

University of San Diego

Digital USD

Digital Initiatives Symposium

Apr 30th, 10:15 AM - 11:15 AM

Dean's Panel - Digital Infrastructure: Paying for the Pipes

David Lewis

IUPUI University Library

Alexia Hudson-Ward

Oberlin College and Conservatory

Shan Sutton

University of Arizona

Rhonda Huisman

St. Cloud State University

Follow this and additional works at: <https://digital.sandiego.edu/symposium>

Lewis, David; Hudson-Ward, Alexia; Sutton, Shan; and Huisman, Rhonda, "Dean's Panel - Digital Infrastructure: Paying for the Pipes" (2019). *Digital Initiatives Symposium*. 10.

<https://digital.sandiego.edu/symposium/2019/2019/10>

This 60-minute panel session is brought to you for free and open access by Digital USD. It has been accepted for inclusion in Digital Initiatives Symposium by an authorized administrator of Digital USD. For more information, please contact digital@sandiego.edu.

Dean's Panel - Digital Infrastructure: Paying for the Pipes

Presenter 1 Title

Dean Emeritus

Presenter 2 Title

Dean of Libraries

Presenter 3 Title

Director of Libraries

Session Type

60-minute panel session

Abstract

David Lewis will present his talk on Digital Infrastructure. Rhonda Huisman, Alexia Hudson-Ward, and Shan Sutton will provide responses.

Location

KIPJ Room D

Creative Commons License



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

Digital Infrastructure Paying for the Pipes

David W. Lewis
Dean Emeritus, IUPUI University Library

Deans' Panel
2019 Digital Initiatives Symposium
University of San Diego
April 30, 2019

My Agenda

1. Open Scholarly Commons
2. Infrastructure Supporting the Open Scholarly Commons
3. Why Creating and Maintaining this Infrastructure is So Hard
4. How We Can Overcome the Challenges and Make It Happen

Goal: Open Scholarly Commons

The Open Scholarly Commons will make the **research create at all of our institutions**, and the data and methods that underlie this research, evaluation of it and commentary on it, **easily and freely available to everyone in the world** who wish to use it. This content will be discoverable, accessible, and preserved.

Like libraries have always been, it will consist of many different resources connected with a variety of tools. **It will be complicated and messy.**

In the end, libraries can point out the fact that their future role actually points in two, apparently opposite, yet deeply complementary directions: on the one hand, they plunge deeply into the local production scenes since they aim at **systematically sweeping, storing, preserving, and curating all that is produced in their hosting institution**; at the same time, the libraries, with their sister institutions, are involved in the task of **ensuring a vibrant knowledge-nurturing life for their documents**: they will circulate, be discoverable, be interoperable, be evaluated, etc. With the first function, each library ensures it safe and strong function within its host institution; with the second function, the libraries connect to bring the knowledge infrastructure that we all really need.

Goal: Open Scholarly Commons

1. **Content** — from institutions and individuals.
2. **Infrastructure** — systems and services that make contributed content discoverable, accessible, and that preserve it. Needs to be integrated and should cover the whole scholarly workflow.

Scholarly communities will be build on the commons and these communities will facilitate its creation.

Infrastructure for the Commons

Systems and Services

1. Repositories — Dspace, Fedora, Islandora, CONTENTdm, bepress
2. Directories and Indexes — Google, GoogleScholar, DOAJ, Unpaywall, Open Access Button, OpenCitations
3. Services — Orcid, Crossref, Creative Commons
4. Preservation — LOCKSS, Meta Archive
5. Evaluation and Comment — Impactstory, Hypothes.is

Infrastructure for the Commons

To create the commons requires:

1. A system(s) of **governance**
2. Ongoing **provision of resources (mostly money)** from individuals and/or institutions.

Today the open community is an **underfunded hodgepodge of disconnected projects**.
This is not adequate!

Four principles of...



...the information system supporting research

Four principles of...

