Calibrating and Catalyzing: Technology and Service Strategy Considerations for the LANL Research Library

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LANL RL DGL candidacy job talk
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“Moving Rocks on the Racetrack: Mystery Solved” by Jeff Sullivan under CC BY-NC-ND 2.0
job talk questions

• What **experience** do you bring to the Research Library and the Laboratory?

• What is your vision for the **future of technology in research libraries** generally and LANL's Research Library specifically?
  – In this context, please also address aspects of the adoption, development, maintenance, and long-term management of (new) information services.

• Please outline your thoughts and your **proposed path** to accomplishing goals that would get us closer to your vision.
NO ONE CARES ABOUT TECHNOLOGY

“Message From The Unseen World” by R~P~M under CC BY-NC-ND 2.0
THEY CARE ABOUT VALUE

“Gathered around the fire, End of the Road festival” by Mr Seb under CC BY-ND 2.0
TECHNOLOGY IS NECESSARY TO THE FUTURE OF RESEARCH LIBRARIES, INCLUDING LANL, BUT IT DOESN'T ITSELF ASSURE IT
overview

• self-introduction
• strategic landscape
• services vision
• guiding principles
• services lifecycle
SELF-INTRODUCTION

“Light Painting” by Gwen Lancel under CC BY 2.0
hello, my name is Nicholas...
12+ years in research libraries

- U.S. Supreme Court Library (2007–2010)
- Stanford Libraries
  - Web Archiving (2013–2016)
  - LOCKSS Program (2017–present)
U.S. Supreme Court Library (2007–2010)

- **role**: Library Technology Specialist
- **summary**: supporting library technology in a restricted information environment
- **activities**: technical support, ILS + intranet admin, documentation, website management, scripting, training

“scotus1.jpg” under Fair Use

- **role**: Data Specialist, Web Archiving
- **summary**: serving web archiving operational needs within a gov org
- **activities**: web archiving workflow improvement, data transfer, software dev coordination, QA, central IT + contractor liaison, program representation

• **role:** Web Archiving Service Manager

• **summary:** setting up a new web archiving program in an academic environment

• **activities:** service dev + management, product ownership, policy dev, project support, user outreach, community representation
Stanford Libraries – LOCKSS Program (2017–present)

- **role:** Program Manager, **LOCKSS + Web Archiving**
- **summary:** running a 20yo P&L digital preservation service provider w/ dozen staff
- **activities:** program + service management, budgeting, partnerships, product ownership, strategy, community leadership
Lots of Copies Keep Stuff Safe

- principle, program, software, community
- bottom-up view on risks to digital info
- enable distributed, local custody by communities
- validate co-stored data via consensus + reputation
- built for PCA, later generalized
- operates under "Red Hat" business model as SU Auxiliary

“Domino’s” by david pacey under CC BY 2.0
STRATEGIC LANDSCAPE
digital stewardship

trends:
• more (+ different) content to preserve
• ambivalence about:
  – what to preserve...
  – at what level

implications:
• strong pressure to define digital preservation down
• be deliberate about trade-offs
• greatest threat is (still) economic
trends:
• growing recognition of the value of values alignment
• innovation, but also consolidation, lack of coordination, sustainability challenges
• lots more technologies than solutions

implications:
• open infrastructure (still) needs business models
• new frameworks for solutions dev, advocacy, funding, interoperability
open access

trends:
• funder policies + prerogatives
• growing researcher awareness + buy-in
• “Big Deal” giving way to “Read and Publish”

implications:
• democratize access to scholarly pubs
• less custodial interest for preservation, but more for data mining

“Open Everywhere” by Alan Levine under Public Domain
web centrality

trends:
• evolving research lifecycle
• research sources live on the web
• “web archiving” → “archiving”
• consolidated web archiving capacity

implications:
• favor web- rather than library-centric approach to services
• participate in standards-setting
• web archiving (still) needs to be mainstreamed in digital libraries
“inside-out” library

trends:
• discovery happens beyond library
• network- vs. institution-scale services

implications:
• reconceptualize library collecting, stewardship, access facilitation
• build library services around user workflows
• APIs + interoperability relatively more important

"Externalising" by Michael Coghlan under CC BY-SA 2.0
research data

trends:
• research data as “first-class” scholarly objects
• funder pressure for research data management
• open science, reproducibility driving normative change

implications:
• opportunity for better science + new stewardship capacities
• unsettled landscape of services + providers
change debt

trends:
• purposeful conservatism
• **serials crisis**
• less valued relatively by parent orgs

implications:
• potential new roles more contested
• under-capitalized to self-transform
LANL RL strategy + services

