



Digital Libraries at Stanford:

infrastructure, services, & projects for accessible content

Mark A. Matienzo / **@anarchivist**

Stanford University Libraries

ARL Diversity, Equity & Inclusion Programs webinar, 26 Apr 2018

My background



<https://matienzo.org/>

Stanford Digital Libraries as infrastructure and services

Stanford Libraries by the numbers

— — —

- **12 million** volumes
- **75,000** current serials
- **500,000** cartographic resources (maps, images)
- **59 million** manuscript pages across Special Collections
- **120** countries from which we acquire
- **400** languages represented
- **110,000** new volumes acquired each year

Stanford University Libraries (SUL)

— — —

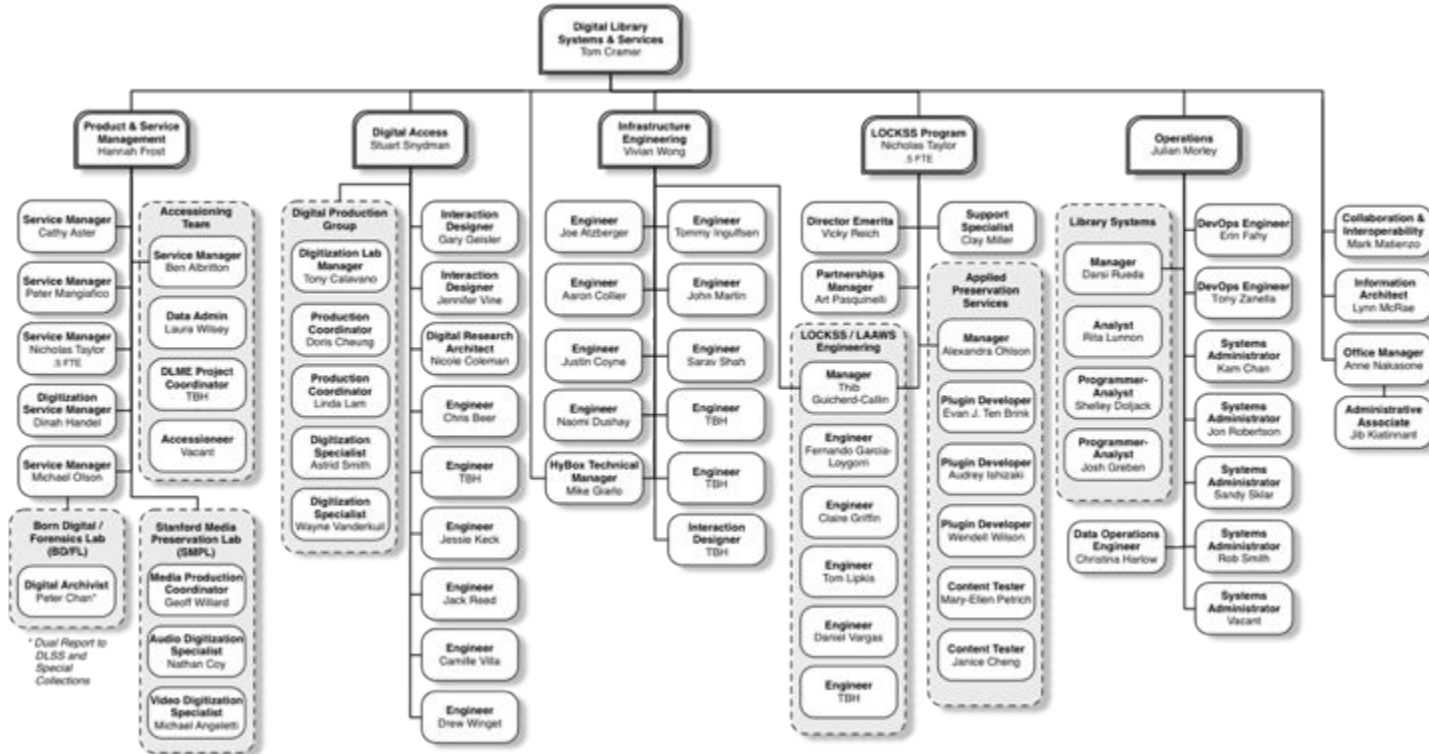
- 16 Libraries
 - ~450 staff
 - 68 subject / information specialists
 - 8th largest academic unit at Stanford (by budget)
 - Plus...
 - Stanford University Press
 - LOCKSS
- Art & Architecture (Bowes)
 - Archive of Recorded Sound
 - David Rumsey Map Center
 - Earth Sciences (Branner)
 - East Asia
 - Education (Cubberley)
 - Engineering (Terman)
 - Green
 - Lathrop
 - Marine Biology (Miller)
 - Music
 - Stanford Auxiliary Library 1&2 (SAL)
 - SAL 3
 - Science (Li and Ma)
 - Special Collections
 - Stanford Digital Repository

What Does a Library Do?

— — —

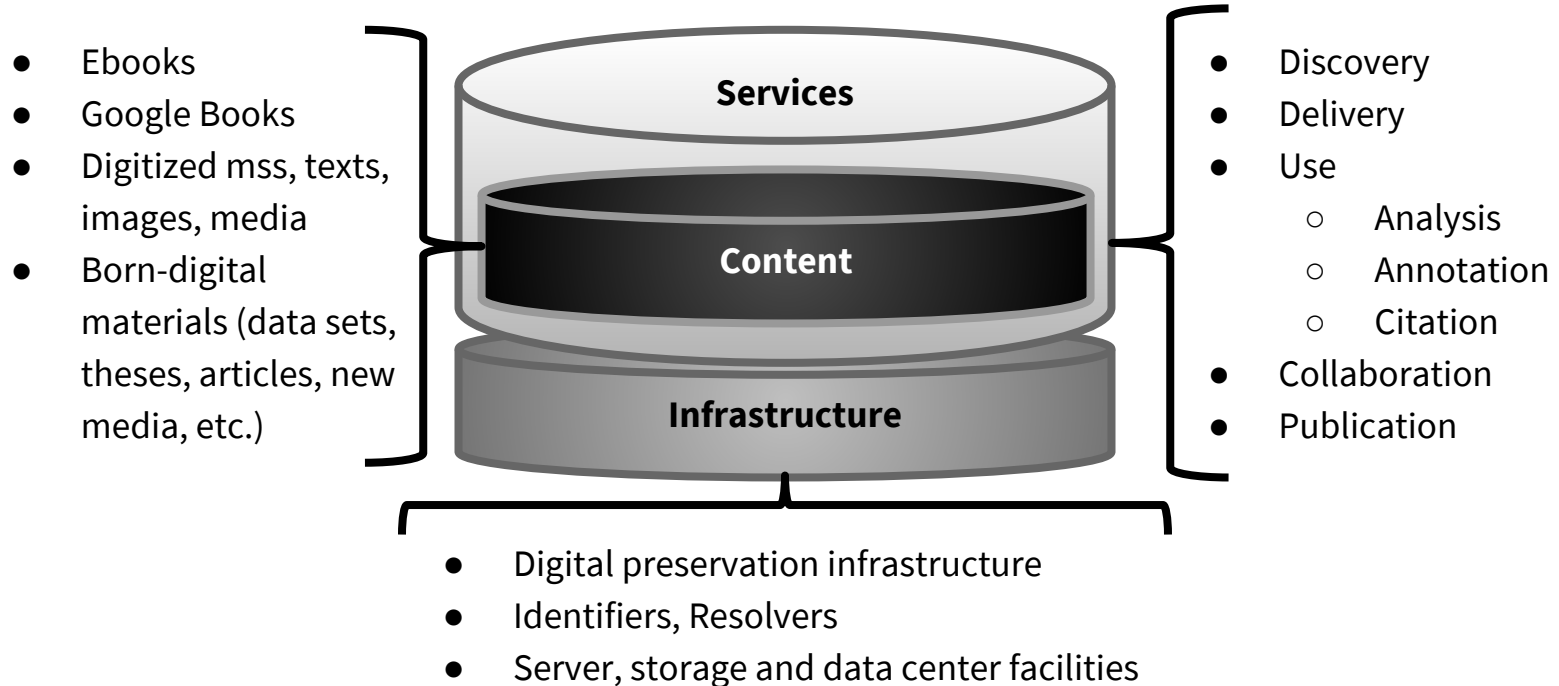
- **Select** resources to add to its collections
- **Acquire** those resources
- **Describe** the resources to enable discovery
- **Store** & manage items until such time as they are needed
- **Provide** access to the items to patrons on request
- **Preserve** the items so they are available to future scholars
- **Support** teaching, scholarship, and research needs

