LD4L Use Cases - Version 1 -- 42 Use Cases across 5 Clusters

Active Use Case Pages

LD4L Use Cases - *Describes Use Cases that are being addressed by LD4L.*
Use cases from beyond LD4L - *Describes potential Use Cases that may follow from the LD4L work, but are currently beyond the scope of LD4L.*
Use Cases - Next Steps for Implementation - *Describes active work on Use Cases for LD4L.*

Historical Document - no longer active

Background

what makes a good use case?

- which of them is really linked data enabled, vs. what you could do with MARC if put in a big database
- but it may also be valid to show what can be done with linked data, even if it could be done without
- examples tying library data together with faculty profile information, archival information, and other sources not described in MARC
- and working across institutions
- enables a target audience to "get it" – LD experts, librarians, university administrators, scholars, the mainstream media

what intersections of our data sources will be strong enough to support compelling use cases?

- we have good bibliographic data
- we have usage data
- we have information about our faculty (their publications, but also potentially grants, research groups, patents, facilities they use, other research resources, datasets they have produced)
- some amount of organizational and classification data – what's shown up on the reading list for a course, or been included in reference consultations, or has been identified as a classic text in a research guide
- BUT there are companies trying to sell us information they have indexed, gleaned, and sometimes disambiguated

Related Work

- See the BIBFRAME Use Cases: http://bibframe.org/documentation/bibframe-usecases/
- See W3C Library Linked Data Incubator Group: Use Cases: http://www.w3.org/2005/Incubator/lld/XGR-lld-usecase-20111025/
  and final report: http://www.w3.org/2005/Incubator/lld/XGR-lld-20111025/

Goals

We need to choose a key set of use cases that address the challenges articulated in the grant proposal for the project. Here are some specific points that we want to make sure that the use cases address:

1. **Pragmatic value.** They have real value to our core constituencies: librarians, researchers, teachers, students, etc. E.g., they help a researcher discover resources, or help a librarian make better acquisition decisions. Such values might be *aiding discovery* or getting *more value from existing resources*.
2. **Community added-value**. They leverage the unique value that librarians and scholars add to materials when they select, annotate, or reference the resources.
3. **Cross-institutional data**. They clearly demonstrate the value in combining data from our three different institutions - ideally in a way that shows how that value will grow as more institutions join in.
4. **Leverage existing data and services**. They leverage existing efforts in this space, specifically including VIAF, SNAC, BIBFRAME, and existing faculty profiling systems like CAP, Profiles, and VIVO, as well as existing LOD collections.
5. **Integration into the Web**. They show how research libraries can integrate with existing popular and useful Web sites and services, e.g., Wikipedia.
6. **Cross-discipline**. They show examples from a variety of disciplines.
7. **Help core missions**. They demonstrate value for teaching and learning; scientific research; research in the humanities; and archival research.
8. **Multi-data**. They cover a broad range of scholarly information resource types: articles, monographs, images, datasets, archival materials, cultural materials, etc.

9. **Unusual data**. They show how non-traditional data (from the point of view of libraries and related projects) can be useful.
10. **Media "photogenic"**: They clarify to the mainstream media the value of LOD and this project, and excite that media about the prospects
11. They show interesting ways to use the aggregated data for analysis or visualization.
12. They take advantage of data on how the materials are being used. (??)

We do also need to be careful about not putting in effort in areas where other projects are already working or areas that don't leverage the unique attributes of library data sources. Here are some non-goals:

1. We need to be careful about depending on external, non-institutional sources of linked data.

Clustering use cases

The purpose of this table is to group use cases into 5 clusters (columns) to help identify a small set of exemplar implementable use cases that can be the focus of engineering work. Good candidates to exemplar or to be merged to form an exemplar are marked "top".

