

The Digital Mathematics Library Initiative: International Organization and Funding Issues

The somewhat scattered and disjoint issues and questions identified below are central to the broader success of the project but each will have to be addressed in a consorted form as requests are made for appropriate funding in each jurisdiction.

1. **Funding Model.** I take \$125 million as my estimate of full funding needs over ten years, and attribute \$20 million per annum in each of the first five, and \$5 million there after. I assume we need a two-level funding model. This should secure a limited number core groups, sufficient to assure the basic success of the initiative. But we should also establish a model for secondary sources/societies to join the project.
2. **Core Funding Groups.** If we look at the intersection of countries or regions with access to significant national funding, with thriving mathematical research communities and with advanced involvement in electronic publishing (not necessarily in Mathematics) we might end up with four core components, with the funding goal as suggested.¹
 - US: 35%
 - EU: 35% (including individual member country contributions)
 - Japan: 10%
 - Canada: 5%
 - Secondary sources: 15% (e.g., Australia, Brazil, Chile, China, India, Israel, Korea, Russia, Switzerland, other regional leaders.)

I would imagine establishing subgroups of our committee to secure the funding commitments in each of the five jurisdictions.

3. **Realistic Milestones and Success Metrics.** These are two-fold. We need a reporting and release mechanism for funds which is not too onerous, but which provides the needed reassurances to the funding bodies.

¹ISI measures of the proportion of mathematics (not impact) originating in each jurisdiction (over the past 5 years) *might* be useful. For example: a quick search lead to: US 34.25%, France 12.4%, Germany 9.9%, UK 6.8%, Japan 5.6%, China 5.6%, Italy 5.3%, Canada 4.8%, Spain 4.4%, Russia 3.8%, Israel 2.95%, Australia 2.8%, Holland 1.8%, Sweden 1.3%, Switzerland 1.25%, Brazil 1.2%, Taiwan 1.2%, Korea 1.1%, Austria 0.8% (at least one author from that country).

How do we remove non-performing participants? One possibility is that we provide some initial seed funds as needed, say to a group in Grenoble, but that after that we only pay by invoice on receipt of well-identified, and useful, deliverables.

4. **Compatible (Public Sector) Partners** in each major sector. It is critical to identify the right primary, but not exclusive, agency and have them work with others as appropriate.

In Canada, for example, this is likely to be NRC which has already indicated some informal interest. NRC oversees CISTI (Canada's national science library) and the NRC Press and so has the capacity to undertake a large amount of the needed acquisition and preservation/maintenance work. My experience is that we shall need to identify a comparable value to each national body. While they all honestly like international participation they need to be seen to be paying for national value-added and at best often have only bi-lateral international arrangements.

5. **IP and Costing Arrangements.** What access model do we indicated to our funding agencies? For example NRC Journals are currently free on-line to users with a 'dot.ca' address.

What is our strategy for securing adequate commitment from some/enough of the commercial academic publishers?

What do we require of them? What do we offer? Digital licensing and bundling developments has made resolving this much more necessary and complicated.

Do we envisage something resembling a General Public License (GPL)?

6. **Value to other disciplines.** To successfully attract national funding we will need to make the case that the literature is of broad value outside mathematics. This will certainly mean addressing the development of (i) appropriate 'naive' search tools, and (ii) guaranteeing high-enough quality capture to allow for all conceivable OCR uses.

Jonathan Borwein, July 4, 2002