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June 9, 2011

Vice Provost Daniel Greenstein
University of California
Office of the President
1111 Franklin Street
Oakland, CA 94607

Dear Dan,

I am pleased to transmit the final report of the California Digital Library's review. The report has been approved by the Steering Committee and discussed with the CDL management team and is now ready for wider distribution.

I would like to make a few additional observations about the findings of the report. In most reviews of this type that I have conducted, the ratio between recommendations for improvements and statements of value is more heavily weighted towards improvement opportunities. In this case, the reverse was true. There was remarkable consensus about the value of CDL across many constituencies, both internal to UC and from external peers. None of the interviewees suggested that existing CDL services should be stopped or removed but rather focused on opportunities to extend the benefits. As you know, the steering committee insisted on delivering a letter to you midway through the process to highlight the value CDL brings to the University and its symbiotic relationship with a range of campus activities supporting scholarship.

Another aspect that is worth highlighting is CDL's leadership role as a reflection of leadership by UC and its libraries overall. One interviewee attributed CDL's success in this area to several factors: the ability to be focused but also flexible and strategic; the commitment to collaboration and innovation that allows others (internal and external to UC) to benefit and partner; and its relationship to other UC libraries as an equal partner with space to set its own agenda, one that currently aligns with the issues facing most research libraries. With more interest in forms of collaboration among UC peer institutions and others, CDL is viewed as a success story where UC can take credit for the original vision and ongoing support.

The Steering Committee carefully considered the recommendations in the report and felt they were all in the spirit of clarification of roles and improvements to a very strong organization and portfolio of services.

It has been a pleasure to participate in this review and I am happy to answer any questions you may have. I look forward to meeting with you to discuss the findings.

Sincerely,

Mary Beth Baker

C: CDL Review Final Report
CDL Self Assessment
Letter from CDL Review Steering Committee to Vice Provost Greenstein
Letter from Vice Provost Greenstein to CDL Review Steering Committee

California Digital Library

CDL Value Review and Recommendations

May, 2011

FINAL DRAFT

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Executive Summary

Executive Summary

- The budget crisis affecting the University of California (UC) has resulted in the many divisions, departments and units that comprise, or are affiliated with, the UC to evaluate current operations and identify ways to improve efficiency and quality of service. The University Libraries and California Digital Library (CDL) are similarly under pressure to maximize the efficient use of library resources. As such, the office of Academic Planning, Programs and Coordination asked the leadership of the CDL to conducted a review to understand what clients value in the services provided by CDL and to identify ways to enhance or increase the value of services delivered to its clients.

- The approach to this project consisted of the Steering Committee and consultant reviewing the self-study written by CDL (September 2010) and conducting interviews and focus groups with the Review Steering Committee, the University Librarians, and CDL leadership and staff. To understand CDL's position on the national landscape, a series of interviews were conducted with five peer organizations. With the exception of a focus group with the Systemwide Operations and Planning Group (SOPAG) this review did not include interviews with any other professional staff from the campus libraries. A Steering Committee comprised of University Librarians(2), Reference Librarian (1), faculty(2), a campus IT leader (1) and current director of the Coalition for Networked Information was formed to review the results of data collection, validate themes, confirm and prioritize recommendations.

- CDL is considered to be a strategic resource for the UC designed to support the infrastructure of the campus libraries and is an integral part of the overall library ecosystem that supports faculty and students in their intellectual pursuits. It was founded in 1997 to assist the ten University of California libraries share their resources and collections more effectively, in part through negotiating and acquiring consortial licenses on behalf of the entire UC.

Executive Summary (con't)

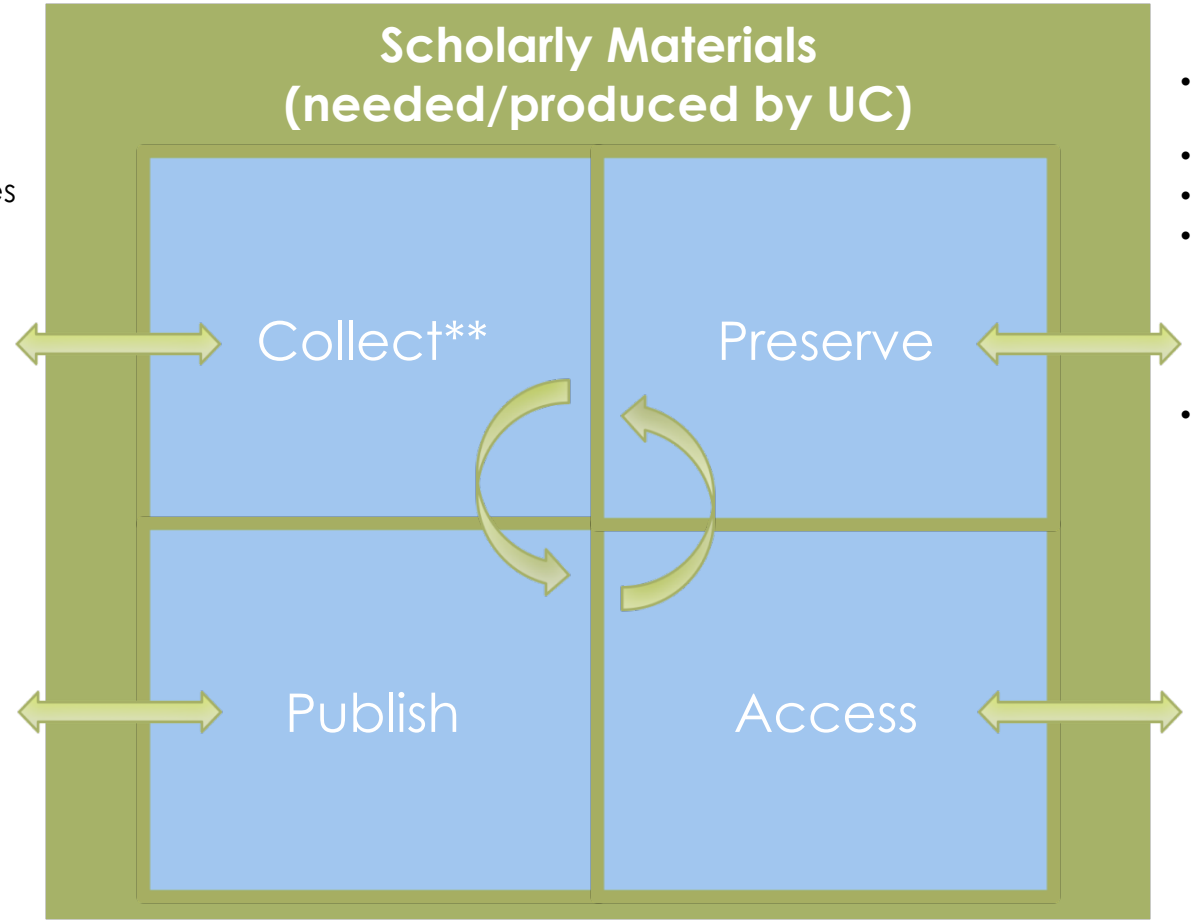
- CDL's mandate is to work in partnership with the UC libraries to ensure that the scholarly materials needed for and produced by UC are effectively secured, managed, preserved and made available for appropriate use by others. Services and tools are designed to:
  - enhance information resource sharing across the campuses;
  - create a scholarly information infrastructure;
  - collaborate across and among disparate information-intensive partners including other libraries, industry, and museums;
  - transform scholarly communication (in part by becoming a "digital publisher");
  - use information technology to support the effective use and sharing of print materials; and,
  - create a framework for continuous planning and innovation.

- CDL offers a suite of integrated tools and services (reference page 6) to directly support its audiences. These audiences include the UC campus libraries, museums and archives, faculty and researchers, cultural heritage institutions across the state, California citizens and the general public.

