The BC Digital Library initiative: Radical collaboration toward community infrastructure for Open Access¹

BC Digital Library Admin Team²

Introduction

To materialize research infrastructure is to act without weight and therefore gravity. It is a process that is clearly distinguished from the reality produced: a covert operation, not a result. And yet the devising and development of new systems might equally be seen as the devising and development of their standards, measures, and meanings and the principles of their provenance in which the restless, transformative, and connective work of infrastructure can be understood as a form of inventiveness and interpretive resourcefulness, too. (Verhoeven, 2016, p. 10)

The idea of the BC Digital Library is to provide a community good by "materializing" infrastructure that enables Open Access to knowledge and stories about and by British Columbia and its people. As an ongoing initiative, this good is devised through collaborative work and contributed resources of publicly-funded and non-profit GLAM³ organizations that steward content and/or provide related services, and also through persistently adopting strategies and technologies that are collaborative, equitable, sustainable, and "open" in ethic, not just free.

Work on behalf of the BC Digital Library has required collaboration and resource sharing across and beyond habitual, well-established structures for governance, decision making and resource allocation, within and beyond organizations and sectors, and this has been both rewarding and challenging. Discussing the power of collaboration in social and educational innovation, Torfing and Diaz-Gibson (2016) explain that

we collaborate because we are different and we expect that our different experiences and perspectives will give us a more complex and nuanced understanding of the world, challenge and disturb our tacit knowledge, and produce new and creative ideas through passionate debates based on joint aspirations and mutual contestation (p. 105).

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³ GLAM sector is a term that describes a collaboration among Galleries, Libraries, Archives, and Museums.

Progress and successes related to the initiative demonstrate the power of committed, "inventive" proponents to develop and advance ideas that meet a collective need, surfacing and serving a public good that would not otherwise be prioritized, while constructively interpreting and disrupting comfortable, established structures for collective decision making and action. Particular challenges arise through the process of disrupting established structures and relationships, and also in responding to conditions and examples in the broader environment that reinforce both the fragility of some existing GLAM organizations and the consequent necessity to materialize infrastructure that is sustainable and that is grounded in community needs and values. This paper reflects on what proponents have learned about the value and the values of the BC Digital Library through work on the evolving initiative, and how that learning suggests ways forward.

Situating ourselves as authors

For more than a decade there has been broad interest among BC GLAM organizations in the idea of a BC Digital Library in some form. Throughout that time, the conversation has garnered input and support from many interested GLAM organizations, but it has been moved forward consistently and substantively by several committed organizations who have participated in ongoing development and interim governance of the BC Digital Library initiative, contributing resources and administrative capacity. Based on our experiences as active proponents and collaborators, these diverse organizations collectively offer the reflections that follow:

BC Electronic Library Network Kwantlen Polytechnic University Library Royal BC Museum and Archives University of British Columbia Library Vancouver Community College Library Vancouver Island University Library

What kind of paper is this?

For purposes of thoughtful communication about the BC Digital Library initiative it seems fitting to use the practice of critical reflection. Adapting questions from a model offered by Fook and Gardner, we can navigate among what they might describe as "dark alleys, bright lights, shadowy mazes, enticing doorways and thorny bushes" (2007, p. ix) of our experiences.

What is the context?

- How did the programme develop?
- Who was involved and what were their assumptions and expectations?
- What was the political and social context?
- How has the programme been funded and what are the implications of this?
- How does the programme fit with the organization?

What are the aims?

- How were the aims developed?
- What assumptions and values are implicit in the aims of the programme?

Who is involved?

- What are the different perspectives?
- Whose voices are being heard?
- Are there voices not being heard?

What is expected of the project?

- Are specific outcomes expected?
- What is the balance between process and outcomes?
- How will the project be evaluated? (p. 151)

These questions loosely guide the reflections that follow, to the extent that they apply to the BC Digital Library initiative, and its development to this point in time.