Goal	bib+curation	bib+faculty	leverage external authorities	leverage deeper graph via queries or patterns	leverage usage data	no cluster
use cases by cluster in priority groupings	top: 3, 11, 24, 35 | | challenges: 18	top: 6, 9	top: 22, 23 | med: 19, 25, 28, 42 | challenges: 5, 21, 32 | low: 15	top: 12, 38 | med: 29 | challenges: 14, 17, 41 | low: 39	top: 1 | med: 16 | challenges: 10,26	challenges: 30,31,33,34,37, 27 | low 2,4,7, 8,13,40
pragmatic	3 (build virtual collection)		22, 42 (Find unexpected resources through OPAC searches), (Topical intersections of related authors)	41 (Exploring the contemporary context of an historical source**)**	16 (Be guided in collection building by usage)	
community added-value	35 (Finding selected or highlighted works)				1 (Research guided by community usage)	
cross-institutional data	3 (build virtual collection)		5, 22, 32 (Info-rich maps), (Find unexpected resources through OPAC searches)	38 (Identifying related works)	16 (Be guided in collection building by usage)	31 (Compare course usage to holdings)
leverage existing external authorities			23, 19, 25, 42, 21, 15 (Pivot on works to explore more contexts), (Acquire related works), (Work-based discovery) (Topical intersections of related authors), (Intelligent term expansion)	38 (Identifying related works)		8 (Be guided in collection building by usage)
leverage researcher networking data		6 (Highlight my faculty's work)	23 (Pivot on works to explore more contexts)			7 (Find an expert)
leverage existing sources of LOD			22, 23, 42 (Info-rich maps), (Find unexpected resources through OPAC searches), (Topical intersections of related authors)	38, 41 (Identifying related works), (Exploring the contemporary context of an historical source)		
integration out into the Web			22, 19 (Find unexpected resources through OPAC searches),(Acquire related works)			
cross-discipline						
help core missions				12, 14, 38 (Find associated works more relevant than Amazon does),(Create lists and learn from others' in my class), (Identifying related works)		
multi-data						
highlight unusual data			5 (Info-rich maps)	12, 14 (Find associated works more relevant than Amazon does), (Be notified when new archival components are uncovered)	1, 16 (Research guided by community usage),(Be guided in collection building by usage)	

media "photogenic"			22, 42 (Find unexpected resources through OPAC searches),(Topical intersections of related authors)	12, 17, 41 (Find associated works more relevant than Amazon does), (		
interesting analysis or visualization	**11** (Build lists and make that metadata reusable)			38, 17 (Identifying related works),(Use NLP to explore the Library Graph)		
take advantage of usage data					1, 16, 10, 26, (Research guided by community usage),, (Be guided in collection building by usage),(Assess influence by community usage),(See usage faceted by funder)	

Use Cases (suggestions, in draft form)

	(title)	As a...	I want to...	In order to ... (Benefit)	Comment	Cluster	Comments
1	**Research guided by community usage**	As a researcher exploring a new field, or as a reference librarian	I want to find what is being used (read, annotated, bought by libraries, etc.) by the scholarly communities not only at my institution but at others, and especially to find sources used elsewhere but not by my community	I'll be satisfied when the result of a search for a subject or for a particular work makes suggestions for further exploration that are both relevant and surprising	Demonstrates scholarly communities learning from one another across institutions This divides up by subject; others are possible	5.1 usage	H5 C5 S0 + value of non-traditional data + cross-lib