- In addition CDL is involved in a number of community initiatives to develop and deliver quality and cost-effective solutions that require greater scale, sustainability and longevity to the UC community and beyond. Among others, these initiatives include HathiTrust, WEST, DataCite, and DataOne.

Source: CDL: The Second Decade, September, 2010.

Executive Summary (con't)



- Licensed Resources
- Shared Print
- Mass Digitization

- eScholarship
- UC Press e-books
- UC PubS

- Merritt Repository and Micro-Services
- Web Archiving
- EZID
- Partnerships and Initiatives (e.g., Hathi Trust and Data Management Tool (DMP)
- UC3

- Melvyl / Next Generation Melvyl
- Resource Sharing
- UC e-Links
- Shared Cataloging
- Metadata Services
- OAC
- Calisphere
- UC Shared Images

** CDL collections include digital special collections, web content, electronic theses and dissertations (ETDs) and UC scholarly output.

Final Draft

Executive Summary (con't)

The following items were most frequently cited by interviewees as the **value** that CDL provides to the University of California and to the broader community of libraries.

- ***Staff*:** An overwhelming majority of individuals interviewed for this review, UC employees and individuals from peer institutions alike, commented that the CDL has a staff comprised of smart, dedicated, accessible and innovative advisors and technologists – who are committed to collaboration. CDL provides a source of information, expertise and experience that many of the UC libraries and peer institutions do not have internally and/or do not have the resources to build.

- ***Leadership:*** CDL has an established national and international reputation as a leader and innovator to the academic community with respect to negotiating licensing terms and conditions, preservation and web archiving tools, establishing standards for primary authoring, and developing open source software applications (XTF)

- ***Collaboration:*** Colleagues from peer institutions specifically commented that CDL is a national trendsetter, partner and an exemplar for how to facilitate successful multi-site collaborations.

- ***Licensing:*** CDL acts as a negotiating agent and broker for licensing scholarly content on behalf of the UC. In this role, the CDL has negotiated agreements with 34,500 electronic journals, and 508,000 ebooks and enabled campuses to collectively avoid over $25 million in independent subscription fees. It addition CDL works with the UC Libraries'' Collections Development Committee to develop principles, analyses and formulas to evaluate the value of content.

- ***Scholarly resources:*** CDL provides scholars and staff of UC with essential electronic resources needed for research and learning, and works to make sure those resources will be available over time for future students and faculty. This includes licensed resources, primary sources such as images and manuscripts, digital books, scholarly texts, and archived web sites.

Executive Summary (con't)

- ***To faculty*** CDL helps: 1)Increase the impact and reduce the costs of scholarly communications; 2) Provides information services (access, retrieval, publishing and preservation), and 3) Increases the competitiveness of UC faculty for winning grants and extramural funding.

- ***Infrastructure:*** CDL aggregates technical resources and expertise on behalf of UC to build and maintain systems that support the entire research community. As a result, an affordable digital library infrastructure has been built for the University of California to support the ways in which scholarly information is accessed, shared and preserved. Examples of this infrastructure include Melvyl, the Request Service, eScholarship and UC3.

- ***Community:*** CDL coordinates and facilitates UC participation in many community initiatives that provide opportunities to innovate with new technologies which have produced cost effective access and data curation solutions to the UC community. These partnerships include HathiTrust, Western Regional Storage Trust, and Internet Archive* and Google.

- ***Innovation:*** In addition to delivering existing tools and services CDL provides a focus on innovation and future trends in digital libraries.

- ***Neutrality:*** CDL is able to facilitate collaboration and resource sharing among the UC campuses from a neutral position.

- ***Research competitiveness:*** Developments in data curation and preservation tools enable researchers to be more competitive on grant applications.

- ***Public service:*** CDL makes a strong contribution to the public service mission of UC through support of Calisphere and OAC.

Executive Summary (con't)

Interviewees expressed overwhelming confidence that the services and technologies provided by CDL will continue to position them for the future. In fact, it is noteworthy that none of the interviewees cited any CDL tools or services that do not add value or that should be stopped. However there are several recommendations suggested to enable CDL to maximize its potential and value for the University of California resources.

Area	Recommendations
Roles and responsibilities	1. Clarify sharing and distribution of roles and responsibilities between CDL and the UC libraries and University Librarians.
Decision-making	2. Develop a formal yet nimble decision-making process that includes participation from the campus UL's to advise and guide CDL on priorities and to optimize investments for CDL.
Communications and Education	3. Create an overall communications and awareness program targeting University libraries (librarians and library staff) and users of CDL services.
Business Development	4. Aggressively pursue external funding as a mechanism to fund the innovation and the delivery of more robust services to faculty and students. 5. Expand fee-for-service offerings to external/ Non –UC entities.

Executive Summary (con't)

Area	Need/Opportunity
Existing Processes and Services	6. Develop a research to production process that includes decision gates on funding models and service offerings to manage the lifecycle of CDL projects and initiatives. 7. Assess and strengthen user support for eScholarship. 8. Expand CDL's role in negotiating e-content to Increase coordination and optimization of resources spent on collections.
Emerging Opportunities	9. Test user/market demand and cost of emerging technology applications and services.
Internal Operations	10. Identify ways to create more integration and synergy among the Program Areas in order to maximize CDL service and tool offerings. 11. Align CDL services and staffing to support campus strategies for the digitization of Special Collections.

Introduction

Context

- The budget crisis affecting the University of California (UC) has resulted in the many divisions, departments and units that comprise, or are affiliated with, the UC to evaluate current operations and identify ways to improve efficiency and quality of service. The University Libraries and California Digital Library (CDL) are similarly under pressure to maximize the efficient use of library resources. As such, the leadership of the CDL would like to understand what clients value in the services provided by CDL and identify ways to enhance or increase the value of services delivered to its clients. Key questions that CDL would like to answer include:
  - What value does CDL currently provide to the University?
  - Are there CDL services that do not add value to the University?
  - Is CDL positioned to serve the future needs of the University?
  - What course corrections should CDL make to meet the service needs of its clients?
  - What are the trade-offs of pursuing a new direction?

Approach

- The approach to this project consisted of reviewing the self-study written by CDL and conducting interviews and focus groups with the Review Steering Committee, the University Librarians, and CDL leadership and staff. To understand CDL's position in the national landscape a series of interviews were conducted with five peer organizations. With the exception of a focus group with the Systemwide Operations and Planning Group (SOPAG) this review did not include interviews with any other professional staff from the campus libraries.

- A Steering Committee was formed to review the results of data collection, validate themes, confirm and prioritize recommendations. Membership of this committee included representation from the University Librarians(2), Reference Librarian (1), faculty(2), a campus IT leader (1) and current director of the Coalition for Networked Information.

- A list of the names of individuals who served as the Steering Committee and participated in the interviews and focus groups is provided in the appendix of this document.

Description of the CDL

What is the California Digital Library?

- In 1997, the CDL was founded to assist the ten University of California libraries share their resources and collections more effectively, in part through negotiating and acquiring consortial licenses on behalf of the entire UC. More specifically the CDL's mandate was to work in partnership with the UC libraries to:
  - enhance information resource sharing across the campuses;
  - create a scholarly information infrastructure;
  - collaborate across and among disparate information-intensive partners including other libraries, industry and museums;
  - transform scholarly communication (in part by becoming a "digital publisher");
  - use information technology to support the effective use and sharing of print materials; and,
  - create a framework for continuous planning and innovation.

