Project Justification

A nationwide collaboration of organizations is seeking a $598,036 grant for a 36-month implementation effort to develop the Collaborative Collections Lifecycle Project (CCLP). The partnership is led by National Information Standards Organization (NISO), Partnership for Academic Library Collaboration & Innovation (PALCI), and Lehigh University Libraries, with contributions from Big Ten Academic Alliance (BTAA), Canadian Research Knowledge Network (CRKN), Greater Western Library Alliance (GWLA), Center for Research Libraries, Colorado Alliance of Research Libraries, Minitex, Orbis Cascade Alliance, the Boston Library Consortium, the Eastern Academic Scholars' Trust (EAST), Washington Research Library Consortium (WRLC), Columbia University Libraries, Cornell University Library, Johns Hopkins University Libraries, New York University Libraries, Rutgers University Libraries, Tulane University Libraries, University of Delaware Library Museums and Press, University of Denver Libraries, University of Pittsburgh Library System, Washington & Jefferson College, the Duke University Press, JSTOR, Project MUSE, Ithaka S+R, Index Data LLC, ISSN International Centre, Paratext LLC.

The CCLP will create a suite of best practices and improved standards and develop prototype middleware infrastructure for the development and management of collaborative collections. This infrastructure will support varied implementation models, data interoperability and exchange, and sharing of expertise across a range of institutions and consortia. This project aligns with several IMLS goals, but it is most specifically targeted at building greater community collaboration (Objective 2.2). The project supports other IMLS objectives as well such as supporting both collections management (3.1) and promoting access to collections (3.2) by focusing on improving institutional efficiency through partnership to maximize public access across institutions, while also reducing duplication in collection acquisitions and management.

Statement of Project Need

Background - Throughout 2020 and 2021, a large group of more than 25 representatives from the partners named in this proposal, including libraries, consortia, publishers, and technology providers, began meeting regularly to discuss the challenges of and barriers to the laborious process of building and managing collaborative collections initiatives in our respective organizations. These discussions considered the successes and failures of previous efforts, which centered primarily on the inability to effectively exchange data about our collections and collections-related expertise at scale, exposing a shared need and revealing a community of stakeholders eager to focus on reducing barriers to implementing collaborative collections.

Context for Collaborative Collections - Networks of libraries have a long tradition of working together to expand their resources and provide more comprehensive coverage across all subjects through sharing of resources. A variety of models have been developed over the years including consortial purchasing, regional centers of excellence, and even shared collections and services among some libraries, such as the 2CUL[1] initiative. More recently, larger networks of institutions have explored wider adoption of cooperative collections management[2], which this project defines as a process by which networks of institutions work collaboratively to

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[1] 2CUL initiative website, Columbia University and Cornell University Libraries. http://www.2cul.org
[2] Lavoie, Brian, Lorcan Dempsey, and Constance Malpas. 2020. "Reflections on Collective Collections." *College & Research Libraries* 81, no. 6: 981-996. https://doi.org/10.5860/crl.81.6.981.

acquire, manage, circulate, and preserve collections across the network[3]. This may include shared infrastructure for patron discovery, fulfillment, analytics, and models for collaboration and organizational decision making. Networks such as the Big Ten Academic Alliance (BTAA)[4], Center for Research Libraries (CRL)[5], HathiTrust[6], Ivies Plus Confederation[7], the Boston Library Consortium (BLC)[8], the Eastern Academic Scholars' Trust (EAST)[9], MetaArchive[10], and Research Collections and Preservation Consortium (ReCAP)[11], have piloted variations on this approach, each with varying levels of success. This project seeks to overcome serious barriers to wider implementations, several of which have been observed[12], including the lack of available vendor-neutral interoperable systems, data exchange standards, adequate governance and decision-making frameworks, and assessment tools.

To draw an analogy, consider public library systems with multiple branches. For years, these local library systems have purchased items with an eye toward efficiently building a collection that suits the needs of the entire community, without each branch building its own individual collection, since materials can easily be moved from one branch to another. Patrons can withdraw or return items to any branch, which improves the patron experience. All of the branches work on an interoperable backend system, which allows patrons to know each branch's item availability, and enables decision making about new acquisitions to be made at the network level. This model works because there is a shared understanding of usage patterns at both the network and local levels, as well as interoperable systems–usually a single system–for cataloging, discovery, and circulation. Similarly, research libraries have developed extensive resources sharing mechanisms[13] and attempt to widen their reach[14], but have yet to figure out how to build and maintain effective network level collections at scale. The CCLP project envisions a new research library ecosystem where networks of institutions and experts can collaborate across systems to more effectively serve their just-in-case and just-in-time patrons' needs, while avoiding duplication of effort in their acquisitions and deployment of resources. While this is theoretically similar to the way the branches of a public library system already work together, CCLP will support multiple institutions and consortia using a variety of vendors and systems. We can do this by building trust through development of interoperable data and infrastructure, and best practices for governance and decision-making across a range of participating institutions and organizations.