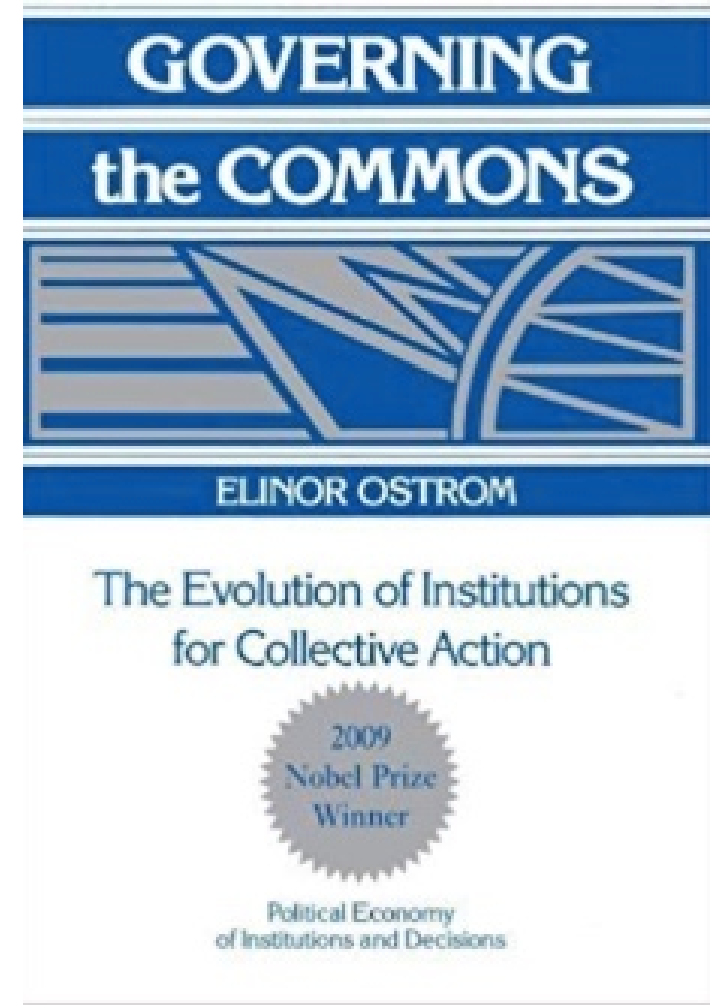
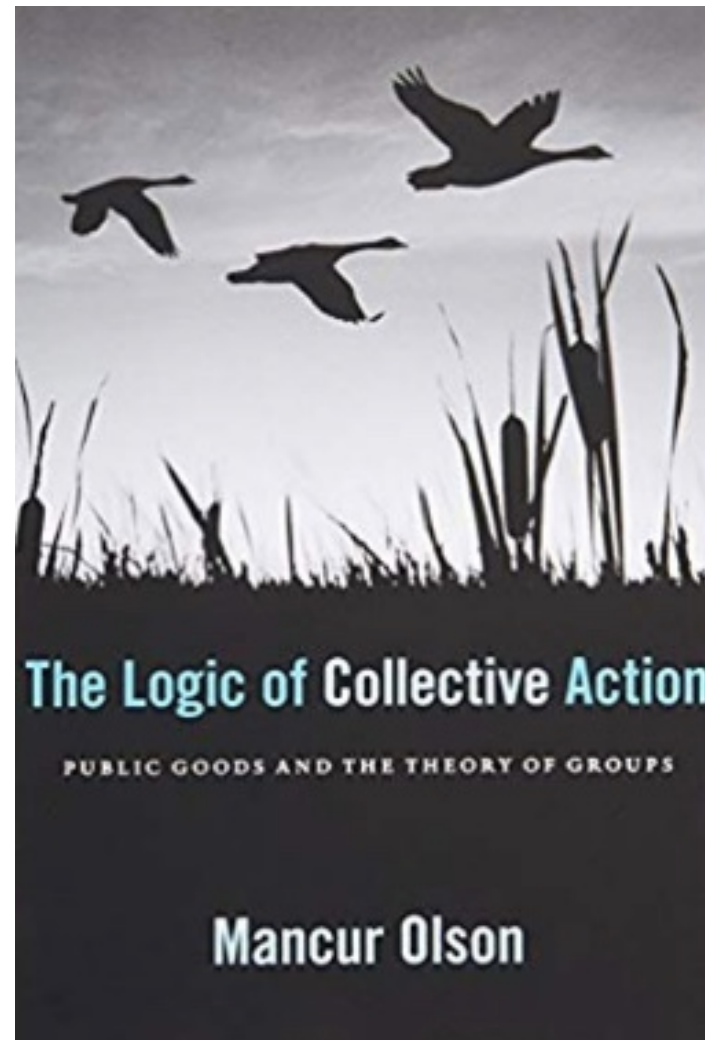
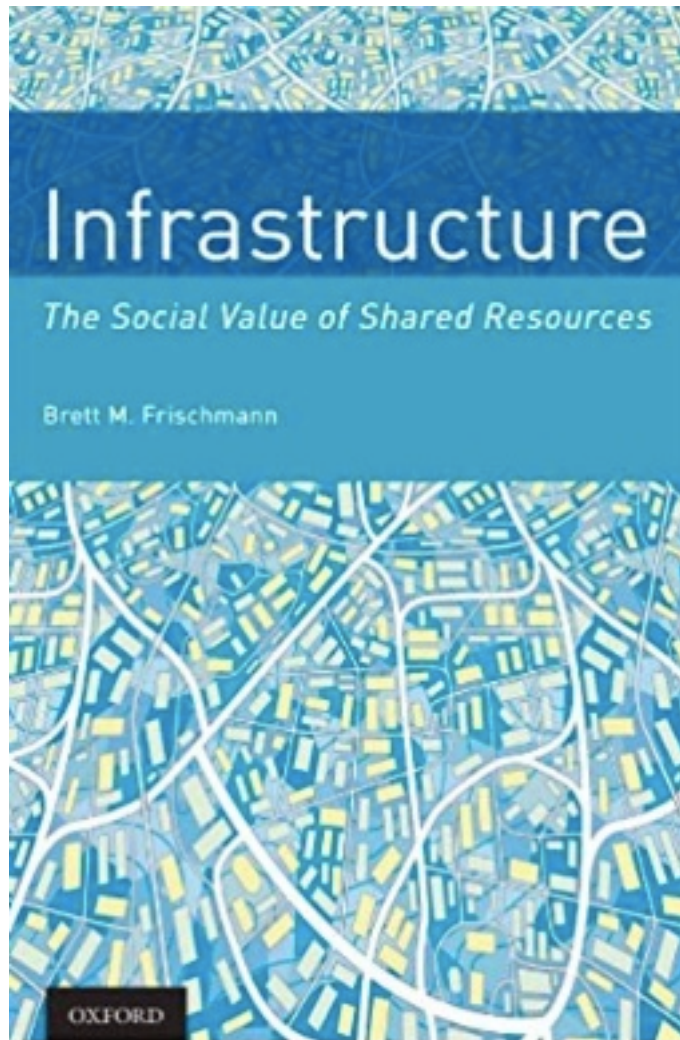