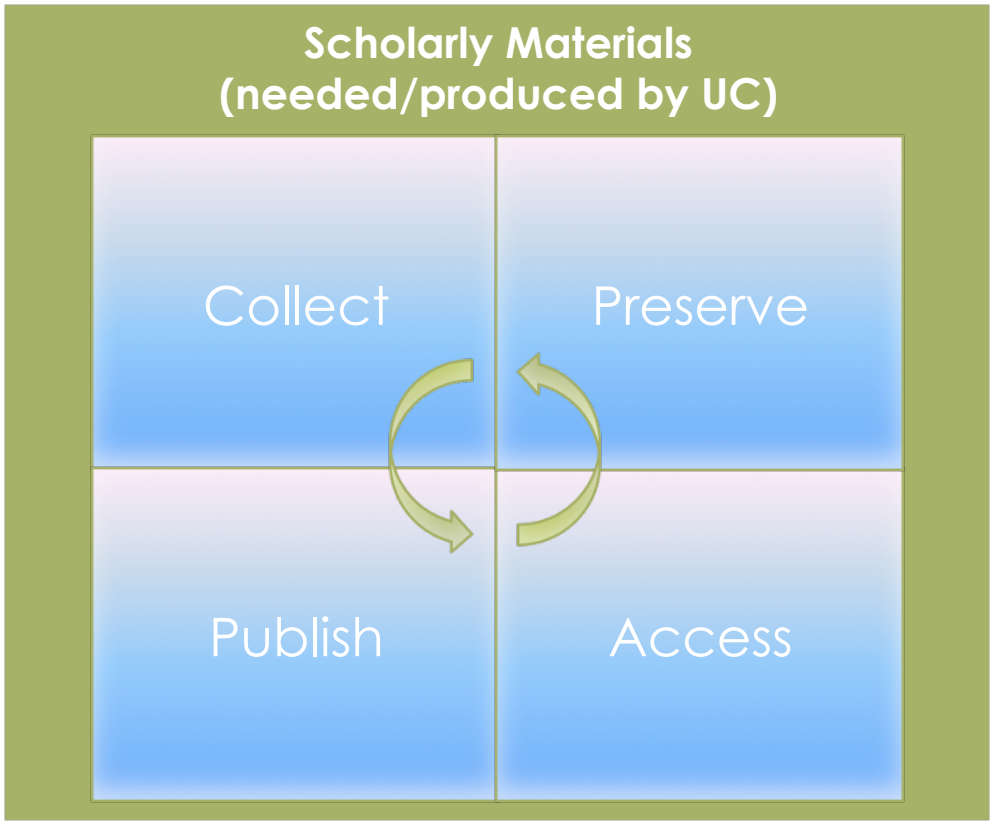
- Historically some individuals referred to the CDL as the University of California's 11th library. However, today most consider CDL to be a strategic resource designed to support the infrastructure of the campus libraries and an integral part of the overall library ecosystem that supports faculty and students in their intellectual pursuits.

Source: CDL: The Second Decade, September, 2010.

CDL Services

- CDL offers a broad and complex portfolio of tools and services to directly support its audiences. These audiences include the UC campus libraries, museums and archives, faculty and researchers, cultural heritage institutions across the state, California citizens and the general public.
- In addition CDL is involved in a number of community initiatives to develop and deliver quality and cost-effective solutions that require greater scale, sustainability and longevity to the UC community and beyond. Among others, these initiatives include HathiTrust, WEST, DataCite, and DataOne.
- The chart on the next page lists CDL's portfolio of services in four categories: 1) Collection of material; 2) Publishing content; 3) Preservation of content; and 4) Access to content.

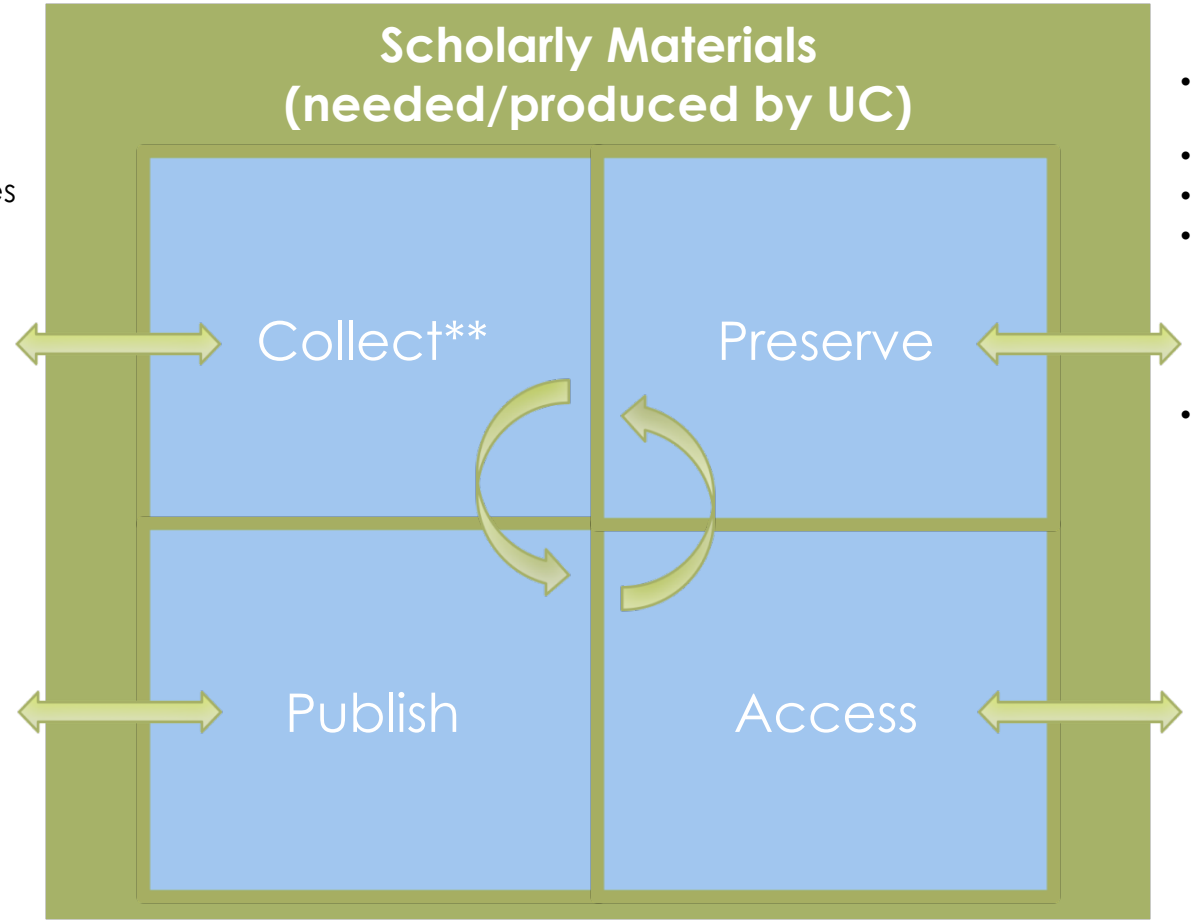
Current Portfolio of CDL Activities & Services



CDL provides a suite of integrated tools and services work to ensure that the scholarly materials needed for and produced by UC are effectively secured, managed, preserved and made available for appropriate use by others. While on the following page these services are positioned in one of four categories: Collect, Preserve, Collect and Access – many of these services are linked and serve multiple purposes in CDL's portfolio of services.

Current Portfolio of CDL Tools, Activities & Services

- Licensed Resources
- Shared Print
- Mass Digitization



- Merritt Repository and Micro-Services
- Web Archiving
- EZID
- Partnerships and Initiatives (e.g., Hathi Trust and Data Management Tool (DMP)
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- Calisphere
- UC Shared Images

** CDL collections include digital special collections, web content, electronic theses and dissertations (ETDs) and UC scholarly output.

