Designing a Preparedness Model for the Future of Open Scholarship

Preliminary Findings

September 2020

IOI

Designing a Preparedness Model for the Future of Open Scholarship: Preliminary Findings

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Executive Summary

This report shares a preliminary summary of the findings and top level insights of the Future of Open Scholarship stakeholder interviews, run by the authors from June 29 to August 24, 2020. Over 54 interviews were conducted (some individual, some group), with a total of 81 participants from 56 different institutions, scholarly societies, and supporting organizations. (There are an additional 18 participants as a part of this research effort who have not yet participated in an initial user interview at the time of this report).

Engagement in this work involves representatives from 18 countries and 5 continents around the world. These include Egypt, Malaysia, Australia, New Zealand, Mali, Zimbabwe, Kenya, South Africa, Algeria, Sudan, Germany, the Netherlands, Belgium, France, Spain, the United Kingdom, Canada, and the United States.

We invite feedback and comments directly in this document. This is primarily written for study participants, as well as other institutional leaders, infrastructure providers, and decision makers working to advance open scholarship.

This report is accompanied by:

- Project Plan (including research questions, deliverables, methodology, and approach)
- Participant List
- Participant Call Agenda/Notes & Slidedeck (Sept 2, 2020)
- Shared Project Folder

Highlights include:

- Useful terms
- Stakeholder Mappings
- Phase I Findings
- Call & Workshop Schedule
- Methodology & Approach

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0. Introduction

Motivation

This research effort was born out of conversations with a number of institutional leaders grappling with a confluence of crises stemming from the pandemic, leading to a period of sustained financial hardship while also balancing a heightened demand for openness and access to research, scholarship, educational materials and increased levels of service. As institutions rush to respond to the pandemic, the economic downturn, and the needs of their scholarly communities, corporate publishing stands ready to offer short term solutions.

We believe that there's an urgent need to invest now in a coordinated approach for the future of open 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.

This research is designed to address pending infrastructure consolidation and collapse across the research ecosystem, 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.

Initial interviews

Over the course of seven weeks, we conducted initial user interviews with 81 participants virtually, over 54 interviews - some in group settings, some individual, based on interviewee preference. (83% completion rate, with additional interviews still being scheduled). The calls ranged from 50-60 minutes, and followed a discussion guide (available here in English and in French). Calls were recorded with the participants' permission, and are currently being transcribed and analysed by our project associate. (We will share more in the coming weeks about that analysis as it is completed.)

These calls served a few core purposes:

- Help establish a baseline understanding of the realities our participants were operating under
- Glean a sense of their current priorities, concerns, perceived risks/threats, and histories/dependencies on open infrastructure
- Surfaced areas for future exploration, models to investigate (and in some cases, avoid!)

Questions were deliberately open-ended to help us understand the range of issues relating to the relationship of scholarship and technology in the current crisis.

Selection of participants:
Participation in this work to date has been self-selected and voluntary, meaning that those who have signed on to join have done so at their own volition and without us directly soliciting set numbers of representatives from each area we are keen to explore. We reserve the right to expand our current list to bring in additional perspectives or expertise, on an as needed basis.

For more on participant roles and representation, visit section (1) of this document.

Useful Terms

The following terms are useful to understand before you read this report, and will be frequently used throughout this work.

Baseline. A starting point used for comparisons.

Dependencies. A program, service, or system that one relies on for their work.

Efficiencies. Being able to accomplish something with the least waste of time, effort, and/or resources.

Interventions. Actions taken to improve or change a situation or status.

Reallocation. When a share, role (or job) is shifted and/or designated to a purpose other than initially intended.

