

University of Maryland – April 26, 2017

# **Sustainable Collection Management:** *Enabling the Transformation of Libraries*

**Matt Barnes**

Director, Sustainable Collection Services (SCS)

# Topics

- Sustainable Collection Services
- Libraries Evolving
- Learning-Centered Thinking
- Practical Considerations
- The Facilitated Collection
- Enabling Transformation
- Impact – Group Projects

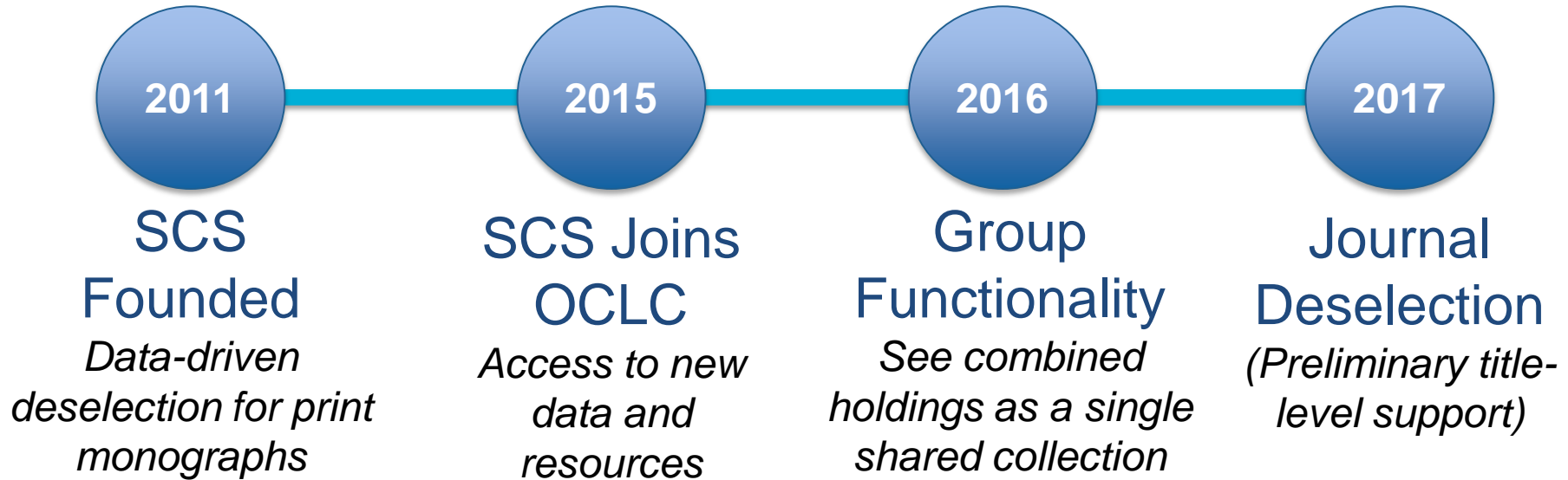
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# Sustainable Collection Services

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# Sustainable Collection Services (SCS)

**SCS: Helping libraries manage and share print monographs since 2011**



# Library Projects

## Individual Projects

- Indiana University\*
- Arizona State University\*
- Oregon State University\*
- Eastern Washington University\*
- Michigan State University
- Johns Hopkins University
- Iowa State University
- Boston College
- MIT Libraries
- McGill University

## Group Projects

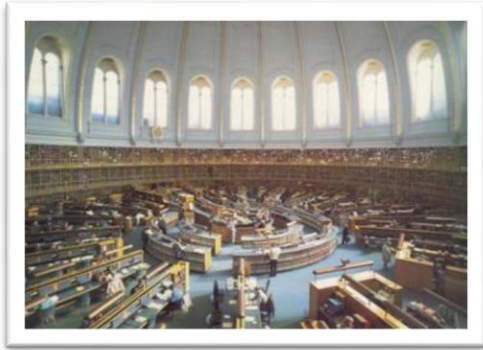
- University System of Maryland & Affiliated Institutions (USMAI)\*
- Statewide California Electronic Library Consortium (SCELC)\*
- Eastern Academic Scholars' Trust (EAST)
- Michigan Shared Print Initiative (MI-SPI)
- Council of Prairie and Pacific University Libraries (COPPUL)
- Washington Research Library Consortium (WRLC)
- Academic Libraries of Indiana (ALI)

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# Libraries Evolving

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# Evolution of the Library Paradigm