Current Portfolio: **Collect**

Service	Description	CDL Role
Licensed Resources	The licenses to 34,500 electronic journals, and 508,000 databases and ebooks are negotiated by CDL on behalf of and in coordination with the ten UC campuses. CDL manages more than $35 million annually in systemwide content expenditures	CDL currently uses an outsourced solution from Serials Solutions for electronic resource management; this may change in future.
Shared Print	CDL coordinates the activities and projects to collaboratively acquire, share and manage the UC libraries' shared physical collections.	Utilizes CDL Metadata Management Services and outsourced systems such as OCLC Collection Analysis Tool and Ulrich's Serials Analysis System.
Mass Digitization	Specific to mass digitization, CDL: • Manages the contracts with digitization partners such as Google and the Internet Archive; • Coordinates digitization processes at the campus and regional facilities; • Oversees quality control and manages the integration of digitized output with other services such as OCLC WorldCat and HathiTrust; Over 3 million UC books have been digitized, at a rate of 800,000 annually.	• Built infrastructure to track the workflows and outputs from Mass Digitization efforts for all of UC; • Manages and/or participates directly in activities related to content ingest, storage and access within HathiTrust, and manages the HathiTrust relationship; • Manages an outsourced print-on-demand service via HP.

Current Portfolio: **Preserve**

Service	Description	CDL Role
Merritt	A comprehensive repository service that allows UC users to manage, archive, and share digital content easily. It features intuitive interfaces for deposit, update, and search; access via persistent identifiers; tools for long-term management; permanent storage; and pro-active preservation planning.	• Provide technologies to enable cost-effective preservation and curation of UC's valuable digital content. • CDL can host content centrally or deploy Merritt micro-services to the campuses and external partners. • Developed by CDL, Merritt has received widespread community review and uptake.
Web Archiving Service (WAS)	A service that provides the tools necessary to easily capture, analyze, and preserve web content. The web archives created with WAS can be searched by keyword or browsed by site. WAS web archives are free to the general public, and WAS capture tools are available by subscription.	• Integration of open-source web capture and CDL-developed tools. • Provide management and access through straight-forward curatorial and end-user interfaces. • CDL hosting for subscribers to have optimal control of their archives.
EZID	EZID makes it simple for digital content producers (faculty, researchers, and others) to obtain and manage long-term identifiers for their content. This service lets users create and resolve DOI, ARK, and other identifiers, as well as maintain information about identifiers ("metadata"). EZID is available via both a programming interface (an API that software can use) and a user interface.	• Development of the software to facilitate the creation, maintenance, and resolution of persistent identifiers. • CDL hosts the service for campus and for external users by subscription.

Current Portfolio: **Preserve**

Service	Description	CDL Role
Data Management Plan (DMP) Tool	A service that enables researchers to easily generate data management plans in accordance with grant submission requirements set by funding agencies such as the National Science Foundation. The online DMP tool will direct campus researchers to data management services at CDL and at their institutions, and produce a plan fulfilling grant and local requirements.	• Hosting of the online DMP Tool. • Tool development in partnership with UCLA, UCSD, Smithsonian Institution, University of Virginia, University of Illinois at Urbana-Champaign, DataONE, and the UK Digital Curation Centre.
UC 3 Curation Center (UC3)	Provides consultative services to the campuses to help design and implement effective and efficient digital curation strategies and practices to ensure the long-term preservation and access to valuable University digital resources.	• Analysis and recommendations for long-term curation strategies. • Design of workflows for CDL-supported services. • Brokering acquisition and use of externally-provided services.

Current Portfolio: **Publish**

Service	Description	CDL Role
eScholarship	An institutional repository enhanced with open access publishing services. Acts as an alternative to traditional scholarly publishing channels, supporting the digital dissemination and publication of UC research at all stages of the scholarly lifecycle, including: journals, books, articles and working papers, conference proceedings, seminar/paper series, etc	• Historically a hosted vendor solution. In the midst of a transition to an XTF-based, CDL managed platform with enhanced access and submission services, reflecting the diversity of content and the increasing necessity of integrating papers with their data and integrating the IR with other UC systems. • Built using XTF, open source language. • Front end hosted by CDL. Back end hosted by the Berkeley Electronic Press, to transition to CDL in AY 2011-12.
UC Press e-Books	A joint project of UC Press and the CDL's Publishing Group, UC Press E-Books Collection (1982-2004) includes nearly 2,000 UC Press published books on a range of topics including art, science, history, music, religion and fiction. Access to the digital books is free for all UC faculty, staff and students. Over 750 titles are free to the public.	• Using XTF, built and deployed presentation and indexing for the UC Press. • Host and deliver the backlist content but do not add to it.
UC Publishing Services (UCPubS)	A collaboration between the CDL's Publishing Group and UC Press, UCPubS offers UC departments, research units and publishing programs the flexibility to provide free digital access to their book projects while retaining the ability to sell and/or distribute print copies.	Re-purposes technology used in eScholarship.

Current Portfolio: **Access**

Service	Description	CDL Role
Melvyl Catalog (and Next Generation)	The Melvyl catalog contains records for materials (books, journals, movies, maps, music scores and recordings, computer files, dissertations, government documents, etc.) held by the libraries of the ten UC campuses, the California State Library, UC Hastings College of the Law, the California Academy of Sciences, the California Historical Society, the Center for Research Libraries, the Graduate Theological Union, and the Lawrence Berkeley National Laboratory.	• CDL built original system which is based on a sophisticated merge algorithm. • In 2003, moved to vendor solution hosted in-house. • Currently in transition between CDL hosting the catalog and participating in a UC-wide initiative to move to a hosted vendor solution.
Resource Sharing	The Request service provides fast and convenient interlibrary loan (ILL) and document delivery service (DDS) to UC faculty, students, and staff. Users can access Request from the Melvyl® Catalog, UC-eLinks, or from Citation Linker.	• Host the technology and the fulfillment service for interlibrary loan. • Began with a vendor product, co-developed with the vendor to make it work for UC.
UC-eLinks	UC-eLinks connects scholars directly with articles and ebooks by providing an easy way to move from an article or book citation to the actual publication. UC-eLinks also lets users check to see if an item is available in the UC libraries and request items not available on their home campuses.	• Vendor solution was co-developed to meet UC needs and is now hosted on behalf of all UC campuses. • Manage vendor relationship and maintain software including implementation of upgrades, patches and fixes.

