

Draft-- Abridged

Aug 2018

Mapping the Infrastructure for Digital Scholarship

Executive Summary

Our project, Mapping the Infrastructure for Digital Scholarship, seeks to understand the current level of investment in the infrastructure necessary for digital scholarship, to document the attitudes about these sorts of investments, and to identify promising strategies for encouraging greater investment by colleges and universities. To do this, we will undertake the following activities:

1. Write a **Literature Review** that situates this work within the current research on scholarly publishing.
2. Conduct **Focus Groups** that will provide insight into how libraries currently make decisions about investing in infrastructure.
3. Develop a **Census of Infrastructure** that will make visible the current set of platforms, systems, and applications that comprise the system of scholarly publishing
4. Create a **Map of the Scholarly Publishing System** that visualizes the results of the census
5. Write a set of **Case Studies of Infrastructure Providers** that provide insight into what is required for long-term sustainability for this infrastructure
6. Conduct a **Survey of Investment in Infrastructure** by colleges and universities that will document the current state of investment
7. Develop a **Report** that synthesizes the materials from our activities and provides recommendations on promising directions to sustain and grow investment in this infrastructure, and if warranted, how to sustain the specific work of this project.

Timeline

The project begins in September 2018 and concludes in February 2020. Below is a timeline of activities. Detailed descriptions of each activity can be found in the body of this plan.

Timing		Conferences & Meetings	Literature Review	Infrastructure Census	Digital Scholarship Map	Case Studies	Survey of Libraries	Focus Groups	Final Report
2018	Sep	■	■						
	Oct		■						
	Nov		■						
	Dec	■	■						
2019	Jan	■	■						
	Feb		■						
	Mar			■	■				
	Apr	■							
	May								
	Jun								
	Jul								
	Aug								
	Sep	■							
	Oct								
	Nov								
	Dec	■							
2020	Jan								■
	Feb								■
	Mar								
	Apr								
	May								
	Jun								
	Jul								
	Aug								

Project Team

Core Team

The **Core Team** conducting this work will be:

- David Lewis, IUPUI (emeritus)
- Michael Roy, Middlebury College
- Katherine Skinner, Educopia Institute

In addition, the team will rely on two advisory boards of leaders in this field in order to vet our work, and to connect this work to allied efforts.

PROPOSED ACTIVITIES AND RATIONALE

Rationale and Justification

"Big breakthroughs happen when what is suddenly possible meets what is desperately necessary."

—Thomas Friedman¹

Why this Work is Important

Over the past several decades, scholarship has moved from a system based predominantly on print on paper to one that, while in some cases the final results are distributed on paper, is entirely based on digital technologies. Unsurprisingly, given the diversity of scholarly practice across disciplines and the widely distributed nature of higher education, the tools and services to support scholarship in this digital world developed in an opportunistic yet uncoordinated way. A widely-held belief (although admittedly not well documented) is that most non-commercial infrastructure was funded by grants or was bootstrapped². Sustaining funding has been a challenge resulting in a diversity of projects that advanced scholarship in interesting and important ways that could not be adapted for use in broader communities.

To support scholarship in the digital environment, academic and research libraries developed and have supported important systems and services. But because of their obligation to support both the legacy print and the new digital environments while confronting rapidly increasing prices for journals and fiscal constraints in higher education, these efforts have not resulted in the needed comprehensive and coordinated infrastructure.

Definition of Infrastructure

This project focuses primarily on the systems and services that make scholarship discoverable and accessible, as well as those that preserve it. This will include physical systems such as computer systems and software. It will also include the human resources that manage the creation, maintenance, and use of all systems.

For clarity, we offer four key distinctions, noting that each involves some gray areas and will require that we tighten definitions as we proceed.

1. Infrastructure vs. content. The project focuses on infrastructure, not content. In some cases, this distinction is clear. The Digital Public Library of America makes content discoverable, but does not hold content itself. The Open Journal System software makes a publication and its content accessible, but the software when viewed in isolation has no content component. The HathiTrust and the ArXiv are hybrids, and distinguishing what portion is infrastructure and what portion is content will likely be an opportunity and a challenge. Understanding the connection between the costs to build and maintain systems required to produce, disseminate, and preserve content, and the costs to produce the content itself will provide a useful way to perhaps identify new funding sources for infrastructure that does not require reducing funding for content.