Digital Library Systems and Services

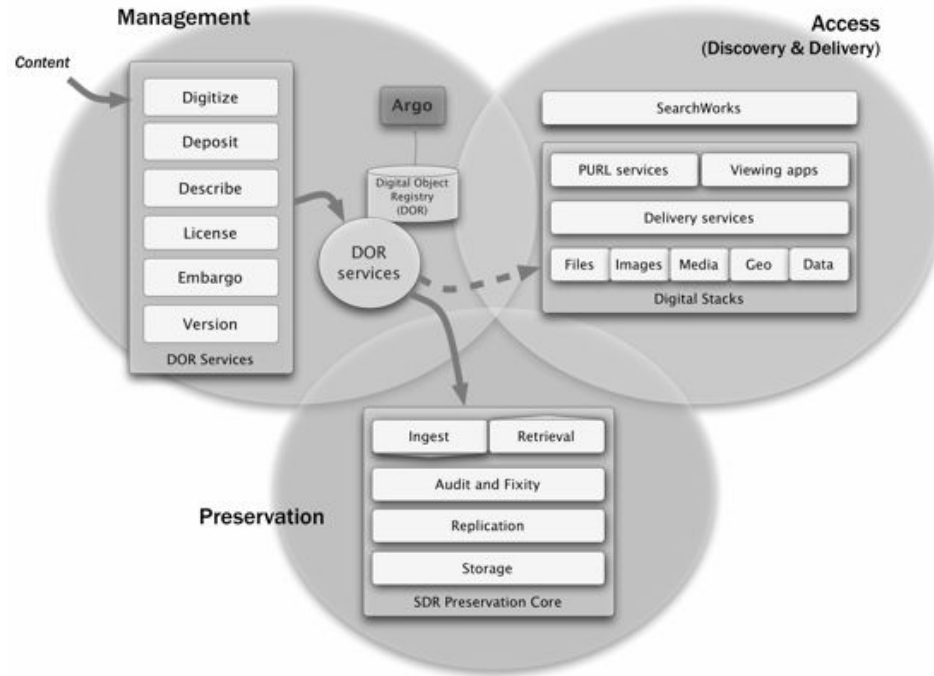


The Digital Library: Content, Services & Infrastructure

— — —



SDR: Manage, Preserve, Access



SDR at a Glance

- **2006:** 1st year of operation
- **1.6 million** Digital Objects
- **227 million** Files
- **1,800+** Collections
- **467 TB** Unique Data
- **930+** Depositors from **40+** departments

SDR's mission:

— — —

The Stanford Digital Repository (SDR) provides services to make scholarly resources

available over the long term

by helping ensure their

integrity, authenticity, and reusability.

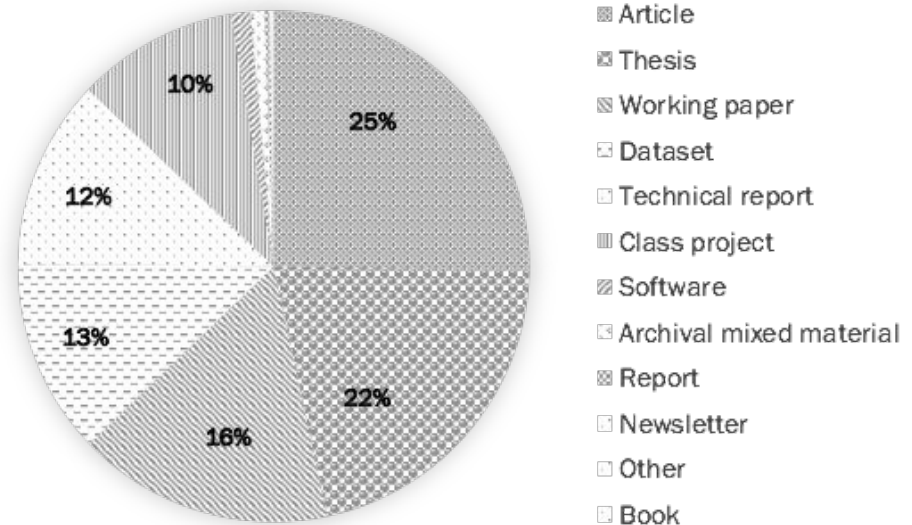
To fulfill its mission, the SDR must be

secure, sustainable and trustworthy.

Funder Mandates & Other Use Cases

- — —
- 1. Supplemental data files for published articles
- 2. Reproducible Research: sharing data & code
- 3. Complying with data management plans
- 4. Archiving pre-prints (with embargo support)
- 5. Publication archives
- 6. Open access articles
- 7. Dark archiving patent information
- 8. Enriched data access (e.g., large file access, video streaming, archived websites)

Distribution of Stanford Community SDR Deposits



Digitization

Stanford has digitized millions of items in the last 20 years:

- Books
- Images
- Maps
- Manuscripts
- Audio
- Video
- Film
- Legacy digital files
- 3D objects

To support

- Collection development
- Digital access
- Research projects
- New forms of research (AI, ML, etc.)
- Preservation

Digitization services

Digitization services +

Services +

Portfolio +

The labs +

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Stanford University Libraries provides high quality digitization services for materials in a wide variety of formats from across the library collections or from other cultural heritage institutions. Highly trained staff combine state-of-the-art digitization equipment with best practices to provide support for collection-level digitization projects, systematic digitization, as well as on-demand requests by Stanford researchers and other library patrons.

Featured collections



R. Buckminster Fuller Collection

Fuller's versatile career as an architect, lecturer, mathematician, writer, and social critic is documented extensively.



Riverwalk Jazz Collection

Riverwalk Jazz: Live At The Landing educated and entertained public radio listeners with a program devoted to celebrating traditional jazz and modern

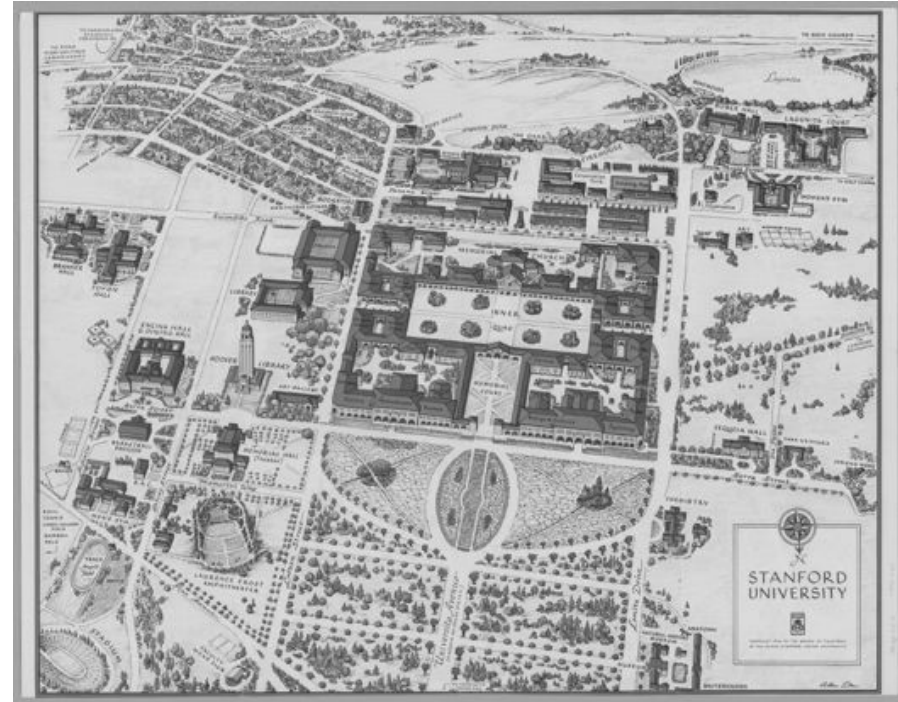
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- 3D objects

To support

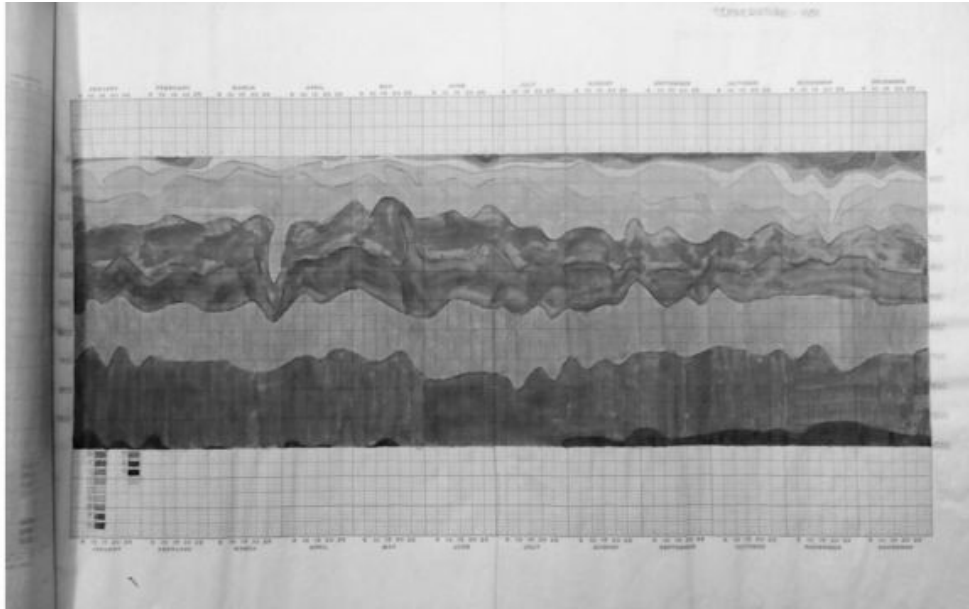
- Collection development
- Digital access
- Research projects
- New forms of research (AI, ML, etc.)
- Preservation