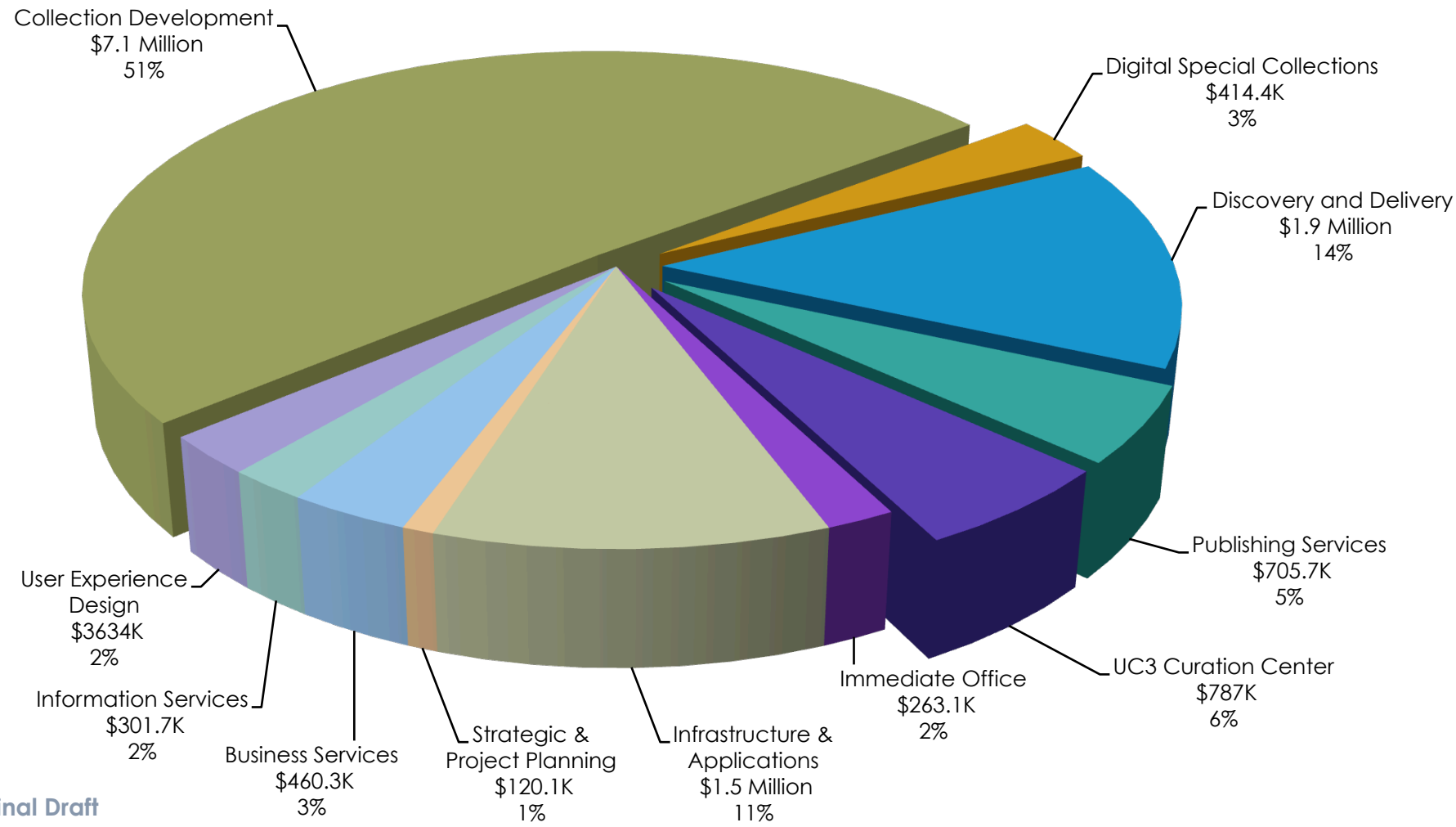
Current Portfolio: **Access**

Service	Description	CDL Role
Shared Cataloging	Provides bibliographic records for remote access CDL-licensed materials and designated open access electronic resources to the UC campuses for their ILSs (and through their ILSs, to Melvyl)	CDL-managed unit operating remotely at UC San Diego that utilizes UCSD's cataloging systems, leveraging campus capability for systemwide benefit
Metadata Management Services	Support current services, and create new services, such as the HathiTrust Metadata Management System, and the Print Archives Preservation Registry (PAPR) sponsored by the Center for Research Libraries that support larger UC initiatives.	• Database design, records ingest, merging and control for both Hathi Trust and PAPR (Print Archives and Preservation Registry). • Develop software that supports efficiencies in the Shared Cataloging program. • Run the ingest of bibliographic records that feed the Melvyl catalog and other related services. • Advocate for metadata standards and best practices at the national level
Online Archive of California (OAC)	Provides free public access to detailed descriptions of primary resource collections including manuscripts, photographs, artwork, scientific data—through more than 20,000 collection guides and 200,000 digitized images and documents. The content is contributed by more than 150 archives, special collections, libraries, historical societies, and museums at all 10 UC campuses and across California that house the original materials	• Developed end-to-end toolset to receive, store, and deliver special collections materials from around the state (including standards and tools to ingest objects and metadata). • Distribute the toolset to content producers and host the service.