¹ Thomas Friedman, "Come the Revolution," New York Times, May 15, 2012, <https://www.nytimes.com/2012/05/16/opinion/friedman-come-the-revolution.html>

² One by-product of our effort will be to begin to document the history of funding for non-commercial infrastructure.

2. Creating scholarship vs. discovery, access, and preservation. There is another fuzzy boundary between systems and services used to create scholarship and those used for discovery, access, and preservation. Laboratory instruments clearly fall into the former. Mapping software is in the gray area.
3. General application vs. specialization. Infrastructure is generally understood to be systems and services that can be used by a broad range of individuals for a broad range of purposes. We will adhere to this principle and will not consider systems and services that serve only specialized populations or niche applications.
4. Infrastructure inside institutions vs. regional, national, and international infrastructure. The distinction between infrastructure housed inside an institution and infrastructure available to multiple institutions will be important and we will consider each separately.

Using this preliminary definition of infrastructure as a guide to help limit the scope of what infrastructure we will focus on, the proposed project will provide a view of a subset of the existing infrastructure projects and services that support digital scholarship. We will identify redundancies and gaps, survey academic library leaders, and review different funding and governance models that might be used to collaboratively support infrastructure going forward. Our work will provide library and campus leaders with a more comprehensive, data-driven picture of what is required to build and maintain the scholarly infrastructure necessary for the digital world. In turn, this picture should guide investments made by libraries and their parent institutions.

There is a strong desire in the library community for a road map³ that includes not only technical requirements, but also strategies for the financing and governance of academy owned and controlled infrastructure. Currently many library leaders feel a sense of platform fatigue because they are paying for multiple uncoordinated projects. We expect this project to create the grist from which such a road map can be created, and expect to make recommendations to advance this goal.

We begin with the hypothesis, based on the proposal by David Lewis, that 2.5% of the \$7 billion spent in expenditures by US academic libraries could be sufficient to create and support an infrastructure to provide access to the scholarly research outputs.⁴ Our work will explore whether this level of funding -- \$100 to \$150 million per year - would be sufficient. We believe a benchmark figure of this sort is critical so that libraries and their parent institutions may evaluate their current levels of investment and plan accordingly for the future.

³ We are aware of and are in conversation with other groups that are also working on similar road maps, and will coordinate our work with these other efforts. For example, we will ask a representative of the Joint Roadmap for Open Science Tools to serve on our advisory board in order to align our efforts with their work.

⁴ David W. Lewis. "The 2.5% Commitment," September 11, 2017, <http://doi.org/10.7912/C2JD29> and David W, Lewis, Lori Goetsch, Diane Graves, and Mike Roy. "Funding Community Controlled Open Infrastructure for Scholarly Communication: The 2.5% Commitment Initiative." *College & Research Libraries News*, 79(3):133-136 March 2018. Available at: <https://crln.acrl.org/index.php/crlnews/article/view/16902>

Summary of Activities

In order to document the current state of investment in this infrastructure, we propose to undertake the following activities:

1. Write a **Literature Review** that situates this work within the current research on scholarly publishing.
2. Conduct **Focus Groups** that will provide insight into how libraries currently make decisions about investing in infrastructure.
3. Develop a **Census of Infrastructure** that will make visible the current set of platforms, systems, and applications that comprise the system of scholarly publishing
4. Create a **Map of the Scholarly Publishing System** that visualizes the results of the census
5. Write a set of **Case Studies of Infrastructure Providers** that provide insight into what is required for long-term sustainability for this infrastructure
6. Conduct a **Survey of Investment in Infrastructure** by colleges and universities that will document the current state of investment
7. Develop a **Report** that synthesizes the materials from our activities and provides recommendations on promising directions to sustain and grow investment in this infrastructure, and if warranted, how to sustain the specific work of this project.

