

Two years after the launch

An update on the BioOne electronic publishing initiative

by Heather Joseph and Adrian W. Alexander

In April 2001, a unique coalition of academic librarians and scientific societies launched a new electronic journal aggregation, BioOne.¹ It took two full years of collaboration, common purpose, and hard work to make BioOne a real product with high-quality scholarly content, an outstanding technical platform, and hundreds of institutional subscribers. Two years and a few months after the launch, it's worth a look back to see how far we've come and how we got here.

Development and organization

BioOne represents the collective effort and financial commitment of five founding organizations:

- The American Institute of Biological Sciences (AIBS), comprised of 88 member societies and related organizations;²
- SPARC, the Scholarly Publishing and Academic Resources Coalition, with over 200 member libraries and affiliated organizations around the world;³
- Allen Press, a commercial producer of over 300 print and electronic scholarly journals;¹
- The University of Kansas, a comprehensive public university that has assumed a national leadership role in scholarly com-

munication issues over the past five years;⁵

- The Greater Western Library Alliance, a consortium of 30 research libraries in the western half of the United States.⁶

Two years before the launch, these organizations saw an opportunity to address two critical needs in the scholarly communication process: an academy-based alternative for the electronic publishing of journals by scholarly societies that lacked the financial and technical resources to become electronic publishers, and the continuing need for academic libraries to acquire high-quality scientific literature at a more reasonable cost. Involving a group of societies such as those represented by AIBS provided an opportunity to create an aggregation of scholarly electronic journals that were similar in subject content.

Over the following months, consensus for building the database was developed in the library community, through SPARC, and in the society publishing community, through AIBS and Allen Press. A "working group" of key personnel from the five founding organizations was formed to begin writing a business plan for the enterprise, and a nonbinding memorandum of understanding was signed by the founding organizations in June 1999. BioOne was incorpo-

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rated in Washington, D.C., in August of that year. A board of directors was elected, with each founding organization holding two voting seats on the board.

In August 2000, the BioOne Board of Directors hired Heather Joseph as president and chief operating officer. She came to BioOne with extensive experience in scholarly publishing and, currently, also serves as president-elect of the Society for Scholarly Publishing. Joseph is the only full-time paid staff member at BioOne, so the enterprise is highly dependent on its founding organizations for operational support. For example:

- The main office of BioOne, Inc., is at the SPARC headquarters in Washington, D.C. Office and fiscal support services are provided by SPARC and its parent organization, the Association of Research Libraries (ARL), and one of SPARC's business consultants, Howard Goldstein, has provided invaluable business development support to the project since its inception.

- Allen Press is BioOne's "production shop," where articles are SGML-encoded, linked, and indexed.

- The University of Kansas hosts the BioOne database on one of its servers in Lawrence, Kansas, in order to provide Internet 2 access to the journals.

BioOne also outsources its sales and marketing operations to two other organizations. Amigos Library Services,⁷ based in Dallas, Texas, represents the company in the United States and Canada. Elsewhere in the world, BioOne is now represented by Cambridge Scientific Abstracts.⁸

Advisory groups

BioOne's management and strategic direction is supported by three important advisory groups: publisher, library, and technical. The publisher advisory group helps in identifying and recruiting appropriate primary journal content for the BioOne database, recommending appropriate linking arrangements (between BioOne and other journal collections, citation resolvers, A&I services, and other related resources such as taxonomic databases), recommending participation in digital preservation projects, and recommending mechanisms that provide the appropriate level of access restric-

tion for material contained in the BioOne database.

BioOne draws on the expertise of the technical advisory group to ensure that it continues to conform to industry standards in all areas. This group also provides advice on key issues, such as architecture and new system developments, linking mechanisms between citations of digital works and the works themselves, standards, digital archiving, access management, discovery and retrieval (including metadata), and technical and other issues associated with helping users gain authorized access to networked information, such as identification, authentication, and authorization issues.

The library advisory board makes recommendations on pricing issues, such as balancing adequate revenue for the publishers and continued system development with reasonable pricing for libraries, licensing terms and conditions, interface development to better present content to end users, and ways to improve existing functionality and develop additional functionality to best meet end-user needs.

Business model

BioOne's greatest challenge in its initial planning stages was how to acquire over \$1 million in development funds. Grant funding was sought and both cash and in-kind contributions were pledged by the founding organizations, as well as other interested groups. Ten provosts from universities in the Big 12 Athletic Conference, for example, contributed \$50,000 from their own budgets. It is important to note that the largest amount of cash support, by far, came from the academic library community and, more specifically, from the SPARC membership.

In the fall of 1999, SPARC launched a solicitation effort among its 180 member libraries, asking them to contribute between \$1,000 and \$5,000 each in charter support (based on materials budget size), and an optional \$5,000 in sponsor support from funding already earmarked to support SPARC initiatives. In return, these libraries would receive discounts on their BioOne subscriptions for each of the first five years of participation. At launch, 127 libraries had provided financial support totaling over \$750,000.

BioOne's business model was developed with the aim of building and maintaining a cooperative operating and financial structure that would simultaneously meet the needs of noncommercial scholarly publishers, libraries, and the scientists and students who create and use the scholarly information published in its journals.

