

## REFORMING THE SCHOLARLY COMMUNICATION OF MATHEMATICS AND STATISTICS: PROJECT EUCLID AND ITS ECONOMIC MODEL

Zsuzsa Koltay and Jean Poland  
Cornell University Library

### Abstract:

Project Euclid, the non-profit electronic journal publishing initiative of Cornell University Library is described with special attention to its complex and flexible economic plan. IATUL members are asked to support this realistic reform initiative by talking to journal editors and acquiring subscriptions to the system for 2003.

Project Euclid's mission is to advance the cause of effective and affordable scholarly communication for theoretical and applied mathematics and statistics by developing an infrastructure that allows responsibly priced, high-quality independent journals to create and share a highly functional, state-of-the-art online presence. We are working with publishers to allow for the continued intellectual and economic independence of Project Euclid's participants while benefiting from the potentials of cooperative online publishing.

Cornell University Library developed Project Euclid with the active collaboration of Duke University Press. This partnership was very important to us and we believe that it shaped the project in very positive ways. A library and a press working closely together produced a system and an economic model that is sensitive to the needs of both communities. We have also received a lot of invaluable feedback and suggestions from our development partners and early adapters who represent a cross-section of the independent publishing scene in our disciplines such as small scholarly societies, academic departments, small commercial concerns, a scientific consortium and university presses.

Project Euclid is a SPARC Scholarly Communities partner, a fact that underlines our commitment to high-quality, low-cost scholarly communication. Our funding comes from The Andrew W. Mellon Foundation. We are also supported by a portion of a major hardware gift from Sun Microsystems, Inc. Project Euclid enjoys the support of scholarly societies such as the European Mathematical Society, the American Mathematical Society, the Society of Industrial and Applied Mathematics and the American Statistical Society.

2002 is a transitional year in the project as we prepare for the end of our grant-funded phase and ramp up for the cost-recovery phase starting at the beginning of 2003.

### **Software development**

The functionality of the site is based on the needs of independent journal publishers. The system offers the following main features:

An editorial toolkit with password-protected areas to empower editors and/or publishers to easily publish their journals online. Other features for journals include journal use statistics and an ability to keep track of subscribers.

Both journal publishers and authors will benefit from the exposure gained through a large aggregated site, and their users will benefit from advanced user features that many individual publishers would be unable to provide on their own. Such features include browsing journal by journal, flexible keyword and full-text searching (journal by journal, any combination of journals, or all Project Euclid journals), reference linking, and e-mail current awareness services (set up an individual profile and sign up to receive tables of contents of journals of interest.) Individual journals each have distinct "front doors" into the system. Journals may choose either to allow open access to the full text of articles or to limit that access to authorized users only.

Long-term retention of data is an important aspect of the project. Although initially Project Euclid will retain files in the formats in which they were contributed, ongoing research will be applied to the broader challenge of how best to preserve digital math content. Project Euclid will be an active participant in the discipline's efforts to identify and accept a single standard for archival file formats and migration. We will closely monitor developments in MathML and conversion methods between TeX and the archivally more sound MathML.

The software is Open Archives Initiative compliant and it uses the Dienst protocol. Project Euclid's URL is <http://ProjectEuclid.org>.

### **Economic model**

One of our biggest challenges was to come up with an economic model that will make this non-profit venture self-supporting. What made this process difficult was the need to balance the economic needs of both a wide variety of journals and a wide variety of libraries while ensuring enough revenues to support the maintenance and continued development of a state-of-the art online system and doing all of this in a way that supports our primary reason for starting the project in the first place, namely benefiting the scholarly community and its communication process.

Working with independent publishers with no or little experience with electronic journals and their effects on the economic balance of publishing means that we have to be fairly conservative in our approach. These journals tend to be somewhat behind the curve in entering the electronic arena, consequently their publishers' main concerns tend to be with the print version and not wanting to see the revenues coming from print sales erode. Although they do hope for some additional revenues from the electronic version, they tend not to see the electronic revenues becoming their main source of support in the near future. The economic concerns of scholarly societies are even more complex since their journals are usually treated as a benefit of membership.

To attract as wide a variety of independent journals as possible, we provide three different options for journals.