**Reader-centered:**  
from monastic  
scriptorium  
& library;  
dominated by light  
& reading tables



**Book-centered:**  
local access;  
unrelenting need for  
shelving



**Learning-centered:**  
digital content;  
information commons;  
learning spaces;  
information literacy

Source: Scott Bennett, *Libraries and Learning: A History of Paradigm Change* (2003)<sup>1</sup>

# Book-Centered Paradigm



*“Libraries built as late as the 1890s were, like those in Lunt<sup>1</sup> and Altgeld<sup>2</sup> Halls dominated by reader spaces, not by shelving.”*

- Scott Bennett, Libraries and Learning<sup>3</sup>

*“Book space, not reader space, came to dominate the library [Altgeld Hall] over a period of just 50 years.”*

- Scott Bennett, Libraries and Learning<sup>3</sup>

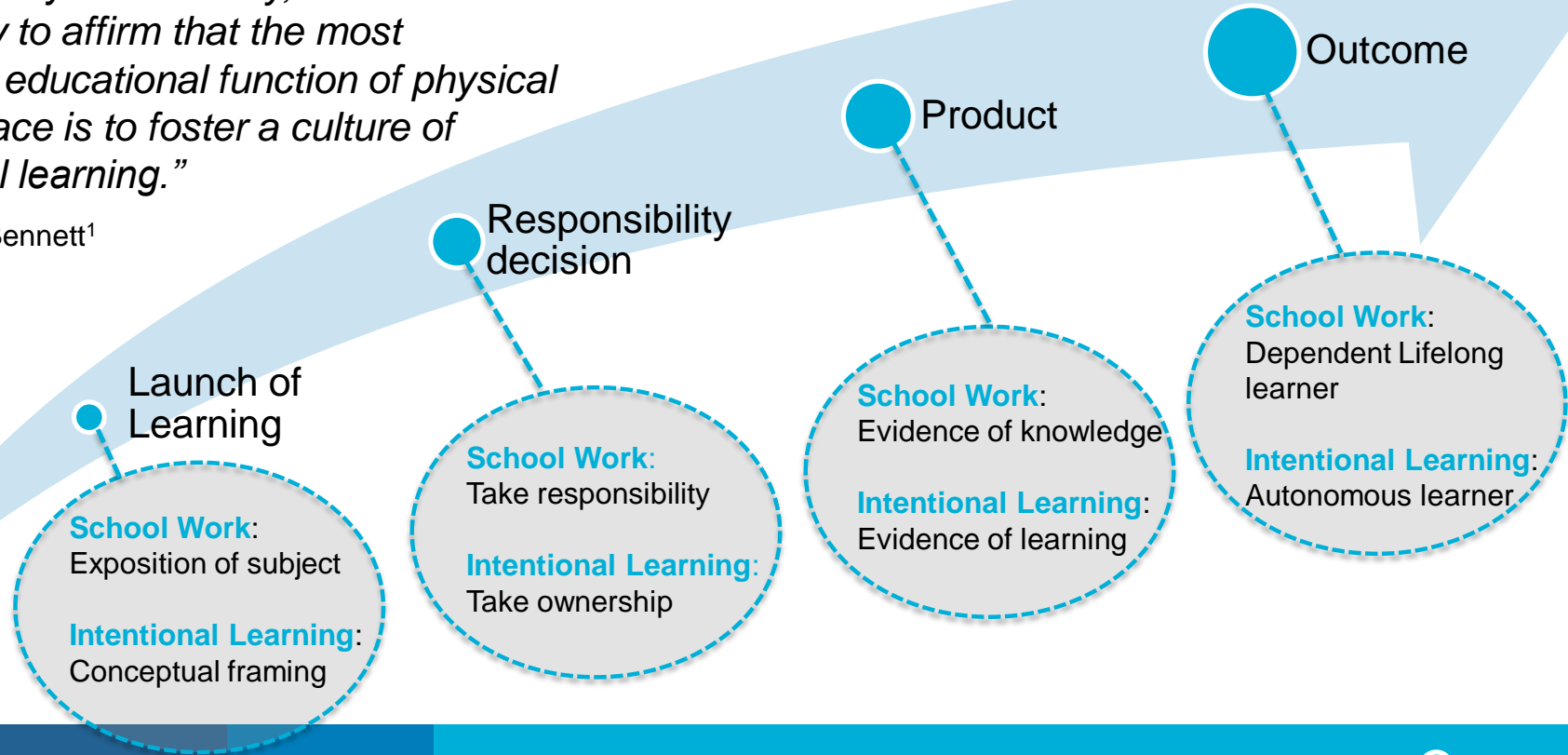
Source: Scott Bennett, Libraries and Learning: A History of Paradigm Change (2003)