Project Organization

Core Team

The **Core Team** conducting this work will be:

- David Lewis, IUPUI (emeritus)
- Michael Roy, Middlebury College
- Katherine Skinner, Educopia Institute

This group, which has been meeting regularly since the fall of 2017, will play a key role in overseeing the work of this project. The group, convened by the PI, will meet regularly outside of the meetings already built into the project plan. Specific duties shared by all will include:

- Reviewing the status of the project plan and ensuring progress is being made on all fronts
- Providing oversight, input, and feedback to the consultants conducting the survey, census, and focus groups
- Outreach and communication to the two advisory boards and to the broader library community

- Analyzing, summarizing, and synthesizing the various strands of work, and developing future plans based on our findings
- Identifying opportunities to present at relevant conferences and meetings, and to publish our work in relevant journals and other outlets

A key partner in this effort will be the **Educopia Institute**. As described on their website, “The Educopia Institute provides administrative hosting, strategic planning, and organizational development services to its Affiliated Communities so they can have an impact and strengthen their own collaborative efforts. Educopia provides Affiliated Communities with community-building and facilitation expertise, as well as a broad range of administrative, legal, and financial services, tailored to meet the needs of each community's stage of organizational development. Educopia works with its Affiliated Communities to help them mature and evolve from grant funded projects to robust, sustainable programs.”

We selected Educopia as our partner for this effort after considering a range of options. We felt that we did not have either the time or expertise to take on all of the work required to complete this project, and that the overhead of hiring a new staff person to take on this work was not a reasonable approach because of the varied skill set required, and in order to move forward more quickly.

Advisory Committees

We will rely on two advisory committees for input, feedback, analysis, and to help connect our effort to allied efforts both nationally and internationally. The first will be comprised of key individuals involved in the creation of the infrastructure that comprises the scholarly commons. Specific duties of members of the Scholarly Commons Advisory Committee will include:

- Providing input and feedback on the definition of infrastructure
- The identification of infrastructure providers to include in the census
- Input and feedback on our case studies, including identifying promises projects to study
- Input and feedback on design of the campus survey
- Identifying networks of schools to recruit to participate in survey, and encouraging participation
- Input and feedback on the identification of an institutional home for the project
- Assistance with outreach and communication to various scholarly communication networks

We will also convene a second advisory committee of individuals who will help us connect our work to the broader higher education community. Specific duties of members of the Higher Education Advisory Committee will include:

- Providing input and feedback on our final report, with an emphasis on our recommendations
- Assisting with outreach and communication by identifying relevant audiences for our report

More broadly, through assembling these two groups, we will ensure that this work complements and connects to allied efforts. We will also encourage this group to continually remind us to focus our efforts on action-oriented change.

In terms of process, our work plan is as follows:

1. Finalize roles and responsibilities (listed above)
2. Identify specific points in the overall project plan where we will engage the network

In order to control costs, we will either engage this group virtually (via zoom and google docs) or convene the group before or after meetings that members of the group would be attending. Costs associated with this effort are in the 'travel' section of the budget. Proposed membership of these two committees are included as an appendix.

Advisory Committees Timeline

These are the activities associated with both the Scholarly Commons Advisory Committee and the Higher Education Advisory Committee.

- August 2018 – Core Team will finalize roles and responsibilities (as defined above) and identify potential members of the two advisory committees
- September 2018 – Core Team will ask potential members to participate in the relevant committee and finalize membership
- October 2018 – Scholarly Commons Advisory Committee will review policy for the Census
- December 2018 – Scholarly Commons Advisory Committee will review the Literature Review and the Case Study procedures
- March 2019 – Scholarly Commons Advisory Committee will review the Census report, the Map, and the Focus Group procedures
- September 2019 – Both Committees will review reports of the Case Studies, the Survey, and the Focus Groups
- November 2019 – Both Committees will review the DRAFT Report with an emphasis on what might be the logical next steps based on what we have learned from this work.
- February 2020 – Both Committees will review the final report and provide recommendations for distribution

Plan of Work

The project is comprised of seven main activities, each of which is described below. A project timeline, at the end of this section, displays how these activities are sequenced and connected.

Literature Review

Timeline

- September to November 2018 – David Lewis will conduct the Literature Review
- December 2018 – Literature Review reviewed by the Scholarly Commons Advisory Committee
- January 2019 – David Lewis will complete the Literature Review

This review will examine the journal and report literature, primarily from North America, but also including important work from Europe.