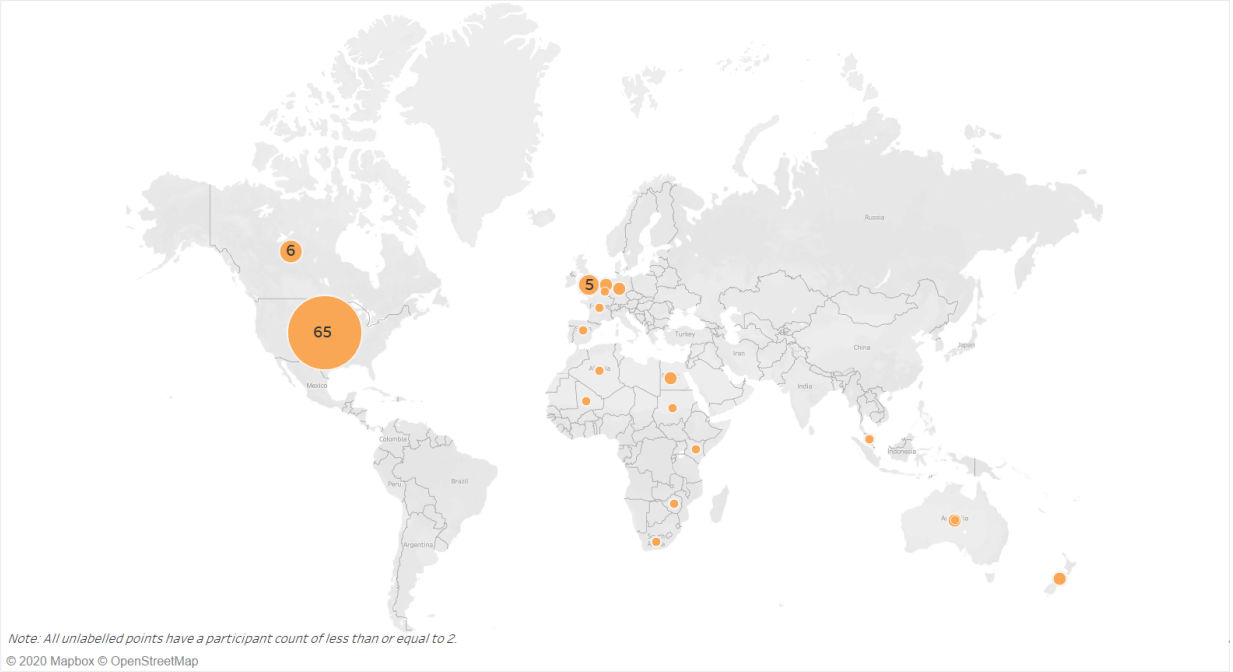
Trade-offs. A balance achieved between two desirable but often incompatible features or considerations.

1. Stakeholder mappings

Participants represent 18 countries and 5 continents in total, with the largest concentration being from the United States, as evidenced in the mapping below. These include Egypt, Malaysia, Australia, New Zealand, Mali, Zimbabwe, Kenya, South Africa, Algeria, Sudan, Germany, the Netherlands, Belgium, France, Spain, the United Kingdom, Canada, and the United States.

As noted above, participation in this effort was entirely voluntary, and there are known gaps in representation among attendees (most notably in Latin America).

Figure 1.



We've also done a preliminary analysis of the roles and organization / institution types (*Figure 2*).

The classifications below are sorted initially into the following categories (*further refinement can be expected over the coming weeks*):

Academic library: participant works at a library at a University

University: participant works at a University but not at the library (e.g. professor)

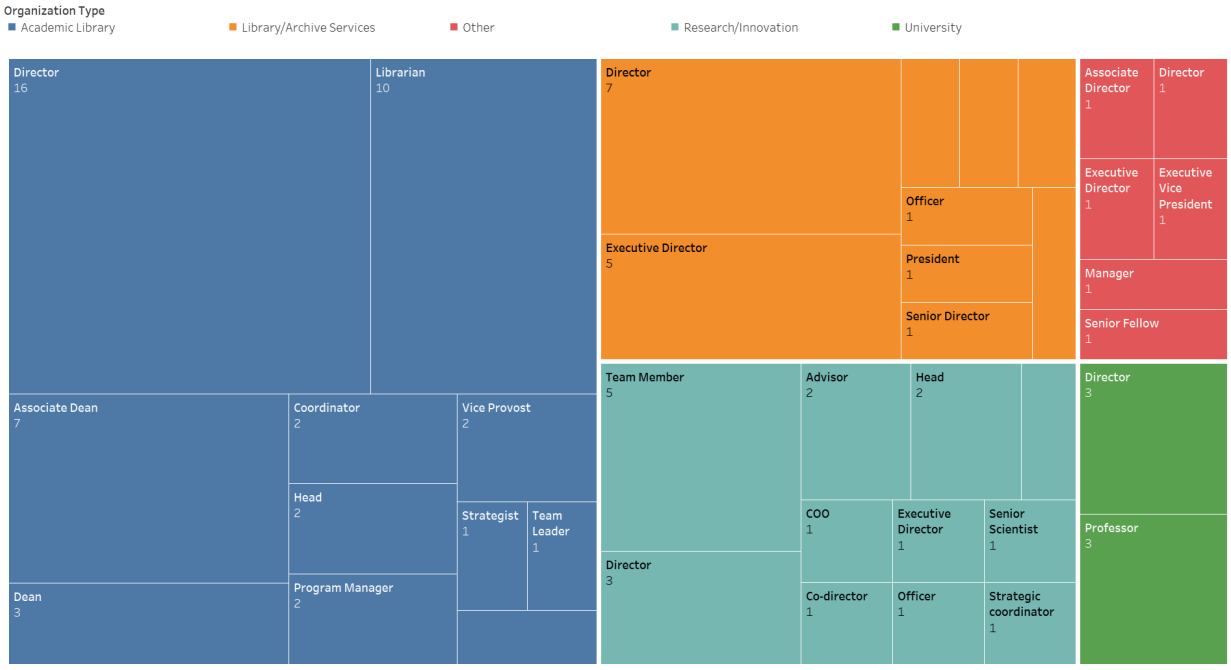
Library/archive services: organization provides consulting, consortium, networking and other related services directly aimed at libraries and archives

