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Project LEND

**Project LEND: Planning a Research Project
for Expanded Access to Digital Books
at the University of California Libraries**

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University of California Libraries
Project LEND Steering Committee



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This report details the work of the [University of California Libraries](#) to examine current and potential strategies to expand digital access to scholarly materials. The work is inspired by and grounded in the experience of hundreds of academic libraries that used HathiTrust's Emergency Temporary Access Service (ETAS) for pandemic-era access. The project seeks to analyze all aspects of a digital access program — including user needs, legal frameworks, technical requirements, and collection scope — in designing an expanded service or set of services for UC faculty, staff, and students. This report provides background on digital access to scholarly materials and summarizes the progress to date, along with the roadmap ahead. This work is funded by the Andrew W. Mellon Foundation.

The need for expanded access

The COVID-19 pandemic triggered an unplanned large-scale experiment in digital access to scholarly books, including at the University of California Libraries. As campuses across North America and around the world closed in the early months of 2020, many libraries began offering expanded access to digitized versions of the print books in their collections as an emergency measure.

One large successful collaboration was the [Emergency Temporary Access Service \(ETAS\)](#) organized in March 2020 by [HathiTrust](#), which provided access to digitized versions of in-copyright print books held by the user's library while those print books were temporarily inaccessible. Faculty, staff, and students could virtually check out and access a digitized book available in HathiTrust if the corresponding print item was owned by their institution's library, on a 1:1 own-to-loan basis. Access was limited in various ways: short checkout periods, no downloads, single page print, no text mining or transformations. At the height of the pandemic, over 200 campuses employed ETAS. As a major contributor of digitized content to HathiTrust since its founding, the UC Libraries enabled access for thousands of users on its own and other institutions' campuses, driving digitized book use to new heights. Based on the [preliminary assessment by UC Libraries](#), the experiment was a resounding success with the university community, and demand for digital materials continues to increase. While UC and other institutions de-activated ETAS, as full access to their print collections again became possible, the service remains available for future emergency use.

Another framework for access has been leveraged by a few UC campuses and other libraries in the United States — namely, [controlled digital lending](#), a legal construct for lending a digitized version of a print book to a reader while making the corresponding print copy unavailable. Gaining acceptance and momentum among public and academic libraries, controlled digital lending and its foundation in U.S. copyright law have been questioned in recent litigation. The controlled digital lending framework holds that a library may digitize a print book and make the digital version available instead of the print copy, with many caveats, including: (a) the print copy is made wholly unavailable; (b) the number of users who may access the digital version at a time is limited by the number of print copies owned, and access is

provided for a limited time; and (c) digital rights management is leveraged to prevent wholesale copying and redistribution. The implementation of these caveats typically prevents some kinds of usage.

The ETAS experience led to nuanced conversations with academic researchers and others about the benefits and scenarios for developing a permanent service by which library collections are available digitally. As emergency access to these in-copyright collections ended, libraries now have a mandate to explore what is possible as a lawful successor in providing access to digitized books that are still in copyright. While Project LEND focuses on the needs within academic and research library contexts, there are ample indicators of the demand for expanded access to digitized books within public libraries, K-12 school libraries, and special libraries as well. By focusing on the foundational legal, technical, and usability questions associated with digital access, this project seeks to inform any library exploring expanded access.

The University of California initiative

[Investigation of the Future of Digital Book Access at the University of California \(Project LEND\)](#) is a University of California-led initiative to research and design new and expanded services for providing robust, legal access to digital books, including books that are or may be in copyright, in order to support new forms of research, education, and lifelong learning. Ultimately, the initiative envisions a service that leverages large collections of digitized books to better support scholarship and offer transformative advantages to scholars by augmenting print access with digital access to collections. Both phases of the initiative are supported by funding from the [Andrew W. Mellon Foundation](#). As of January 2023, we have completed the initial one-year planning phase and are launching the intensive two-year research phase with additional partners.