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[3] Definition adapted from Dempsey, Lorcan, Constance Malpas, and Mark Sandler. 2019. Operationalizing the BIG Collective Collection: A Case Study of Consolidation vs Autonomy. Dublin, OH: OCLC Research. https://doi.org/10.25333/jbz3-jy57

[4] The BIG Collection Introduction website. Big Ten Academic Alliance https://btaa.org/library/big-collection/the-big-collection-introduction

[5] Cooperative Collection Building website. Center for Research Libraries https://www.crl.edu/collections/cooperative-collection-building

[6] HathiTrust website. https://www.hathitrust.org

[7] Ivy Plus Libraries Confederation website. https://ivpluslibraries.org

[8] Resource Sharing Services website. Boston Library Consortium. https://blc.org/page/resourcesharingservices

[9] About Us website. Eastern Academic Scholars' Trust (EAST) https://eastlibraries.org/about-us

[10] MetaArchive Cooperative website. Educopia Institute https://metaarchive.org

[11] Research Collections and Preservation Consortium (ReCAP) website https://recap.princeton.edu

[12] Harcourt, Kathryn, and Jim LeBlanc. "The 2CUL Technical Services Strategic Alliance." (2017): 259-266. DOI: https://doi.org/10.5860/lrts.61n1.43

[13] Borrow Direct program (Wikipedia entry) https://en.wikipedia.org/wiki/Borrow_Direct

[14] Controlled Digital Lending Implementers (CDLI) About us webpage https://sites.google.com/view/cdl-implementers/about-cdli?authuser=0

Increasing Equitable Access and Improving Stewardship - As research information grows exponentially every year, libraries nationally and internationally wish to collaborate in a multitude of ways to improve equitable access to library collections. Through collaboration, institutions can effectively cover core-collection areas and redirect scarce resources to improve the diversity and representation of collections by reinvesting resources in areas of social and cultural under-representation. By working together with trusted partners and in an interoperable, community-owned infrastructure, libraries will be able to reduce unnecessary duplication, increase availability of and access to a wider range of sources, better preserve and maintain these resources, and further enhance new and existing collaborative initiatives while maintaining their autonomy. Smaller publishers, open access publishers, and those that publish under-represented voices will be empowered through increased market share and preferred discoverability in the shared CCLP infrastructure.

Evidence of Need - In a 2020 survey[15] by Levenson and Hess of library staff (n=83) describing the potential benefits of cooperative collections development (CCD), 69% responded that cost savings would be the greatest benefit. Sixty percent noted "increased breadth and depth from access to shared collections", while 47% thought cooperative collections development would lessen the burden of price negotiations on individual libraries. Similarly, 45% thought cooperative collections development would lessen the licensing burden. Forty-two percent thought this approach would reduce unnecessary duplication among libraries. The survey also collected data on librarians' (n=70) perceptions of the greatest drawbacks they perceived to this approach. Respondents overwhelmingly (93%) selected the complexity of managing cooperative collections development as the biggest barrier. Individuals also referenced vendor resistance (53%) and decreasing autonomy in resource selection (44%) as other barriers. Clearly, to be successful, cooperative collections development needs to be simplified and standardized to become widely adopted. When asked whether the potential benefits of collaborative collections development outweigh its potential drawbacks, 64% responded that they either agreed or strongly agreed, with an additional 26% somewhat agreeing to the statement. The study's authors concluded, "These types of initiatives require a much higher level of effort and coordination, and this complexity may directly relate to institutions' or librarians' hesitancy to engage in such work. In the same vein, respondents selected the complexity associated with managing CCD activity to be the greatest drawback to success." From its inception, CCLP is meant to be built and governed in deep collaboration between publishers, providers, consortia, individual libraries, and standards communities to take into account heterogeneous perspectives and data workflows. It aims to lower the cross-industry barriers to collaboration by reducing complexity and increasing the trust among potential collaborators. We envision that a healthier collaborative infrastructure will increase overall market share by supporting new collective efforts and new business directions. Reduced barriers should also increase competition and extensive utilization of industry standards will increase overall market effectiveness.

A Failing Marketplace for Scaling Efficient Collaborative Collections Activities - At this stage, there is no infrastructure existing to support collective collections at scale as envisioned by CCLP[16]. Selectors and collection support teams work within the limitations of their own local systems and are restricted to vendor-supplied information (hard to find at best) regarding potential duplication and usage inside their own consortia networks (often inside their own branch libraries). The data ecosystem for identifying available content, its

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[15] Levenson, Helen N. and Amanda Nichols Hess. "Collaborative collection development: current perspectives leading to future initiatives." *Journal of Academic Librarianship* 46 (2020): 102201 - 102201.

