

Designing a Preparedness Model for the Future of Open Scholarship

Universities and colleges leaders have an opportunity -- and an obligation -- to build a plan today that addresses strains on existing infrastructure and also looks to the future needs to support its students, researchers, and faculty. That calls for thinking through what a “preparedness” model looks like for higher education and research writ large, one that takes into account the economic implications on the university itself as well as on the services and enterprises it relies on, like publishing and data management infrastructures.

“[Preparedness models](#)” are commonly used in disaster planning as ways to coordinate and organize individual, organizational, and community action. They traditionally [call for the following](#):

- Evaluation of existing risks and threat modelling,
- Understanding of roles of key stakeholders;
- Multi-dimensional scenario planning;
- Coordinated action on behalf of common goals to serve the broader good;
- And, a focus on building towards system resilience.

These sorts of models, [drawing from disaster recovery efforts](#) at the national, state, and local level, are designed to balance the need for near-term action as well as long-term planning. These models are designed to enable rapid-response decision making both in the immediate term and in case of resurgence, which, in light of the current pandemic, universities [should expect](#) and invest time now in planning for. In addition to a coordinating framework, these models also facilitate shared, coordinated action in times of crisis and radical change.

Over the next 12-18 months, the way higher education operates and the structures academics and research performing organizations rely on for research and scholarly communication will be fundamentally altered, and on a global scale. We believe that there’s an urgent need to invest now in a coordinated approach to create a preparedness plan for the future of scholarship and research at the institutional level. In doing so, institutions have an opportunity to explore collectively cost-effective and sustainable solutions to address immediate needs at their institution. They also have an opportunity to play an active role in furthering a larger, more systemic shift towards open, community-owned and operated infrastructure at the institutional level to support scholarship and ensure research continuity.

We propose the creation of a coordinated, cross-institutional “preparedness plan”, in partnership with [Invest in Open Infrastructure \(IOI\)](#), to begin work on identifying the opportunities, leverage points, costs and approaches that could be employed to enable the following:

- Creation of shared set of principles to help assess solutions based on a values-based framework;
- Support that addresses heightened demands on universities as they shift operations online and transform the way they serve their communities;
- Coordinated scenario planning that plans for a radical shift towards open scholarship and a convergence on existing, open tools and services;
- Ways to pool resources and risk to maximize cost-effectiveness and minimize system failure;
- Creation of a shared action plan to facilitate coordinated decision-making ensuring research continuity;
- Bolster researcher productivity, continuity, and growth in both the near and long-term.

The need for coordinated action in the face of uncertainty

Institutions around the globe are currently being forced to radically adapt and re-evaluate current ways research and education are conducted and delivered in the face of COVID-19. The sudden shifts to online are already stretching existing infrastructure, and uncertain economic futures, budget cuts, and sweeping furloughs are leaving many to assess how they can do more with less, while ensuring research continuity and a level of service to their faculty and students.

Decisions that are being made today will have lasting effects. [Current predictions](#) for when “normal” operations can resume for higher education are summer or fall 2021 on a conservative end, dependent on the emergence of a vaccine and additional information about expected rates of recurrence. The global economy is [grinding to a halt](#), and the effects of the current recession are likely to be felt across the research and higher education ecosystem for years to come.

At the same time, we are seeing past investments in digitization and infrastructure pay off in real time. Academic libraries have in many ways been on the leading edge of digital transformation for the past two decades, and as a result, were in a much better position to quickly shift research operations, collections, and teaching online in the face of a crisis. Over a decade of cross-institutional investment in offerings such as [HathiTrust](#) paid off overnight, with their ability to switch on an [“Emergency Temporary Access Service”](#) to quickly enable their 150+ members to make vast swaths of their otherwise print-only collections available digitally for their researchers.

The ability to quickly make decisions to benefit the bottom line of the academic research community was made possible by a number of institutions recognizing a decade ago the need for a community-controlled copy of the books digitized by Google through their investment in a shared solution, the HathiTrust. The current pandemic has also made the case on a global scale for platforms that facilitate the rapid dissemination of open research, such as medical preprint servers [medRxiv](#) and [bioRxiv](#), open, rapid review services such as [Outbreak Science](#), and cross-institutional open research datasets such as the [CORD-19 dataset](#).

We are currently in a moment that calls for a similar sort of upfront investment and cross-institutional planning to ensure the research community is prepared for the future.

