Do you think that a program like Peer-to-Patent (third-party submissions of prior art) should be incorporated into regular USPTO practice?

- Yes
 No

Explain

37. Is there value to public participation in patent examination?

- Yes
 No

Explain

38. What is your perception of the patent system in the United States?

39. Overall, were you satisfied with the experience of Peer-to-Patent?

- Yes No

Explain

40. Additional Feedback

Peer to Patent Reviewer Survey

4. USPTO Feedback

41. Did the USPTO use material that you submitted?

- Yes
 No
 Don't Know

Explain

42. If yes, what material was used? (Check all that apply)

- Prior Art
 Research
 Annotations

Explain

43. Were you satisfied with the feedback from the USPTO?

- Yes
 No

Explain

44. If you would like to receive a free t-shirt for participating in Peer-to-Patent, please fill out the address form below:

Name:

T-Shirt Size (S, M, L, XL):

Address:

Address 2:

City/Town:

State/Province:

ZIP/Postal Code:

Country:

Peer-to-Patent thanks you for participating in the pilot program and providing valuable feedback.

Center for Patent Innovations
The Institute for Information Law & Policy
New York Law School

57 Worth Street
New York, NY 10013-2960

T 212.431.2368

E info@peertopatent.org

NEW YORK
LAW SCHOOL