[16] With the more limited exception of POOF! Collaborative collection development system developed by Cornell and Columbia (between 2010-2014) to support the 2CUL project which is still in use today. Cornell University Library, "Poof! Pre-Order Online Form", http://poof.library.cornell.edu/

providers/distributors/sellers, and the details about processing an order (such as price, rights, payments, consortial relationships, etc.), are complex and heterogeneous. Consortia and libraries have attempted to circumvent such dependencies by agreeing on collaborative collection building via joint purchasing, shared approval arrangements, or shared selectors, but often such higher-level agreements fail over time, when local collection priorities change and personnel shift. In addition, and with the lack of adequate infrastructure and interoperable data standards, selectors need to constantly be aware of potential duplication across such arrangements, and context-shift between multiple vendor systems dealing with particular collection coverages. The lack of an accepted trusted registry and best practices related to collective and local decisions, standardized and machine readable approval plans and collective MOU's, lead to a growing gap between strategic prospective collection building and retrospective collection analysis and ultimately to a waste of institutional resources, and collective effort. Libraries and consortia lack a timely mechanism to translate proven longitudinal collection behaviors into operational prospective realities, in support of communal targeted investments. A number of organizations have undertaken a range of projects which will inform this project's efforts. Among examples of related work are: Exploration of aggregation of holdings information, comparison tools (Gold Rush[17]), and aggregation of usage data (projects GreenGlass[18] and Unsub[19]) and aggregation of ONIX data for potential resource acquisition and deposit[20]. While work has been moderately successful and seen localized implementation, these systems have yet to break through and find widespread adoption as such tools remain separate from the daily acquisitions and selection decisions which also trigger collection lifecycle processes (and the expensive invisible economics related to them). An additional result of such limitations—while libraries for more than two decades have promoted open data, open access, and heterogeneous access to diverse resources in their advocacy efforts—local resources related to the metadata creation needed to allow such content to be discovered have diminished or been outsourced to support local buying behaviors. CCLP, beyond other benefits, can allow a more strategic reallocation of metadata expertise to support much needed growth in collective scope related to open science.

In order to achieve the potential envisioned by cooperative collections development, workflows need to be reimagined if they are to function across multiple institutions and need to be supported by technology tools that facilitate communication and individual and collective decision making. In addition, decisions that are made in specific, time-bound, collaborative arrangements need to be recorded and analyzed to serve new relevant mission-driven directions and future collection decisions. Beyond these systems, governance and frameworks for collective decision making need to be developed and tested to ensure that they are suited for deployment across a range of institutions and consortia and the experts working within these structures.

CCLP Addressing the Need - The CCLP infrastructure promises to optimize daily, network-first collaboration[21] between libraries on the institutional, consortial, and inter-consortial levels. Its availability will improve equitable access to library acquisitions by giving small publishers and open access providers the preferred logistical footing as established for-profit publishers and will encourage healthier scholarly communication

[17] Gold Rush® Software webpage. Colorado Alliance of Research Libraries. https://coalliance.org/software/gold-rush

[18] GreenGlass tool webpage. OCLC. https://www.oclc.org/en/greenglass.html

[19] Unsub service webpage. https://unsub.org

[20] KOSKAS, Mathilde and DERROT, Sophie (2015) Legal deposit of ebooks in France and its bearings on cataloguing and the National Bibliography. Paper presented at: IFLA WLIC 2015 - Cape Town, South Africa in Session 89 - Bibliography. http://library.ifla.org/id/eprint/1129

[21] Dempsey, Lorcan, Constance Malpas, and Mark Sandler. 2019. *Operationalizing the BIG Collective Collection: A Case Study of Consolidation vs Autonomy*. Dublin, OH: OCLC Research. https://doi.org/10.25333/jbz3-jy57.

lifecycle activities by directly partnering with university presses and not-for-profit providers. Dashboard insight into local and network level collections, their usage, and preservation status will assist heads of library collections and individual selectors in collaborating while increasing data-driven decision-making and coordination of prospective collecting to emphasize what is of unique value to their communities. The common CCLP infrastructure will also allow for greater logistical efficiency, with centers of excellence acting as functional designate nodes to enable a more sustainable overall ecosystem. For example, selectors in certain disciplines across multiple organizations will be able to treat overall collection development workforce and processing expertise as serving one great collection. They will be able to contextualize local decisions such as firm orders, approvals, deaccessioning, and annexation projects, across systems and workflows and within an interoperable, data-informed, and network-first context. CCLP will provide them a shared virtual-meeting point to partner with other selectors, to communicate, coordinate, and actively collaborate with each other in order to achieve the goal of more relevant titles accessible to all patrons via resource sharing mechanisms. It will allow them to apply readily available data from individual purchasing decisions and users' activity to inform new collection development models, new purchasing plans, and to create data-informed MOUs and approval agreements. It will extend functionality that will alert of potential duplication and a means to know what low use is and of low interest before placing an order necessitating processing workflows. Once selected, newly acquired collections can be directed for physical and digital preservation, retention, and archiving, or to receive community centered metadata enrichment. These distinct management actions could be done for certain collections in specific languages, for areas of local significance, or for any other materials of value. Such activities will allow hubs of processing excellence to specialize and grow and increase overall accountability via process and cost awareness. Through visibility, CCLP will enhance transparency and trust and encourage additional network reliance. The community owned vendor-neutral collaborative collections lifecycle platform will flexibly address changing needs over time and retain the primacy of libraries collections' buying power by supporting new and scalable collection development pathways.