Below we propose a cross-institutional effort to create a robust “preparedness plan” that models scenarios, costs, and actions necessary to ensure research and scholarship persist amidst sweeping budget cuts and economic turmoil. We also outline a few pressing use cases to illustrate the realities universities are facing and the opportunity that exists in joining together. The aim of this work is to provide a framework for coordinated, collective action, and additional information to guide decision makers at institutions as we navigate the next six to 12 months.

Planning for uncertainty: Risks and opportunities

Over the next 12-18 months, leading structures relied on to conduct, publish and disseminate scholarly research are at risk of collapse. Below are a few use cases to illustrate the current reality as it unfolds, and how it inevitably will affect cornerstones of the scholarly research and communication ecosystem.

Focus 1: The future of University presses

University presses are collectively facing unprecedented deficits and sales shortfalls for print books this year. Budget constraints at the library level may well directly affect the sale of scholarly monographs as well as subsidies and subventions for university presses more broadly.

Potential outcome(s):

- (1) Many university presses shut down. Humanities and social science faculty will have fewer places to publish, affecting their ability to get tenure, as book and monograph publishing infrastructure collapses. The majority of research and new knowledge being done by this generation of young scholars in these fields never sees the light of day.
- (2) For-profit publishers create an offering to support near-term needs to keep university presses in operation. These deals have lasting effects on content ownership, profits and sales for the university versus the commercial partner, and end up costing the academy over the long run in lost-revenue and lock-in.

- (3) A complete recalibration of university press and library publishing efforts takes place, resulting in a broader “university publishing” infrastructure, invested in by a series of universities, and building off of existing library publishing efforts.

Focus 2: The future of Scholarly and Learned Societies

Scholarly and learned societies funding primarily consists of publishing, membership, meeting revenue. Prior to the current crisis, scholarly and learned societies were under already increased pressure to pivot their business models away from a reliance on closed access publishing and meeting revenue to more sustainable ways to both serve their communities and stay financially afloat.

Scholarly societies serve important roles within their communities, and for some, scholarship for their discipline exists as conference talk proceedings and papers linked to annual meetings. With the shift away from in-person convenings, this poses significant risk on a number of levels for scholarly and learned societies’ future, as well as for the scholarship of their communities.

Potential outcome(s):

- (1) Commercial, cash-rich publishing outfits offer societies a lifeline to support their publishing outfits at a heavy discount for the next 3-7 years, converting their business to closed access, for-profit models. This provides a quick fix for societies looking to ensure publishing for their communities continues but at an unsustainable price for their members over the long-run, with a transfer of editorial and business control to the commercial publisher.
- (2) Scholarly societies shift to lightweight operations largely supported by existing library publishing infrastructure, shifting to Open Access and online-only publishing models, more in line with web publishing. They see a decline in revenue in the next 2 years due to decline in membership dues, meeting revenue, and publishing, but are able to serve and grow their communities by still providing service at little to no cost.
- (3) Societies work to re-imagine online meeting formats to keep them anchored in serving their communities, with shifts to open platforms such as Humanities Commons. Societies re-evaluate models for scholarship where there’s a strong emphasis on conference talk proceedings and working papers to accommodate online meeting formats.

Focus 3: Increased demand and need for infrastructure to share research outputs

As the focus shifts from moving teaching and learning online to research continuity, we will see an increased focus on ensuring research outputs can be shared widely—at a higher volume and velocity—and across services and institutions more readily.

We are already seeing strains on existing data and content infrastructure services in the face of the current pandemic. We are also seeing calls for more open, machine readable research

outputs and tools that foster faster, more effective collaboration, review, and information management. These systems are essential supports for the research ecosystem.

Potential outcome(s):

- (1) Commercial data infrastructure services offer no-cost extensions in an attempt to corner the market for institutional customers and provide “continuity” to minimize service disruption. Institutions, as a result, face long-term, multi-year lock-in deals. Platform vendors will make product decisions in their own best interest, resulting in technical lock-in to prevent customers from switching off vendors/platforms. This will prevent universities from granting immediate access to data and research generated by their communities in the event of another crisis and may result in difficulty publishing data in the most open and aggregatable ways in the short term.
- (2) Libraries see increased investment and stimulus support to further bolster open research data management infrastructure. This create a maximum opportunity for institutions to flexibly and robustly serve their communities as research operations re-open and adapt to new ways of operating.

Focus 4: A move towards consolidation of tools and services

Over the last 15-20 years, universities have been at the vanguard of building shared open infrastructure, serving as the institutional homes of such projects as HathiTrust, and investing in open platforms to support research and learning on their campuses. Yet outside of limited circumstances, these projects have often lacked the adoption and dominance in comparison to their commercial alternatives which dominate most spaces, with those choices leading to vendor lock-in, limited choice, and decisions based more on profit margins than value to users.