As the editors of the Journal of Librarianship and Scholarly Communication put it in a recent editorial, “The current scholarly communication landscape is populated by a variety of actors and powered by an ever-increasing array of complementary and competitive systems for the production, publication, and distribution of scholarship. Recent years have also seen increasing numbers of proposals to recast these systems in ways that better align with the needs and values of the academy and its scholars.”⁵ This literature review will catalog these efforts and document existing systems and services. The focus will be primarily on the library and higher education literature, but will include reports from government agencies, scholarly societies and foundations, and important contributions from other disciplines.

The result should be a picture, as reported in the literature, of the current state of the infrastructure needed to support scholarship in the digital environment. It should also provide a summary of the existing financial and governance structures used to provide this infrastructure. Finally, it will summarize perspectives on current best practices and recommendations on the best ways to move forward.

Census of Infrastructure Providers

Timeline

- October 2018 – Core Team will develop policies and procedures and review them with the Scholarly Commons Advisory Committee
- October 2018 – Educopia and design firm will build data collection tool and identify participants
- November 2018 to January 2019 – Educopia and design firm will conduct Census
- February 2019 – Educopia and design firm verify and compile results for report
- March 2019 – Report reviewed by Scholarly Commons Advisory Committee

This census of current providers of key infrastructure to academic and research libraries and archives in North America will enable us to better understand what services they offer, how they are governed, what their maintenance costs involve, what technologies they are using, and how they structure their business development. It will provide a foundation for our project’s overall findings and deliverables.

⁵ Clement, G., Agate, N., Searle, S., Kingsley, D., & Vandegrift, M. (2018). JLSC Board Editorial 2018. Journal of Librarianship and Scholarly Communication, 6(General Issue), eP2261. <https://doi.org/10.7710/2162-3309.2261>

In the first phase of project work (September-October), the Core Team and the Scholarly Commons Advisory Committee will formally define and delineate what is meant by the category “providers of open infrastructure,” building on the “2.5%” initiative’s work over the past year. Results will include the criteria for “providers of open infrastructure” and a list of tools and services that fit this criteria.

In October and November, Educopia Institute, in close collaboration with the Scholarly Commons Advisory Committee and the Core Team, will design a data framework and survey instrument that will query providers of open infrastructure about their offerings, governance, costs, technologies, staffing, community engagement, and business structures. Recognizing that many of the open infrastructure providers in North America are either led by volunteer labor or are chronically understaffed and overtaxed. We will ensure that wherever possible, the instrument draws on existing information about each of these entities and simplifies their individual participation. Educopia Institute, and a design partner to be selected, will ensure that the data framework lends itself to both matrix-based displays and visualization frameworks to facilitate a rich and robust data experience to users.

The project team will issue the survey to all appropriate providers of open infrastructure and collect as many responses as possible through a range of outreach activities between November and January. Outreach will include promotion of the census at the Digital Library Federation’s November 2018 meeting and the Coalition for Networked Information meeting in December 2018.

Educopia Institute and a design partner will lead data analysis during February 2019, providing a range of data visualizations and a white paper summarizing major findings therein. Based on these findings, the Core Team will work together in March to determine the costs and utility of maintaining the census over time, and if such maintenance seems warranted, the team will begin to plan for a second-phase development framework for this component.

Digital Scholarship and Scholarly Communications Map

To visually highlight the ways in which infrastructure connects to the scholarly research workflow, and to bring to the surface gaps and redundancies, we will build a new map that provides a broad view of how the overall system is currently connected and funded.

Based on the work of Alejandro Posada and George Chen⁶ of the University of Toronto Scarborough, who have built a map of how one commercial publisher is constructing its own private system of scholarly publishing, our map will provide a visualization for the data generated in our campus survey.