Stanford University by Arthur Lites, 1943 -
<https://purl.stanford.edu/jr426dw0774>

Preserving legacy research


Hopkins Marine Station CalCOFI hydrobiological survey of Monterey Bay, CA: 1951 - 1974 /



Project Goals

1. Digitize everything;
2. Rehouse materials in archival boxes;
3. Make content available via Stanford Digital Repository (SDR);
4. Convert select data from PDF to actionable format (tabular text).

Capturing new research

 **Stanford** | LIBRARIES

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Stanford Digital Repository – Online Deposit

[Home](#) / [Dynamic Design Lab](#) / [Autonomous Vehicle Control ... \(draft\)](#)

[View Draft](#) [Edit Draft](#) [History](#) [Datastreams](#)

Autonomous Vehicle Control Up to the Handling Limits for Emergency Scenarios: Supplemental Material

Item Details

Will be online at	https://purl.stanford.edu/jf481sc6894
In collection	Dynamic Design Lab (view items)
Deposited by	jfunke
Contact at	jfunke@stanford.edu
Version Details	v1.0.0 – Initial Version
Item created	2015-04-21 4:16 pm
Version started	2015-04-21 4:17 pm
Last saved	2015-04-21 4:23 pm

Authors and Contributors

Author	Funke, Joseph
Author	Brown, Matthew
Author	Erlie, Stephen
Author	Gerdes, J. Christian

STATUS Draft

☒

 Required fields completed

☒

 File(s) uploaded

☒

 Release and visibility settings reviewed

☒

 Terms of Deposit accepted

☒

 Item can be published

ACTIONS

Publish

☒

[View Terms of Deposit](#)

☒

[Share link to this item](#)

☐

[Discard this item](#)



Chris Gerdes
Director, Revs Program

Simplifying publication management

Stanford University Libraries
Stanford Digital Repository

Seismic Collapse Risk Assessment of Buildings: Effects of Intensity Measure Selection and Computational Approach

PREFERRED CITATION
Eads, L and Miranda, E. (2013). Seismic Collapse Risk Assessment of Buildings: Effects of Intensity Measure Selection and Computational Approach. John A. Blume Earthquake Engineering Center Technical Report 184. Stanford Digital Repository. Available at: <http://purl.stanford.edu/cn733sv2623>

COLLECTION
John A. Blume Earthquake Engineering Center Technical Report Series

1

TR184_Eads.pdf
4.06 MB

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Description

TYPE OF RESOURCE
Text

Stanford University
Log in for Blume and SEG Group

Blume Earthquake Engineering Center

Home About News and Events Publications Research Affiliates Links

Publications

Blume Center Technical Reports

Reliability of Marine Structures (RMS)

RMS Technical Reports

RMS Theses

CUREE Publications

Blume Center Technical Reports

No.	Title	Authors	Date Published
191	Ground motion simulations: validation and application for civil engineering problems	L. Burks and J. Baker	Oct 2015
190	A framework for engineering sustainable composites based on time-dependent material properties and environmental impact assessments: an application to bio-based composite design	S.A. Miller, M.D. Lepech and S.L. Billington	Sept 2015
189	Design of Composite RCS Special	D. Kathuria, H. Yoshikawa, S.	Sept 2015

Honoring Student Achievement

Stanford LIBRARIES

SearchWorks catalog All fields

Stanford Digital Repository

The SDR is Stanford University Libraries' managed repository for scholarly content of enduring value. It includes digitized content from our archival collections as well as research materials deposited by scholars.

Search SDR for: data | images | maps | collections

Start over Library: Stanford Digital Repository Genre: Thesis/Dissertation

Limit your search 6,734 results

Access

Resource type

Date

Library

Language

Author

Call number

Topic

Genre

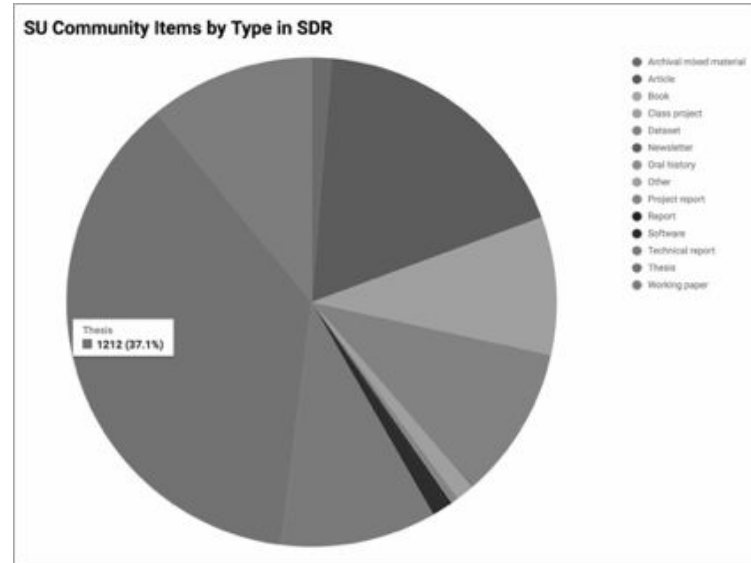
Region

Era

1 3D Printing of Bioengineered Functional Cardiac Tissues (2017) Online Hu, Daniel (Author) May 3, 2017 COLLECTION Undergraduate Theses, School of Engineering Summary Heart disease is the world's leading ca...

2 A Behavioral System for Imaging Prefrontal Cortex Activity in Freely Behaving Mice (2017) Online Nguyen, Nghia (Author) June 2, 2017 COLLECTION Undergraduate Theses, School of Engineering Summary The medial prefrontal cortex (mPFC) L...

3 "A Class on Whiteness?" Investigating the Need for Anti-Racist



Replaying lectures, performances, oral histories

■ Martin Luther King at Stanford [motion picture]



RESPONSIBILITY (MGB-TV)
IDENTITY (S.L. / S.A., 1967)
PHYSICAL DESCRIPTION 1 film reel (30 min.) : sd., b/w ; 16 mm.
1 streaming video file (47 min., 51 sec.) : digital, SDP file, sd., col.

42:06

Guerrilla Girls Whitney Action footage

COLLECTION Women art revolution : videotape interviews by Lynn Herschman-Leeson for film, 1990-2008



44:31

Oral history with Shahezadi Begam, 2015 July 25



27:33




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UNIVERSITY**

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- ▶ [Help, FAQ, Site Report](#)


STANFORD UNIVERSITY LIBRARIES

Stanford Web Archive Portal

A searchable collection of websites archived by Stanford University

Captured **14** times between December 8, 2012 and December 8, 2013

1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030																																												
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<http://www.stanford.edu>
<https://www.ec.gov.gh/>

STANFORD UNIVERSITY LIBRARIES

Stanford Web Archive Portal Home | Help

Showing <http://www.ec.gov.gh/> captured on Dec 8, 2012

[Previous capture](#)
[Show overlay](#)
[Next capture](#)

The Electoral Commission of Ghana

[HOME](#)
[2012 ASPIRANTS](#)
[ABOUT EC](#)
[ELECTORAL SYSTEM](#)
[POLITICAL PARTIES](#)
[REGULATIONS](#)
[2012 ELECTION RESULTS](#)



**HISTORIC
GHANAISANS QUEUE
TO VOTE**

Ghana

DEMARCATIONS

HOW TO REGISTER TO VOTE

HOW TO VOTE

THE ELECTORAL COMMISSION OF GHANA





ELECTION 2012 - STANDING ROOM

LIVE UPDATE OF PRESIDENTIAL & PARLIAMENTARY RESULTS










NEWS & EVENTS

- [BY NAC 2012](#)
PRESS RELEASE - ALL ELIGIBLE VOTERS IN THE QUEUE BEFORE 8:00PM ENTITLED TO VOTE.
- [BY EEC 2012](#)
PRESS RELEASE - ADJOURNMENT OF POLL AT POLLING STATIONS WHERE BIOMETRIC VERIFICATION OF VOTERS COULD
- [ON EEC 2012](#)
Special voting starts across the country
- [ON EEC 2012](#)
SECURITY PERSONNEL AND ELECTION OFFICIALS WHO COULD NOT VOTE IN SPECIAL VOTING TODAY TO VOTE ON FRID