Supporting the largest public research university in the United States, with ten campuses and five medical centers, the UC Libraries is ideally positioned to undertake the design of a large-scale program expanding access to digital books. UC Libraries stewards 40M volumes, over 4.6M of which have been digitized. With a multi-decade track record of strategic multi-campus collaboration in collection stewardship and the application of new technologies, the UC Libraries has developed extensive expertise in designing online library services and associated technologies. Further, UC's work as a co-founder and key contributing member of HathiTrust places it in position to provide for its users the access to additional millions of books through collaborative agreements and services.

Planning phase (2022)

During the 2022 planning phase funded by the Mellon Foundation, the Project LEND team assessed the landscape and laid groundwork for research and service design work. Along with purchased ebooks, libraries have long provided online access to digitized books in the public domain, including books published in the U.S. prior to 1927, and those published more recently under open access terms. Providing access to digitized in-copyright books raises a host of legal, technical, and usability questions, few of which have been answered to date.

Under the leadership of the UC Davis Library and the California Digital Library (CDL), UC Libraries initiated an investigation in 2022 of key questions around the future of digital book lending:

- What have we learned about the best uses for print versus digitized books, and what are the implications for the future?
- How does digitized book lending extend and strengthen the historical role of the academic library in ensuring long-term access to scholarship?
- What legal framework(s) and/or case law might support various long-term options for large-scale digitized book lending, beyond the emergency context of the pandemic? Does a form of lending that builds on the principles of controlled digital lending offer a scalable solution?
- What technologies and digital book formats are required for a large multi-campus university system like UC to implement such a system at scale?
- What critical mass of digitized books is needed to create a viable, compelling resource for scholars? What content gaps might need to be filled via targeted digitization within UC's mass digitization efforts?
- How do authors, including those among UC's staff and faculty, perceive the ethical and legal issues involved?
- As we look to the future, what transformative research opportunities might be enabled by broader access to digital books?

The principal investigator for the planning project was MacKenzie Smith, University Librarian and Vice Provost for Digital Scholarship at UC Davis, along with a steering committee of five additional senior leaders from the UC Davis Library and the California Digital Library (CDL), the UC system's central unit for providing shared digital library resources and services: Peter Brantley, Director of Online Strategy at UC Davis Library; Sarah Houghton, Director of Discovery and Delivery at CDL; Rice Majors, Associate University Librarian for scholarly resources at UC Davis Library; Catherine Mitchell, Director of Publishing, Archives, and Digitization at CDL; and Günter Waibel, Associate Vice Provost and Executive Director of CDL at the UC Office of the President. The project was managed by Sandra McIntyre, a consultant with deep knowledge of digital libraries, access to digital scholarship, and the educational technology sector.

During 2022, Project LEND accomplished key planning tasks: (a) conducted a lightweight legal consultation; (b) investigated related work within UC and at other organizations; (c) established a framework of research dimensions; (d) brainstormed user scenarios to seed user research; (e) approached experienced partner organizations and consultants about participation in the research phase; (f) designed a two-year work plan and established methodologies for pursuing the research; (g) obtained grant support for Phase 2 research from the Mellon Foundation; and (h) prepared reports to the library community (i.e., this document) and to the UC community of authors and users. Highlights of the plan were presented to the Council of University Librarians at UC and to UC Libraries governance committees for input.

Scholarly use cases for expanded access

Key to the planning effort was identifying potential scholarly scenarios (i.e., technological use cases) to support new modalities of research and education and to enable innovation. How might scholars work

most effectively and most creatively if they had greater levels of access to use digital books? Project LEND began the process of developing a strong subset of all possible scholarly use cases, ones that have the most promise to impact the future of scholarship. During the next phase of research, we will refine and validate the seed use cases with targeted focus groups of scholars, and use these scenarios to work out implications for content, implementation, and legal frameworks.