Target Audience and Beneficiaries

The infrastructure and trust created by this initiative will benefit patrons of those libraries working in collaboration using CCLP tools. The main target audiences for this project are: 1) The selection teams and leadership within libraries and consortia, including those librarians involved in materials selection and acquisitions, who will benefit from the infrastructure support around their expertise and partnerships, and greater transparency about availability and use of selected resources; 2) The Deans/Directors/AULs leading library organizations/units who will be more effective in managing their institutions, directly through better analytics about collection related expenditures in order to achieve greater return on investment within their organizations; 3) Consortia, either officially organized or informal groups, which will benefit from decreased barriers to collaboration and infrastructure to sustain existing and innovative partnerships.

More broadly, there will be many beneficiaries from this initiative. They include:
- Library Users/Patrons, who will benefit directly from the collections and services libraries provide
- Describers, library, publisher, and systems staff involved in materials description, who will benefit from a common system for managing and discovering metadata
- Content providers of any sort, who will benefit from easier and timely access to library systems, relevant data, and decision makers across institutions
- Suppliers of library systems, who will benefit from increased interoperability and logistical effectiveness

We see this work offering direct, short-term benefits for libraries and patrons. Library patrons will benefit from a greater breadth of collections access that they can draw upon. The CCLP infrastructure will also allow the focus on expertise and resources needed to mitigate the risk involved in more ambitious strategic collective action because it is shared across many partners. This model could also be adapted by non-academic libraries seeking to develop collaborative collections development strategies in their own networks.

Project Work Plan:

The first phase of this effort will be the development of a community-based governance structure (Deliverable #1) and detailed project roadmap with requirements, specifications, and feature prioritization mechanisms (Deliverable #2). A simultaneous data gathering initiative managed by Ithaka S+R will provide a detailed assessment and documentation of the landscape and classify existing standards and current practices of organizations engaged in collaborative collections projects, including those pilots launched by project participants. This assessment will also include interviews of key community leaders regarding their organizational requirements and expectations of a successful outcome (Deliverable #3). Building on these elements, a community working group will then develop model workflows, model user experience, and activity paths based on defined personas engaged in CCD at different management levels in libraries, consortia, and publishing (Deliverable #4). Based on these components, the group will then build mockups and wireframes of key components of the needed infrastructure (Deliverable #5), taking into account existing systems and collaboration workflows and policies, combined with the identified gaps in those systems based on the goals of this project. The team will also model a community-based implementation structure describing interactions, specifications, and feature prioritization mechanisms (Deliverable #6). The team will develop prototype middleware tools, where those tools do not exist, in partnership with technology vendors. Where existing tools may exist but may need customization or iterative improvement, this team will prototype those adjustments (Deliverable #7). ~~Documentation of the prototypes and deployment of an outreach plan to encourage adoption, assessment, and outreach to describe the project's results will be widely circulated (Deliverable #8).~~

The project will be managed by Todd Carpenter, Executive Director of NISO, Jill Morris, Executive Director of PALCI, and Boaz Nadav Manes, University Librarian at Lehigh University. These three will oversee the grant administration. The team will be supported by a Project Manager to be hired at NISO and a variety of staff contributions from PALCI, Lehigh, and the other partners in the project. The project will also be supported by a Steering Committee composed of volunteers who will oversee organizational contributions to the project. This governance committee will guide the overall project's goals and provide project management oversight. It will also manage various working groups undertaking elements of the projects as it progresses.

The project will pilot and explore interoperable, open source middleware with modular applications that will be closely aligned with current collective collections visions and practices. The middleware applications will be developed based on an open standards architecture and will support the flow of data about disparate library collections. This will include holdings information, contractual information, retention obligations, usage data, aggregation of library staff and subject matter expertise, local/consortial/group-based insights, and publisher/marketplace information necessary to support collaborative decisions at both the local and cross-institutional levels. Initial planned applications may include: A) An aggregated shared index and knowledge base in which libraries/publishers can share data about their collections and expertise; B) A discovery mechanism for library staff to support searching and browsing for content, information, and human resources;

C) A communication application that will support interactions across institutions; D) Data aggregation, visualization, and reporting; E) Negotiation and group purchasing decision support protocols.