Research/innovation: works in the production of research (policy research etc.) or software (e.g LiberateScience) or both. While the products of these organizations can be used by libraries/archives, this' work is not exclusive to libraries/archives.

Other: publishers, university presses, and misc. organizations.

Further areas of exploration include examining the affiliation types and roles across geographic boundaries (e.g. comparing "head of" to "director" levels), and refining the categorization types to reflect more nuance regarding publisher entities, scholarly societies, university presses and other miscellaneous organizations.

Figure 2.



2. Phase I findings (preliminary)

The focus of Phase I of this work (June 29 - Sept 29, 2020) is on information gathering, with the aim to build a foundational understanding and establish initial baselines for key budgetary constraints, dependencies on open technology, and perceived risks in participants' work to aid future scenario planning.

We are actively synthesizing over 55 hours of interviews, but wanted to share out some preliminary findings as that work evolves.

Here are some top-level items emerging from our initial interviews that we will continue to explore over the course of this project. The findings below are designed to serve as a conceptual framework as we move into the coming months and next phase of analysis.

Tension points and tradeoffs

A key tension point / balancing act articulated lies in the need and demand for increased levels of service, more robust and immediate access to research, data and educational materials, while also managing budget cuts and financial instability.

Tied to this are the subsequent layers of decision making to ensure continuity and increased service for researchers, students and faculty, with some associated tradeoffs existing in each of those decisions.

Examples include, but are not limited to:

- Staffing vs purchasing of materials or services
- Immediacy of certain purchases vs longer term reuse (specifically for digital materials)
- Efficiencies gained vs longer-term challenges with outsourced hosting and development support to counter staffing shortages for key infrastructure

Challenges include vendor lock-in, loss of values-alignment with introduction of intermediary vendors, tradeoff of user privacy / ownership and control of data, as well as governance challenges as they relate to product roadmaps and visibility into processes and cost to name a few.

A number of participants also noted the complexity in prioritizing "local first" development of tools and technology versus converging on fewer foundational offerings (with the aim of that approach providing additional stability, sustainability, and shared infrastructure). The arguments for building locally centered around the benefits of customization and integration with specific university systems; needs and systems that participants believed didn't generalize more broadly outside of their institution (e.g., research intelligence services, HR, procurement). Participants also referred to the history of some of the infrastructure services, catering to local hosting and development (e.g., repository services such as Fedora, DSpace and others fit this mould).

Challenges varied from blockers based on an institution's loyalty to a particular homegrown solution and sense of "individualism" to the institution or department's history of innovation and open source (both good and bad). Some noted an impact on service, speed, and ability to upgrade technical solutions as key downsides to highly customized technical solutions. This applied whether highly customized solutions were locally hosted or hosted by a vendor, with some partners falling years behind on critical upgrades. (In some cases, the challenges outside of the academy are the opposite - lack of agency and control over centrally hosted infrastructure that's difficult to implement and host independently also arose as a counterpoint.)

The staffing "reallocation shock"

In addition to discussions of budgetary cuts, freezes and other austerity measures as institutions and research organizations move into the coming months, there's also the reality of staffing shortages on open infrastructure development, maintenance, and innovation. These shortages range from layoffs to furloughs and hiring freezes, and are particularly pronounced in the United States (in line with the economic shortfalls predicted).