What is the context: "Devising" space in the presence of gravity

Many collaborative initiatives thrive in the overall BC knowledge sector. The "...sector is well represented by a variety of apex organizations, yet has struggled when it comes to operationalizing initiatives across sectors, precisely because apex organizations are not designed to be operational, and with few exceptions, the operational consortia do not serve cross-sector memberships" (BC Digital Library, 2018).

Often collaborative projects advance through consensus having been reached among a majority of stakeholders. Practically, this means that worthy minor projects will never rank unless advanced apart from established processes and relationships, i.e. unless new relationships, collaborative structures, and processes are formed. Indeed, since the outset, those most closely involved with the development of the BC Digital Library have somewhat ironically characterized their efforts as the "coalition of the willing." The coalition advanced in its *Business Analysis* (2018) that "BC's cultural heritage is at risk, and is undervalued: radical collaboration is required to reckon with this reality."

It can be said that the "coalition" eschewed traditional collaborative structures from the outset, owing to the shared experiences of the group in matters of collaboration at scale, and the typical responses to these by established agencies. As Ran and Qi (2017) observe,

Power can be exercised not only in decision-making processes but also in non-decision-making processes. In the non-decision-making process, the exercise of power may influence the context of decision making (Bachrach & Baratz, 1970) or control which issues can be allowed to become agenda items (Walsh, Hinings, Greenwood, & Ranson, 1981). (p. 838) Perhaps in particular, the coalition understood that for the BC Digital Library to leave no interested contributing institution behind, and to sustain that commitment over time, a non traditional model for collaboration would be required. This is somewhat akin to the notion of collaborative or network governance as "common emerging phenomenon: the collaboration of different organizations from public, private, and civic sectors working together as stakeholders based on deliberative consensus and collective decision making to achieve shared goals that could not be otherwise fulfilled individually" (p. 838).

What are the aims? Developing the platform

How were the aims developed? Initial community meetings and symposia focused rapidly on the notion of a versatile platform for harvesting, aggregation, and discovery, recognizing the myriad of pre-existing approaches, sources, types and technologies undertaken within the jurisdiction, and the inherent challenge that this technical diversity represents. As a pragmatic step, research into open source options that might fit the BCDL purpose was undertaken. A responsive and robust development community and the potential to have flexible integration with related local and national initiatives were key, preferences that have been affirmed both in conversations and in early work with other regional initiatives, and by the Government of Canada's recent *Directive on Management of Information Technology* that prioritizes use of open standards and open source software (2018, December 3). Ultimately the varied considerations led to selection of Supplejack for development work toward a BC Digital Library prototype. Supplejack is the platform initially developed for use by Dlgital New Zealand: https://digitalnz.org.

Development of the BC Digital Library platform has been exemplary in demonstrating "inventiveness and interpretive resourcefulness" (Verhoeven, 2016, p. 11). The potential scale of the BC Digital Library and the challenge of contributor diversity has necessarily led to collaborations across institutions and jurisdictions to ensure that development and approach respond to contributor expectations. The relationships and co-commitments that have grown are now understood to be foundational to the sustainability model for the initiative. Tangibly, to demonstrate flexibility and responsiveness, a "triclops" architecture has been developed by the BC Digital Library in partnership with Ontario's Our Digital World to explore the possibilities of sharing a platform while providing differently scoped views of the content. In the current demo instance, there are three different interfaces to the test data: one for BC, one for Ontario, and one for the entire index (Barry & Sifton, 2017). This approach is scalable and offers interesting potential for national-scale infrastructure.

Why open source and how much and how far?

Earlier this year, Heather Joseph outlined the response of SPARC (Scholarly Publishing and Academic Resources Coalition) to the growing reality of consolidation and enclosure in the scholarly communication environment, not just with respect to content, but also now with regard to platforms for dissemination and the very tools that scholars need to conduct their

work. SPARC has committed to "actively exploring ways to position our repositories, libraries, and research institutions as the foundation for a distributed, globally networked infrastructure for scholarly communication" with the greater aim of "taking back control of the research enterprise to ensure that it functions in a manner that has the public good at its center" (Joseph, 2018, p. 426).