2	**Compose a syllabus**	As a faculty member preparing the readings for a new course (or refreshing an existing course)	I want to see what works are being used by colleagues in different institutions, by searching for a course subject, or by suggestions based upon a work that I know about. I would like to be able to browse to the other works being used in a particular course, and also to see the works that are on the periphery of the standard works within a subject.	I'll be satisfied when a tool enables me to do this.	raises the question of alignment of subject terms - library resources use LCSH but (often in unique combination) but few other resources do. OCLC Fast may help. jcr Also, lib materials often have multiple subject headings. Could do textual analysis perhaps. There's work to do here. It may be considered arbitrary.	no cluster	H0 C0 S0 - we don't have the data to do this
3	**Build a virtual collection**	As a faculty member or librarian	I want to create a virtual collection using online materials in multiple collections across multiple universities. I need a tool that will let me browse fluid, discovering items that otherwise would have escaped my attention, and easily creating an online exhibition. Information about user interaction with this exhibition – unique visitors, but also which items they click on, in what order, how long they spend with each – should be fed back into the universities' systems to help inform future people browsing the collections.		Heavily focused on the UI. How central should that be to the use cases. How much should people be able to say about the collection itself and not just its items. Or info about the items but specific to the collection.	1.1 bib+curation	H5 S5 C5 + cross institution + pragmatic value
4	**Follow up on a colleague**	As a researcher	I want to identify colleagues at my school who have taught at or were graduated from a partner school, and see what work they have done on the topic they pursued at my school after they left my school.		Why would I want this? dw seems far afield. Out of scope.	no cluster	H0 C0 S0
5	**Info-rich maps**	As a student	I want to browse a geographic map and see annotations automatically added that show me relevant information (library items, archival items). I want to know that new information has been added in close to real time.	I will be satisfied when that works	Maps are a gnarly type. And how do we get the geolocated items? And this isn't very fresh. Is there a way to show relations among the pins? Or something? - dw May be possible to do autotagging by place names but may not be reliable, and are we tagging author origin, publisher, aboutness? jcr Perhaps restrict their viewing to a geo location. We'd need a gazetteer. Nasty data Not linked data base	3.3 leveraging authorities	H4 C4 S0 If we have the data. (Harvard does.) Also, scale it back. + cross-instit. + unusual data
6	**Highlight my faculty's work**	As a university dean	I want to works created by my faculty to be highlighted in the OPAC. This includes works by any author who has ever worked at my college.	I will be satisfied when that information is accessible by the OPAC, although it'd be nice if the OPAC actually used that information.	requires a commitment to maintain information on departed faculty in other systems of record, or taking on that task in the library. jcr we'd be ok with just current data good one integrates person data, so good	2.1 bib+person	S5 H4 C4 Not very dramatic and may already have been done, but worth supporting