After a round of public comment, the combined model and toolset will be vetted by NISO standards committee leadership and, if approved, published openly as a NISO Recommended Practice. All of the other deliverables for this project will be made freely available using Creative Commons Attribution 4.0 (CC-BY) license or using an MIT open source license, as appropriate. Training and outreach materials will also be developed.

This effort will proceed in two phases with an anticipated third future phase planned to support full implementation following this project's completion, some of which will overlap during the time frame outlined below. Some elements of the phases will occur simultaneously as work on the previous phase reaches its final stage. The project will be timed such that core elements of later stages will occur in a timely manner, so as to allow early-stage work in the next phase to begin where contingencies are critical to determining its direction. Project management structures will be in place to ensure adherence with the proposed timeline. Prior to the receipt of the grant, the project team will advance a NISO New Work Item Proposal, to gain the necessary approvals to launch the initiative as a NISO standards activity, contingent on the project's funding.

Phase 1: Requirements gathering, governance establishment and roadmap definition

Phase 1 of this project is focused on the development of the social infrastructure necessary for the subsequent creation and adoption of technical infrastructure. The team has already discussed many of these topics, but consensus development around the group's initial ideas will be critical to getting the necessary buy-in to these ideas to ensure that they are broadly adopted by the community. Phase 1 outputs will provide this foundation for the subsequent development work. Once the project is funded, a Steering Committee will be formed from the existing stakeholders. A public call will also be issued to solicit additional community participation, as well as on the other working groups that will be formed. Committee participation will be vetted in collaboration with NISO's Information Discovery and Interchange (IDI) Topic Committee[22]. An essential element is the creation of a governance structure for the project including the participation of existing stakeholders and other prospective stakeholders who may respond to a public call for participation on the Governance Working Group, consisting of approximately 10-15 volunteers. The group's first task will be to agree on the community governance structure for decision making within the project. Ithaka S+R will facilitate these discussions, serving in a consultative role, and provide advice guiding it to a successful outcome.

Ithaka S+R will conduct a landscape review (i.e., a detailed assessment and documentation of the landscape) of organizations engaged in collaborative collections projects, including those pilots launched by project participants. This work will be conducted through a combination of desk research and interviews. As part of this landscape review, Ithaka S+R will classify existing standards and current practices. This landscape review will be published as an Ithaka S+R report or issue brief and will constitute Deliverable 1. Ithaka S+R will separately conduct a needs assessment regarding organizational requirements and expectations of a successful CCLP outcome. This needs assessment will be based primarily on interviews with key community leaders, potentially supplemented with focus groups and other forms of organizational and consortial engagement. When completed, it will be reviewed by the Governance Working Group and is Deliverable 2. A second set of working groups will then develop model workflows, model user experience and activity paths

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[22] NISO Information Discovery and Interchange Topic Committee website; https://www.niso.org/topic-committees/information-discovery-interchange

based on defined personas engaged in collaborative collections development at different management levels in libraries (Deliverable 3). This work will be undertaken by a committee of approximately 15-20 volunteers working for roughly three months. The group will break into subgroups to develop detailed workflows for the following personas: Consortia, Publishers, Standards, Metadata, Acquisitions, Selection, Providers, Deans.

Based on Deliverables 2 and 3, a subsequent working group will then detail a functional roadmap of key components of the needed infrastructure (Deliverable 4), taking into account existing systems, collaboration workflows, and policies identified in those deliverables. This roadmap will include guidance on technological tools to be developed or adapted into existing systems, along with policy guidance on community best practice for implementing cooperative collections development within libraries. After a round of public input, the combined model with its governance components will be vetted by NISO standards committee leadership and, if approved, published openly as a NISO Recommended Practice. This recommendation will form the basis for the technical development of the middleware systems.

Phase 2: Development team organization, initial application prototyping, public advocacy

The second phase of this project will focus on advocacy, partner engagement, and the development of prototype systems that can implement the technological tool guidance provided by Deliverable 4. This phase will begin with the establishment of a prototype development team, including one paid developer and a user experience specialist supported by this grant, and additional in-kind contributors with applicable expertise. They will identify necessary systems development resources, programming resources, and various in-kind contributions from partners in this project. The organization of Phase 2 will begin before all the Phase 1 outputs are fully completed to allow iterative-design-thinking development. The prototype development team will establish a structure of virtual operation to ensure project timelines and development goals are met.