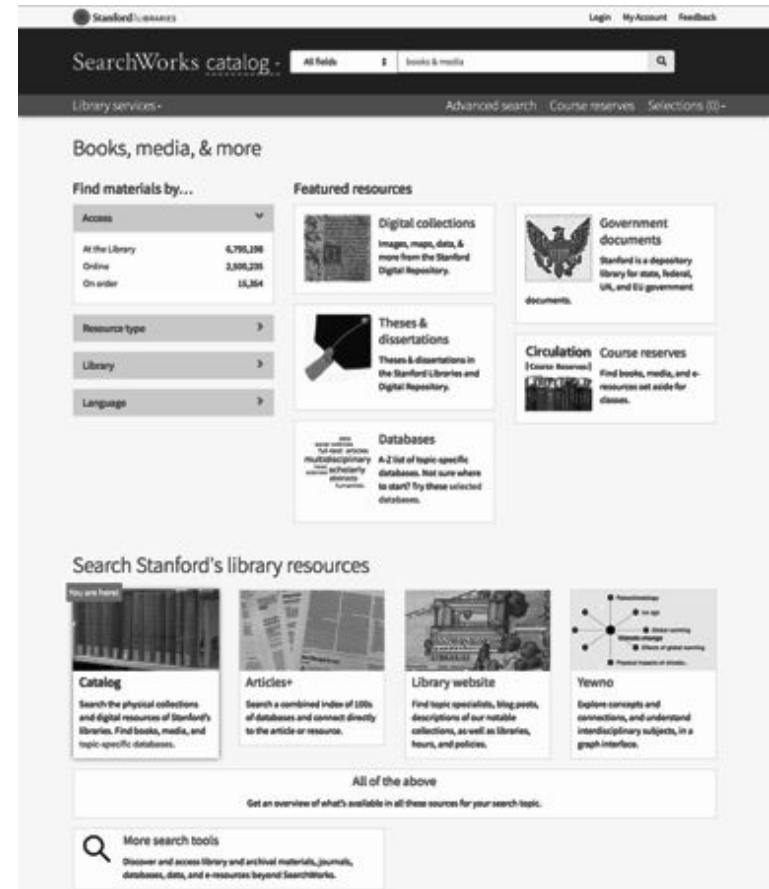
Supporting Access, Discovery, and Delivery

— — —

- SearchWorks
- Spotlight
- EarthWorks
- The International Image Interoperability Framework (IIIF)
- Requests and Course Reserves

SearchWorks

- Discovery environment (“library catalog”) for Stanford University
- Allows for searching and browsing of materials from SDR and Stanford’s libraries (inc. some outside of SUL), and articles
- Integrated access to digital resources, request management for delivery of materials, and citation generation



<https://searchworks.stanford.edu/>

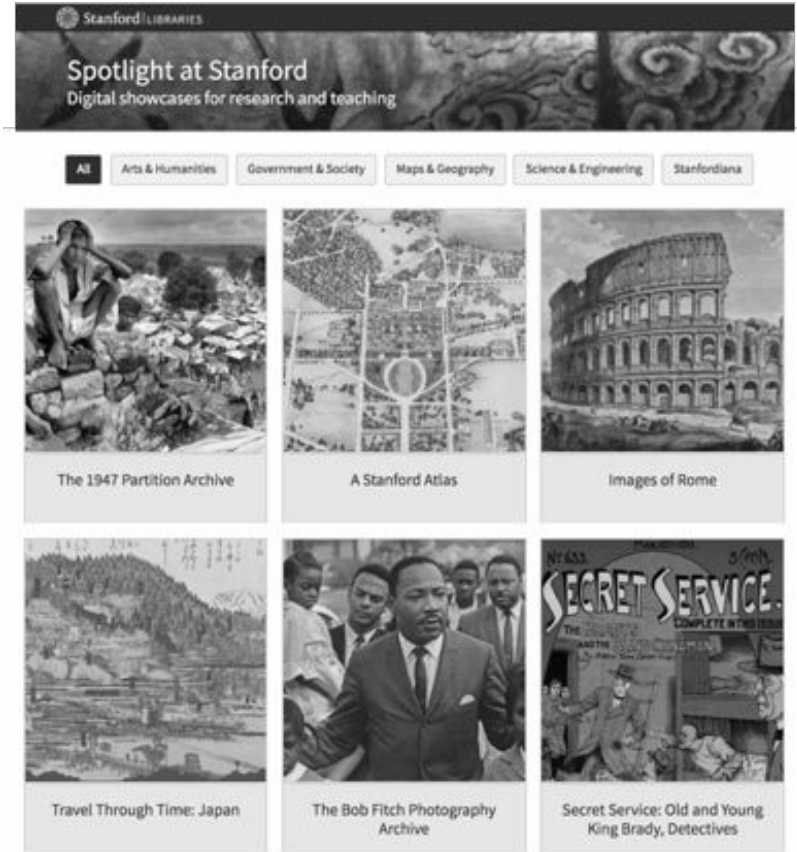
Spotlight

Full-featured website for showcasing digital collections:

- Visually attractive, responsive, and accessible website
- Self-service exhibit creation
- Powerful searching and browsing, multiple search result views, include gallery, slideshow, and map views
- Integrated with SDR and IIIF

Uses: rich digital libraries, digital exhibits, student portfolios and teaching tool

<https://library.stanford.edu/research/spotlight>



<https://exhibits.stanford.edu/>

EarthWorks

- Discovery of geospatial assets
 - Purchased
 - Licensed
 - Stanford-produced
 - Multi-institutional
- Direct access to geospatial web-services
 - Preview
 - Download
 - Sideload to online services

The screenshot shows the EarthWorks website interface. At the top, there's a header with the Stanford Libraries logo, the EarthWorks title, and links for Login and Feedback. Below the header is a search bar with the text "Find maps and data" and "Get started here". The main content area is divided into two sections: "Browse by category" and "Browse by location".

Browse by category

- Institution**: Represented by a house icon. Lists: Harvard, Stanford, Tufts, Columbia, Minnesota, MIT, MassGIS, Berkeley, UCLA, More.
- Data type**: Represented by a download icon. Lists: Polygons, Line, Point, Raster, Mixed, More.
- Placename**: Represented by a globe icon. Lists: California, Arctic Ocean, Europe, United States, Massachusetts, Pacific Ocean, Sonoma County, Calif., More.
- Subject**: Represented by a tag icon. Lists: Boundaries, Society, Urbanization, Administrative and political divisions, Imagery and Base Maps, Land use, Quatern, More.

Browse by location: Represented by a world map icon. Lists: Europe, U.S. Coastline, This country of

Institution (dropdown menu):

Institution	Count
Harvard	9,895
Stanford	8,205
Tufts	2,802
Columbia	2,795
Minnesota	2,258
MIT	2,127
MassGIS	398
Berkeley	150

<https://earthworks.stanford.edu/>

International Image Interoperability Framework

- Open international community building specifications for rich access to image and other resources
- Used to support deep zoom, presentation, annotation, and comparison of images
- Expanding to provide support for audiovisual materials and 3D resources