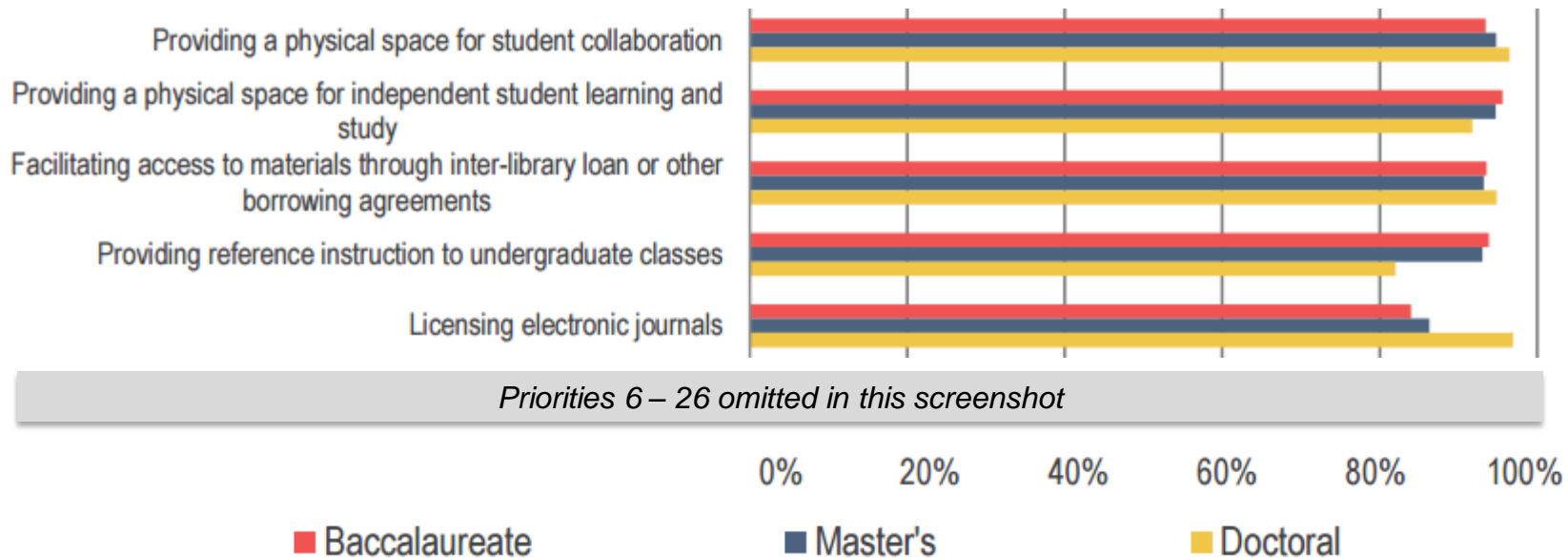
# Learning-Centered Paradigm

*“In the twenty-first century, we need constantly to affirm that the most important educational function of physical library space is to foster a culture of intentional learning.”*

- Scott Bennett<sup>1</sup>



# Ithaka 2016 Library Survey



Ithaka S+R US Library Survey 2016  
April 3, 2017  
Christine Wolff-Eisenberg  
<https://doi.org/10.18665/sr.303066>

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# Learning-Centered Thinking

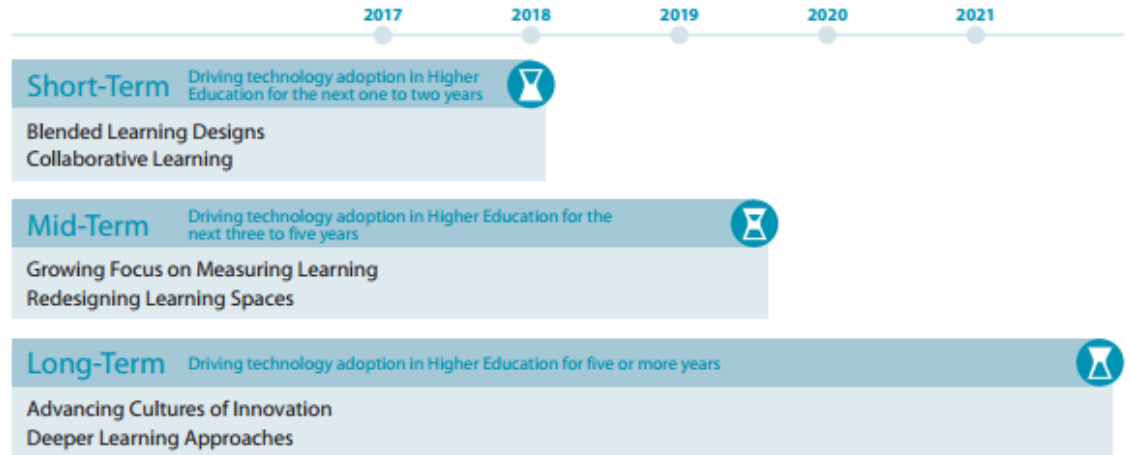
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# 2017 NMC Horizon Report