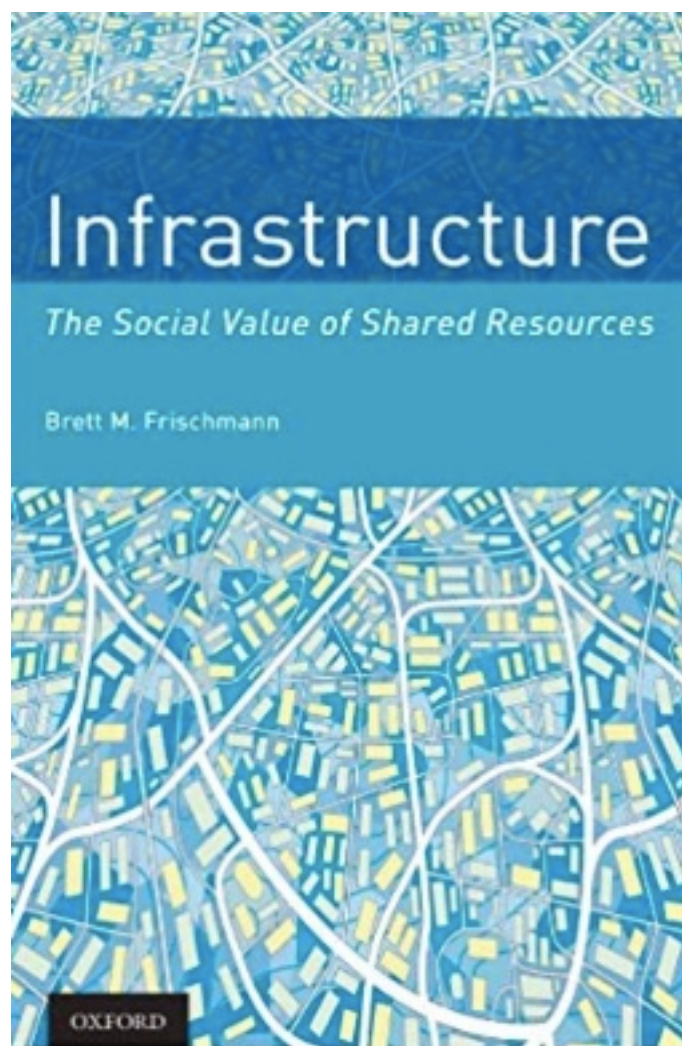
...the information system supporting research

Important Issues

Why is it so hard to create and maintain the infrastructure?

How can we **overcome the challenges** and make it happen?