Le manuscrit 5 de la
Bibliothèque municipale
de Châteauroux, c. 1460

Folio in BVMM
Miniature in the BNF








<https://iiif.io/>

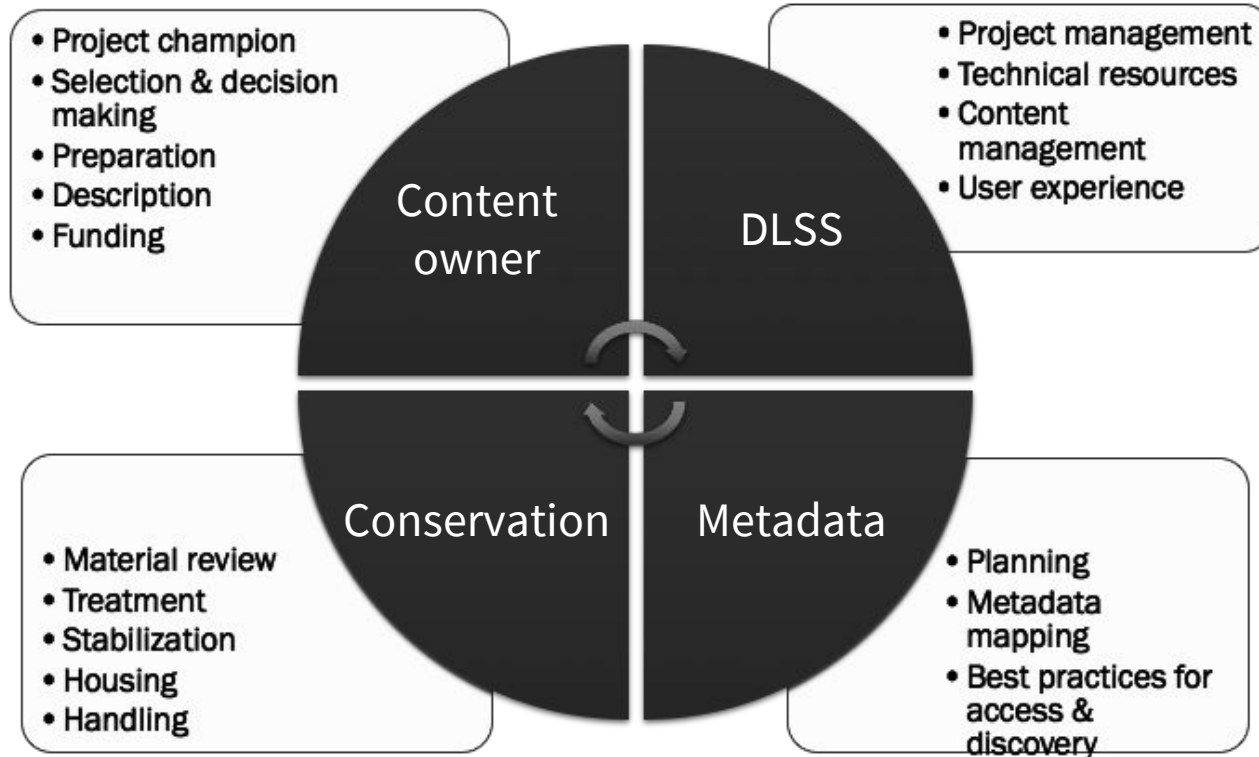
How digital library projects happen: content and projects

Digital Object Life Cycle

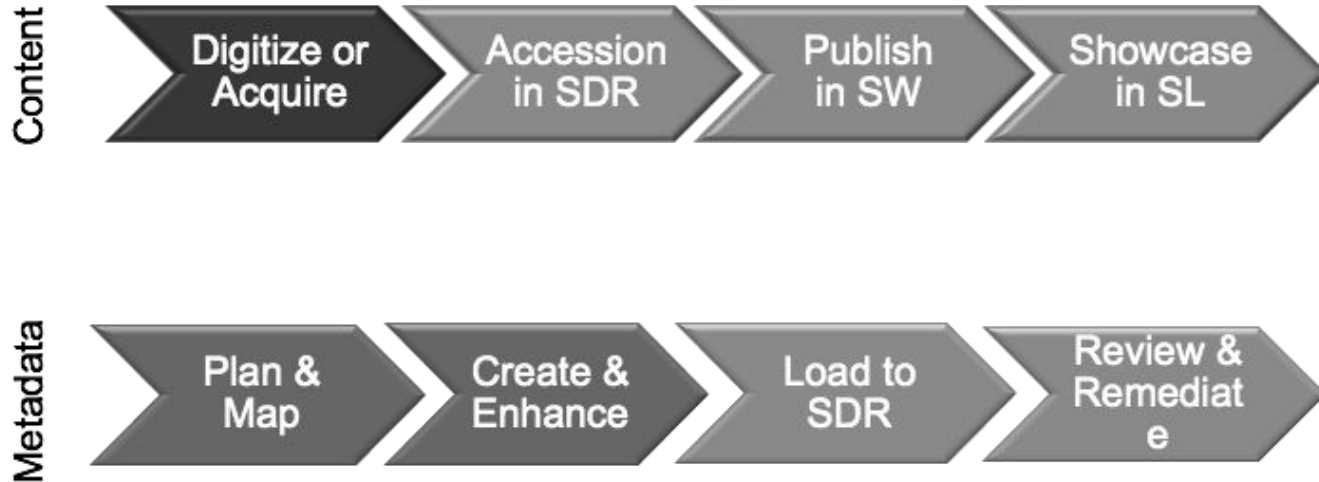
— — —

Original	Capture	Accession: PURL/SDR	Index: SearchWorks	Showcase: Spotlight
				
Accessible:	Limited	✓	✓	✓
Preserved:		✓	✓	✓
Discoverable:			✓	✓
Curated:				✓

Stakeholder Roles and Responsibilities



Digitization/Acquisition



Digitization/Acquisition is a Team Effort



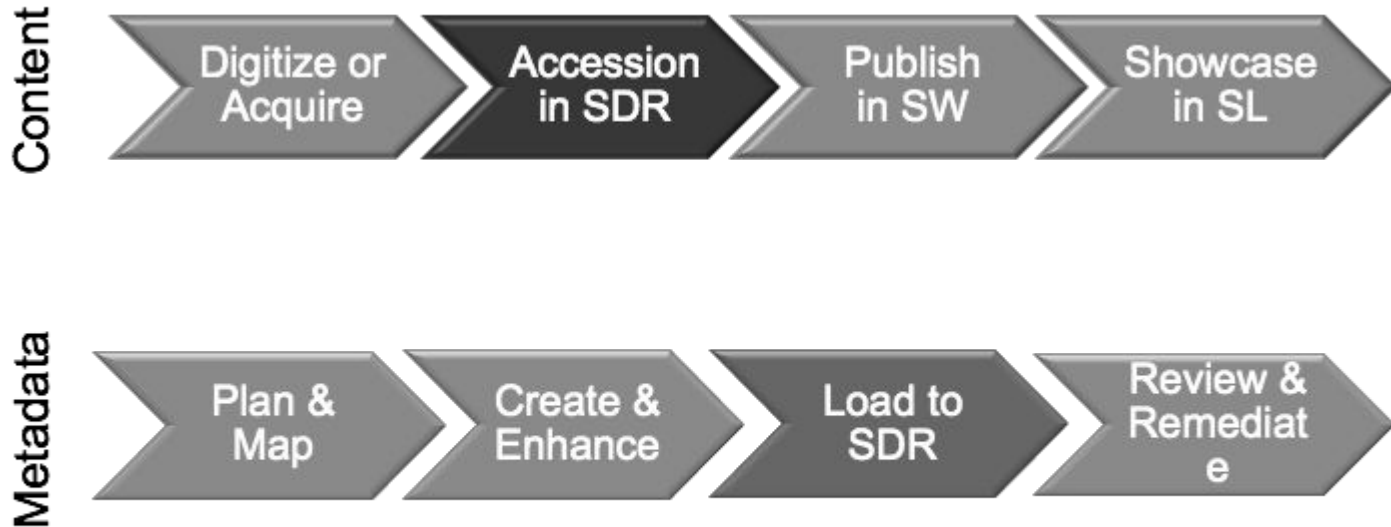
What always takes longer than you think

— — —

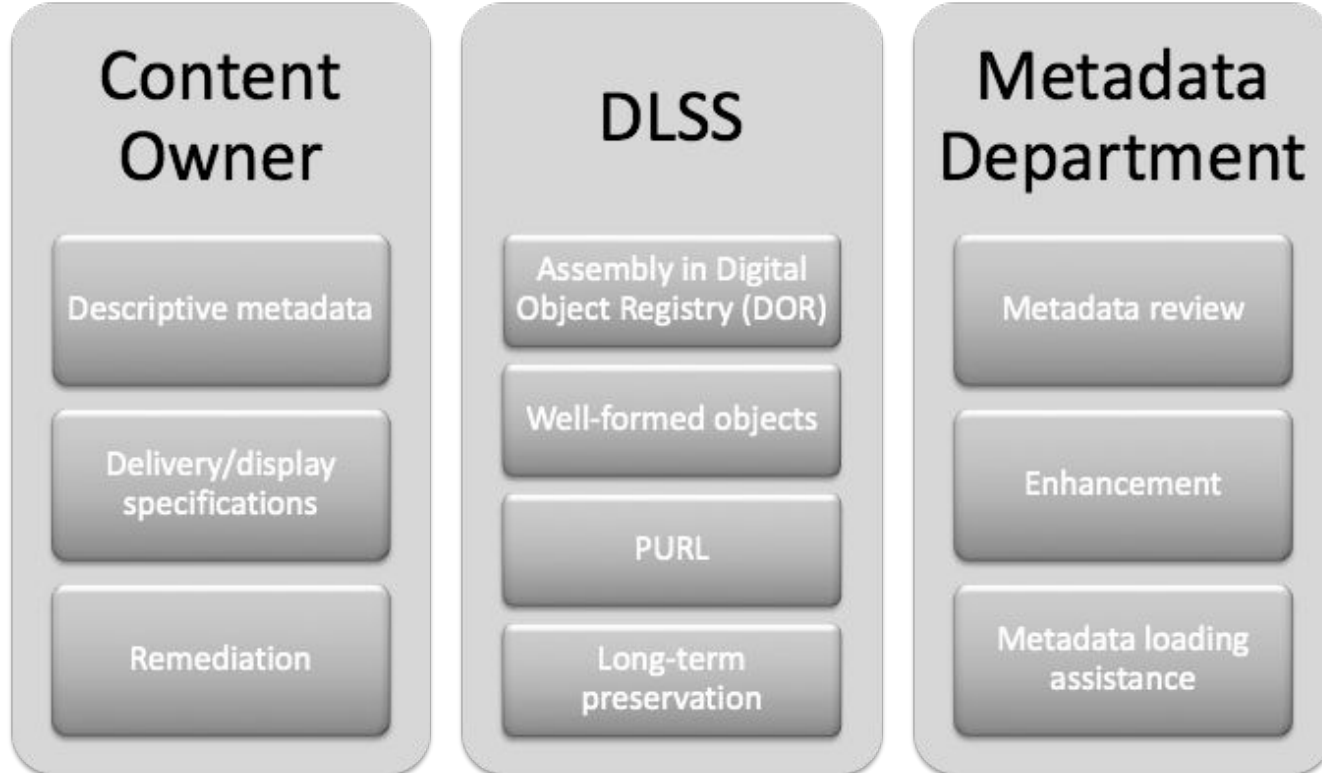
- Determining rights and access
- Creating descriptive metadata
- Competing priorities across projects
- Digitization or data wrangling complications