## NMC Horizon Report > 2017 Higher Education Edition at a Glance

### Key Trends Accelerating Higher Education Technology Adoption



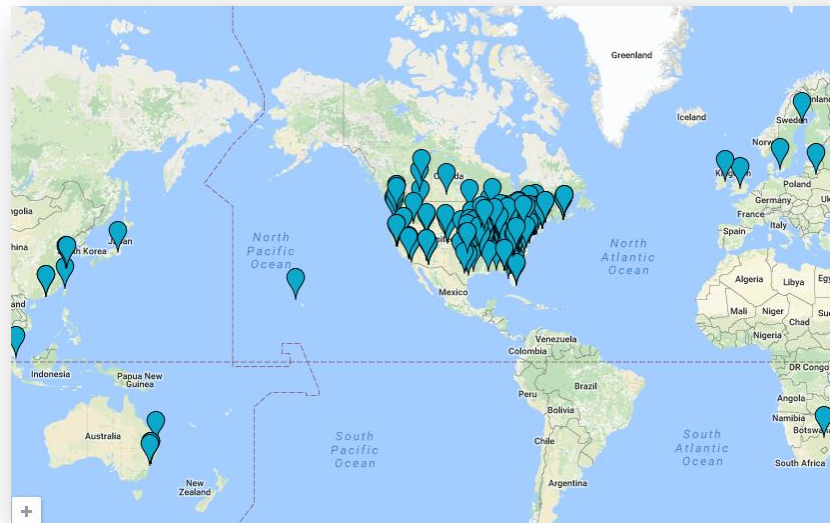
Source: NMC Horizon Report: 2017 Higher Education  
Screenshots: Pages 1, 3  
<http://cdn.nmc.org/media/2017-nmc-horizon-report-he-EN.pdf>

# Advancing Cultures of Innovation

Supporting the exploration of new ideas across learning institutions  
(Horizon, 10)



University of Nevada Reno's Makerspace  
Screenshot: NevadaToday<sup>2</sup>



3D Printer Map created by Amanda Goodman<sup>3</sup>  
Screenshot: 3D Printers in Libraries<sup>4</sup>

# Deeper Learning Approaches

“...content that engages students in critical thinking, problem solving, collaboration, and self-directed learning.” (Horizon, 12)



## Syracuse University's Blackstone Launchpad

Image: Blackstone Launchpad Facebook page<sup>2</sup>

## SYRACUSE UNIVERSITY | NEWS CAMPUS & COMMUNITY

Campus & Community

### Libraries' Blackstone LaunchPad wins Fast Pitch Competition at Charleston Conference

Monday, November 7, 2016, By Pamela Whiteley McLaughlin

+ Share

The Blackstone LaunchPad won the Judges' Prize at the inaugural Charleston Conference Fast Pitch Competition on Nov. 4. The new innovation competition looks for compelling new ideas in academic library and information management. A committee of professional judges selected the winners from a national field of applicants.

Scott Warren, associate dean for research and scholarship at Syracuse University Libraries, pitched the libraries' idea. Warren oversees collections and subject librarian services and is taking part in the 2016-2017 Association of Research Libraries (ARL) Leadership Fellows Program. He developed the Fast Pitch proposal with Linda Dickerson Hartsock, Blackstone LaunchPad executive director; Stephanie McReynolds, the University's business, management and entrepreneurship librarian; and other library staff.



## Charleston Fast Pitch Winner – 2016

Screenshot: SU Campus & Community<sup>3</sup>

# Redesigning Learning Spaces

Educational settings designed for project-based interactions and equipped to support technology. (Horizon, 16)



University of Iowa Learning Commons



NCSU Libraries' Teaching & Visualization Lab  
Screenshot: NCSU Libraries website<sup>3</sup>