Infrastructure

The Social Value of Shared Resources

Brett M. Frischmann

OXFORD

Frischmann: The Nature of Infrastructure

Infrastructure is a **shared means to many ends**.

Infrastructures generally are **managed in an openly accessible manner** whereby all members of a community who wish to use the resource may do so on an equal and non-discriminatory terms.

Frischmann: The Nature of Infrastructure

Infrastructures generate significant **spillovers** (positive externalities) that result in **large, but often unknowable, social gains.**

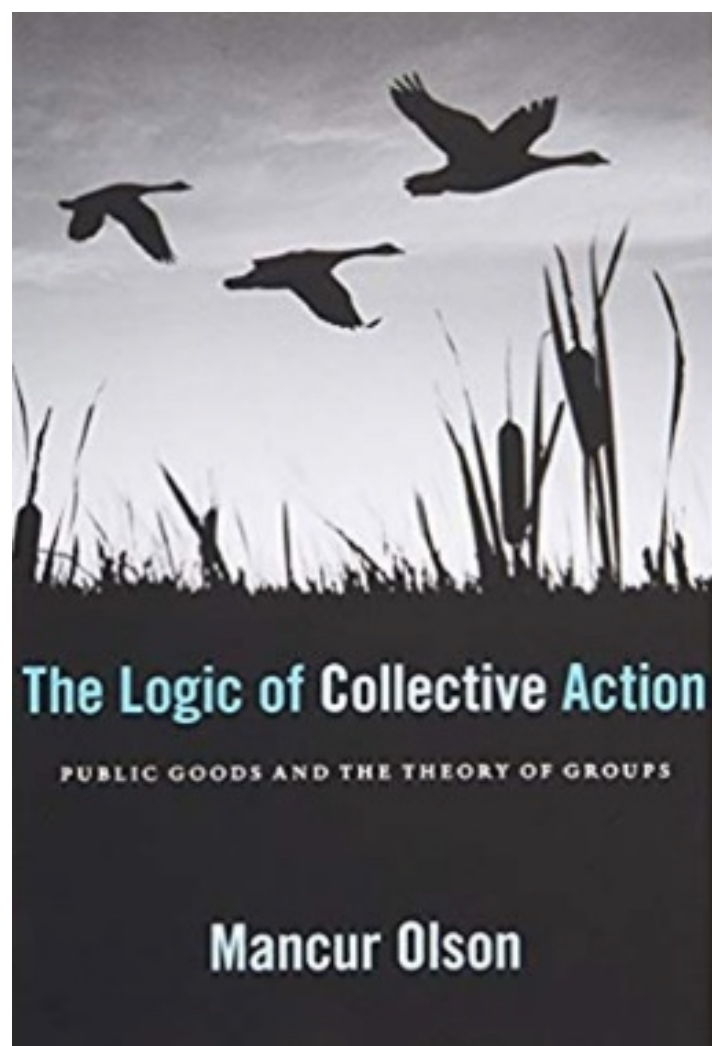
Governments have and continue to play a significant and widely accepted role in ensuring the provision of infrastructures.

- can compel contributions — taxes
- can take spillover effects into account

Frischmann: The Nature of Infrastructure

Infrastructure in general is difficult because:

1. There is often a very **high initial cost**.
2. Many of the benefits of infrastructure accrue to individuals, firms, and to society at large, making the **measurement of impact difficult**. They often also accrue indirectly and long after the actual use.



The Logic of Collective Action

PUBLIC GOODS AND THE THEORY OF GROUPS

Mancur Olson

Olson: Difficulties of Collective Action

“Though all of the members of the group therefore have a **common interest in obtaining the collective benefit**, they have **no common interest in paying the cost** of the providing that collective good. Each would prefer that others pay the entire cost, and ordinarily would get any benefit provided whether he had borne part of the cost or not.”

Olson: Difficulties of Collective Action

“The larger a group is, the further it will fall short of obtaining an optimal supply of any collective good, and the less likely that it will act to obtain even a minimal amount of such a good. In short the larger the group, the less it will further its common interest.”

Olson: Difficulties of Collective Action

How can groups produce collective action?

1. Coercion (taxes)
2. Outside inducements (club goods)
 - Requires excludable good
3. Oligopoly-sized groups

Collective Action and Scholarly Communication — John Wenzler

“Although it is likely that university **libraries could develop a more efficient system of scholarly communication** if they were to redeploy their collective subscription budgets, each individual library — when it decides how to spend its own little piece of that huge pie — has **little incentive to redirect its own expenditures**... Unfortunately, if every librarian waits for every other librarian to make the investments necessary to develop a sustainable system of Gold OA publishing, it may never happen.”