Some common use cases are already potentially both legal and technologically possible, while other use cases don't meet one or both of these criteria. In all, we identified over 20 use cases that could be transformative for both research and education, including of course the use of entire digitized books (in lieu of print equivalents) but extending as well to a wide range of opportunities:

- I need the bibliographies from 10,000 books on my research topic...
- I want to download the chapter I need right now, not place an ILL request...
- I want to do my own data mining, rather than having to work through a mediated process...
- I want to convert this book chapter to an audio file so I can listen to it while I'm commuting...
- I want to apply translation utilities other than Google Translate to this passage I found...
- I need access to this book for a few minutes – to see if it's interesting, to check a citation, why does it matter?
- I need immediate access in order to respond to clinical care needs...
- I need to browse materials to assess reading level or performance level before assigning them for instruction...

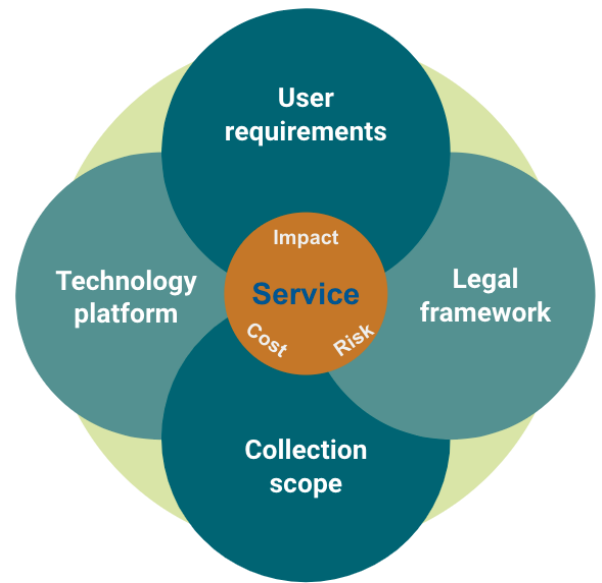
There are likely to be additional scenarios for scholarship in the future. As the project team explores what a shared digital lending system for UC might entail, we intend to design an approach that will leave room for potential uses we cannot even imagine today.

Research framework and iterative design process

Notable among the Project LEND planning accomplishments was the identification of a framework for pursuing more comprehensive research, including four core research dimensions impacting the service design for the provision and use of large-scale digital book collections. In the next phase, the research will be conducted in an iterative fashion, ensuring a detailed focus on each of these four dimensions, within a framework of interaction and inquiry across the dimensions. The goal ideally is a service design that responds to opportunities and constraints posed by all four of the research dimensions, and that meets the requirements of impact, cost, and risk.

- **User requirements** — research into the needs of diverse UC researchers and students, producing use cases validated through focus groups and other participatory design methods, describing distinct user scenarios for research, education, and clinical care.
- **Legal frameworks** — research into legal frameworks for library provision of expanded access to digitized books, including those still in copyright, and assessment of risks, with options for risk mitigation and long-term pathways to legal access.

- **Technology requirements** — review and analysis of existing technology platforms and systems for sharing and interacting with digital books, and possibilities for creating new systems, assessed against well established criteria, including technology-based risk, and development of requirements for UC, its partners, and/or vendors for future implementation.
- **Collection scope** — determining what the optimal composition of a digital book collection would look like to meet user needs, what digital collections are currently available or where more digitization efforts may be required, and how best to manage both print and digital collections.



As part of the iterative design process, engaging in ongoing conversations with other stakeholder organizations will be key, as the service may ultimately be implemented with a variety of partners, vendors, and systems. UC has existing relationships with a number of these entities via our participation on the [Interoperable System of Controlled Digital Lending working group of the National Information Standards Organization \(NISO\)](#); our participation in the informal [Controlled Digital Lending Implementers \(CDLI\)](#), a group of collaborating libraries, consortia, software developers and resource sharing organizations; and our proposed participation in a pending [Institute of Museum and Library Services \(IMLS\)–funded expansion of the Palace Project](#).