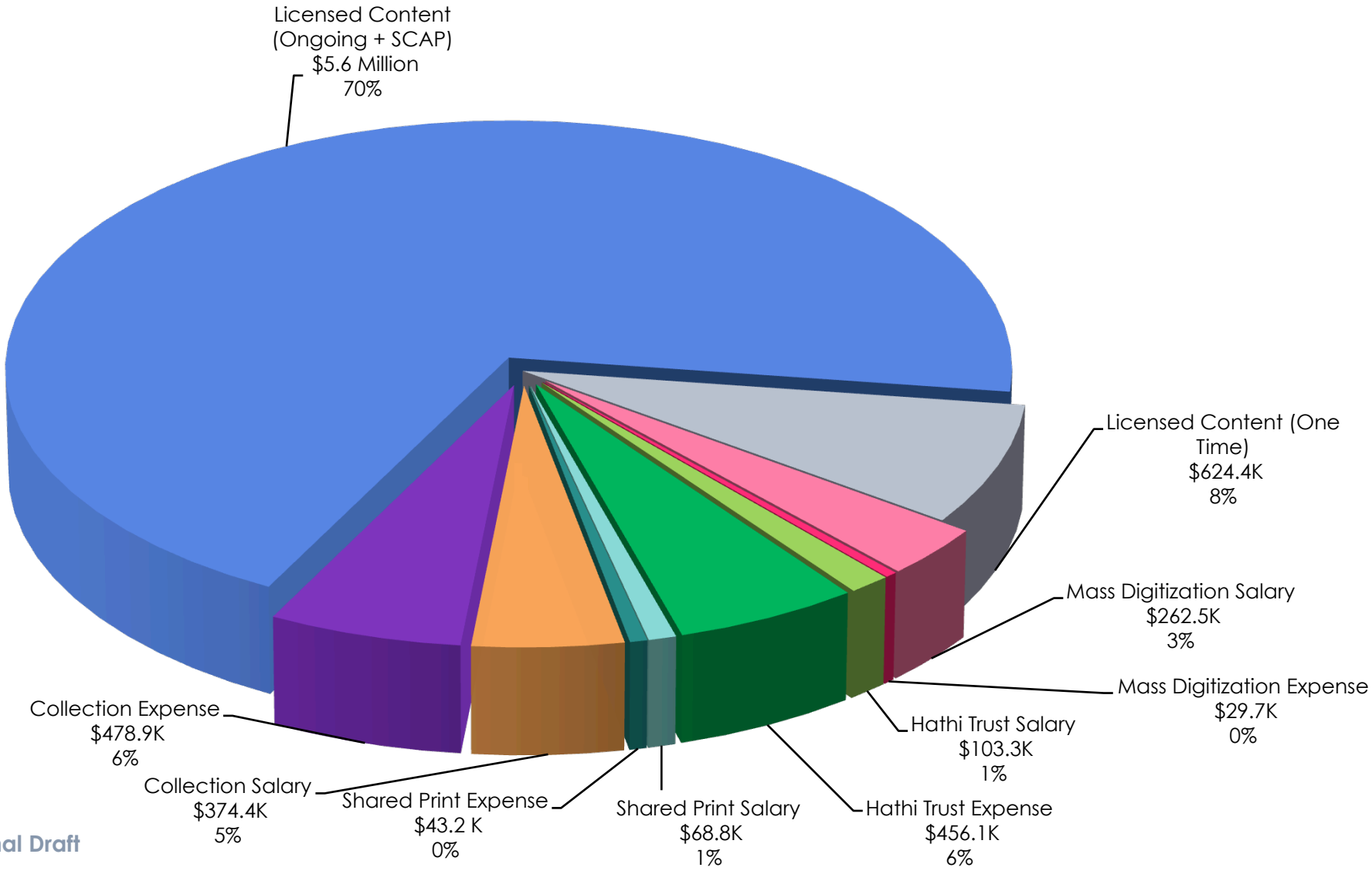
Current Portfolio: **Access**

Service	Description	CDL Role
Calisphere	A free website that offers educators, students, and the public access to more than 200,000 primary sources such as photographs, documents, newspapers, political cartoons, works of art, diaries, transcribed oral histories, and other cultural artifacts. These materials reveal the diverse history and culture of California and its role in national and world history. Calisphere takes content from OAC and repurposes it for K12 and general public through "themed collections" tied to California teaching standards.	• Primarily an access system and publishing system. • Built the technology and host the solution. • Code is open source (XTF) – developed and managed by CDL - and considered an industry standard for indexing and presentation software.
UC Shared Images	A collaborative, cross-campus program for building an aggregated image collection for classroom instruction and research. The collection is built by aggregating campus-based image collections with licensed system-wide resources from third-party vendors and selected open-access resources and loading content into a shared database.	• Formerly hosted a local Luna Insight instance to manage the service. A subsequent evaluation of available services led to a brokered business arrangement with ARTstor. • Work with ARTstor to maximize functionality for UC and to ingest content generated by UC. Maintain relationship. • May transition to a different platform (locally-developed or 3rd-party) in future in response to a new cost model for ARTstor's shared image functionality

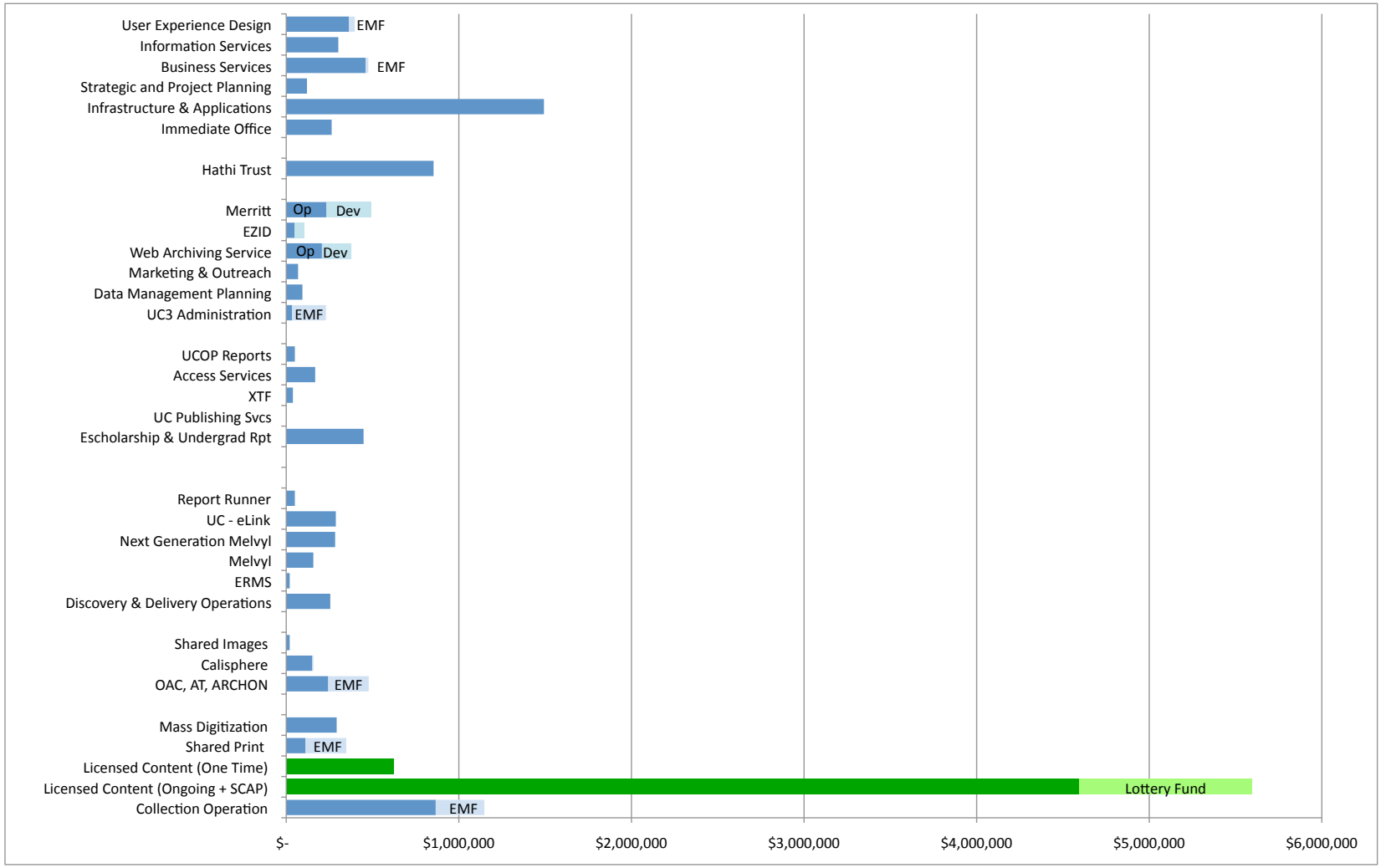
CDL Program Costs in 19900 Fund (2011-2012)



CDL Collection Development Program (2011-2012)



All Program Costs (2011-2012)



Assessment of Value

Value of CDL to UC and the community

The following items were most frequently cited by interviewees as the value that CDL provides to the University of California and to the broader community of libraries.

- ***Staff:*** An overwhelming majority of individuals interviewed for this review, UC employees and individuals from peer institutions alike, commented that the CDL has a staff comprised of smart, dedicated, accessible and innovative advisors and technologists – who are committed to collaboration. CDL provides a source of information, expertise and experience that many of UL's and peer institutions do not have internally and/or do not have the resources to build.

- ***Leadership:*** CDL has an established national and international reputation as a leader and innovator to the academic community in terms of digital content.
  - Licensing terms and conditions
  - Preservation and web archiving
  - Establishing standards for primary authoring
  - Developing open source software applications (XTF)

- ***Collaboration:*** Colleagues from peer institutions specifically commented that CDL is a trendsetter, partner and an exemplar for how to facilitate successful multi-site collaborations.
  - CDL is known in the broad library community as a thought leader for setting standards in licensing, shared print, scholarly communications, and publishing, and data curation.
  - CDL is a leading partner in its work with HathiTrust, WEST project and DataCite.

Value (con't)

- ***Licensing:*** CDL acts as a negotiating agent and broker for licensing scholarly content on behalf of the UC. In this role, the CDL has negotiated agreements with 34,500 electronic journals, and 508,000 ebooks and databases and enabled campuses to collectively avoid over $25 million in independent subscription fees. It addition CDL works with the UC Libraries' Librarians' Collections Development Committee to develop principles, analyses and formulas to evaluate the value of content.

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- ***To faculty*** CDL helps: 1)Increase the impact and reduce the costs of scholarly communications; 2) Provides information services (access, retrieval, publishing and preservation), and 3) Increase the competitiveness of UC faculty for winning grants and extramural funding.

Value (con't)

- ***Infrastructure:*** CDL aggregates technical resources and expertise on behalf of UC to build and maintain systems that support the entire research community. As a result, an affordable digital library infrastructure has been built for the University of California to support the ways in which scholarly information is accessed, shared and preserved. Examples of this infrastructure that were most often cited include:
  - Melvyl provides a single place to discover all of UC library collections – over 33 million items. The Next Generation Melvyl initiative will extend the scope of the collection globally providing access to over 200 million items from over 71,000 libraries and move to a hosted solution.
  - The Request service provide UC faculty, staff and students access to the entire UC library collection and allows for efficient transfer of materials between locations. This minimizes the need for libraries to hold duplicate copies of physical collections.
  - eScholarship provides all UC researchers an open access platform to digitally publish materials at all stages of their research process.
  - UC3 provides a preservation repository (Merritt) and associated resources (Web Archives and EZID) to manage, archive and share digital content.