Economists refer to this phenomenon as a "reallocation shock", and there are multiple efforts outside of academia to devise forward-looking measures to predict reallocation of jobs and impacts on staffing and resourcing. The impact for the scope of this project is a question particularly of capacity in these times where there is heightened demand and need for increased levels of service, increased usage (which leads to additional maintenance) of infrastructure, and the costs associated with volunteer and invisible labor that most of these efforts run in part or in full on.

We will continue to monitor the staffing and resourcing implications as we move into the coming months, and examine through this work the efficiencies sought via third party vendors versus a shift towards preserving staff over collections or print materials that are difficult to access.

Outlining phases of intervention

As we work to map those areas of exploration into a framework to fuel actionable recommendations, we will explore clustering them into the following phases of intervention:

- **Near-term:**
  - Working with and within existing technologies and systems already up and running.
  - This begins to look at interoperability, access, and portability (getting content in / out of systems) through building connectors, exploring open metadata solutions, as well as standards to facilitate exchange of information and resilience should a service quickly shift status or availability (consolidation, sunsetting a service, etc)
- **Medium-term:**
  - Leveraging existing models & frameworks such as exploring efficiencies offered by consortia-based models operating at the local, regional, and national level
- **Longer-term**:
  - Transformation of economic support models
    - Efforts to think beyond the membership and grant based models, to explore common funds at the regional vs national level, as well as across areas of interest (portfolio based)

3. Research Schedule

Upcoming Call & Workshop Schedule

September IOI Community Call	W, September 2, 2020 11AM EST & 7PM EST 60 mins /agenda: • Share preliminary synthesized findings • Present next steps in the FOS work • Share info about September FOS workshop ○ Shared principles & decision making frameworks
September FOS Workshop	W, September 16, 2020 11AM EST & 7PM EST 75 mins /agenda: • Developing shared principles to make decisions

October IOI Community Call	W September 30, 2020 11AM EST & 7PM EST 60 mins /agenda:
	• Share next phase of synthesized findings
	• Share info about October FOS workshop
	  ○ Economic models
	  ○ Examining thresholds for change

October FOS Workshop	W, October 14, 2020 11AM EST & 7PM EST 120mins • Discussing economic models • Assessing threshold for change
November IOI Community Call	W, November 11, 2020 11AM EST & 7PM EST 60mins

	• Share preliminary recommendations
	  ○ Principles
	  ○ Models
	• Share info about November FOS workshop
	  ○ Coordination, governance, and action

December FOS Workshops	M, December 1 (11am ET) & 7 (12pm ET) 60 mins • Explore costs and benefits modelling

Methodology & Approach

This project — and our work at Invest in Open Infrastructure, more broadly — is anchored in a human-centered design approach. We draw from the best of field research, market research, and participatory action research.

These approaches tackle interactive systems development (both technical and social) by aiming to make systems usable and useful by focusing on the users, their needs and requirements, and utilizing various methods of iterative design to outline shared solutions and opportunities for collective action. Building on participatory action research, our approach intentionally focuses on moving towards producing solutions (in our case action plans, testing new business models and means of pooling resources and risk, and working to establish trust and support among cohorts to empower them to move towards adoption).

There are six key types of field study we center our work around. These are all commonly used in corporate research and in areas designing technical and social interventions among diverse sets of stakeholders, like in this project. They include (1) exploratory, (2) foundational, (3) generative, (4) communicative, (5) evaluative, and (6) applicative. These types of study often run sequentially and inform one another, but given the timeliness of this work, will at times run concurrently.

Deliverables

- *Note: This can also be found in this Project Plan.*

Below is a mapping of how the fields of study listed above apply to our work for this project:

(1) Exploratory:

Focus: This is most readily applied to projects exploring themes, areas of commonality, opportunity - typically strategic areas of interest, mapped to the participant's domain. This area of study helps build trust with participants and is often employed sequentially with other areas of study.

Our application: User research / "kickoff" calls. We spoke with participants both individually as well as in some cases, grouped by institution. (They selected their preference.) We operated off of a standard interview guide for the 50-60 minute initial call.

Deliverables: Foundational understanding and establishment of baselines for key budgetary constraints, dependencies on open technology, and perceived risks in their work to aid future scenario planning. Initial scenario planning sketches for 6, 12, 18 month outlooks.

