From: Christoph Angerer
Sent: Monday, June 20, 2011 10:40 AM
To: reexamimprovementcomments
Subject: "Invention Effort" instead of "prior art" in (software-)patents

Dear Sir/Madam

I hereby submit my thoughts on how the current patent system, especially for software patents, may be improved. I am not sure about the exact length and form you were expecting; but I hope my comment can contribute something to the general discussion.

Sincerely,
Christoph Angerer

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A Thought Experiment
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What's the difference: 1) an inventor has the idea to allow registered users to purchase goods with a single click, potentially changing the retail industry; 2) an inventor developed a new encoding scheme for digital music that improves compression by a factor of 10, potentially changing the music industry.

Both 'inventions' have a big impact on their industries. However, some may say that 1) is an "obvious" invention, one that immediately comes to mind when thinking about the problem. But measuring "obviousness" is difficult: if it were obvious, why didn't any of the numerous competitors invent that very same solution long ago? The second invention seems less difficult to judge because undoubtedly a lot of work and inventive genius went into this new compression algorithm (or did it?).

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Where Software Patents can be Harmful
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Especially in the field of software patents, granting patents to seemingly trivial solutions is not only harmful to a whole thriving industry but it puts the whole patent law into a bad light. Where is the harm in patenting "trivial" solutions? The harm is that patents are unknowingly violated by programmers who just do the most obvious thing that comes to their mind when solving a problem at hand: "We have all the customer data in the data base and the customer wants to buy something? No problem, sir, I just add this button". This especially hurts the ""small inventor", the very same person that the patent law is supposed to protect. Violating patents unknowingly is less likely for more complex solutions that require a certain engineering effort.

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The Proposed Change: Use Invention Effort
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So what should the goal of the patent system be? The patent law should prevent uncompetitive behavior where a competitor gets an unfair

advantage by simply "stealing the idea" instead of putting the effort into solving the problem herself. For the two examples mentioned in the beginning this means that stealing the idea in 1) does not really reduce the effort you have to put into adding the button to your homepage (which is hardly any effort anyways); whereas in 2), simply re-implementing the compression algorithm could potentially save you years of research effort and is therefore a "more severe idea theft".

Patent law should not value "good ideas" and not even "who had it first"; it should prevent gaining unfair advantages by stealing, As a catchy phrase, the difference is that "good ideas are worth a dime a dozen, what creates the value (and is costly) is the engineering"

Therefore, I propose—especially for software patents—to not take prior art or "obviousness" as any legally meaningful measures. Instead, the patent law should take the "effort" that went into the invention, for example as a dollar value or spent man hours. This estimate attaches a $$$ value to the patent.

To put this idea in different words, it should not be forbidden to (accidentally or knowingly) re-invent something. Re-invention is good for the industry because it results in a larger exploration of the solution space. Rather, it should be forbidden to steal an idea and get around the potentially huge investments that are associated with research and inventions. Getting around the research costs by stealing an idea results in an unfair advantage over competitors.

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Journaling of Invention Efforts
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It is reasonable that the patent office expects inventors to attach "proof" of the spent effort to their patent applications (for example, in the form of emails, notebook entries, or work journals; in the following discussion I will use "journals" as a collection of documents proving the time and money put into an invention). Especially in software development, journals are created essentially automatically through date and timestamps on files, emails, histories in versioning systems, and much more. Forging a coherent journal and its history after the fact for a project of significant is believed to be very difficult or even impossible if third parties are involved in any way.

Initially, the patent office can simply believe the application and does not need to perform much data analysis. A comparison with the journals of potential future patent violators will show if the initial estimate was too high.

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Resolving Patent Infringement Claims
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If a patent infringement is reported, the patent office requests the journals of the supposedly infringing party. The patent office then compares the effort that went into the original invention and the re-invention. If the efforts are similar then the re-inventor did not have any competitive advantage; if, however, it shows that the invention in

question popped up "over night" whereas the original inventor spent years of research, the patent office can assume a patent violation.

If the original inventor claims 3 years of development effort but the re-inventor can prove that it got the same functionality within a week, an expert group can consult the journals of both parties to determine whether the re-invention was a legitimate re-invention of if the idea was 'stolen'. If it turns out that the re-inventor really managed to develop the same thing in a fraction of the time then the patent is just not as valuable as previously thought and re-evaluated (however, not overruled). In fact, reaching the same goal with a fraction of the effort is a big achievement in itself and should therefore not be punished by the patent law (as it would be today) but be encouraged.

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Patent Values as basis for Licensing Costs
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The $$$ value of a patent can also be used for determining the licensing costs, making the market for patent licenses more transparent. For a competitor, the question arises whether it is cheaper to pay for the license or re-invent the solution herself (where the patent's $$$ value is the 'expected' cost of the invention, unless the competitor is much more efficient or the $$$ value was hugely overestimated). For the inventor the question is how much a licensee is willing to pay before they start simply re-inventing the same thing. (The costs of many software patent licenses would probably plummet under this valuation—which is a good thing and shows that they are not worth their money in the first place)

It is a question of who can grant a license. One solution could be that the original patent holder is only party that can license the invention to others. A legitimate re-inventor is not punished by the patent law but he also cannot license the invention to third parties. A second solution is that all inventors and re-inventors jointly own the license and the base $$$ value of the patent is the lowest effort of any (re-)inventor. All (re-)inventors get a share of the licenses (where the original inventor may get an additional premium over the re-inventors).

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Declining Patent Value
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As technology advances, more and more things become "obvious" that were not so before. It may also become easier to re-invent certain things; where programmers may have spent 3 years of development to implement a certain feature in 1980, it may take a today's programmer just a couple of days. This is how technology progresses and generally a mechanism that should be encouraged in the spirit of progress.

By assigning a $$$ value to the patent, this decline in value of the invention over time is represented seamlessly. Whenever a patent is challenged and the patent office finds that the re-inventor did actually re-invent the same thing (as opposed to steal it), but with less effort, the patent office can assign this new lower $$$ value to the original patent.

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Glossary
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Original Invention: The first patent application filed at the USPTO; the application comes with a development journal that is the basis for its $$$ value

Re-invention: An invention with claims overlapping an original invention but that was not "stolen" but rediscovered with a legitimate amount of effort; either filed by the re-inventer or written as part of a patent infringement examination.

(Development) Journal: A set of time-stamped documents proving the effort that went into an invention. Can be emails, notebook entries, log files, version control meta-data, etc. Companies and private parties writing software that may infringe on patents are required to keep journals (or rather, they are 'strongly encouraged' in their own interest).

Patent Infringement Examination: Initiated by a patent holder accusing a third party of patent infringement. During the examination, the journals of all parties are examined. If it turns out that the third party did legitimately re-invent the invention this re-invention is put to the file and the original invention is potentially re-valuated.

Patent value: the currently smallest effort put into the invention or related re-invention. Can be $$$ or man-hours or some other measure that is supported by the development journals (lines of code, ...).