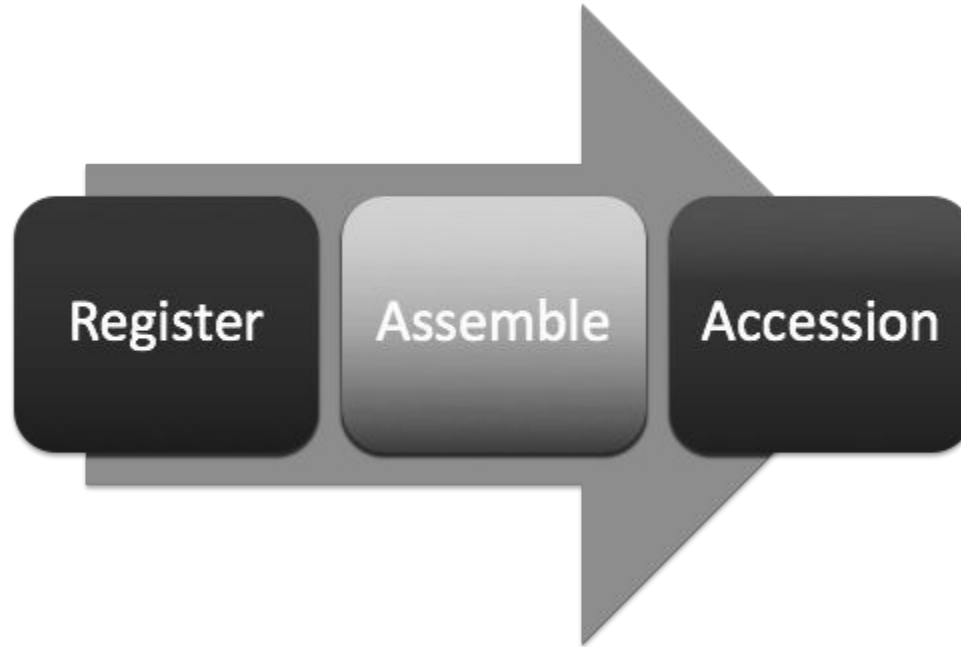
Accessioning



Creating Digital Objects is a Team Effort



Accessioning process



Assembly

— — —



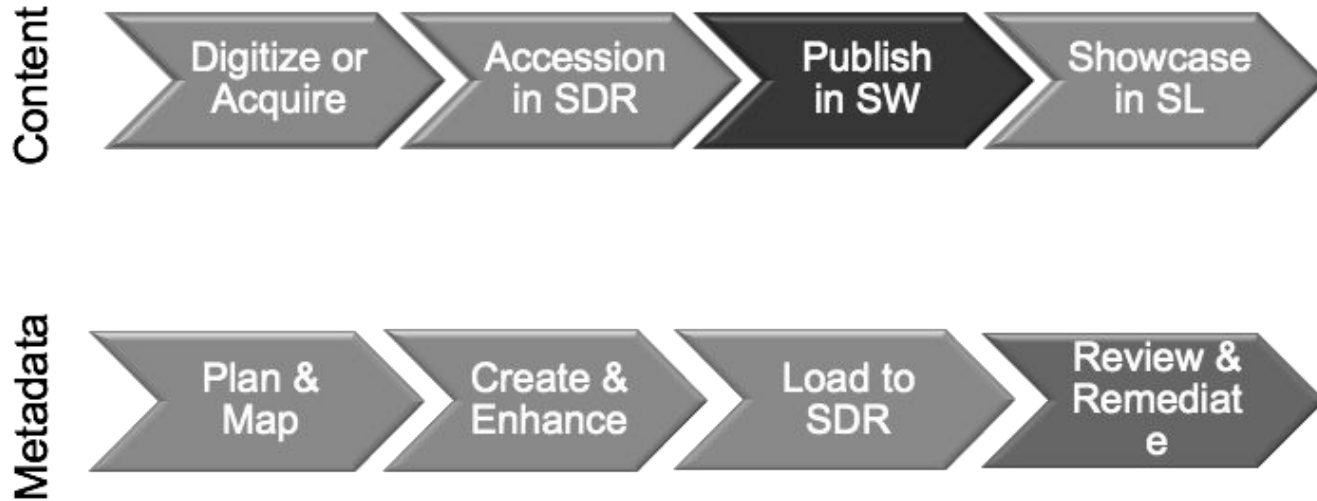
What always takes longer than you think

— — —

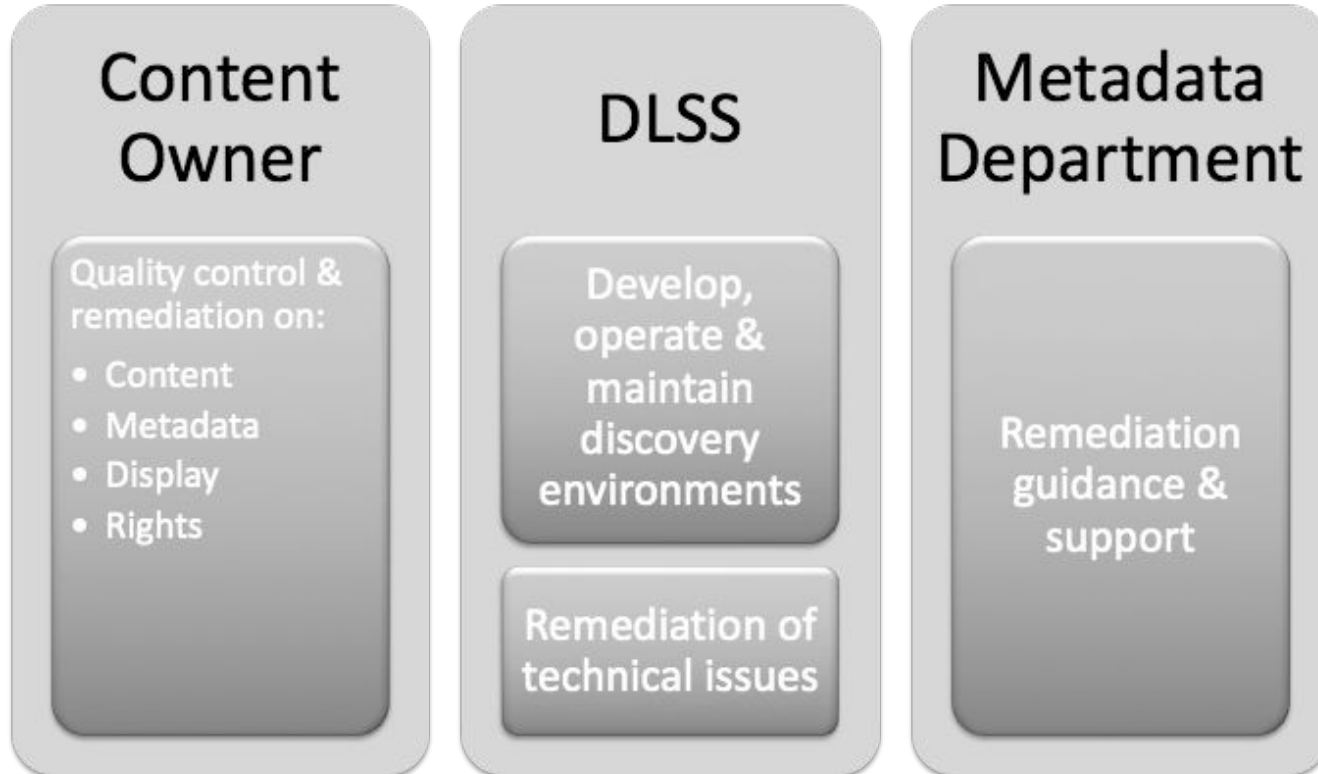
- Modeling the digital content
- Incomplete metadata
- Technical errors