To accomplish that goal, the business model had to be highly cost-effective and sustainable. It also had to be priced at a point that would be attractive to libraries, but which would also provide scholarly societies with adequate revenue. The working group determined early on that a critical mass of at least 30 journals would be necessary to provide enough value to the market to generate sufficient revenue to sustain and expand the enterprise. When the product was launched in April 2001, it included 40 scholarly journals in whole-organism biology, ecology, and environmental sciences.

From the outset, the BioOne founding partners agreed that as much revenue as possible from subscription sales should go directly to the societies that had chosen to publish electronically through us. Since the first day of paid access, one half of gross subscription revenue has gone directly to the publishers at the end of each subscription year. The amount each publisher receives is based on a formula that takes into account the number of pages each title has in the database and how many hits the title received during the previous subscription year.

In 2002, the average journal received just over \$8,500 in revenue from sales through the BioOne database, which was equivalent to 52 subscriptions of the print version of the average BioOne journal. The highest paid journal in 2002 received just over \$35,000 from BioOne.

Current status

When BioOne ended its second full subscription year on March 31, 2003, the BioOne founding partners could be proud of what they had accomplished only four years after their initial discussions. The database now contains 68 scholarly journals and one electronic book published by 56 scientific societies and other related orga-

nizations. Over 400 libraries around the world (mostly at colleges and universities) provide BioOne access to over 3.5 million scholars, students, researchers, and other practitioners.

New developments at BioOne include the hosting of a small group of Open Access journals, such as the University of Arizona's *Journal of Insect Science*. BioOne also works with PubMed Central to create compatible files for publishers who request this service and delivers them directly to that organization's database for free access.

As a scholarly publishing innovator, BioOne is committed to keeping abreast of emerging trends in scholarly communication and to collaborating with new partners when that cooperation can further BioOne's mission.

In the summer of 2003, BioOne began participating in the World Health Organization's HINARI program, which provides institutions in less-developed countries with free access to BioOne. As of July 1, 2003, 481 institutions in 52 countries had access to BioOne via this program.

Future challenges

BioOne's central aim has always been to establish a robust, reliable source for cost-effective electronic access to the full text of primary journals. Established jointly by the library and publishing communities, BioOne set out to support noncommercial publishers who lacked sufficient resources to make the leap to online publishing and to support their transition from print-based to electronic publishing. This directly served the library community's interest by preserving its ability to continue to provide high-quality scientific literature at a reasonable cost. All of BioOne's partners agreed that other options available at the time—remaining paper-based and facing slow but inevitable irrelevance or the sale/license of content to commercial publishers and facing inevitable large increases in subscription costs—were unacceptable.

By launching on schedule and with the content promised to library supporters, BioOne rapidly moved beyond being perceived by the scholarly community (librarians and publishers alike) as an experimental, potentially risky endeavor to being re-

garded as a sound alternative for publishers in need of an online platform and as a primary source of journal access for librarians. This rapid acceptance resulted in some interesting implications for BioOne, some intended and some not. Rapid acceptance allowed new sales and renewals to proceed apace, and also allowed content recruitment to quickly become a fairly routine procedure, proceeding at a faster pace than initially expected. However, as librarians have come to accept that BioOne will provide reliable and ongoing access to electronic journals, they are much more comfortable with dropping corresponding print subscriptions to the journals contained in the database.

BioOne publishers had initially seen only a small number of cancellations of their print subscriptions after the database became operational. Two years later, however, they began to hear from more and more libraries that their print journals were being cancelled in favor of electronic access via the BioOne database. In fact, 75 percent of ARL members indicated in a May 2003 survey that they intend to cut print subscriptions in cases where they hold both print and electronic versions of a journal.

One of the consequences of growing from 40 titles in 2001 to 68 titles currently is that the revenue-sharing "pie" (which has not grown nearly as rapidly) must be cut into considerably more slices in order to pay more content providers. Therefore, revenue per publisher is declining simultaneous to publishers learning that cancellations of

print subscriptions are increasing. Thus far those cancellations have not come anywhere close to offsetting the additional revenue publishers have realized from the BioOne database, but the growing concern about this trend among BioOne publishers is palpable.

BioOne's new challenge is to find a way to make the switch from providing our participating societies with incremental income to providing them with some level of replacement income from print cuts in order for these societies to keep publishing their content. This challenge represents a shift in BioOne's mission and business model, and is the single largest challenge in defining how BioOne will move forward as a collaborative enterprise. BioOne is working actively with its publishing partners to help them meet this challenge. Most significantly, SPARC has commissioned an in-depth economic review of the financial models of a representative cross-section of the publishers participating in BioOne.

Notes

1. BioOne, Inc., www.bioone.org.
2. The American Institute of Biological Sciences, www.aibs.org.
3. Scholarly Publishing and Academic Resources Coalition, www.arl.org/sparc.
4. Allen Press, www.allenpress.com.
5. University of Kansas, www.ku.edu.
6. The Greater Western Library Alliance, www.gwla.org.
7. Amigos Library Services, www.amigos.org.
8. Cambridge Scientific Abstracts, www.csa.com. ■

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