Even more recently the Government of Canada's *Directive on Management of Information Technology* (2018, December 3) prescribes use of "open standards and solutions by default." While no specific rationale is offered in the *Directive*, presumably this approach is seen to be consistent with Open Government, and with a "public benefit" mandate that states:

Information technology (IT) enables the federal government to effect operations and service transformation. IT matters strategically for increasing government productivity and enhancing government services to the public for the benefit of citizens, businesses, taxpayers and employees. (C.2.3.8)

Similarly valuing what open standards and solutions offer to the BC Digital Library initiative, we see within the growing Supplejack development community evidence of the criticality of a dynamic, collaborative and distributed environment to successful open source projects (Weber). More simply, we see the hallmarks of good community, manifest in concern for community, inclusive of all stakeholders – developers, administrators, contributors and users. This openness facilitates working affordably, inclusively, informally and collaboratively, characteristics shared with the BC Digital Library initiative.

With platform development work underway, ongoing community consultations in the form of a survey, interviews, and business analysis, surfaced additional aims. Considering the potential of the BC Digital Library platform together with awareness of varying local organizational resources and needs presented an opportunity to identify gaps in capacity that might be addressed on a shared service basis. In particular, the business analysis identified these values and priority areas for respondents:

Top BCDL values identified by interviewees:

- Increased discoverability is the principal value perceived by the stakeholders interviewed
- Having a provincial metadata store with well-structured and consistent metadata
- Ability to collaboratively build collections that cross institutional boundaries is perceived as a value by some institutions interviewed
- Content hosting is seen as a value by the majority of the potential partners.
- Preservation is seen as a value by the organizations interviewed.

Top potential BCDL services:

- Shared digitization training and support by a provincial or network of regional hub(s) are one of the most valuable services according to both the survey and the interviews.
- BCDL advisory service with respect to copyright, licensing, cultural property, and privacy issues in the digitization and preservation milieu is one of the most valuable services
- Stakeholders are willing to contribute in kind if the value proposition is aligned to their institutions' goals. (BC Digital Library, 2018)

Who is involved? Securing the infrastructure

A hybrid governance model is suggested, simultaneously recognizing and supporting governance, technical operations, contributors and users. Regardless of the model, dedicated operational staff are needed to do the important work of the BCDL. Regarding the governance model, the main challenge according to stakeholders is how to represent all sectors without losing agility and governability (BC Digital Library, 2018).

Following the recent *Business Analysis* that included iterative community and stakeholder consultations, the BC Digital Library remains the project of a coalition of the willing. From some looking in, there is continued reluctance to engage before they perceive what "it" is. From current contributors, there is a strong sense of commitment to the BC Digital Library as a means to gather stories and knowledge as these may be offered by constituent communities, to reflect these back to one another, to Canada, and to the world, and to do this by providing tools, services, and a responsive, regional venue through which to coordinate and represent the local.

A different view, compellingly expressed in recent stakeholder conversation about the BC Digital Library initiative, suggests that if we could do metadata well, organizations might release content for direct interaction (i.e. indexing by Google), and add value through demonstrating an ongoing commitment to owning and maintaining the rigorous work related to metadata. However, reflecting on experiences with metadata aggregation projects over time, Matienzo observes that "precarity tied to metadata aggregation is real. People abstractly understand why it's important, but don't know how to sustain it" (2018).

Practically, while producing and grooming metadata may be enabling for those with capacity, not all organizations entrusted with content have the capacity to describe, digitize, host, preserve, and expose that content in standards-friendly ways. In October 2018 at the Joint NHDS & CRKN Workshop on Documentary Heritage, the need to support smaller organizations emerged as a theme. Participants noted the desire for "taking the lead from the community itself around access, preservation, decision-making, and who does the work when working with marginalized groups" (Hitchens, 2018), and also the challenge to "look at library assumptions re: access, and to consider how to put resources into communities" (McFarland, 2018). This

resonates with a challenge articulated by Jules Bergis in a 2017 article advocating for sustainable funding for community archives:

It must be recognized that academic institutions have historically presented Eurocentric, extractive, and systemically racist approaches to scholarship and research, amounting to historical trauma of the very communities these institutions now seek to engage. We must resist these ideas. Therefore, we believe that libraries, archives/special collections or museums based at academic institutions can support and collaborate on this work, but they are seldom suited to lead this work.