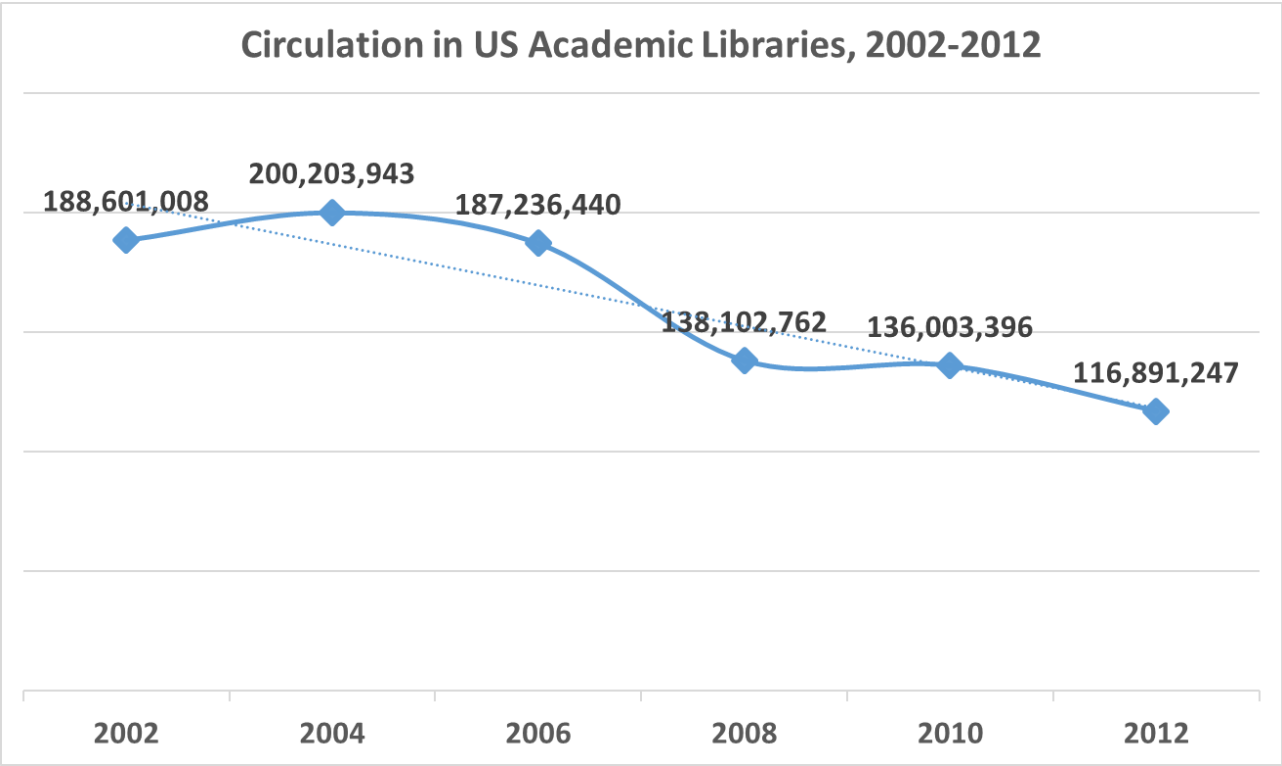
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# Practical Considerations

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# Declining Print Book Circulation (NCES)<sup>1</sup>



# Space Requirements: Monographs

| Volumes   | Square Feet   |
|-----------|---|
| 100,000   | 20,000  |
| 250,000   | 45,000  |
| 500,000   | 80,000  |
| 1,000,000 | 150,000   |
| 2,700,000 | 405,000   |
|           |   |
|           | <p><u>Source:</u> Stephen R. Lawrence, Lynn Silipigni Connaway, and Keith H. Brigham, "Life Cycle Costs of Library Collections" <i>College &amp; Research Libraries</i>, November 2001, p. 546.</p> |



*Equivalent  
to seven  
US football  
fields*

# Maintenance Cost - Monographs

- **\$4.26** / volume in central stacks
- **\$0.86** / volume in high-density facility



## On the Cost of Keeping a Book

Paul N. Courant and Matthew "Buzzy" Nielsen\*

### 1. Introduction

Among the critical functions of research and academic libraries is preservation—keeping both the scholarly record and much of the associated cultural record fit for use over time. Until recently, maintaining this record entailed managing primarily printed works, of ink on paper, bound in book form. The advent of electronic texts poses a novel and expensive set of preservation problems for academic libraries that have been addressed by many current and recent studies on the cost of digital preservation.<sup>1</sup> The topic of this report is the cost of storing and using print in old-fashioned codex form.<sup>2</sup>

We have two motivations for doing this work. The first is something of a straw man: as librarians and their funders become increasingly aware of the daunting technical and economic problems associated with digital preservation, there is often a certain wistfulness for