7	**Find an expert**	As a media person looking for a local expert	I would like to see which subject areas the faculty of a university are focused on, by seeing the subjects on which they are publishing and teaching.		subject terms used by the media are notoriously different from those used by academics, so requires interpretation and /or mapping, as well as having generalization/granularity issues. jcr faculty profiling info - too close to what VIVO et al do. **Maybe looking for a topic, come up with results, and find people.** **If you a topic, can you suggest a reference librarian.**	no cluster	H0 C0 S0 Isn't this a faculty profiles/ faculty /finder? Already done?
8	**Assess strength by subject**	As a librarian	I would like to assess the strength of my university library's collection by seeing for every LC subject class how many resources we have, how heavily they're utilized, and how much research is being done by our faculty in those areas. This could highlight potential areas of the collection to enhance or winnow.	I will be satisfied when I have an analytics tool that lets me make such inquiries.	note comment above that non-library resources are rarely if ever tagged with LC terms. jcr cross ref. to #29-31	no cluster	H0 C0 S0 not LD enough
9	**Identify who an author influenced**	As a researcher working on a particular academic figure	I would like to be to see the works written by the students of a particular figure. E.g., what have the people who were advised by Buckminster Fuller written? Then I'd like to see the citations for those students' works clustered by subject area.		great genealogies in math and CS. But would have to link their identities to the ones that we have.	2.2 bib+person	S5 H0 -No data.
10	**Assess influence by community usage**	As a researcher working on a particular academic figure	When I search on Buckminster Fuller, I would like results ranked not by relevance but by "community relevance," i.e., by how often those works are used by my university's communities.	I will be satisfied with Stacklife	Doesn't demonstrate linked data, and similar to a couple of others - dw Population across the three institutions is big enough.	5.3 usage	S0 H3 This is an application of #1. + cross-institutional
11	**Build lists and make that metadata reusable**	As a teacher and as a librarian	I would like to easily create a "shelf" (a list, really) of supplemental readings for my students, and have the relationship among those items – namely, that they all have some reference to the main sources – be fed back into the Library's data set so that others can benefit from my intellectual work of clustering them. I would like the provenance of that clustering maintained. This information could then be presented through a browsable discovery system. WHAT RELATIONSHIP?	You'd have to log in. (Shelf.io does that) A top priority for Stanford and something they want to get out of this grant Privileged or not privileged? My personal list or public? Great area to explore A third party app might do this, with the three systems incorporating	See #3 & #24	1.1 bib+curation	H4 S5 Lists are a subset of virtual collections (#3)
12	**Find associated works more relevant than Amazon does**	As a researcher	I would like an alternative to Amazon's "people who read this also read that." The alternative should be focused on finding results relevant to me as a researcher, rather than works a vendor is trying to sell me. In fact, I would like to see side by side lists of Amazon's clusters and my Library's clusters so I can see just how much the Library's kicks Amazon's skinny butt.	Could use data from Fac. finder, items put on reserve, lib guides, lists and collections		4.1 deeper graph	S0 H5 + Great for the media + Discovery tool + Shows use of new data
13	**Create lists and learn from others' in my class**	As a student in a MOOC	I would like a tool that lets me create a "shelf" of works as I do my research. I'd like to be able to see other student's shelves for a particular assignment, and I'd like to see an aggregated shelf that shows me the most shelved works. I'd like clicking on the items in these shelves to reveal other student shelves on which they appear. I'd also like to be able to see each work in a shelf other books related by subject,		Could be SQL - dw	no cluster	S0 H0 Version of virtual collections (#3) and lists (#11)
14	**Be notified when new archival components are uncovered**	As a researcher and teacher	I would like to be notified when there are archival items that might bear on a topic I'm researching or teaching. I would like this to work at the component level, not only at the "box" level.		This would require devolving metadata from the box to the component level; Harvard has done work on this and has a set of EAD components - dw	4.3 deeper graph	S0 H4 + Discovery + Unusual data (Harvard has componentized EADs. Anyone else? Rich enough metadata)
15	**Authority control**	As a librarian	I would like to enter any form of an author's name and have authority control		As it stands this use case doesn't seem to leverage our work. If the method by which one decided which "John Smith" you wanted used other information about the person, their works, their geography, etc. then it would seem to fit. Still seems a somewhat standalone tool though – sw	3.4 leveraging authorities	S5 H0 -Does not need our data
16	**Be guided in collection building by usage**	As a librarian	I would like help building my collection by seeing what is being used by students and faculty, and what's being used at other universities			5.2 usage	S0 H4.5 + useful + uses unusual data (It's another use of #1)