While informed by existing models for providing access to in-copyright books (such as controlled digital lending and HathiTrust’s Emergency Temporary Access Service), the project will look further to develop paths for the highest impact access to digital books by scholars over the long term.

Design checkpoints are built into the work plan, for coordination across the UC campuses, with the UC Legal office in the UC Office of the President, and with relevant UC Academic Senate committees. Reviews will give valuable feedback to the working group and serve to familiarize UC stakeholders with the emerging service model. Advised at certain checkpoints by a Library Community Group, composed of varied academic libraries outside UC, the project will validate its direction and assumptions frequently to assure broad applicability of the service model developed.

Research phase (2023–2024)

To prepare a service design for a comprehensive digital book delivery system for all UC users, the Andrew W. Mellon Foundation awarded generous additional funding to UC Davis on behalf of the UC Libraries, to pursue research and service design work during 2023 and 2024.

Research goals and deliverables

Designing services to expand access to digital books requires the interaction of domain experts with multiple informed perspectives and careful consideration of legal, technical and user experience design issues. Over a two-year timeframe, we will complete the research required to gain a deep understanding of the needs of diverse University of California users for additional uses of digitized books and to design a set of services to provide the needed expanded access. The resulting service model will articulate a solid legal framework and identify clearly the interacting parameters of collection management practices and technology requirements.

As a chief outcome of the project, the service design will position the UC Libraries to identify resources — including potentially other library partners and vendors — to implement or expand systems and associated policies. The project will coordinate at a deep level with HathiTrust, leveraging its experience in access to digitized books and laying the groundwork for its potential role in the implementation. The project will also consult with academic library partners outside UC to develop an understanding of the potential applicability of the service model to the wider library environment, to socialize its acceptance, and to encourage its broad adoption. Ideally the work completed in this project will provide the conditions that allow a national service to emerge.

The project will produce the following deliverables to meet the goals above: (1) internal work products, including a landscape description, validated use case scenarios, user needs report; (2) internal service design documents, including final selection of user scenarios, definition of maximal collection scope, legal assessment report, a technology roadmap with detailed system requirements, and prioritization of potential service offerings, taking into account impact on users (emerging from User research), cost (emerging from Collection and Technology research), and risk (emerging from Legal and Technology research); and (3) outreach and educational events and documents.

Methodologies for research

The project is establishing four Project Teams for conducting detailed research into each of the four dimensions (user requirements, legal research, collection assessment, technology requirements). These Project Teams will work separately on their investigations, while coordinating frequently to synthesize all requirements into a common service design.

User requirements research

The User Requirements Project Team will work in collaboration with the other focus areas to establish a deep understanding of user needs for expanded access to digital books and identify the opportunities to improve research and education through expanded access. Under the direction of a faculty expert in human-computer interaction and user experience, the Project Team will first iterate on existing known use cases by leveraging established data inputs (e.g., prior reports and analyses of digital lending/usage) and detail a set of 4-6 initial user scenarios. The team will design a detailed methodology for evaluating, refining, and prioritizing the preliminary user scenarios.

With the involvement of a dedicated post-doctoral researcher, the team will convene 6-8 focus groups of key user and stakeholder groups across multiple UC campuses. Participants will be encouraged to discuss shared needs and goals with respect to expanded digital usage, articulate their existing work practices, envision new scenarios of use, and react to and help prioritize initial use case scenarios. Based on the results, the Project Team will refine the preferred user scenarios into a final set of detailed user scenarios and requirements.

Legal research and assessment

The Legal work plan will be carried out primarily by a full-time legal fellow and a law student research assistant, under the direction of a law professor who is a leading expert in copyright law's intersections with new information technologies. The Legal Project Team will consult regularly with expert advisors from the University of California, other peer universities, other library and library-supporting organizations, as well as authors, publishers, and other stakeholders.