Timeline and Plan of work to construct this map

1. The Core Team will develop requirements for map, including examples of similar maps and what we like and don’t like about them. (October, 2018)
2. The Core Team will hire a graphic designer (November 2018)
3. The graphic designer will develop a first draft of map (December 2018)

⁶ Rent Seeking by Elsevier: Publishers are increasingly in control of scholarly infrastructure and why we should care: A Case Study of Elsevier, Alejandro Posada and George Chen, University of Toronto, Scarborough, The Knowledge Gap, 2017, <http://knowledgegap.org/index.php/sub-projects/rent-seeking-and-financialization-of-the-academic-publishing-industry/preliminary-findings/>

4. The Core Team will get feedback from Scholarly Commons Advisory Committee, December 2018)
5. The graphic designer will finalize map (January 2019)
6. Use map as one interface to the census (part of the visualization of census--February 2019)
7. Scholarly Commons Advisory Committee reviews and offers feedback.
8. Present Census and Map at CNI Spring 2019 and ACRL 2019
9. Use map as one interface to the survey results

Case Studies

Timeline

- October 2018 to November 2018 – Core Team will hire contractor
- November 2018 to January 2019 – Core Team will create the study policies and procedures and identify organizations
- December 2018 – Review of policies and procedures by the Scholarly Commons Advisory Committee
- February 2019 to June 2019 – Contractor will conduct the Case Studies
- July 2019 – Contractor will write Report on Case Studies
- September 2019 – Scholarly Commons Advisory Committee reviews Case Studies report

Case studies of successful collective support models will provide useful insight into the design and implementation of infrastructure projects within the North American higher education ecosystem. Looking at a variety of types of providers, the Core Team will hire a contractor to examine three to five cases that represent the economic support models prevalent across community-sourced infrastructure initiatives, including federations formed to achieve scale efficiencies by consolidating administration, and complementary commercial applications that have developed on top of open infrastructure projects.

Their work will describe the mechanics and dynamics behind successful community-formation and collective support, and also examine some examples where such efforts failed, describing common predictors of success, as well as those decisions, actions or omissions that might predict insurmountable challenges.

A final report will analyze critical elements of community-supported infrastructure projects critical to long-term economic sustainability. Examples of successes might include OCLC, Lever Press and Internet 2; NITLE might serve as a failed project.

Focus Groups

Timeline

- January 2019 to February 2019 – Core Team will create policies and procedures
- March 2019 – Policies and procedures reviewed by the Scholarly Commons Advisory Committee - team #1
- March 2019 – Core Team will recruit participants
- April 2019 to May 2019 – Focus Groups conducted by Educopia Institute
- June 2019 – Report on Focus Groups completed by Educopia Institute
- September 2019 – Focus Groups report reviewed by the Scholarly Commons Advisory Committee

Educopia Institute, in close coordination with the project team and the Scholarly Commons Advisory Committee, will develop a focus group instrument that guides a conversation with librarians and

archivists about their investments (past, current and prospective) in infrastructure tools and services. This will allow us to understand the gap between perceptions of how much a school is investing, and the actual amount of investment. The instrument will be designed for groups of 10 librarians and archivists to be hosted in coordination with up to four major events (ARL, CNI, ACRL, and Oberlin Group) during the spring of 2019. The focus group design and implementation will build on the census discovery work conducted in the fall of 2018 and will provide a foundation for the survey we will design and issue in the spring and summer of 2019.

Focus group conversations will be held in closed forums where participants will be able to talk freely about scholarly infrastructure and what its role and relationship is to their libraries and archives. Katherine Skinner of Educopia Institute will lead these sessions, and a designated note-taker will co-host each focus group event. If necessary, additional virtual focus groups will be held with key players who are unable to attend in person.

Focus group notes will be analyzed by Educopia Institute, with iterative input and feedback from the Core Team and the Scholarly Commons Advisory Committee, and a report detailing major findings will be issued in April 2019. Findings will directly inform the questions presented in the survey, and focus group participants will be invited to help vet that survey prior to its launch.

Survey of Libraries

Timeline

- January 2019 to February 2019 – Core Team will create policies and procedures
- February 2019 – Core Team will hire contractor to create data collection tool
- March 2019 – Policies and procedures reviewed by the Scholarly Commons Advisory Committee
- March 2019 – Data collection tool built by Educopia Institute and Contractor
- April 2019 to June 2019 – Survey conducted by Educopia Institute and Contractor
- July 2019 – Report on Survey completed by Educopia Institute and Contractor
- September 2019 – Survey report reviewed by the Scholarly Commons Advisory Committee and the Higher Education Advisory Committee

Building on the census, the map, and the focus groups, Educopia Institute will work in close collaboration with the Core Team and Scholarly Commons Advisory Committee to create a data framework and survey instrument to query academic and research libraries and archives about their investments in “open infrastructures” as defined in the first phase of project work.