• LANL RL has been responsive to changing strategic landscape
• national security context means:
  – relatively more essential to community it serves
  – stronger pressure to provide value
  – less able to leverage common infrastructure
1. Support the research lifecycle.
2. Provide strategic intelligence to quantify, analyze and illustrate research impact.
3. Advance research by facilitating a network of expertise and services that promote collaborative science.
4. Deliver services, tools and outreach to the classified research environment.
5. Enhance research communications by helping to shape and influence the future of scientific communication and knowledge management.
embed services in the research lifecycle

• **value:**
  - enable collaboration, conversation, connections, annotation, visualization
  - reduce redundant effort

• **build on Nucleus:**
  - extend boundaries of supported collaborators
  - anticipate new integrations, via [FedRamp](https://fedramp.gov)

• populate journal submission forms w/ RASSTI cached data
provide meta-insight to designated community

• value:
  – dynamic, macro, multi-dimensional view of institutional research activity
  – assessment, reporting, expertise discovery, collaboration

• aggregate, curate, leverage metadata about institutional research activity
  – via aDORe, Altmetric, Symplectic, LDRD data, etc.

“Ikea networks” by Isidro Maya Jariego under CC BY-ND 2.0
automate content + data loading

- **value:**
  - comprehensively-populated platform for persistent, trustworthy access to LANL scholarly output
  - techniques + tools to enhance utility + viability of distributed open repositories

- enhance Autoload w/ OAButton, UnPaywall, + Fatcat APIs

- cross-pollinate w/ or converge on site-specific capture heuristic framework (Tracer) w/ LOCKSS, BrowserTrix, others
optimize for machine access

• **value:**
  - more machine-legible + machine-actionable holdings, supporting new modes of interacting w/ RL
  - improve discovery of RL holdings at network-scale

• provide [LARO ResourceSync](#) endpoint

• improve [LARO](#) visibility to external search engines
  - add [sitemap](#), [schema.org](#), embedded metadata
  - adjust [robots.txt](#)
modernize systems

• **value:**
  - services that better align w/ contemporary user expectations + interfaces
  - enhance + maintain services at lower cost

• **candidates:**
  - 15yo repository ([aDORe](http://aDORe))
  - 6yo library website
GUIDING PRINCIPLES

“Full Sun - Shattering Silence” by Jason Mrachina under CC BY-NC-ND 2.0
align w/ broadest possible communities

• pursue most **general solutions** to address **specific needs**
• leverage scale
• for **LOCKSS software re-architecture**, align w/:
  - IT + web industries
  - digital preservation community
  - web archiving community
  - LOCKSS community
• for LANL RL, could be:
  - IT + web industries
  - higher ed + FedGov RLs
  - FedGov classified IT + RLs
  - NNSA IT + RLs community
  - LANL IT + RL community
APIs + interoperability

• prefer modular architectures using widely-implemented standards
• diminish project risk w/ smaller projects
• better capitalize on external work
• build + procure more replaceable systems
partnerships + collaboration

- internal + external
- researcher + practitioner communities
- be informed by users + best practice
- facilitate pipelines + cross-pollination

“Together” by owly9 under CC BY-NC 2.0
sustainability

• for open initiatives, a foundational concern
• need to continually benchmark, marshal, reassess resources re: 
  – current portfolio
  – prospective ambitions
• resources include funding, staffing, social + political capital
SERVICES LIFECYCLE
conceptualize + design

• seek stakeholder input, buy-in, prioritization
• learn from peers
• engage in a design process
  – create service blueprint, user stories, personas, wireframes, etc.
• have process + secure approval to proceed w/ development
develop + test

- explore iterative + team-centric methodologies
- plan, schedule, scope work
- time- or feature-bound
- discretize + break work down
  - epic → user story → dev task
  - project → work cycle → sprint
- meetings: kickoff, standup, wind-down, retrospective
- define + adhere to testing for production deployment

“Building spiral staircase 2” by Justyn Comer under CC BY-NC 2.0
rollout + engage

• production-ready app ≠ service readiness
• define + adhere to process for service rollout
• documentation + training
• communication + marketing
• enlist + cultivate champions
  – Library Advisory Board
maintain + improve

• maintenance at least as important as new feature dev
• build trust by showing that feedback is acted upon
• understand resources needed to sustain service
• less frequent means more expensive each time

"Preparing to Repair the Hubble Space Telescope" by NASA’s Marshall Space Flight Center under CC BY-NC 2.0
manage over time

- manage the backlog
- establish + nurture mechanisms for ongoing feedback
- understand potential + actual value, to whom, for what
- maintain view of entire service portfolio
- be willing to transition + sunset services
YES, TECHNOLOGY, BUT AS A FOUNDATION FOR THE USER-ORIENTED SERVICES THAT WILL SUSTAIN THE FUTURE OF RESEARCH LIBRARIES
QUESTIONS?