The prototype development management and team members will determine the scope of critical functional areas of the necessary systems components. It is possible that not all of the modules described here will be necessary, depending on the outcomes of Phase 1 but it is anticipated that these four key applications will be considered as needed, such as a global product catalog (to understand the universe of available content), a collections analysis tool (a unified view of actual holdings), a usage analysis tool (as well as decision-making), and decision makers' interface (a tool to purchase and support decision-making and communication). The global product catalog will be a comprehensive resource where libraries can turn to identify options for adding content to their collections. This will be derived from publicly available feeds of data from publishers (normally distributed in ONIX format or via MARC) about new and existing product offerings and will serve as a resource institution can use to manage their acquisitions activities. The collections analysis tool will provide a timely view of the holdings of the participating institutions, so that decision makers can discern collaboratively which items to collect or withdraw and the number of items that might be needed in the collection. A usage analysis tool will also support the collection analysis tool, through the aggregation of per item usage data from print and online sources. Finally, a decision-making interface tool will allow individuals in participating institutions to advance their acquisitions decisions by supporting the collective decision-making process, communication, and ordering and fulfillment tracking of that order. For each of these applications there will need to be functionality to populate the infrastructure with data from its various data stores around the network. These system components will then be mapped to the framework and prototyped using user experience design methodologies to meet the demands of library staff, management, and library patrons.

Additional work on the necessary data exchange between the prototype systems and other library or publishing systems will also be documented and proposed as new standards. Potentially existing standards, such as those for interlibrary loan, circulation, usage data collection, etc., may simply need to be adapted and extended to work in this new environment. Other newer specifications may need to be drafted and consensus reached on those new standards. Phase 2 will include this consensus development work, guided both by the Phase 1 outputs and the experience of prototyping the Phase 2 modules.

Once published, any standard requires a variety of outreach and promotional efforts to socialize the recommendations. Promotion of and advocacy for engagement with the Phase 1 outputs will entail a number of in-person and virtual events, including a mix of both large presentations and small group discussions, as well as virtual presentations and published papers. These will describe different elements of the outputs with the aim of continuing to gather additional input on the elements of the project, as well as to recruit partners in the deployment of tools being developed. All of these public sessions and papers will be freely available.

The components of the system will be prototyped and provided to the community via the MIT open-source license, although it is also envisaged that proprietary software providers will also engage in the project, developing their own tools that will be integrated into their offerings. Part of the Phase 1 and early Phase 2 activities will include outreach to commercial vendors providing library systems to assess their willingness to participate and develop these tools commercially, either through open source development as part of a future project or separately in their own environments.

Following completion of this work, project organizers anticipate a third future phase to deploy and fully implement the prototype system for full-scale evaluation.

Project Deliverables

1. The first phase of this effort will be the development of a community-based governance structure (Deliverable #1) and detailed project roadmap with requirements, specifications, and feature prioritization mechanisms (Deliverable #2).
2. A simultaneous data gathering initiative managed by Ithaka S+R will provide a detailed assessment and documentation of the landscape and classify existing standards and current practices of organizations engaged in collaborative collections projects, including those pilots launched by project participants. This assessment will also include interviews of key community leaders regarding their organizational requirements and expectations of a successful outcome (Deliverable #3).
3. Building on these elements, a community working group will then develop model workflows, model user experience, and activity paths based on defined personas engaged in collaborative collections development at different management levels in libraries, consortia, and publishing (Deliverable #4).
4. Based on these components, the group will then build mockups and wireframes of key components of the needed infrastructure (Deliverable #5), taking into account existing systems and collaboration workflows and policies, combined with the identified gaps in those systems based on the goals of this project. The team will also model a community-based implementation structure describing interactions, specifications, and feature prioritization mechanisms (Deliverable #6).
5. Documentation of the prototypes and drafting of an outreach plan to circulate sharing of the project's results, encourage adoption, and assessment of the project (Deliverable #7).

Diversity Plan

Many libraries are seeking to bring the lens of diversity, equity, and inclusion to expanding their collections in order to include voices and perspectives that have been historically marginalized or excluded altogether. A challenge they collectively face in doing so, however, is that the very technologies and systems they depend on to tackle the monumental task of diversifying collections are written by and for a majority largely responsible for the marginalization and disadvantaging of people of color. Bias is often embedded in the very code, programmed into the logic of our collections systems. Through a community-based, open, and inclusive approach, the project will create a system of automated workflows rooted in principles of equity and justice, programmed from the ground up to be inclusive of diverse perspectives and sensitive to cultural variety. The project will seek out a deep engagement with institutions and participants representing historically under-served populations and will directly engage diverse institutions' staff in the project leadership and working groups. The project will improve the diversity and representation of the collective collection by facilitating net reinvestment of duplicative resources and expertise into areas of social and cultural under-representation. It will also allow partners to redirect resources towards areas of national or international emergency collecting and preservation.