In March, Educopia Institute and a design partner will develop the data framework and survey instrument to gather information about both how much and what forms of investment academic and research libraries are currently making in open infrastructure. We will also inquire about these institutions’ perceptions of value and return on investment and try to surface how these relate to characteristics of open services and tools. As described above, focus group participants will be invited to help to vet and refine the survey prior to its launch.

The data framework and survey instrument will be vetted and tested by the Scholarly Commons Advisory Committee before being released to research libraries and archives for data collection in April-June. Outreach supporting the survey will include a presentation at the spring Coalition for Networked Information meeting and a series of webinars developed by the project team to raise interest in and excitement about the project. We will target a range of academic and research library- and archives-based

communities including ARL, ACRL, Oberlin Group, SCOUT, and SAA, and regional collaboratives such as RAAC, CIC, PALNI, and COPPUL.

The resulting survey data will be analyzed by Educopia Institute and a design partner in July and August, in close coordination with the Core Team. The aggregated data will be provided to all participating institutions via a matrix and data visualizations that demonstrate how each participating institution's investment relates to the overall aggregate and to aggregated data for each Carnegie Classification level.

The Core Team and the Scholarly Commons Advisory Committee will produce and publish a brief introduction to the data that will describe how to use it to understand investment decisions and directions. They will also assess the costs and utility of maintaining and repeating this survey (or a similar instrument) over time and evaluate what such data could reveal and how it might be used to help shape investment decisions.

Final Report

Timeline

- July 2019 to November 2019 – Core Team will write DRAFT Report
- December 2019 – DRAFT Report reviewed by both the Scholarly Commons Advisory Committee and the Higher Education Advisory Committee
- January 2020 – DRAFT Report revised by Core Team
- February 2020 – Final Report submitted by Core Team
- February 2020 – Both the Scholarly Communications and Higher Education Advisory Committees will review the final report and provide recommendations for distribution

During the summer months of 2019, the team will draft and edit a final report of the project's activities and findings. During fall 2019, the team will edit and hone the report, and then share it with the members of both Advisory Committees. Our goal would include sharing our final work at the December 2019 CNI meeting, with publication to follow in winter, 2020.

Should the results of the various studies indicate such action, in June 2019 we will launch an effort to develop a plan for sustaining this effort beyond the life of the grant. This plan would include recommendations for who should host the inventory and the census, a budget for building and maintaining these applications, and how the maintenance and further development of these two applications might be governed. Over the summer months we will identify potential partners that would have the capacity to provide a "home" for the project. Planning would include an RFQ process, interviews, and selection, as well as the development of a governance plan and supporting budgetary model.

Timeline of Activities

Timing		Conferences & Meetings	Literature Review	Infrastructure Census	Digital Scholarship Map	Case Studies	Survey of Libraries	Focus Groups	Final Report
2018	Sep	■	■						
	Oct		■		■	■			
	Nov		■	■	■	■			
	Dec	■	■	■	■	■			
2019	Jan	■	■		■	■	■	■	
	Feb		■	■	■	■	■	■	
	Mar			■	■	■	■	■	
	Apr	■				■	■	■	
	May					■	■	■	
	Jun					■	■	■	
	Jul					■	■	■	
	Aug					■	■	■	
	Sep	■							
	Oct								■
	Nov								■
	Dec	■							■
2020	Jan								■
	Feb								■
	Mar								
	Apr								
	May								
	Jun								
	Jul								
	Aug								

Conferences – Planned reports, focus groups, and Advisory Committee meetings

1. CNI – December 2018, Washington, DC
2. ALA Midwinter – January 2019, Seattle, WA
3. CNI – April 2019, St. Louis, MO
4. ACRL – April 2019, Cleveland, OH
5. CNI – December 2019, Washington, DC

Reports and Other Deliverables

We believe that the individual reports of our activities, along with a summary of how the various findings connect to one another, will be of interest to the library and scholarly communication community. To that end, we plan to develop publications intended for this community.

