In October of last year, Patrick Brown, a professor of biochemistry at the Stanford Medical Center, stirred up a storm in the scientific world when he launched the Public Library of Science (PLoS) Biology (http://www.plosbiology.org). Like any other science journal, it contained research articles, editorials, features, and reviews. Why, then, would its website receive hundreds of thousands of hits the first day it opened, nearly bringing down the server? The research was ground breaking: the first issue announced an implant that could control monkey behavior and the development of genetic tests that discovered a new Asian elephant species. The caveat, however, was that PLoS Biology could only be accessed by those with a computer and an internet connection, but readers would not have to pay the exorbitant fees that usually come with reading original research articles.

A site license for an annual subscription to Nature is $1,280 a year (Stanford University would qualify as a site), chump change for a university with an endowment approaching $8 billion. Yet for many people off-site, Nature does not offer individual subscriptions, though individuals can purchase a glossy reprint of an article for thirty dollars each. In contrast, open access rests on the idea that everyone, from world-class scientists to grade-school students, can read materials from the comfort of their own desktops. Even though the articles are targeted for a very specific demographic (mostly research scientists), the allure of PLoS is the sense of egalitarianism that free access to knowledge bestows upon the populace. A woman with advanced carcinoma can decide which treatment will best suit her; a young teenager, determined to learn about the heavens, can launch a successful career in astronomy.

When Brown, Harold Varmus, and Michael Eisen founded PLoS in 2001, they posted a brief, pointed letter online, warning that scientists would not subscribe to, publish in, or review any scientific journal that did not make its full contents available after half a year. The letter, with the signatures of over 30,000 scientists from around the globe, seemed to be a harbinger of change. Although the gauntlet had been thrown, the Goliaths barely blinked an eye. Science agreed to release its articles after one year, while Nature, with a few exceptions (such as the mouse genome paper), held to the status quo, allowing access only to subscribers. The journals realized that, for many scientists, publication within their pages was far more important than the lofty ideals outlined in PLoS’ letter.

According to Mary Buttner, digital resource manager at Lane Medical Library, the reason Science and Nature subscriptions are so expensive is because established journals, ingrained with the print model, are spending a fortune on technology support—site maintenance, programmers, and the like—in order to keep their websites up to date and to maintain their simple accessibility. Although each or its article is saturated with advertisements and pop-ups on all sides, the New York Times website, updated every few minutes, is barely breaking even. “Technology is expensive, and people still want to make money,” said Buttner.

PLoS, on the other hand, hopes to become self-sustaining by implementing a novel business model. Already endowed with $9 million in seed money from the Moore Foundation, which is being used to defray operational costs for the first four years, PLoS is also charging authors $1,500 to have their articles published. The fee is small compared to costs of running experiments, which can run into the hundreds of thousands of dollars. Moreover, authors already pay fees for longer articles and color printing in established journals. Also, some institutions, such as the Howard Hughes Medical Institute and the University of California at Berkeley, have already agreed to pay this fee for scientists within their institutions.

The goal now is to develop the presence of PLoS to the point where publication in its pages signifies preeminent findings. A number of steps can be taken to more quickly establish PLoS within the scientific community. For example, the National Institute of Health (NIH) can recommend that its scientists publish in open access journals. After all, if the NIH is already funding a large amount of their research, the authors should not be forced to pay what are essentially middlemen, journals such as Nature, just so they can have access to previous research. Another step is to correct the notion that only older, established scientists will publish in open access journals. After all, if the NIH is already funding a large amount of their research, the authors should not be forced to pay what are essentially middlemen, journals such as Nature, just so they can have access to previous research.

In the meantime, PLoS is expanding its horizons and is currently in the midst of launching PLoS Medicine. As the established journals quietly wait to see what happens, PLoS is busy moving onward, confident that its publication model will ultimately force other journals to embrace open access. “PLoS is the future, and the future is very soon,” Buttner said.

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