These sentiments need to be heard by institutions who have come to see as part of their mandate to provide infrastructure and services to a broader community, and who may continue to operate on a transactional vs. a relational basis with respect to acquiring or digitizing content stewarded by community organizations.

National infrastructure for scholarship is presently being envisioned and assembled through national scale organizations, but also locally and regionally where there is energy and capacity to imagine and create alignment. The BC Digital Library initiative and other regional centres or "hubs" should form part of and shape a resilient, responsive, distributed network model. There is an inherent assumption that national infrastructure projects will benefit diverse regions and communities, but coordination falls short and may fail when not sufficiently informed and supported by stakeholders. Regional and diverse engagement is imperative in light of clear messaging from community organizations who want to see themselves in national-scale initiatives.

The matter of how we organize our collaborative efforts to support community aspirations, and to offer value in those terms, is particularly timely given current examples of large-scale GLAM collaborations that are winding down or drastically changing direction, apparently owing to problems of sustainability and clarity of mandate (Schonfeld, 2018). In Canada there is a present opportunity to build sustainable national-scale infrastructure for open scholarship, ultimately for citizens. If carefully done, making space for potential partners to articulate their priorities, and relying on contributed strengths and resources, this might result in a federation without the compromises inherent to convergence. That is, a federation of diverse and disparate parts that draws strength from, surfaces, and celebrates the richness of diversity rather than normalizing it.

The relative sustainability and scalability of distributed approaches that rely on engaged communities is frequently discounted in favour of traditional organization and decision making models that are perceived to be more efficient and agile. Yet, DPLA's current crisis, DPN's recently announced (DPN, 2018) wind-down, and similarly failed Canadian infrastructure-at-scale examples serve to underscore the downsides of reliance on centralization, including frequently attendant difficulties related to ensuring stakeholder

representation and accountability, and ongoing stakeholder engagement and continuous improvement.

What is expected? Materializing the service

By design, the BCDL proposes services and infrastructure that make space for smaller organizations to participate and bring value to the collaboration. This approach has been commended, including after an update provided at the Vancouver Island Library Staff Conference 2018, when the Council of Canadian Archives Chair encouraged the initiative to continue to place emphasis on grassroots and community perspectives and priorities (McFarland, 2018). Looking at social network perspectives in program implementation, Valente et al. find that:

...network-informed interventions and programs are more effective than non-networked ones. All programs think about networks and most probably acknowledge that networks are important components of program design and delivery. Yet, most programs do not explicitly account for networks in their design, delivery, and evaluation (2015, p. 13.)

The emerging BCDL is more grassroots than not. Although large potential partners are currently electing to stay apart until they perceive compelling value, limited consensus is still consensus. Larger institutions may perceive alignment with their stated *values*, but decline to participate because they do not perceive that sufficient *value* will accrue to them to justify prioritizing participation. Even so, passive participation occurs when organizations engage in standards-based metadata work, and expose content for indexing or harvest, including into the BC Digital Library. Users will benefit both from these passive contributions and from the work of active participants in the BC Digital Library who provide services and infrastructure. Similarly, the BC Digital Library initiative is strengthened by ongoing programs and work within institutions that support a wide range of GLAM organizations in digitizing, describing, and providing access to content.

Many elements of what could be considered BC Digital Library infrastructure already exist, if these were to be integrated, articulated as such, and regarded as work contributed to a radical regional collaboration in support of open access and open scholarship. A forthcoming statement from the BC Digital Library initiative will in part identify elements of the "covert operation," of the "transformative, and connective work of infrastructure" (Verhoeven, 2016, p. 11) that are already in place. These include, but are not limited to:

- Assisting community-based organizations with funding and expertise for digitization and related activity (e.g. BC History Digitization Program)
- Supporting community partners with "hub" services for grant-writing, planning, digitization, metadata, preservation, copyright and open licensing, and/or content hosting where local hosting can't be supported by local infrastructure. For example, at VIU

formal agreements are in place to provide services to the Nanaimo Pride Society, Plan Canada, and (pending) the Nanaimo Historical Society. The BC History Digitization Program and BCELN offer content hosting and services to support discovery of grant-funded digitized content through the ARCA repository.