Project Results

A core element of the success of this project will be in establishing community and networks of trust among institutions. Convening an open Collaborative Collections Lifecycle Community Hub with diverse participation from academic libraries, consortia, publishers, technology organizations, and other library service providers will enable the development of a shared vision, business practices, and infrastructure needs. The development and initial testing of the CCLP middleware prototype will lead to more efficient, sustainable, and responsive library collection-building activities and will encourage further growth of network level partnerships.

National Information Standards Organization (Z39)/Lehigh Univeristy/PALCI
Collaborative Collections Lifecycle Project (CCLP)
CCLP Schedule of Completion

Year 1

ACTIVITY	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
CCLP Steeting Committee	Forms	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets	
Ithaka S+R Research Projects	Landscape Review				Landscape Report							
Working Groups		Needs Assessment Review					Needs Report					
1) Governance		Forms					Gov. Report Draft			Gov Report		
2) User stories and personas coordination			Forms					Personas Draft			Personas Report	
3) UI prototyping and wireframes						Forms						
4) Technical + interoperability												
5) Legal and negotiations												
6) Business evaluation and case												
Process Approvals	New Work Item	WG Approval	WG Approval			WG Approval				Gov Report	Personas Report	Phase 1
In-person meetings/presentations				Meeting							ALA - Chicago	
Middleware Prototype												
User Experience Design											Hire UX Specialist	
Reporting			NISO Board	IDI Topic Cmtte			IDI Topic Cmtte			NISO Board	IDI Topic Cmtte	
Public reporting/announcements	Award	Launch	Volunteer call		S+R Report		S+R Report			Gov. Report		

Year 2

ACTIVITY	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
CCLP Steeting Committee	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets	
Ithaka S+R Research Projects												
Working Groups												
1) Governance												
2) User stories and personas coordination		Draft User Stories		Final User Stories			Jounreys Report					
3) UI prototyping and wireframes												
4) Technical + interoperability												
5) Legal and negotiations						Forms				Legal Report		
6) Business evaluation and case						Forms					Business Report	
Process Approvals				User Stories Report		WG Approval	Jounreys Report			Legal Report	Business Report	Phase 2
In-person meetings/presentations				Charleston	CNI	Meeting					ALA - San Diego	
Middleware Prototype										Hire Developer		
User Experience Design												
Reporting			NISO Board	IDI Topic Cmtte						NISO Board	IDI Topic Cmtte	
Public reporting/announcements	Progress Update	User Stories	Volunteer call		S+R Report	Project Update				Legal Report	Business Report	

National Information Standards Organization (Z39)/Lehigh Univeristy/PALCI
Collaborative Collections Lifecycle Project (CCLP)
CCLP Schedule of Completion

ACTIVITY	Year 3											
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
CCLP Steeting Committee	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets	Meets	
Ithaka S+R Research Projects												
Working Groups												
1) Governance												
2) User stories and personas coordination			Journeys Draft				Jounreys Report					
3) UI prototyping and wireframes						UI Prototype Report						
4) Technical + interoperability										Techincal Report		
5) Legal and negotiations												
6) Business evaluation and case												
Process Approvals			Journeys Draft			UI Prototype	Jounreys Report			Techincal Repo	FINAL Report	
In-person meetings/presentations	Implementers		Implementers	Meeting	CNI		Implementers			Implementers		
Middleware Prototype												
User Experience Design												
Reporting			NISO Board	IDI Topic Cmtte						NISO Board	IDI Topic Cmtte	IMLS
Public reporting/announcements	Prottype model		Prottype model		Prottype model		Documentation			Techincal Report		FINAL Report

Collaborative Collections Lifecycle Project (CCLP)
DIGITAL PRODUCT PLAN

TYPES OF DIGITAL PRODUCTS

This project will result in the creation of a variety of digital products, which fall broadly into the following categories:

> The resulting NISO Standards or Recommended Practices, developed by NISO will be copyrighted to NISO but circulated freely with a liberal reuse policy, though which excludes derivative, republication, or sharing of adaptations without prior consent, so as to provide a canonical source trustworthy copies of the current version of standards, consistent with NISO's Intellectual Property Rights Policy. This policy, approved by the American National Standards Institute (ANSI), provides protections to developers and users of American National Standards from patent claims and supports a bedrock of trust among technology implementers. This policy requires any intellectual property incorporated into a NISO standard to be available to the user community under Free, Reasonable and Non-Discriminatory (FRAND) terms.

> Presentations, published papers, articles, recordings of training sessions, reports, and other content generated by the project team will be the property of the contributors (individually or collectively) and shared under a Creative Commons-Attribution-Share-Alike 4.0 license (CC-BY-SA) to maximize reuse.

> Software code produced by this project will be released using the MIT License for Software Code, to allow for as broad reuse of the code as possible, including incorporation into commercially-licensable products.

ACCESS

NISO will only assert copyright ownership on the formal standards and/or recommended practices and the software code developed by the project team, consistent with NISO's Intellectual Property Rights Policy, noted above. NISO does not charge for access to its standards or best practices. The copyright notice is posted on all NISO documents indicating its reuse terms.