The first phase of the legal analysis will involve mapping the field and literature to identify other similar efforts and any available legal analysis applicable to those efforts. The next phase will be identifying and assessing possible legal obstacles to the identified use cases, focusing on obstacles posed by the U.S. Copyright Act and relevant case law (and informed by any relevant ongoing litigation or threats of litigation involving similar efforts). The final phase will examine possible routes to overcoming the identified legal obstacles. The results of the legal analysis will be described in a legal assessment report.

Collection assessment and scoping

The Collection work plan will include research on UC library collections by a Collection Scope Project Team. To define the maximum viable collection scope for the potential audiences, the Project Team will establish criteria useful in describing collections to be accessed via digital means, describe UC's collection in context of these criteria, describe how collection management practices in relation to controlled digital lending could be enacted, and make recommendations regarding future strategies for print collection management to maximize the available collection for this project.

The Collection Scope Project Team will look at print collections owned by UC, UC's capacity and appetite to digitize more content, content already digitized by UC and by others, and born-digital content that UC owns, stewards, and/or licenses. We will describe the contours of this UC Libraries collection, which we anticipate to be heterogeneous along technical and political/governance dimensions. Because the UC Libraries collection is currently held in multiple locations and storage systems, we will leverage a range of data sources and examine policy and/or technical data related to each location. We will also articulate how publishing and use patterns of the collection can be quantified to aid selection and prioritization. We will continue to research collection management and operational questions, including sequestration of print books, workflows for further digitization, format conversion strategies, and metadata remediation strategies.

Technology requirements

The Technology Project Team will first contribute a précis of existing technology solutions that can address the range of user scenarios. Then the Project Team will evaluate and provide review of initial use cases and determine if there is a gap between user needs and technical solutions. After selecting preferred technical solutions and frameworks, the Project Team will draft an initial requirements document and a product specification outline, and note missing or incomplete software or protocol implementations whose definition and development will need to be addressed during implementation.

The technology work plan will be influenced by the determinations of the User, Legal, and Collection recommendations. Software may address a range of scenarios, each potentially using different platforms and technical strategies for access. Requirements will be derived for each of these paths for descriptive, actionable, and policy-driven metadata; development or integration of appropriate access control mechanisms; and with a special focus on the support for the widest range of accessibility support, which will also influence user experience (UX) design for discovery as well as the user's reading acquisition and reading software.

Special role of HathiTrust

HathiTrust has extensive experience in providing online access to digitized books and is a key contributor in design and potential provider of parts or all of the technology stack for delivery. It is also uniquely positioned as a trusted repository of digitized content from academic and research libraries, including over 6.4 million in-copyright volumes that overlap with UC-owned collections. It has a history of commitment to providing access to the greatest extent possible, particularly for scholarly uses, within lawful limits, and its collaborative governance and funding provide assurances of ongoing stewardship adhering to library principles and standards.

HathiTrust will partner in developing service design and technology requirements. HathiTrust will also help establish a Library Community Group of varied academic libraries outside UC, to assure the broadest possible applicability of the service model. HathiTrust staff will provide unique expertise in support of the design of work products generated by the project, leveraging their deep knowledge of the existing landscape for digitized content (including access and preservation considerations), experience through the Emergency Temporary Access Service, and awareness of additional functionality desired by its users across many institutions. Additionally, HathiTrust will contribute to evaluating proposed strategies, helping articulate whether scenarios are feasible given current infrastructure and collections and/or what would be required to bridge any gaps.

Leadership, staffing, and partnerships

The principal investigator for the research phase is Rice Majors, Associate University Librarian for Scholarly Resources at UC Davis Library. Additional leadership on the project steering committee includes two co-principal investigators: Erik Mitchell, the Audrey Geisel University Librarian at UC San Diego; and Günter Waibel, Associate Vice Provost and Executive Director of the California Digital Library. Majors and Waibel were core members of the planning team.