Value (con't)

- ***Community***: CDL coordinates and facilitates UC participation in many community initiatives that provide opportunities to innovate with new technologies which have produced cost effective access and data curation solutions to the UC community.
  - UC is a founding member of the HathiTrust. HathiTrust "provides long-term preservation and access services for public domain and in copyright content from a variety of sources, including Google, the Internet Archive, and 50 partner research institutions". As a result of UC's participation in HathiTrust researchers can access over 7.5 million non- UC volumes through Melvyl.
  - CDL is directly involved in the development and support of a number of technology tools that support HathiTrust including technologies to locate, view, and link to content in HathiTrust as well as the management of metadata.
  - The Mellon Foundation has awarded the UC Libraries a three-year grant to support implementation of the Western Regional Storage Trust (WEST), a distributed shared print repository program for retrospective journal archives. Under the WEST program, over 20 participating libraries will consolidate print journal backfiles at major library storage facilities and at selected campus locations.
  - CDL works with the Internet Archive* and Google to digitize UC content and make it permanently accessible to the UC community and the public.

* IA is non-profit that was founded to build an Internet library. Its purposes include offering permanent access for researchers, historians, scholars, people with disabilities, and the general public to historical collections that exist in digital format.

Value (con't)

- ***Innovation:*** In addition to delivering existing tools and services CDL provides a focus on innovation and future trends in digital libraries digitization.
- ***Neutrality:*** CDL is able to facilitate collaboration and resource sharing among the UC campuses from a neutral position.
- ***Research competitiveness:*** Developments in data curation and preservation tools enable researchers to be more competitive on grant applications.
- ***Public service:*** CDL makes a strong contribution to the public service mission of UC through support of Calisphere and OAC as well as the scholarly materials available through the open access publishing platform of eScholarship and the web archives that are open to the public.

Recommendations

Summary of Recommendations

Interviewees expressed overwhelming confidence that the services and technologies provided by CDL will continue to position them for the future. In fact, it is noteworthy that none of the interviewees cited any CDL tools or services that do not add value or that should be stopped. However there are several recommendations suggested to enable CDL to maximize its potential and the use of University of California resources. The recommendations identified through the interview process are grouped into seven categories summarized in the table below and on the following pages.

Area	Recommendations
Roles and responsibilities	1. Clarify sharing and distribution of roles and responsibilities between CDL and the UC libraries and University Librarians.
Decision-making	2. Develop a formal yet nimble decision-making process that includes participation from the campus UL's to advise and guide CDL on priorities and to optimize investments for CDL.
Communications and Education	3. Create an overall communications and awareness program targeting University libraries (librarians and library staff) and users of CDL services.
Business Development	4. Aggressively pursue external funding as a mechanism to fund the innovation and the delivery of more robust services to faculty and students. 5. Expand fee-for-service offerings to external/ Non –UC entities.

Summary of Recommendations

Area	Need/Opportunity
Existing Processes and Services	6. Develop a research to production process that includes decision gates on funding models and service offerings to manage the lifecycle of CDL projects and initiatives. 7. Assess and strengthen user support for eScholarship. 8. Expand CDL's role in negotiating e-content to Increase coordination and optimization of resources spent on collections.
Emerging Opportunities	9. Test user/market demand and cost of emerging technology applications and services.
Internal Operations	10. Identify ways to create more integration and synergy among the Program Areas in order to maximize CDL service and tool offerings. 11. Align CDL services and staffing to support campus strategies for the digitization of Special Collections.

Area: Roles and Responsibilities

1. Clarify sharing and distribution of roles and responsibilities between CDL and the UC libraries and University librarians.

Background:

CDL exists in a dynamic relationship with libraries. The services provided by CDL directly impact the services that the University Libraries offer to meet their local client needs. The services and tools provided by CDL have grown over time and it is important that future directions and decisions are made in conjunction with the University Librarians and that the roles in the delivery of these services are clearly defined and understood. A group comprised of University Librarians, senior library staff and CDL senior leaders should be convened to discuss and clarify the specific roles and responsibilities of CDL versus a campus library in areas specific to priority setting, project management, communications and end-user support. A clear understanding of roles and responsibilities will help ensure that resources are employed most efficiently across CDL services. Specific areas that need to be addressed include:

- What role should the campuses play in setting direction and priorities of the CDL?
- In the absence of a dedicated unit, who should play or facilitate the role of system-wide library planning?
- What is the role of the campus vs. CDL in conducting investigative work to inform a future project?
- When should a project be managed by CDL versus a campus?
- What role should CDL have in communicating priorities, project status, etc to campus library staff and end-users beyond the University Librarians?
- What role should CDL have in directly educating and marketing to faculty and other end-users on CDL offerings and trends?
- In what areas should CDL make decisions with direct campus input? And in which areas can CDL act alone?

Final Draft

Area: Decision Making

2. Develop a formal yet nimble decision-making process that includes participation from the campus UL's to advise and guide CDL on priorities and to optimize investments for CDL.

Background:

Currently, there is no formal mechanism or process for UL's to provide input into the directions and priorities pursued by CDL, to discuss and evaluate the alignment of CDL priorities with campus needs, and to ensure a balance of input from all campuses, regardless of size.

A new decision-making process should be designed to support and enhance the relationship that CDL has with the campus libraries and one which balances the needs for UL input and supports CDL's current strength and ability to respond to outside forces with agility and independence. [NOTE: the Council of University Librarians is implementing a new process to review strategic priorities of the Libraries and CDL for AY2011-2012 which may address this issue].

Area: Communications

3. Create an overall communications and awareness program targeting University libraries (librarians and library staff) and users of CDL services.

Background:

The value of CDL will be greatly enhanced to the UC Librarians and campus library communities if there was more awareness of the available CDL services and tools. CDL's overall communications and training strategy should include clarification on what role of CDL plays for the University of California, what services are offered by CDL and how to access these services. In reviewing communications strategies CDL should also identify which audiences outside the direct library community would benefit from increased awareness and communication. For example, CDL could cultivate relationships with campus Vice Chancellors for Research and Office of Sponsored Projects to raise awareness about the data curation services available to researchers and to market the value these services can add to their grant proposals.

Area: Communications (con't)

Communications

- CDL uses a variety of mechanisms to communicate with its constituents including newsletters, meetings, speaking engagements, and status reports to the University Librarians. However several interviewees cited disconnects in information regarding current and future initiatives. Two examples that highlight this issue include:
    - Knowledge and understanding of the Data Curation Services offered by CDL is mixed. While some UL's cite these services as a value-added service provided by CDL, others are not clear what services are provided and how these services benefit the campuses.
    - Some UL's commented eScholarship was rolled out before campuses fully understood the benefits to the researchers, the underlying workflow requirements, and associated costs of the service.
- It was cited that CDL does a good job building tools and products but should improve communications regarding the priorities, rationale and value of the proposed projects and services to the campus libraries– before a project begins.

Area: Communications (con't)

Awareness

- CDL offers an extensive portfolio of tools and services to faculty, staff and students; however not all of these tools are understood by the University Librarians, campus library staff and faculty. eScholarship and the UC3 Curation services were areas most often cited as requiring more information about the available services and tools.
  - It is perceived that many faculty are not aware of eScholarship and its value even though CDL has developed a marketing guide describing the tool and tailored to faculty. Direct marketing to the faulty on all campuses is currently not the role of CDL.
  - Several ULs are not clear about what the data curation services are and their value to the research community.