17	**Use NLP to explore the Library Graph**	As a researcher or student	I would like to be able to ask questions about the relationships among library data using something like natural language (although I'd be happy to accept some common sense restrictions) and get back interesting results. For example, "What books were written by Cornell biologists on topics that Harvard and Stanford biologists rarely write books about?" "What books are available about communication technology that don't use 'Communication' in their title or subtitle?" "Create a timeline of science books that charts them by how many of those books have illustrations." "Find all the anthologies that have chapters by both Marshall McLuhan and Neil Postman." "Create a table that shows how many genetics books were published in England per year versus how many were published in the United States." "Find me books about Christian Fundamentalism read (or assigned) in Divinity schools in the 1990s but less so after 2000." "Show me chronologically the usage in medical schools of books under the headings of both vaccination and autism." "Map by publisher location the clustering of books about American slavery since 1640." (Library Graph)	I will be satisfied when there is at least a limited vocabulary and syntax that I can master and get back interesting results.	(We could limit the NLP issue by creating a pick list of operations, relations, and outcomes. Or maybe there's an Open Source NLP library we could use. I dunno. - dw) I think the NLP part of this is too much to bite off. I think it would be a reasonable goal for this project to use a structure query language to express and then answer these queries, I think the NLP part would be extremely cool but would need NLP expert collaborators – sw Keep an eye out for an NLP person who might want to hook up an NLP front end to this, for a demo.	4.3 deeper graph	S0 H5 +Great for the media (Remember that these are use cases, not things we're saying we'll build. And we have the data – not the NLP – to do this. I.e., we should be aiming at enabling someone else to build this.)
18	****MERGE with 24** Expand on Cornell's Curated List of Library Resources (CuLLR)**	As a researcher or librarian	I would like to be able to tag and group resources of a specific type, matching some of the affordances of a physical library in the virtual world. Examples include: • identify books on the virtual shelf of engineering reference handbooks • identify "classic texts" in physics/astronomy/chemistry • identify a "reference collection" for entomology	Allow students and researchers to easily discover selected types of highly used /useful materials	What about extending the use case to inclusion of non-local materials? – sw See #24	1.2 bib+curation	C5 S5
19	**Acquire related works**	As a librarian working on acquisitions	I would like to find additional materials that build on our current holdings – additional works by the same authors or about the same topics.	I will be satisfied when I have a tool that lets me explore these ways		3.2 leveraging authorities	S5 H5 but only if it brings in outside sources
21	**Intelligent term expansion**	As a researcher or student	I would like intelligent term expansion: • based more on entities and relationships than on purely linguistic analysis • that predictively disambiguate query strings (e.g., bank)		This would rely on some of the ideas of authority control #15 – sw OCLC Fast? We could do this for authors etc. but how well by navigating the linked data we have?	3.2 leveraging authorities	S5 H5 if we have the data
22	**Find unexpected resources through OPAC searches**	As a researcher	I would like a panel in the OPAC that shows more information about a given <author,subject> when I do a search. E.g. "Gettysburg Address" shows panel on the town of Gettysburg, Lincoln, the battle, the tourist destination. Find other items near Gettysburg's geocode and perhaps in decades surrounding the event's time.	So that I can find related resources that fall on the periphery of my search	Facilitates serendipitous discovery, not too near not too far.	3.1 leveraging authorities	H4.5 S5 +cross-inst. +external data LD +pragmatic +media
23	**Pivot on works to explore more contexts**	As a researcher	I would like a browse interface in the OPAC that is more intuitive, more flexible and allows for easy pivots than current (legacy) browse interactions for author, title, subject, shelf location	So that I can get a sense of related works across multiple different dimensions.		3.1 leveraging authorities	S5 H5 depending on data implications (Similar to #22) +pragmatic
24	**Tag items in cross-silo ways**	As a librarian	I would like to be able to 'tag' items in the OPAC into curated lists, to feed subject guides, course reserves, or reference collections; I'd like these lists to be portable (into Drupal, into LibGuides, into Spotlight! or Omeka, into Sakai, e.g.) and durable; I'd like these lists to selectively feed back into the OPAC without having to modify a MARC record.	So that I can create durable, portable lists of curated resources for many uses, without having to do cataloging.	aka LD-powered CuLLR for SearchWorks ha ha! I added a similar comment to #18. Maybe merge these? – sw Will use CuLLR	1.1 bib+curation	H5 S5 (Not sure what it implies for the data model)
25	**Work-based discovery**	As a researcher or librarian	I'd like to do work-based discovery rather than item-based discovery for musical resources.	because I heard that FRBR would be really useful. </snark>	Hummable front end?	3.2 leveraging authorities	S0 H5 If this means someone could spin up a page at the work level, then 5. (Doing it for music is a nice touch but not essential)
26	**See usage faceted by funder**	As a bibliographer or librarian	I'd like to be able to search all books acquired by a certain fund, and see which fund paid for the acquisition of any given book, and crosswalk that to how many times each book circulated / was used in course reserves / was on a syllabi or reading list / was authored by an institutional faculty member	So that I can do queries to support collection development and management.		5.3 usage	S0 H3 we have this data. Not sure how useful.
27	**Authorized names via auto-suggest**	As a cataloger	I'd like an auto-suggest for fields when doing cataloging that gave me authorized forms of <names, places, subjects, corporate bodies> for data entry – based on pooled data	So data entry is quick, less error-prone, and authority controlled from the get go.		no cluster	S0 H same as #15
28	****OUT** Form-fill for faculty deposits to an IR**	As a faculty depositor to an IR	I'd like an auto-suggest for fields when doing data deposit that (first) autopopulated my bio-demo data based on a unique ID (ORCID?), and (second) gave me useful, authorized forms of names, places, subjects, keywords, departments, etc. for data entry.	So data entry is quick, less error-prone, and authority controlled from the get go.		3.2 leveraging authorities	H4 S5 + useful (see #15)