## Annual Cost of 100,000 Monographs



Central stacks

**\$426,000**  
per year

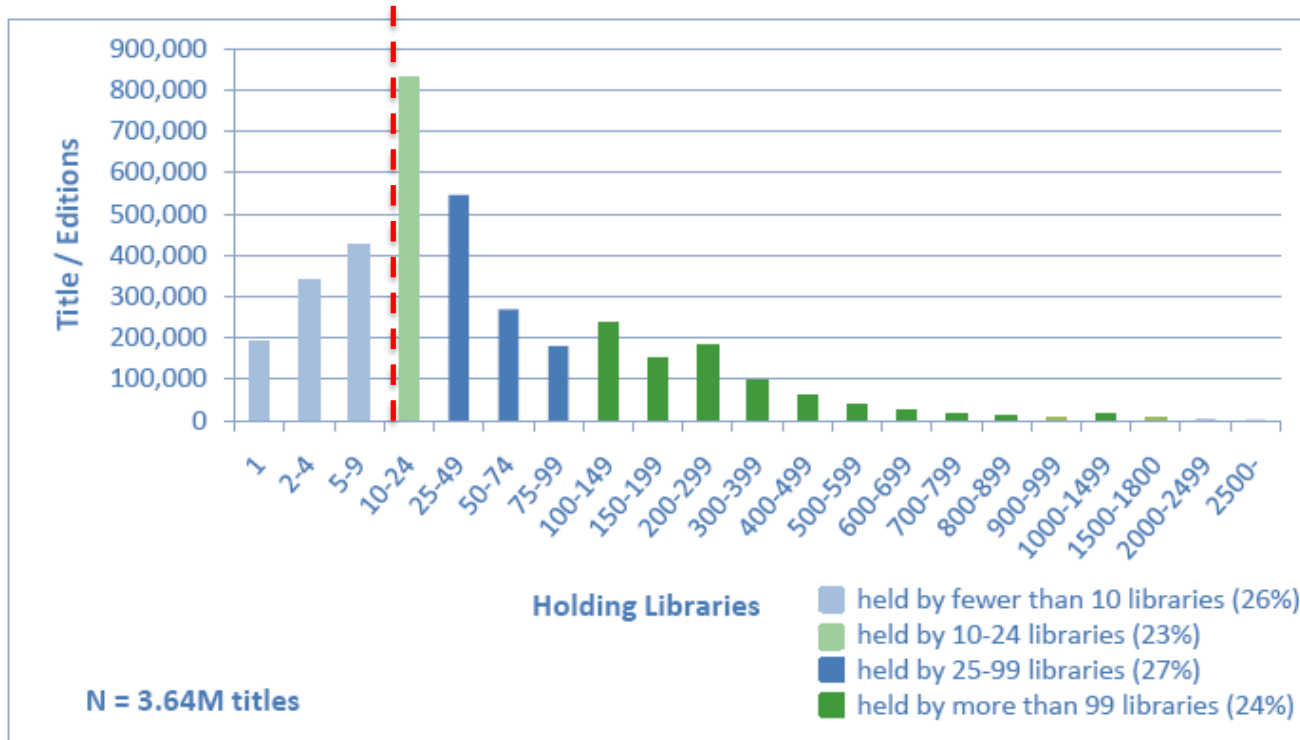


High-density off-site  
storage stacks

**\$86,000**  
per year

# Print Monograph Redundancy is Significant

Cloud-sourcing Research Collections: Managing Print in the Mass-digitized Library Environment



Constance Malpas,  
“Cloud-sourcing  
Research  
Collections”<sup>1</sup>

Figure 8. System-wide distribution of library holdings for titles in HathiTrust Digital Library (June 2010)