- Additional areas where there are perceived gaps in education and awareness training include:
  - Scholarly communications and the related issues, e.g., copyright management, new NIH and NSF regulations, etc.
  - Best practices in managing the security of research data and how to implement data management plans.

Area: External Business Development

4. Aggressively pursue external funding as a mechanism to fund the innovation and the delivery of more robust services to faculty and students.

Background:

CDL is recognized nationally in its successes in the area of research and development. Through a series of grant opportunities over the last ten years CDL has been involved in a series of major innovation projects which has increased collaboration among several high profile organizations and expanded access to content and services by external organizations . These include the Online Archive of California with the California State Library, the Web Archiving Service with the Library of Congress, Western Regional Storage Trust with the Mellon foundation, Data ONE with NSF and Social Networks and Archival Content with the National Endowment for the Humanities. CDL has also brokered successful public/private partnerships for new services similar to CDL's with Google, Microsoft, and OCLC.

CDL should leverage its experience with sponsors and granting agencies and public/ private entities as a way to fund the research and development initiatives that are in alignment with emerging areas of interest for the campus libraries and CDL.

Area: External Business Development (con't)

5. Aggressively market the availability of fee-for services to non-UC entities and identify resources to assist with the development of business and marketing plans to support new offerings.

Background:

- As CDL moves into developing services that can be offered to entities outside the UC (such as EZID, Web Archiving, etc) it requires support to efficiently develop business models and fee structures and to market these solutions to the non UC community. CDL must either build the capabilities in-house or identify resources within UC that can facilitate this work.
- There may be opportunities for CDL to leverage its existing expertise in negotiating journal subscriptions on behalf of other entities. CDL should explore the legality, feasibility and demand of providing such a brokering service to other constituents in the state with whom UC does business, e.g. Venter Institute, Salk Institute, Scripps Institute, etc.

Area: Existing Tools and Services

6. Develop a research to production process that includes decision gates on funding models and service offerings to manage the lifecycle of CDL projects and initiatives.

Background:

- It is not always clear to University Librarians (and their staff) which CDL projects are in the R&D phase versus those which are more formally developed and in production. Further it is not always clear what the supporting funding model is for new initiatives and how much campuses will be expected to contribute to the overall cost of the project from development through support and maintenance.
- The total cost of ownership of introducing a new technology must be analyzed during the R&D phase and again as the initiative matures. The overall costs that should be considered include one time project costs, ongoing maintenance, and support (training, storage, etc) so that campuses can plan for the required resources.
- CDL must clearly identify those projects that are in R&D stage of review versus those which are more fully developed and in production phase of implementation. During the planning phase of a project the full lifecycle costs of the tool/service should be estimated with an estimate of the expected contribution required from campuses for funding and other support of the service. As a project progresses, the long-term funding model should be monitored and revised as appropriate. The project distinctions and funding model for CDL initiatives should be completed in dialogue shared with the campuses.

Area: Existing Tools and Services

7. Assess and strengthen user support for eScholarship.

Background:

In addition to the need to better market and educate faculty on the purpose and value of eScholarship, there is a need to better support those users who are already familiar with the tool. CDL should obtain feedback from users (contributors ,editors, authors or publishers) on current support processes and implement improvements to ensure that CDL is equipped to meet user support and response-time requirements.

Area: Existing Tools and Services (con't)

8. Expand CDL's role in negotiating e-content to increase coordination and optimization of resources spent on collections.

Background:

CDL has developed a national reputation for its work in negotiating journal subscriptions and setting national standards. CDL can add increased value to the UC by leveraging this experience into other areas including:

- Negotiation of licenses for e-content subscriptions (e.g., e-books)
- Negotiate for all media types that will appear in online and hybrid courses
- Work in partnership with the campuses to negotiate journal licenses for Tier 2 and 3 subscriptions
- Develop standard that will result in consistent licensing agreements.

Area: Potential New Services and Applications

9. Test user/market demand and the cost of emerging technology applications and services.

Background:

CDL's portfolio is not static and currently there are a number of new initiatives in various stages of review and exploration. CDL should systematically apply the lifecycle planning process recommended on page 45 to this portfolio of activities.

Through the interview process a number of new ideas were identified as potential needs of the CDL end-user base. In partnership with the University Librarians and other appropriate constituents, CDL should evaluate whether these opportunities (listed in the appendix) are in alignment with the goals and objectives of CDL and the libraries. The coordination structure should then be utilized to determine the project priority within the overall CDL portfolio.

Area: CDL Organization

10. Identify ways to create more integration and synergy among the Program Areas in order to maximize CDL service and tool offerings.

Background:

The current structure of CDL is organized by Programs and Services with analysts and technologists assigned to support a specific program area. The technologists have developed a structure to ensure that information regarding technology applications and infrastructure is shared across the Program areas. However business strategies are generally developed within Program areas without always proactively identifying potential synergies and opportunities for collaboration across CDL Program areas.

Area: CDL Operations

11. Align CDL services and staffing to support campus strategies for the digitization of Special Collections.

Background:

Special collections are historically unique or rare primary source materials and may have special security or handling needs. The campus librarians have a desire to digitize the special collections. In partnership with the campuses CDL should align its services and resources to support this trend.

Appendix

Interviewees

- *Steering Committee*
  - Shane Butler, UCLA, Professor of Classics and Associate Dean of Humanities
  - Jim Davis, UCLA, Vice Provost, Information Technology
  - Eric Kansa, UCB Information Sciences faculty
  - Clifford Lynch, Director, Coalition for Networked Information and adjunct professor at UCB, School of Information
  - Brian Schottlaender, UCSD University Librarian
  - Ginny Steel, UCSC University Librarian
  - Michael Yonezawa, Digital Library Services Group (DLSAG) member, Reference Librarian, UCR; statewide president of Librarians Association of UC (LAUC)

Interviewees

- *UCOP*
  - Dan Greenstein, Vice-Provost, Academic Planning, Programs and Coordination
  - Bill Tucker, Executive Director, Office of Technology Transfer
- Campus University Librarians (not on Steering Committee)
  - Thomas Leonard, UCB
  - Helen Henry and Gail Yokote (former acting co-librarians, UCD)
  - Gary Strong, UCLA
  - Gerald Lowell, UCI
  - Sherry DeDecker and Lucia Snowhill, Acting Co-librarians, UCSB
  - Ruth Jackson, UCR
  - Bruce Miller, UCM
  - Karen Butter, UCSF
- *Faculty*
  - Rich Schneider, UCSF Medical Sciences
  - Jim Hunt, UCB Engineering
- *Ed Tech Rep and DLSAG member*
  - Mara Hancock, UCB
- *UC Press*
  - Beki Simon
  - Laura Cerruti
- *Focus Group with SOPAG*
- *CDL Directors, Managers and Staff*
  - *Group Interviews with Program Directors, and Managers*
  - *Focus group with Technology Council and Project Managers*

Interviewees

- *Peer Institution Interviewees*
  - Bob Horton, Minnesota Historical Society
  - Karla Hahn Streib, Association of Research Libraries
  - Paula Kaufman, University of Illinois at Urbana-Champaign
  - Sayeed Choudhury, Johns Hopkins University
  - Jim Mullins, Purdue University

Emerging Opportunities

- Delivery and access to licensed resources on mobile devices and platforms (learning management systems) used by scholars.
- Ability to present resources in a unified fashion as a collection via a portal.
- Expert finder system that enables scholars to discover one another in terms of shared interests.
- Publishing digital textbooks with interactive, dynamic tools.
- Improved tools to manage the technical services required to manage libraries, e.g., automation tools.
- Availability of data repositories for students.
- Support for UC campus digital audio and video collection-building activity and delivery of digital audio and video.
- Enhanced support for collaborative electronic collection development and coordinated digitization of special collections across the UC.