29	**Increase the sophistication of query and display**	As a researcher	I'd like to be able to visualize, pivot, do inferencing, and complex, ad hoc queries across the aggregated store of person, bibliographic, usage and curation data from three institutions	So I can uncover relationships and knowledge that were otherwise hidden. Maybe do this more as a specific narrative?	SPARQL-based OPAC + directory + circ reporting? Important Great if we can come up with some good UI, or subset UI that does interesting things. Is there an existing UI to drop on top of a SPARQL endpoint? We don't know of any. Make this use case more specific? And we need some concrete examples. Can we do inferencing?? Make that its own use case?	4.2 deeper graph	S0 H0 This isn't a use case. These capabilties would support use cases, but these capabilities are what the project overall is about, aren't they?
30	**Find which works by an author are used in courses**	As a faculty member	I'd like to query the OPAC and/or Syllabus / Reading List portal to see which of works of a given author were used in courses	So I can gauge the impact and trends in pedagogy		no cluster	H0 S0 -no data
31	**Compare course usage to holdings**	As a bibliographer	I'd like to be able to query which library resources were used in courses (as noted by syllabi, reading lists or course reserves) and compare that to a collection's holdings. (This may be at my or another institution)	So I can see if the relative strengths of collections to support teaching	more specific case of #8 combine with 8. drop 8	no cluster	H0 S0 -no data
32	**Finding Aids across institutions**	As a researcher	I'd like to be able to search across archival holdings at different institutions, and follow the links from the records of one person or org to those of a collaborator held at an another institution.	So I can find relevant archival resources regardless of which institution holds them.		3.3 leveraging authorities	H4 S0 If we have the data (cf. #14)
33	**Integrated search of Finding Aids for archival materials**	As a researcher	I'd like to be able find an emeritus faculty member's publications, teaching materials, reading lists, grant products, advisors, and archival materials in a single search.	So I can trace relevant research and teaching activities.	What else do we have that is EAD-related? #14 would also rely upon decomposition of EAD – sw	no cluster	H0 S0 -hard -how different from a faculty profiler?
34	**Finding works related to course instructor**	As a student	I'd like to be able to find all the works authored by, composed by, created by, or performed by any faculty member who has ever taught the Jazz Piano /B&W Photography/Colonial Women's History course that I'm currently taking	So that I can better understand the nature of the course and various approaches to it		no cluster	H0 S0 -low utility -part of faculty profiler?
35	**Finding selected or highlighted works**	As a researcher	I would like to find works in a particular subject area (e.g., Civil War photographs) that have been individually selected and curated as part of a public exhibit by a museum, library, or archive	So I can find works that are likely to particularly exemplify some aspect of the subject area		1.1 bib+curation	S5 H5 Great if we have the data. (Expand to include data from virtual collections and lists)
37	**Tracing archival relationships**	As a researcher	Specifying an individual in an archival collection, I would like to identify all the individuals with whom they have corresponded and find out where, in turn, those individuals have archival collections	So that I can trace the potential impact an individual has on the people with whom he/she interacts		no cluster	H0 S0 -no data
38	**Identifying related works**	As a researcher	I would like to find all the costume photographs and illustrations for the plays of George Bernard Shaw	So I can see how the characters have been interpreted and visually represented across time	I like this one as it uses relatedness along different axes combined with type taxa and and entity – sw	4.1 deeper graph	H5 S0 + external data + discovery + cross-inst.
39	**Identifying publications related to equipment or facilities**	As a facility or lab director	I would like to find publications describing research that made use of my equipment or facilities	So that I can justify existing funding or advocate for additional resources	Where is the data linking publications to equipment or facilities? – sw	4.4 deeper graph	H0 S0 -no data
40	**Identifying publications related to datasets involving research resources**	As a researcher	Lacking a direct dataset citation, I would like to find candidate publications that may have used a particular dataset that involved certain resources or equipment	So that I can track the propagation of errors related to equipment calibration or otherwise determine the impact of particular questionable resources	How do we infer dataset use where there is no citation? – sw	no cluster	H0 S0 -no data
41	**Exploring the contemporary context of an historical source**	As a researcher	I am exploring an artwork or text situated in a particular historical epoch and want to find related materials for a specified period leading up to that time, so that I can see the context of that work. E.g., For the twenty yeares before GB Shaw's *Arms and the Man*, what was being reported in England about the Serbo-Bulgarian war?	So that I can further my contextual understanding based on available resources	This could draw upon external data sets. E.g., NYTimes archive	4.3 deeper graph	H5 S0 -useful -external data -media photogenic
42	**Topical intersections of related authors**	As a researcher	I would like to see the sets of topics worked on by authors within a particular field of study. E.g., assemble the authors who have written about GB Shaw and show me the other topics each has written about, so I can see over time the change in the domains within which GBS has been considered. (Maybe I'll discover that initially he was treated mainly by people writing about the arts, but during WWI he was taken up by political writers.)			3.2 leveraging authorities	H5 S0 -useful -external data -media photogenic