Crises like the one we are facing are at risk of favoring cash-rich businesses with profit-driven motives rather than those aligned with the mission of higher education. We are already seeing for-profit publishers use the current crisis as a sales and marketing opportunity for their Open Access imprints.

Potential outcome(s):

- (1) We see a complete compression of scholarship into a market driven model. Commercial publishers and for-profit entities buy up core pieces of the scholarly research infrastructure landscape, like we saw in 2017 with the [acquisition of bepress and Digital Commons](#) and the [2016 acquisition of the Social Science Research Network \(SSRN\)](#).
- (2) We see a collapsing effect of open source offerings, with overlapping or adjacent tools converging on “the most popular” as a means of survival. Assets will be transferred to the project with the most users; development of new features will cease until more stable funding can be secured. This allows for open tools to survive, but have far less of a presence, favoring survival over innovation and service to users.

Our approach

[Invest in Open Infrastructure \(IOI\)](#) was launched to create a strategic, global body dedicated to furthering a network of open, interoperable community-led and -supported infrastructure to advance scholarship, research, and education. We work in concert with institutional funders, decision makers, and philanthropic funders to better understand the decision points, funding and governance models available, and costs associated with maintaining, sustaining, and scaling open infrastructure projects. This includes repository services and knowledge discovery tools, data sharing and analysis tools, discussion platforms and tools to enable collaboration, as well as open publishing, archival, and preservation services.

We are ramping up efforts to help support university decision makers, consortia, and funders globally to sustain research and knowledge sharing amidst these uncertain times, and are seeking an initial set of university representatives to participate in designing the following with us:

- Cost-benefit analyses to enable faster, more informed decision making in support of open scholarship,
- Values-based framework / “standard” for assessing solutions in service of the academy;
- Actionable recommendations and guidance for budget owners,
- Actionable recommendations and models for projects to operate sustainably,
- Scenario planning for 6, 12, and 18+ months outlooks,
- A collective model for stewardship, cost-sharing, and risk pooling.

Call for participation:

There is a need to move quickly to align partners, financial support and commitments of in-kind resources, and begin scoping. Each day that passes, new budget caps and cuts are announced, as well as speculation as to what the next 6-12 months will look like for teaching and research at various institutions. Below we outline our near-term needs.

Call for University Participation. We are currently seeking 7-10 university representatives to join us as key participants in this work. Representatives should be able to provide information about the realities abilities at their university, and could consist of roles including, but not limited to university librarians, program directors, technology leads, Vice Provosts, and Deans. Participants will need to be able to speak to budget and programmatic decisions within their department and be able to provide insight to other changes at their Institution.

A Commitment of Resources from Partners. To expedite our efforts and grow our collective capacity, we are calling for a co-investment and commitment from partners. We know that

budgets are tighter than ever, but believe investing now to resource this effort will not only allow us to move faster, but aid us in more directly benefitting your university's decision makers in the next 6-12 months.

Commitments we are seeking include, but are not limited to:

- **Financial commitments from participating institutions, societies, and supporting organizations.** We are committed to creating a shared solution to support the future of open scholarship across higher education with you, as well as support your institution's decision-making needs in the process. As a sign of the value derived from that work, we are looking for a number of institutions and organizations to make financial commitments at the \$5K, \$10K and \$20K level to support the following functions:
 - User researcher / analyst (contractor)
 - Market analyst / economist (contractor)

Investing now in a solution for 12-18 months from now will provide cost-savings, security for your research operations, and a plan that will lead to more informed decision-making designed to support the emergent needs of your institution post-crisis.

- **In-kind staffing and support.** Commitment of staff time (e.g., research analyst capacity, support in information gathering, database development support, market researcher support) is also welcome.

For more information, please contact Kaitlin Thaney, IOI's Executive Director at kt@investinopen.org.

About Invest in Open Infrastructure (IOI):

IOI is a non-profit initiative designed to enable durable, scalable, and long lasting open scientific and scholarly infrastructure to emerge, thrive, and deliver its benefits on a global scale. We are a global coalition of projects, organizations, and initiatives actively working to build a sustainable future for open scholarly infrastructure. IOI is fiscally sponsored by Code for Science & Society, a leading 501(c)3 supporting the public interest technology space, and is made possible with support from Schmidt Futures, the Alfred P. Sloan Foundation, and Open Society Foundations. IOI is governed by a diverse Steering Committee and supported by over 200 institutions, organizations, and individuals worldwide. For more information about IOI, visit investinopen.org.