# Finding the Right Balance



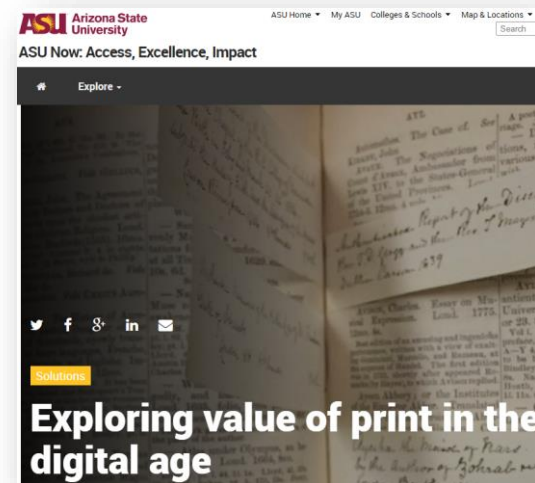
# Case in Point 1: ASU Renovation



Screenshot: Inside Higher Ed<sup>1</sup>

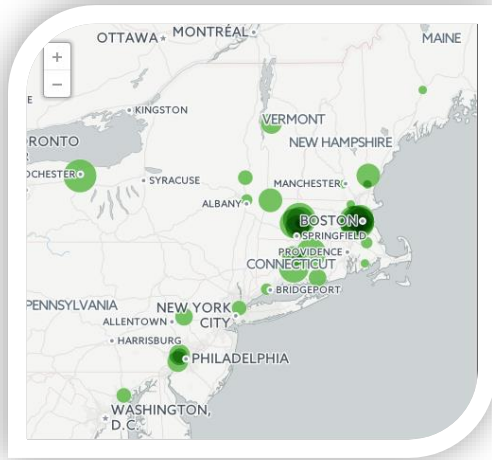


Screenshot: EAB Daily Briefing<sup>2</sup>



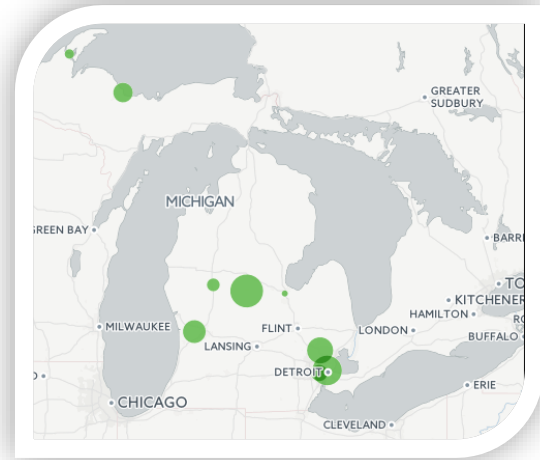
Screenshot: ASU Now<sup>3</sup>

# Case in Point 2: SCS Group Projects



## EAST Group Project

6M+ Retention Commitments



## MI-SPI Group Project

400k+ Retention Commitments

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# The Facilitated Collection

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# Group Projects and Shared Print

