

Open access and closed options

Let's start with some news. We recently announced that EMBO, together with Nature Publishing Group, will launch next year an open-access, author-pays journal called *Molecular Systems Biology*. Two reasons guided our decision: we believe that journals publishing data-intense papers—such as those in systems biology—should be open access so that the information can be shared and mined by the scientific community; furthermore, it will be an interesting experiment to see if the open-access, author-pays model of publishing will be economically viable for a not-for-profit scientific organization such as EMBO.

Indeed, the topic of open access continues to rumble in the background of the scientific world. It was again the subject of various—and, as always, passionate—presentations in Stockholm at the recent EuroScience Open Forum meeting. Of course, the arguments for open access remain convincing: we as scientists clearly want everyone to be able to access and read the results of our work, which society has financed. Open access—that is making papers freely available on the internet—is the way to achieve this. End of story? Well, not quite. Even if we cherish the notion of free access, we are not ready to embrace it as a community. More than 85% of journals in the life sciences—including *EMBO reports* and *The EMBO Journal*—allow authors to put a copy of their article on their private or institution's web site so that anyone can find it. But only a small percentage of authors take this extra step of self-archiving their material; perhaps this shows that providing access is not yet high on our agenda.

But other players are moving forward to ensure that those readers who are not in institutions with site licenses for a wide range of scientific journals will have access to research papers nonetheless. The US National Institutes of Health (NIH) intends to request that scientists who publish any work supported by NIH funding deposit

their manuscripts in the PubMed Central (PMC) server at the NIH. According to a notice issued on 3 September 2004, "Six months after an NIH supported research study's publication—or sooner if the publisher agrees—the manuscript will be made available freely to the public through PMC," either as the author's final version or the publisher's copy. There are some questions related to the interpretation of the notice, and whether non-identical forms of the same paper could be deposited in PMC, but these are not the core problems. While this move clearly benefits the open-access movement, there are two aspects that are of concern. First, this obligation may not be acceptable for current journal publishers such that NIH-supported scientists may find themselves with a restricted range of publication options. Second, the planned US directive points to a location that is defined and controlled by the US government, again a curious restriction from a supposedly pro-business administration. This has also prompted debates at the European level, which could result in a similar requirement. But that is a different story. I presume that this latest move by the NIH is linked to the fact that although successful open-access journals exist, they are still greatly outnumbered by subscription-based journals.

Which brings me back to the problem of economic viability of open access for both publishers and authors. A core requirement for moving away from the subscription-based model is that the costs for authors must be reasonable. At present, calculations of author charges point to a range of US\$1,500–6,000 per paper. But even a price tag of US\$1,500 per paper, which appears to be the minimum, could add up to a considerable sum for research institutions and groups. For instance, EMBL currently pays for a site license for both *The EMBO Journal* and *EMBO reports*, which provides access to a total of about 1,000 papers plus reviews and commentaries. If

our journals had been operating an open-access model in 2003 and had charged EMBL authors €1,500 to publish their papers, the library would have saved money but the cumulative costs for EMBL would have been approximately ten-fold higher than that of the site license. Of course, these papers would be free to readers all over the world, but liberating them has its own costs—more successful research groups or institutions will inevitably carry a greater financial burden for the dissemination of research.

Logically, the overall costs of both systems should be equivalent; the taxpayer still picks up the tab, it is only that the budget responsibility moves from the library to the labs. These costs could only be reduced if the profits made by some journals were diminished. If, therefore, an open-access model is imposed by governments, as the NIH seems to be willing to do, then some large commercial publishers will be very sensitive to the consequences, as they would need to explain to their shareholders the diminution of their profits. And less income could have a deleterious effect on society journals and the activities they finance (Gannon F (2004) Ethical profits from publishing. *EMBO Rep* 5: 1). With this in mind, all parties, including promoters of the open-access movement, support the notion of profit/surplus, but any losses by a journal that switches from subscription-based to open access would most likely be compensated by increasing the price for authors, which could again restrict authors' choices for publishing. Thus, in the end, the fate of the open-access experiment will depend on economics. The concept in its purest form is wonderful, but we will have to be vigilant to ensure that it does not become a double-edged sword that generates unexpected exclusions or unacceptable restrictions.

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