(2) Foundational:

Focus: This area of study builds a foundational understanding of a domain, so effective decisions can be made. Draws on the context of being in-field to deliver a highly nuanced understanding, including the full range of deliverables that will affect behaviours and decision-making in a given context.

Our application: Qualitative analysis, initial synthesis from calls and literature review. Distillation of key interventions and risks surfaced in initial interviews. As participation in this study was also self-selected, this phase also helps us outline additional perspectives needed to involve to advance this work.

Deliverables: Initial framework for decision making for participant review; user experience report and qualitative analysis from the initial interviews; initial outline of key roles and stakeholders; outline of shared challenges, opportunities risks as surfaced by participants.

(3) Generative:

Focus: This area is tailored to generating ideas and concepts. In some cases, based on participant needs and the aims of the research, participants may want concepts or interventions mapped back to opportunities identified in the foundational research stage. Some generative projects include prototyping, evaluation, and iteration. The process can be participatory, with users directly informing what is made.

Our application: This is where we explore the solution space with participants across a number of dimensions iterated on as this work evolves. We aim to not come in with a prescribed solution or preconceived notion as to users needs as part of our work. This is where, based on the initial insight gathered from participants, we begin workshopping through targeted, tailored virtual workshops potential technical, social and business solutions to help achieve shared aims as articulated as a result of this work.

We are currently in the process of onboarding a contractor who will be dedicated to designing those virtual workshops with an aim to design an environment, process for cohort selection, and facilitation that enables the diversity of opinions to be heard but to also move towards agreement and execution.

Deliverables: Design and execution of 4-5 virtual workshops for selected cohorts of participants, grouped intentionally by an Engagement Coordinator and Facilitator (more below on hiring) to best “activate” those groups and align them towards common interests. This work also surfaces ideas and concepts with various degrees of fidelity and refinement.

(4) Communicative:

Focus: This area of study focuses on communicating the strategic intent of the work both inside and outside the organization, including taking into consideration the nuances of the organizational position and context.

Our application: For effective changemaking (especially in a collective fashion) to occur we believe there's a need not only for recommendations and action plans, but narrative and presentation layers that aid in bringing along other budget holders, decision makers, and high-level administrators. Borrowing from the corporate/consulting world, the ability to "make the case" to show broader impact, cost savings, leveraging cross-institutional consortia, even highlighting how competitors are responding in a moment, can help move a plan from theoretical to implementation.

Deliverables: Casemaking documentation and models to augment action plans to help influence high level decision makers within the institutions and organizations represented.

(5) Evaluative:

Focus: This phase evaluates ideas (what we refer to as "interventions and models" for the sake of this work) against criteria informed by the foundational phase of study and supplemental research to augment that work.

Our application: For our project, this phase is where we delve into mapping interventions and ideas to the decision making framework and criteria developed in tandem with the participants earlier in this work. In corporate research, this would take the from of product recommendations with additional study into aspects including usability, prioritization of features for development, user experience reports, etc. We anticipate some of those aspects being directly applicable to our work, especially when we speak of technical development or shifts to practices or tools that gird against potential infrastructure collapse for more targeted areas of scholarship, as outlined in our working brief.

Deliverables: Outlining of key interventions based on initial interviews and workshop feedback to address key themes surfaced in initial qualitative analysis. Creation of comparative analyses/cross-walks of potential solutions, ranging from individual technical offerings to means of moving towards shared, interoperable infrastructure for specific areas of work.

(6) Applicative:

Focus: Typically geared towards product development, this phase employs highly iterative rapid prototyping of tools and models to address challenges surfaced in previous areas of field study (listed above).

Our application: This work takes the form of developing actionable recommendations and roadmaps for various stakeholder groups across the scope of this research effort, and explores testing and trialling shared resource models and means of mitigating risk with both internal and external stakeholders to help make this work a reality (e.g. an open infrastructure fund with dedicated portfolios, consortia-based support for foundational services outlined in this work, coherence models for collaboration across institutions and regions, service-based models to augment revenue lost due to shifting subventions and economic turmoil).

Deliverables: Condensed insights and behavioral models in the form of action plans, roadmaps, recommendations for future work, and initial feasibility sketch for shared resourcing models for the participant group to explore and potentially test.

4. Acknowledgements

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