- Contributing expertise and research. For example, a subset of organizations with capacity may explore related projects that enrich the BC Digital Library, such as:
 - Possibilities for linked open data to support discovery across content repositories, thereby supporting the outcomes of the BC Digital Library;
 - Possibilities to enhance description of content in the BC Digital Library through enabling crowdsourced contributions.

Guided by contributor expertise, resources, and needs, platform features will be developed to facilitate varieties of use. Platform work is well advanced, through the "inventive and interpretive resourcefulness" (Verhoeven, 2016, p. 11) of committed parties to the project. Prospective elements of the BCDL provide for flexible aggregation and will promote effective retrieval by theme, geography, medium, etc., across contributing organizations. As one use case, BC's new curriculum for K to 12 aims to prepare educated citizens through inquiry- and competency-based learning (BC, 2018), with significant implications for the information needs of students, teachers, and other researchers. Early in implementation, limitations of current approaches for this audience are already apparent (Fields and Musser, 2018). GLAM organizations can more effectively meet these emerging needs through broader collaboration.

According to the taxonomy offered by Educopia's *Community Cultivation: A Field Guide* (2018), the BC Digital Library initiative presently displays aspects of a community in formation and/or validation, where resources have been contributed to develop services and tools by players who share an ethos and culture. There is existing partner content of significance to BC, and foreseeably more aligned content to come, along with robust, community-driven platform and service development to support flexible retrieval, presentation, and use. Nevertheless outcomes of a Fall 2018 meeting to explore "how others may understand join, or relate to its work" (p. 12) indicate that broadening the base beyond existing committed participants has yet to occur, and remains dependent on demonstrating services and potential in terms that those others value. Even so, BC Digital Library hub relationships are developing organically, for example through the BC History Digitization Program partnership with ARCA (BCHDP, 2018) and through other MoU's and service agreements among participating organizations.

Consequently, governance, to be effective and responsive, will reasonably and foreseeably continue to be relationship-based. Reflecting on sustainability in knowledge sector collaborations that seek to serve a public good, Neylon writes:

We can look at stable long-standing infrastructures (Crossref, Protein Data Bank, NCBI, arXiv) and note that, in most cases, governance arrangements are an accident of history and were not explicitly planned... We can learn as much from failures of sustainability and their relationship to governance arrangements as

from successes. [With] deeper understanding of how models work, and in particular how they relate to the scale of communities, it should be possible to create pathways to sustainability. These pathways would link the growth of infrastructures from club-like services, through community adoption, to the creation of public goods (2017, p. 8)

A network of co-commitments among partners and contributors to the BC Digital Library is in place and evolving until it may be fitting to create formal governance and new organization. There may be perceived downsides to this approach, for example in that it relies on constantly iterating proof of concept and affirming value for participants through the network of relationships. This is also a potential strength. By situating strategy and resourcing for BC Digital Library activity within contributing organizations, sustainability may be established and demonstrated progressively. This model may mitigate the risk of overextending, or "failing fast" at the community "acceleration" stage (Skinner, 2018, p. 9) as sometimes occurs when core services and growth are based on soft money, creating vulnerabilities through centralizing strategy, decision making, and communication in a body that might not be sustainable or assuredly representative. Scaling the initiative in step with commitment of and authentic perceived value to participants, we are better situated to attain the desirable outcome of a resilient network that might be reparable in the event of loss of node/s. Recent news about DPLA and DPN suggests that the BCDL coalition is wise, and likely more resilient, precisely because it embraces shared strategy, decision making and capacity from the outset.