1. Literature Review – January 2019
2. Digital Scholarship and Scholarly Communications Map – January 2019
3. Report on Census – February 2019
4. Report on Focus Groups – June 2019
5. Report on Survey – July 2019
6. Report on Case Studies – July 2019
7. DRAFT of Final Report – October 2019 *to be published once finalized
8. Final Report – February 2020

Possible venues for these publications include: First Monday, The Scholarly Kitchen, ACRL News, Educause Review, and the American Association for Higher Education Bulletin. We will look for advice from our two advisory committees to identify the right venues to reach our intended audiences. In addition, we will archive our reports in Middlebury’s Institutional Repository. We will also make use of

blogs, twitter, and email announcement lists (CNI, DLF, CLIR, and Leading Change) to call attention to these publications.

Expected Outcomes and Benefits

The final report that we produce will contain the following elements:

1. Publication of the results of the literature review.
2. Census and map of key infrastructure for digital scholarship.
3. Estimate of the current academic library contributions that support infrastructure for digital scholarship, as defined by this project.
4. Estimate of the prospects for continued or enhanced investment in infrastructure from academic libraries or their parent institutions, including business models, and other economic and social arguments for this transformation. This will include recommendations on next steps for this particular effort (census, map, and survey) which (depending on what we learn) might include the specification and costs for building and ongoing maintenance of a system to track investments, and to keep the census current, including identification of appropriate institutional home for such a system.
5. Proposals for funding mechanisms and economic models - discussion of the business case for investment that describes the current state of open solutions, and addresses the question of whether or not there is a compelling case for colleges and universities to make capital investments that do not rob the collections budget.

The economics and many of the current practices of scholarly communications have been carried over from the print era and do not take full advantage of the nature of digital content. Once the first copy costs and the costs of infrastructure are covered (admittedly not always a simple task), digital content can be distributed at no cost to anyone connected the Internet thus making scholarship available to all who can take advantage of it. Some members of the scholarly community believe that the current system would be improved and made more sustainable if it were replaced by a Commons funded and built by the scholarly communities, and that took full advantage of the affordances of digital creation and distribution. The proposed project would help test this hypothesis, and if validated, help provide a path forward. Our effort to understand the current levels of investment in the community built and controlled infrastructure as well as the cultural and economic barriers that interfere with greater levels of investment, and to visualize the relationship of the myriad pieces of infrastructure in terms of the workflow of the researcher will contribute to the burgeoning movement for academics to reclaim control over the system. Specifically, we think the benefits include:

1. Libraries and their parent institutions will understand their current level of investment, and will (perhaps) ask themselves if this is sufficient or properly allocated.
2. Infrastructure providers will have increased visibility, and (perhaps) receive increased investment from libraries and their parent institutions who have been convinced of the value of an investment in building the scholarly commons.

3. A greater awareness of both gaps and redundancies in the overall system, allowing for a more coherent and planned development of that system.
4. New insights into the cultural and economic barriers that interfere with increased investment in community owned and controlled infrastructure, which will be of great value for advocates of system-level change.

Sustainability

Two elements of this project are most important for long-term sustainability: the infrastructure census, and the survey of library investment in that infrastructure. To answer the question of whether or not we should plan on sustaining these two connected instruments, we will answer the following questions:

1. Who would benefit from having a regularly updated census of the infrastructure?
2. Would libraries and other parts of institutions of higher education be willing to regularly record and share their investments in this infrastructure?

We expect to find answers to these questions through our focus groups, through consultation with our advisory groups, and through feedback that we will collect from those who participate in the census and the inventory.

Assuming that we conclude that it is worth sustaining both the infrastructure census and the survey of investments, we would then answer the following questions:

1. How much would it cost to build and maintain these two instruments?
2. What are models for securing one-time and on-going funds to do this?
3. What already existing organizations could serve as hosts for these resources?
4. What would be the policies, procedures, and governance that we would need to put in place to ensure that the data within these two systems remains current?

The work of answering these questions will be done by the Core Team, in consultation with our advisory groups, and through discussions with potential partners that we have already identified as possible 'hosts' for this effort, including: JROST, SCOSS, Lyasis, SPARC, ACRL, and other partners that will emerge through this process.

If we conclude that maintaining the census and survey is worthwhile, our final report will provide a concrete plan and budget for the building and ongoing maintenance of these two connected systems.