Publishing in SearchWorks



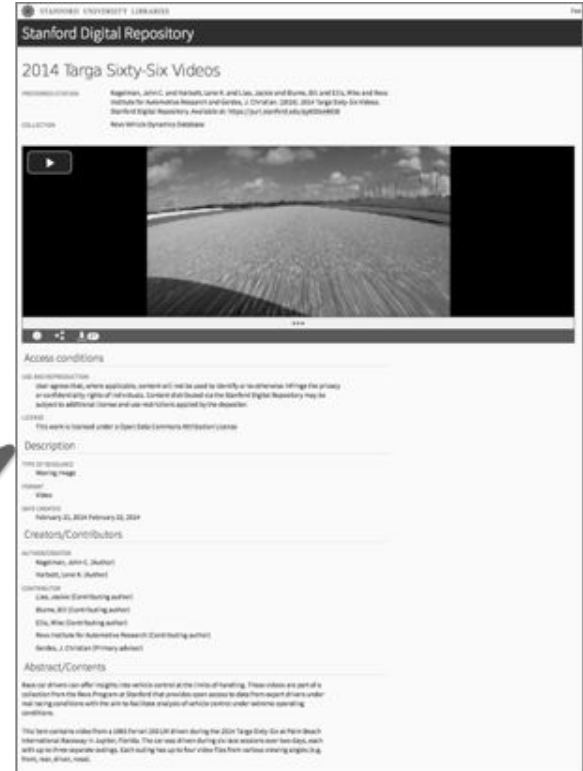
Publishing is a team effort



Minimum Metadata for SearchWorks

- Title
- Creator
- Language
- Type of Resource
- Date
- & preferably more!

Metadata
supporting
discovery



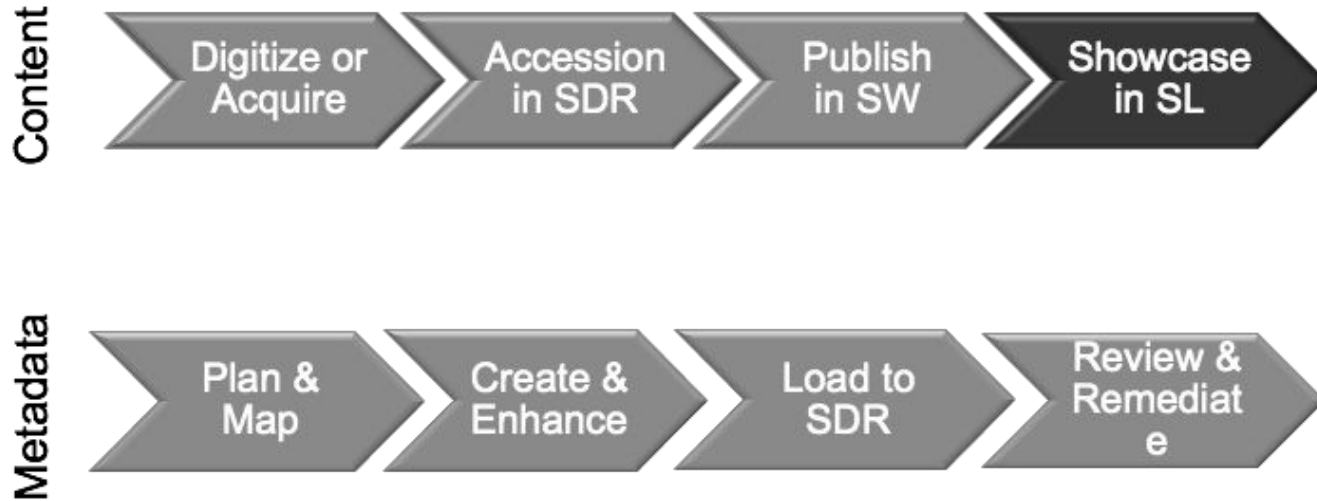
What always takes longer than you think

— — —

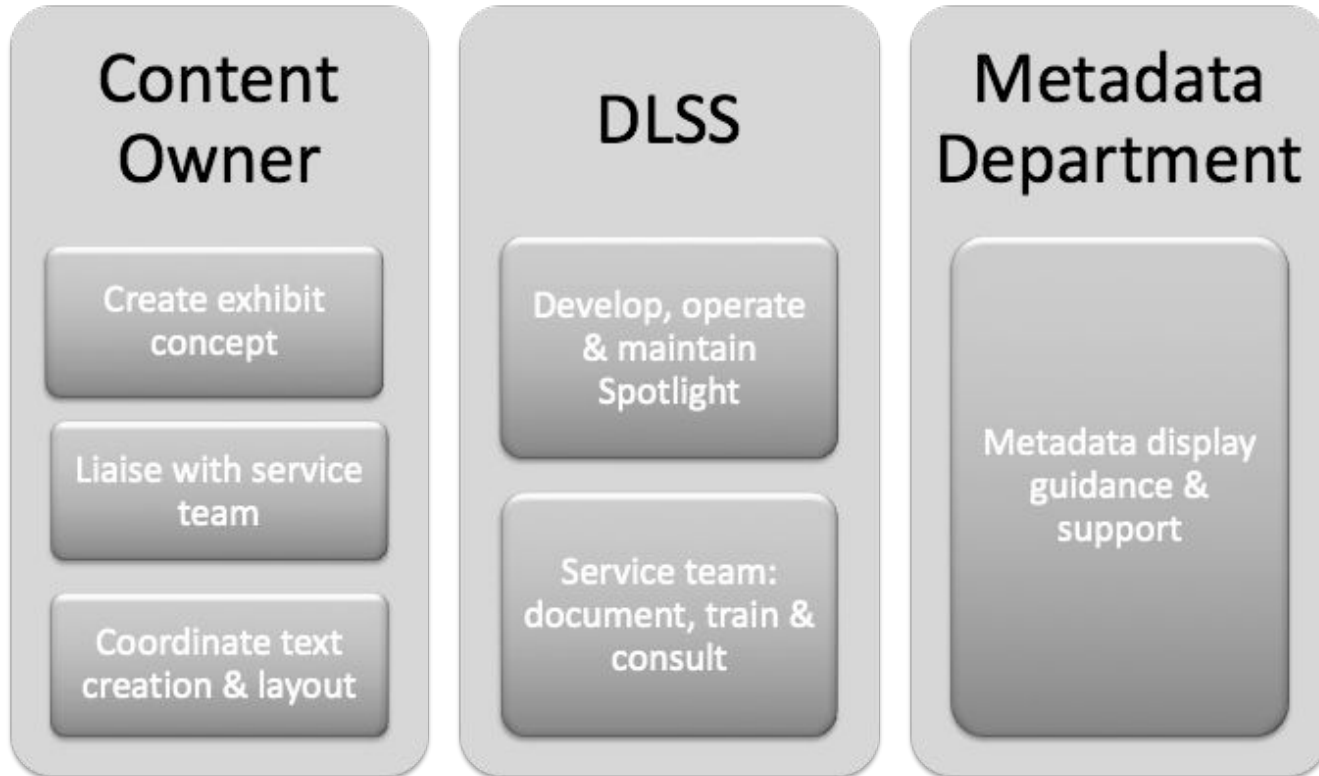
- Remediation of descriptive metadata
- For archival materials in the SDR, adding PURL links to finding aids



Building Exhibitions in Spotlight



Building an Exhibit is a Team Effort



exhibits.stanford.edu

— — —

STANFORD UNIVERSITY LIBRARIES

Online Exhibits

Notable collections showcased by Stanford librarians, archivists, and other curators

All Arts & Humanities Government & Society Maps & Geography Science & Engineering Stanfordiana



David Rumsey Map Center



Herbert Matter: Modernist Photography and Graphic Design



Rare Music Materials at Stanford



Helen Mayer Harrison and Newton Harrison



California as an Island in Maps



The Bob Fitch Photography Archive

Why Spotlight?

— — —

What are the options for highlighting, showcasing, or publicizing a collection?