One sagacious observer of formative BC Digital Library efforts over time advises that proponents should begin to own the work, prepare to scale the services and infrastructure, assume an enabling spirit, and stop seeking permission from those who look in but are not in fact in active partnership. This 'take the rope and run with it' spirit has been similarly expressed by a senior administrator in a large institution, who stated that any lack of participation should not be regarded as passing judgment or intended to obstruct the initiative. Many larger (library) organizations have national-scale relationships that facilitate their work and effectiveness, so that they may not perceive a need to participate in community-based services or infrastructure. This does not mean that such infrastructure is not needed.

In the Canadian context, aside from organizational diversity (i.e. in terms of size, type, public, private), problematic aspects of the history of the country as colony and as a federation are too often overlooked when we attempt representative governance in organizations. Authentic representation is challenging to consider and to operationalize, to be successful perhaps necessarily becoming a concurrent focus and product of collaboration. However, there is much at stake in not considering new models; national solutions that overlook very real and ongoing issues of regionality and diversity tacitly accept entrenched dynamics and constrain their own potential for success, just as inequitable representation of constituent communities, regional alienation, and exclusion of critical stakeholder and expert inputs do. Pragmatically, distributed, federated approaches to solutions-at-scale should become the norm, to contend with, and embrace, these essential considerations.

BC Digital Library proponents are bringing regional perspectives and technical and other expertise to national conversations about infrastructure, with the firm conviction that this "covert operation," this "restless, transformative, and connective work" (Verhoeven, 2016, p. 11) needs to be federated, and also distributed and resilient to work; that to be meaningful and not extractive it needs to carry the stories and knowledge that our communities choose to share. BC Digital Library will fail only by degree.

References & resources

References and resources are available Open Access or have been made freely available by the authors unless otherwise noted.

- Archives Association of British Columbia, BC Museums Association, British Columbia Library Association. Memorandum of Understanding. (March 24, 2017). Retrieved from: <u>https://bclaconnect.ca/wp-uploads/2017/04/MOU.pdf</u>
- Arp, L., et al. "It Takes a Village: Open Source Software Sustainability." (2018). Retrieved from https://www.lyrasis.org/technology/Documents/ITAV_Interactive_Guidebook.pdf
- Barry, M., & Sifton, D. (2017, June). Towards a cross-Canadian digital library platform. In Digital Libraries (JCDL), 2017 ACM/IEEE Joint Conference on (pp. 1-2). IEEE. Retrieved from: <u>https://viurrspace.ca/handle/10613/5015</u>
- BC. (n.d.) BC's New Curriculum: Curriculum Overview [Website]. Retrieved 2018, December 12. Retrieved from: <u>https://curriculum.gov.bc.ca/curriculum/overview</u>
- BC Digital Library. (2018). Business Analysis. [Unpublished report].
- BC Digital Library website and presentations. Retrieved from: https://bcdigilib.ca
- BC History Digitization Program. (n.d.) About the BCHDP and Arca [Website]. Retrieved: 2018, December 12. Retrieved from: <u>https://bchdp.arcabc.ca/about</u>
- Bergis, J. (2017). "Let the People Lead: Supporting Sustainability vs Dependency Models for Funding Community-Based Archives." Retrieved from: <u>https://medium.com/on-archivy/let-the-people-lead-supporting-sustainability-vs-depende</u> <u>ncy-models-for-funding-community-based-82f76d54c483</u>
- DPN. (2018, December 4). DPN FAQ [Website]. Retrieved from: https://www.dpn.org/news/2018-12-04-dpn-faq