Collective Action and Scholarly Communication — Cameron Neylon

How can groups produce collective action? Neylon's Response:

1. Coercion

- indirect cost taken by institutions
- top-slicing of funder

Collective Action and Scholarly Communication – Cameron Neylon

2. Outside inducements

- It requires the **creation of a good or service that is non-rivalrous but excludable**
- Freemium
- Crossref – Contributors gain the right to mint DOIs and the broader community gain an open database of scholarly content

Collective Action and Scholarly Communication— Cameron Neylon

3. Reducing the size of the group — Oligopoly

- Groups of large funders or governments
- Plan S
- HathiTrust

GOVERNING

the COMMONS



ELINOR OSTROM

The Evolution of Institutions
for Collective Action



Political Economy
of Institutions and Decisions

Ostrom: To Solve Appropriation and Provision Problems

Individuals must learn:

1. About the **structure of the physical systems** on which they jointly rely.
2. Their **own appropriation and use patterns**
3. The **norms of behavior** that are followed in a community.

Ostrom: To Solve Appropriation and Provision Problems

Individuals must learn:

4. The incentives they will encourage or discourage as they change rules.
5. About how all of these factors will cumulatively effect their **net benefits and costs over time.**
6. What types of transaction costs will be involved

Ostrom: Success in Creating a Common Pool Resource (CPR)

1. Parties share a **common judgement that they will be harmed** if they do not adopt an alternative arrangement.
2. Parties will be **affected in similar ways** by the proposed arrangement.
3. Parties **highly value the activities** from the CPR, they have **low discount rates**.

Ostrom: Success in Creating a CPR

4. Parties face relatively low information, transformation, and enforcement costs.
5. Parties share **norms of reciprocity and trust** that can be used as initial social capital.
6. The **group is relatively small and stable**.

Fundamental Truth #1:

There is no sustainable path to an open scholarly commons, and the infrastructure that underlies it, without sustained and substantial investment from academic libraries.

Fundamental Truth #2:

If we do not create the open scholarly commons, Elsevier, Springer, and Wiley will own the scholarly record and continue to exploit the academy.

What should be a public good will be used for private gain.

The 2.5% Commitment:

Every academic library should **commit to invest 2.5% of its total budget** to support the common infrastructure needed to create the open scholarly commons.

Why 2.5%?

The *Financial Times* reported that Elsevier paid **\$115 million** to acquire Bepress

2.5% of \$7 billion (annual U.S. academic library expenditures) = \$175 million

60% of \$175 million = **\$105 million**

U.S. Department of Education, *Academic Libraries: 2012. First Look* (Washington, DC: National Center for Educational Statistics, January 2014), 10, <https://nces.ed.gov/pubs2014/2014038.pdf>

David Bond, "Relx Buys Bepress to Boost Academic Publishing," *Financial Times*, August 2, 2017, <https://www.ft.com/content/c6f6c594-7787-11e7-a3e8-60495fe6ca71>.

Since the 2.5% Commitment?

Academic libraries must learn (following Ostrom):

1. About the structure of the physical systems on which they jointly rely.
2. Their own appropriation and use patterns.
3. The norms of behavior that are followed in a community.

When we know these things, we will know if 2.5% is the right number. Today few academic libraries have a clue.

What You Should Do

Penn State Expectations

6. **Take a leadership position amongst BTAA and Pennsylvania peer institutions** with respect to Open Access, Open Data, Open Educational Resources, and Open Source.
 - Penn State should become one of the leading BTAA institutions, joining Rutgers, Indiana, Illinois, and Purdue, with an Open Access Policy as well as **becoming the first BTAA institution** with an integrated approach across the Open ecosystem.
13. **Create a plan, with specific commitments**, with the intention of shifting funding from journal subscriptions to **supporting, publishing, and disseminating open access research** in support of PSU long term objectives and strategic planning ([View examples of some experimental OA initiatives in Table 2 \(P. 7\)](#). [View a 2.5% spending proposal.](#))

What You Should Do

- 2. Contribute to what you use.** Assess your use of the various services and systems and their value to your library. Assess your support for the various systems and services. **Bring value and contribution into alignment.**

What You Should Do

- 3. Agree on norms of contribution.** Talk to your colleagues. Share information. Hold each other accountable.

If you and our peers are in synch, your campus leadership will think it is the right thing to do because they will want to be like everyone else.

On to the Panelists

David W. Lewis

Dean Emeritus, IUPUI University Library

dlewis@iupui.edu