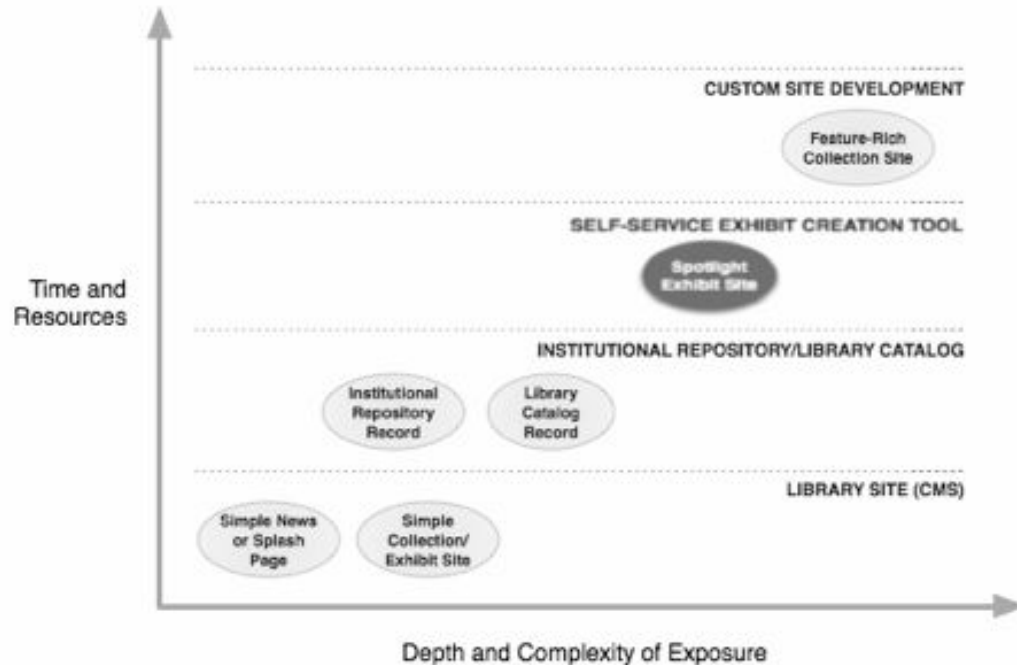
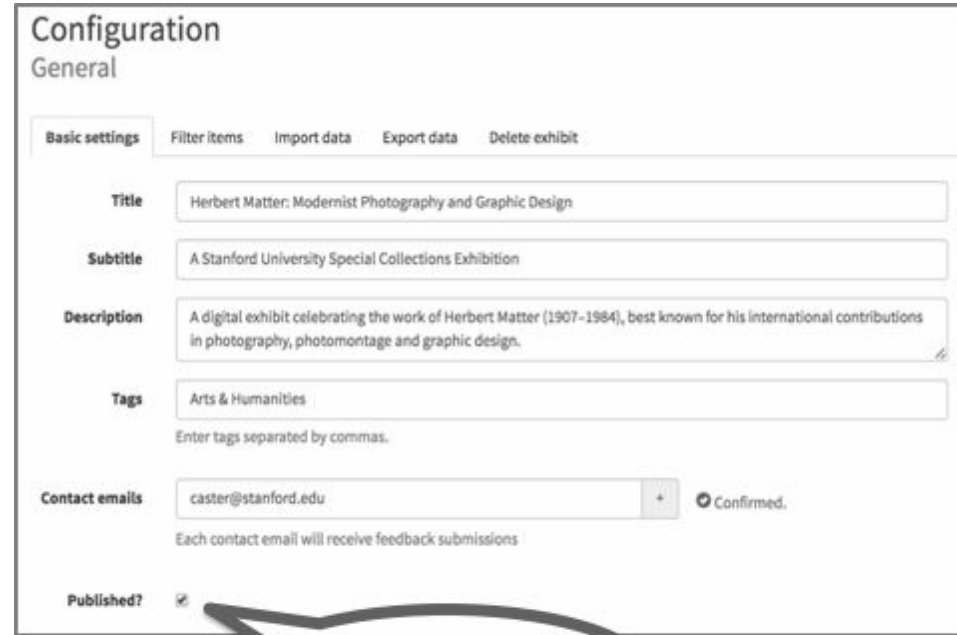


Exhibit Creator Perspective

— — —
Easy-to-use, form-based exhibit building process:

- Site identity (title, subtitle, contacts, masthead image)
- User and role management
- Metadata fields to display on page-by-page basis
- Easy to create browse categories
- Import and export exhibit content and configuration settings
- Widget-based page configuration



The screenshot shows a web interface for configuring an exhibit. At the top, the title 'Configuration' is followed by a sub-tab 'General'. Below this is a horizontal menu with five options: 'Basic settings' (which is highlighted), 'Filter items', 'Import data', 'Export data', and 'Delete exhibit'. The main form area contains several fields: 'Title' with the text 'Herbert Matter: Modernist Photography and Graphic Design'; 'Subtitle' with 'A Stanford University Special Collections Exhibition'; 'Description' with a paragraph about Herbert Matter (1907-1984); 'Tags' with 'Arts & Humanities' and a note 'Enter tags separated by commas.'; 'Contact emails' with 'caster@stanford.edu', a plus icon, and a 'Confirmed' status; and a 'Published?' checkbox which is checked. A speech bubble points to the 'Published?' checkbox.

Configuration
General

Basic settings Filter items Import data Export data Delete exhibit

Title Herbert Matter: Modernist Photography and Graphic Design

Subtitle A Stanford University Special Collections Exhibition

Description A digital exhibit celebrating the work of Herbert Matter (1907-1984), best known for his international contributions in photography, photomontage and graphic design.

Tags Arts & Humanities
Enter tags separated by commas.

Contact emails caster@stanford.edu + Confirmed.
Each contact email will receive feedback submissions

Published? ☒

Curator controls when
exhibit is published

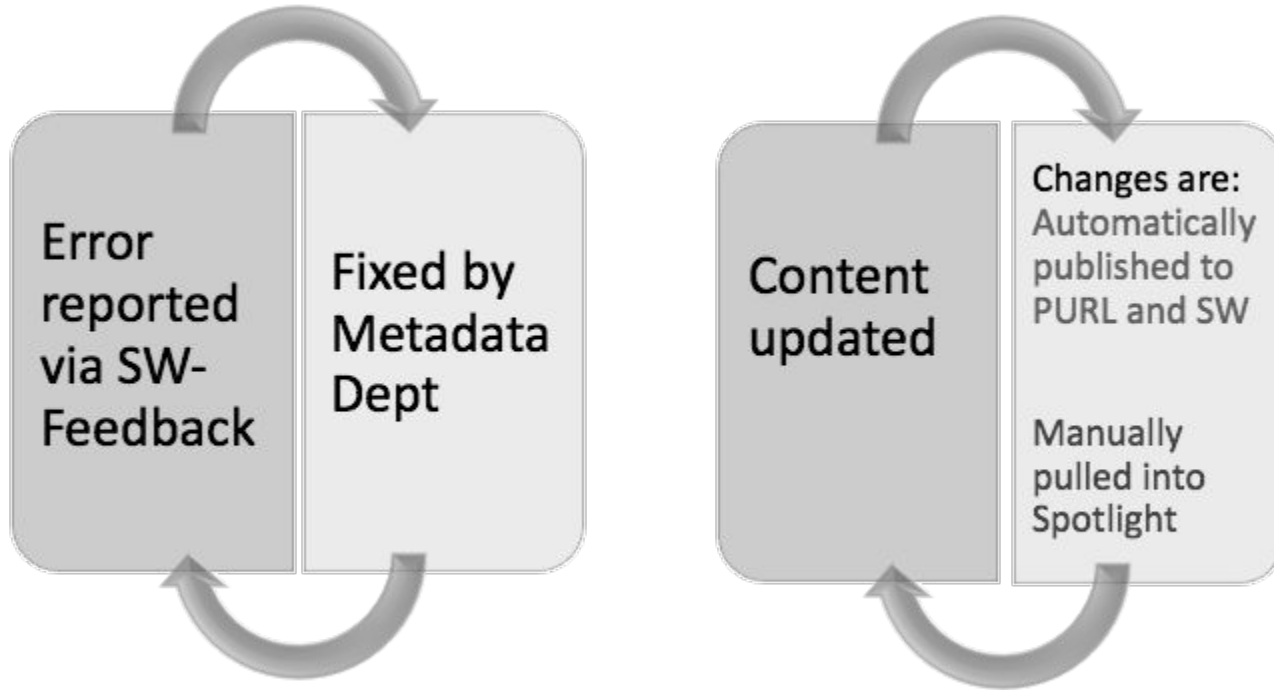
What always takes longer than you think

— — —

- Exhibit planning – purpose, context & narrative
- Supplemental content identification
- Refinement with key stakeholders & service team



Ongoing Maintenance



Summary



Thank You!

Questions?

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