- Eden, C. and Huxham, C. (2001). The Negotiation of Purpose in Multi-Organizational Collaborative Groups. Journal of Management Studies, 38: 373-391. Available [paywall]: <u>https://doi.org/10.1111/1467-6486.00241</u>
- Fields, E., & Musser, P. (2018). Digital Libraries & K-12 Uses of Primary Sources : A UBC Library Study [P]. doi: <u>10.14288/1.0366910</u>. Retrieved from: <u>http://hdl.handle.net/2429/65922</u>
- Fook, J, Gardner, F (2007) Practicing Critical Reflection: A Resource Handbook, London: Open University Press.
- Hitchens, A. [ahitchens]. (2018, October 16). theme of taking the lead from the community itself around access, preservation, decision-making, and who does the work when working with marginalized groups <u>#NHDS_CRKN18</u> [Tweet]. Retrieved from: https://twitter.com/ahitchens/status/1052313450951536640
- Joseph, H. (2018). Securing community-controlled infrastructure: SPARC's plan of action. College & Research Libraries News, 79(8), 426. Retrieved from: <u>https://doi.org/10.5860/crln.79.8.426</u>
- Matienzo, M. [anarchivist]. (2018, November 9). the nature of precarity tied to metadata aggregation is real. people abstractly understand why it's important, but don't know how to sustain it. [Tweet]. Retrieved from: <u>https://twitter.com/anarchivist/status/1060940641796993024</u>
- McFarland, D. [danamcfarland]. (2018, October 16). Follow up to remarks from Lindsay Bilodeau & @MelGiskaast about relationship & digitization of IK & 'nothing about us without us,' Sarah Dupont challenges us to look at library assumptions re: access, and to consider how to put resources into communities #nhds_crkn18 [Tweet]. Retrieved from: https://twitter.com/DanaMcFarland/status/1052312630709256192
- McFarland, D. [danamcfarland]. (2018, April 27). in Q & A about @bcdigilibrary @CCA_Chair pitches for ongoing valuing of grassroots and community perspectives & priorities in the initiative initiative intervent #bcdl #VILSC2018 [Tweet]. Retrieved from: <u>https://twitter.com/DanaMcFarland/status/989980023409885184</u>
- Neylon, C. "Sustaining Scholarly Infrastructures through Collective Action: The lessons that Olson can teach us." KULA: knowledge creation, dissemination, and preservation studies 1.1 (2017). Retrieved from: <u>http://doi.org/10.5334/kula.7</u>
- Ran, B., & Qi, H. (2017). Contingencies of Power Sharing in Collaborative Governance. The American Review of Public Administration. Retrieved from: <u>https://www.researchgate.net/profile/Bing_Ran/publication/321631299_Contingencies_of</u>

<u>Power_Sharing_in_Collaborative_Governance/links/5a2a7daeaca2728e05db43dd/Con</u> <u>tingencies-of-Power-Sharing-in-Collaborative-Governance.pdf</u>

- Rodrigues, E., and Shearer, K. (2017). "Next Generation Repositories: Behaviours and Technical Recommendations of the COAR Next Generation Repositories Working Group." Retrieved from: <u>https://digitalcommons.unl.edu/scholcom/64/</u>
- Schonfeld, R. (2018, November 13). "Learning Lessons from DPLA." The Scholarly Kitchen [Blog post]. Retrieved from: <u>https://scholarlykitchen.sspnet.org/2018/11/13/learning-lessons-from-dpla/</u>
- Skinner, K. (2018). Community Cultivation: A Field Guide. Educopia Institute. Retrieved from: <u>https://educopia.org/cultivation/</u>
- Torfing, J., & Díaz-Gibson, J. (2016). Transforming governance to enhance social and educational innovation. Pedagogia Social, (28), 99-111. doi:10.SE7179/PSRL2016.28.08. Retrieved from: <u>https://recyt.fecyt.es/index.php/PSRI/article/view/44133/31297</u>
- Valente T., Palinkas L., Czaja S., Chu K-H., Brown C. (2015). Social Network Analysis for Program Implementation. PLoS ONE 10(6): e0131712. Retrieved from: <u>https://doi.org/10.1371/journal.pone.0131712</u>
- Verhoeven, D. "As Luck Would Have It: Serendipity and Solace in Digital Research Infrastructure." Feminist Media Histories 2.1 (2016): 7-28. Retrieved from: <u>https://deb-verhoeven.s3.amazonaws.com/papers/AsLuckWouldHavelt.pdf</u>
- Weber, S. (2004). The Success of Open Source. Cambridge: Harvard University Press. Available [paywall]: <u>https://books.google.ca/books?id=78SLSiWqy14C&lr=</u>