We will create a dedicated resources page for the program as a subdomain of the niso.org website, most likely at cooperativecollections.niso.org, with links out to the digital products NISO creates during the project, all of which will be openly available under a *Creative Commons-Attribution 4.0 license (CC-BY)* license, including:

> Videos and other recordings, which will be hosted on the NISO Media Library (https://niso.cadmoremedia.com/) and will be fully transcribed
> Slide decks from presentations, which will be hosted directly on niso.org or on the NISO Plus repository at https://nisoplus.figshare.com/
> Documentation, which will be hosted on niso.org

The software we are seeking to develop and prototype should not involve any privacy concerns directly. However, the exchange of circulation information can be considered an intellectual freedom issue and must be undertaken securely. The Interlibrary loan and resource sharing communities have grappled with secure

methods for sharing patron request information between systems to minimize the risks of private information sharing. This project will build on that existing knowledge and will conduct a specific privacy review of the systems model to ensure compliance with privacy protections, relevant data protection laws, and librarianship principles related to protection of patron information.

SUSTAINABILITY

All digital products will be hosted on the NISO websites, video library, and NISO Plus repository, all of which have their own sustainability/preservation/backup plans. Should any of these sites migrate or cease to exist in future, NISO will ensure that the relevant materials continue to be publicly available elsewhere. NISO has a relationship with the Internet Archive for its ArchiveIt service (presently in production for the NFAIS.org website). NISO also maintains ongoing relationships with Portico and CLOCKSS to preserve NISO digital content. There is also an ongoing archive of NISO's materials at the University of Maryland library, where digital content can also be stored for long-term preservation. Furthermore, other members of this project are recognized memory institutions capable of ensuring long-term preservation of the digital products that are outputs of this project, as well.

Software developed by the community will be hosted within NISO's GitHub Repository at https://github.com/niso-standards/.

Members of the project community are active in the FOLIO and ReShare projects. See http://folio.org (https://github.com/folio-org) and http://projectreshare.org (https://github.com/openlibraryenvironment). For other examples of Open Source software created by Index Data, see https://www.indexdata.com/resources/software/.

NISO, the National Information Standards Organization, is a Baltimore, MD based, non-profit association accredited by the American National Standards Institute (ANSI). As approved by the NISO Board of Directors on May 21, 2020, NISO's mission is to build knowledge, foster discussion, and advance authoritative standards development through collaboration among the cultural, scholarly, scientific, and professional communities. To accomplish this we identify, develop, maintain, and publish technical standards and recommended practices to manage information in today's continually changing digital environment. NISO standards apply to both traditional and new technologies and to information across its whole lifecycle, from creation through production, discovery, distribution, use, repurposing, storage, and preservation.

Founded in 1939, incorporated as an independent not-for-profit education association in 1983 (approved by the IRS on January 28, 1986), and assuming its current name the following year, NISO draws its support from the communities we serve. Thought leaders from more than 100 organizations in the fields of librarianship, publishing, IT, and media serve as our Voting Members. Nearly 250 additional library and related organizations support NISO as members of the Library Standards Alliance. More than 500 experts and practitioners from across the information community serve on dozens of active NISO working groups, committees, and as officers of the association at any given time. The majority of NISO's members are participants are based in the United States, but approximately 20% are based outside of the US.

The outputs of NISO's work are adopted in various forms by nearly every library, every publisher, and every information provider around the globe, and impact nearly everyone who consumes printed or digital media. Some of NISO's standards include the foundation of the MARC record standard (Z39.2), the International Standard Serial Number (ISO 3297 derived from Z39.9), the Dublin Core Metadata Set (Z39.85), Metrics & Statistics for Libraries and Information Providers – Data Dictionary (Z39.7), Criteria for Indexes (Z39.4), the Permanence of Paper (Z39.48), and the Specifications for the Digital Talking Book [DAISY 3] (Z39.86-2005) for accessible reading. We continue to maintain and develop new standards and community best practice in the areas of digital content creation, accessibility, metadata, authentication, discovery, preservation, and library management of resources.

While NISO is based in the United States, NISO recognizes that standards must reflect global needs and that our community is increasingly interconnected and international. Designated by ANSI to represent U.S. interests as the Technical Advisory Group (TAG) to the International Organization for Standardization's (ISO) Technical Committee 46 on Information and Documentation as well as the Joint Technical Committee on Information Technology's subcommittee on Document description and processing languages (JTC 1/SC 34). NISO also serves as the Secretariat for the ISO Subcommittee on Identification and Description (ISO TC 46/SC 9), with our Executive Director, Todd Carpenter, serving as the SC 9 Committee Manager. NISO is well positioned to bring together all interested parties, wherever they are based.