Option A: With no out-of-pocket expense at all, a publisher supplies its electronic files to Project Euclid and agrees that its electronic version may be marketed to academic libraries and other institutional subscribers as part of a special mathematics and/or statistics aggregation. Project Euclid maintains the Project Euclid site, all subscription lists for the electronic aggregation subscribers, and updates the Euclid site as new issues are published.

Project Euclid collects subscription revenue from subscribing libraries and sets aside from such revenue a shared pool equal to 30% of all subscription revenue in the first year of the journal's participation, 40% in Year 2, and 50% in Year 3. After deducting variable production costs [ordinarily \$2,250-\$3,500 per journal, depending on the amount of content published by the journal], the remainder of the pool is distributed proportionately to the aggregation journals based on the size of the journal's paid institutional print subscriptions for the current year.

We believe that this option will eventually be the most popular one as this is the one that paves the way to income streams being successfully shifted from the print product to the electronic version. This option is perfect for some international journals. However, at first we expect some major journals to be hesitant to take this option because it does not protect against print subscription losses. That is why we came up with Option B.

Option B: The publisher pays Project Euclid an annual base amount equal to \$3,500 (per journal), plus variable costs based on the number of published articles during the preceding calendar year. The publisher supplies its electronic files to Project Euclid and agrees that its electronic version may be marketed to academic libraries and other institutional subscribers including library consortia as an add-on to the special mathematics and/or statistics e-Journals aggregation described in Option A. The subscription price for the Option B publisher's journal is computed at 20% of the journal's print subscription price for libraries maintaining both a print and an electronic subscription and 90% of the journal's print subscription price for libraries that subscribe only to the electronic version of the publisher's journal. Project Euclid maintains the Project Euclid site, all subscription lists for the electronic subscriptions, and updates the Euclid site as new issues are electronically published.

Project Euclid collects subscription revenue from subscribing libraries and, after deducting a declining collections commission [Year 1 - 20%, Year 2 - 15%, Year 3 and beyond - 10%], remits the remainder of the subscription revenue to the publisher.

A library must subscribe to the Option A aggregation in order to take advantage of the special pricing offered by an Option B journal. Once a library has subscribed to the Option A aggregation, it may pick and choose among Option B journals or subscribe to them all as a package at a discount.

Option B is a conservative choice that we offer to attract journals whose circulation is so high already that they cannot hope to gain many new subscribers through Project Euclid

at least for the first few years but who worry about losing print subscribers as a result of being part of Project Euclid.

Option C: The publisher pays Project Euclid an annual fee equal to \$3,500 (per journal), plus variable costs based on the number of published articles during the preceding calendar year. The publisher supplies its electronic files in a format satisfactory to Project Euclid. Project Euclid maintains the Project Euclid site, allows access to the listing of libraries and subscribers approved by the publisher and supplied to the project staff, and updates the Euclid site as new issues are electronically published.

In Option C Project Euclid neither markets the publisher's e-journal nor collects any subscription revenue on behalf of the publisher. Option C e-journals do not form a part of either the Option A aggregation nor the Option B "add-on" collection.

We designed Option C mainly to attract society journals. Keeping complete control over marketing and pricing allows publishers to maintain their current model of membership pricing. Hosting such journals is also beneficial to Project Euclid because of the high quality and visibility they usually have and to build the rich content that ensures that Project Euclid will become a real hub of scholarly research.

#### **How do libraries and researchers benefit?**

First and foremost Project Euclid provides non-profit, affordable online access to independent journals that otherwise might not be online at all, or would have to be content with a sub-par system that does not allow important functions such as full-text searching and reference linking. By creating a rich, shared online presence, Project Euclid helps these journals stay competitive thus strengthening their intellectual and economic independence, a key factor in keeping the literature of the discipline varied, strong and affordable. It also provides a viable alternative to libraries and consortia having to deal with lots of small publishers or having to give up on online access to their journals.

#### **How can you support us?**

The coming year or two will be crucial in the success of Project Euclid. We have come a long way by developing a stable, scalable, robust system that reflects the needs of publishers, libraries and end users, and by generating a lot of support and momentum. However, we do need to make a smooth transition to our cost recovery phase, and IATUL members can help us achieve this goal. First, bringing Project Euclid to the attention of editors, managing editors and publishers of independent journals that you might be in contact with would be very useful. We also hope that your libraries will support us by subscribing to our low-cost product starting with the 2003 publication year.

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