

Publisher seeks patent

Scientist applies to protect online reviewing and journal-publishing process.

[Declan Butler](#)



Frontiers journals allow a paper's authors and reviewers to slug it out online. DNY59/iStockphoto
A scientist in Switzerland is seeking to patent a system for peer reviewing and publishing scientific papers online, Nature has learned.

Henry Markram, a neuroscientist and publishing entrepreneur who works at the Ecole Polytechnique Fédérale de Lausanne (EPFL) in Switzerland, last year filed internationally for a broad patent on systems for interactive online peer review and publishing open-access journals.

The application, says Markram, was filed mainly to protect a fleet of author-pays, open-access journals published by the Lausanne-based Frontiers Media, a company he created in 2008 with his wife Kamila Markram, another neuroscientist at the EPFL.

"Frontiers was trying to do something quite radical and novel, and we felt it important to have some strategic advantage," he says. "I don't think our intention is to restrict anything in any way; it's more a defensive strategy. We don't take the patent that seriously."

Real-time reviews

The main innovative features of both the journals and the patent, says Markram, are real-time evaluation of papers and a high degree of automation. Software matches articles to potential reviewers, and authors and referees discuss comments and revisions in an online forum, for example.

The result is just like an Internet discussion group, with editors and authors able to follow comment threads in real time, says Robert Harvey, a molecular neuroscientist at the School of Pharmacy, University of London, who has experience of Frontiers journals as both an editor and an author.

Referees are anonymous at the review stage but are named on the published paper. "Reviewers' comments are more constructive and thoughtful than those provided by many other journals, where reviewers can hide behind the veil of anonymity," says Harvey. This boosts quality, adds Markram, because referees will want their names to be associated only with good papers.

Frontiers journals cover fields including neuroscience, pharmacology and psychology, and publish any research that reviewers judge to be technically sound, leaving readers to decide a paper's importance. Article metrics, such as number of downloads and who reads what — with top scientists' reading given greater weight — are used to promote papers. Authors of highly rated primary research articles are invited to submit, for free, a follow-up article explaining their findings to a broader audience.

Patent problem

Markram's patent application falls into a controversial category known as business methods patents. These have been permitted in the United States since 1998 for processes that use a computer. In Europe, such patents are more difficult to obtain, but worldwide tens of thousands of computerized business methods have been patented.

The future of such patents, in the United States at least, may be decided by an imminent ruling of the US Supreme Court. The court is considering an appeal against a 2008 decision by a lower court, which upheld the rejection of a patent on a method for hedging risks in commodity trading.

The Supreme Court might render patents on business methods such as Markram's "categorically invalid" by ruling they are unpatentable, says Michael W. Carroll, an expert in intellectual property at the American University in Washington DC, and a founding member of the Creative Commons, a non-profit organization that promotes the legal sharing of works through licenses that make these more available, while consistent with copyright law.

A search of patent databases turns up a handful of other patents, both applied for and granted, that are related to online scientific publishing. They cover such things as peer review, publishing scientific posters, open-access business models and methods for indexing and searching for papers.

Markram's patent, entitled 'Internet Method, Process and System for Publication and Evaluation' seems to be one of the broadest with respect to journal publishing, with claims covering many aspects of the publishing process from submission and review through to publication.

Even under current US law, the broader claims in Markram's patent are unlikely to be granted, suggests Carroll. "The claims are likely to be rejected for lacking novelty or for being obvious to one skilled in the art of publishing. The language is so broad that it would include publishing models that were already in existence at the time of invention or filing," he says.

Like the Public Library of Science (PLoS) and other open-access publishers, Frontiers charges authors a fee – in this case €2,000 (US\$2,500) – to publish. But 40-55% of this fee is subsidized by the Frontiers Research Foundation, a not-for-profit Swiss charity of which Markram is president, meaning that authors pay at most €1,200.

The company has already published some 2,000 papers, which, multiplying by author fees, suggests that it has brought in some €2 million or more. To become financially sustainable, says Markram, the company will need to find additional sources of income, such as advertising.

Matthew Cockerill, managing director of BioMed Central — a for-profit open-access publisher based in London — is unconcerned by the patent. "Given the copious amount of prior art in the past decade relating to alternative mechanisms for evaluating articles instead of, or in addition to, traditional peer review, I don't believe there is undue need to worry about an enforceable broad patent being granted that would prevent continued exploration of this space," he says.