Neil Weingarten from UC Davis Library will serve as project manager for the research phase. Digital library strategy consultant Sandra McIntyre will assist in project setup and structuring of the Working Group and the Project Teams as well as ensure continuity from the planning grant phase. Additional UC Libraries experts will be deployed in Project Teams across the four research dimensions. The integration and synthesis of the research work will occur primarily through regular meetings of a Working Group, consisting of the steering committee members and the chairs of the four Project Teams, along with the project manager and consultant.

The project has established key partnerships across UC campuses and beyond, including with faculty and librarians at multiple UC campuses, with HathiTrust, and with senior leadership at the Digital Public Library of America. Representatives of Project LEND will continue to participate in the National Information Standards Organization (NISO) and its Working Group on Interoperable Systems for Controlled Digital Lending, and to coordinate with NISO-proposed standards.

Work plan and timeline

We will perform a series of activities over the next two years. A high-level summary of activities is given below. Details about upcoming activities and findings will be shared on the [Project LEND website](#).

Project Quarter(s)	Selected Activities and Deliverables
Project Q1/Q2 (Jan–Jun 2023)	<p>SETUP AND BASELINE/INITIAL USE CASE DEFINITION</p> <ul style="list-style-type: none"> ● Project setup and administration; communications ● Hire and on-board all existing and new staff ● Kick off Working Group and Project Team meetings ● Write landscape description about four dimensions of user needs, legal framework, collection scope, and technology systems ● Working from seed use cases, define use case scenarios ● Design methodologies for user research and legal research ● Technology platform review ● Set up outreach and feedback framework
Project Q3 (Jul–Sep 2023)	<p>USER NEEDS RESEARCH AND LEGAL ASSESSMENT</p> <ul style="list-style-type: none"> ● Align all participants as to design principles and iterative process ● Conduct user research activities ● Conduct initial legal research and design a detailed methodology for legal analysis
Project Q4/Q5 (Oct 2023–Mar 2024)	<p>ANALYSIS AND SERVICE DESIGN</p>

Project Quarter(s)	Selected Activities and Deliverables
	<ul style="list-style-type: none"> ● Perform a “deep dive” into several key user scenarios ● Conduct key legal research activities and define preliminary legal frameworks ● Decisions about the complete service model — major iterative design work involving all Project Teams and the Working Group, preparing a service design document reflecting choices related to users requirements, legal assessment, collection scope, and technology
Project Q6/Q7 (Apr–Sep 2024)	<p>INTEGRATED SET OF REQUIREMENTS</p> <ul style="list-style-type: none"> ● Articulation of service design into an integrated set of documents together comprising the Service Design, including: <ul style="list-style-type: none"> ○ Legal Assessment Report ○ Technology Requirements ○ Outreach Plan for engagement with UC authors and researchers
Project Q8 (Oct-Dec 2024)	<p>OUTREACH AND REPORTING</p> <ul style="list-style-type: none"> ● Project LEND Vision/White Paper (for the broader community) ● Project LEND Internal Position Document (for the UC community) ● Webinar/Workshop for the library community ● Report to the Mellon Foundation

Outreach and impact in the library community

The project will share its findings across UC Libraries and with faculty (many of whom are authors) and students. The project intends to develop champions within the UC faculty as well as identify possible contributors to a UC-system-wide task force who will lead implementation in a future phase of the project.

The service design to be developed in Project LEND will be vetted by multiple other academic libraries to serve as a model for broad potential implementation in higher education, and will be socialized broadly among academic libraries and other stakeholders. UC strongly favors models that would extend beyond UC; indeed, this would better support some if not all of our anticipated use cases.

For additional information

Additional information will be shared over time via the [Project LEND website](#), as the project proceeds and reports and design elements become available. Questions may be addressed to the project team at projectlend@ucdavis.edu.