**Not Scotch, but Rum:  
The Scope and Diffusion  
Presence in the Publishing**

**Brian Lavoie**

Research Scientist  
OCLC Research



**Right-scaling Stewardship:  
A Multi-scale Perspective on Cooperative  
Print Management**

#printscale

**Constance Malpas**  
Program Officer

**Brian Lavoie**  
Research Scientist



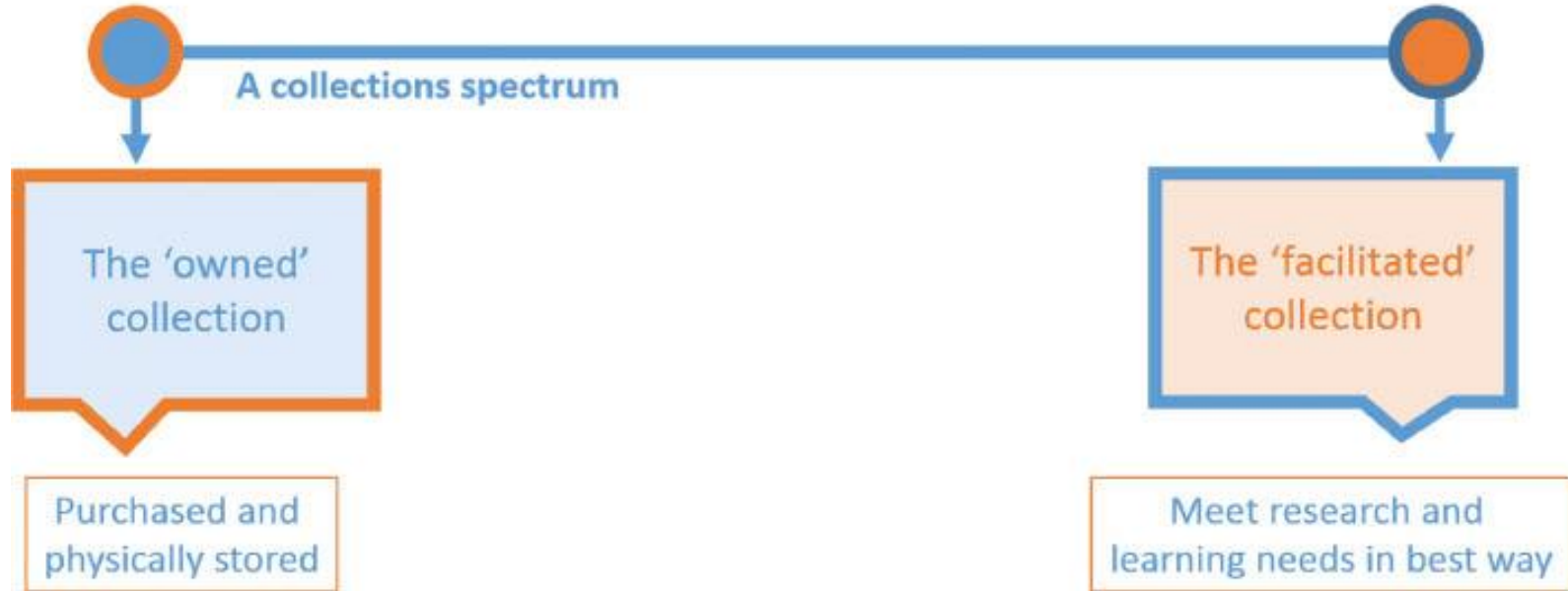
# The Facilitated Collection

*“Increasingly, the library does not assemble collections for local use, but facilitates access to a coordinated mix of local, external and collaborative services assembled around user needs and available on the network.” (Dempsey, 1)*

Dempsey, L., (2016). Library collections in the life of the user: two directions. LIBER Quarterly. 26(4).  
DOI: <http://doi.org/10.18352/lq.10170>

**A print logic:** the distribution of print copies to multiple local destinations

**A network logic:** a coordinated mix of local, external and collaborative services are assembled around user needs



Dempsey, L., (2016). Library collections in the life of the user: two directions. *LIBER Quarterly*. 26(4).  
DOI: <http://doi.org/10.18352/lq.10170>

The 'external' collection:  
Pointing researchers at Google Scholar;  
Including freely available ebooks in the catalog;  
Creating resource guides for web resources.

The 'borrowed' collection

The 'shared print' collection

The 'shared digital' collection

The evolving scholarly record



A collections spectrum



The 'owned' collection

The 'licensed' collection

The 'demand-driven' collection

The 'facilitated' collection

Purchased and physically stored

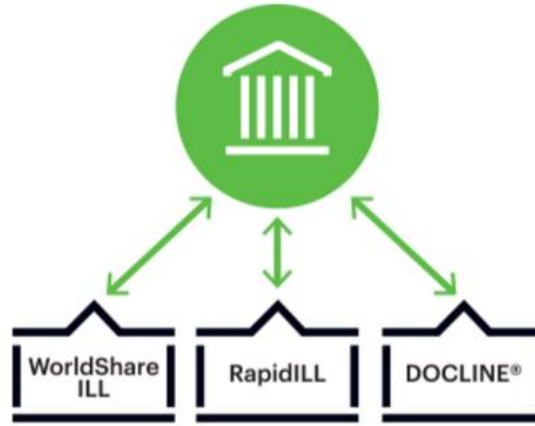
Meet research and learning needs in best way

# The Borrowed Collection

“WorldCat has emerged as an important registry for the borrowable collective collection, spanning thousands of libraries.” (Dempsey, 9)



WorldShare Interlibrary Loan



Tipasa



Relais D2D

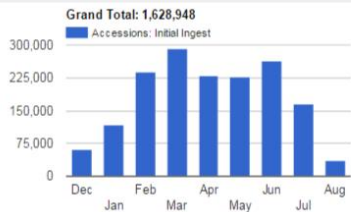
# The Shared Print Collection

“A large part – perhaps the majority? – of library collections will be under shared print management within the next decade.” (Dempsey, 9)



LSC Construction Progress

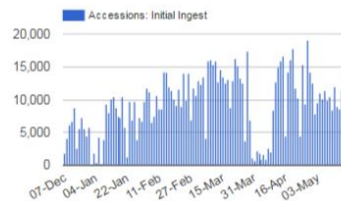
## LSC MONTHLY STATS



## LSC STATS WEEKLY



## LSC STATS DAILY



Screenshot:  
Georgia Tech  
Library website<sup>2</sup>

# The Shared Digital Collection

“As libraries digitize their collections, it has become clear that very few individual institutions are strong gravitational hubs in themselves.”  
(Dempsey, 9)

The screenshot shows the HathiTrust Digital Library interface. At the top left is the HathiTrust logo. To its right are tabs for 'FULL-TEXT' and 'CATALOG'. A search bar contains the text 'Search words about or within the items'. Below the search bar are links for 'Advanced full-text search' and 'Search tips', and a 'Full view only' checkbox. A 'LOG IN' button is on the right. Below the search bar, a text block explains that collections are a way to group items and that full-text can be searched independently. There are tabs for 'All', 'Recently Updated', 'Featured', and 'My Collections'. Below these are filters for 'Collections with at least' (set to 'all items') and a 'Create new collection' link. A 'Sort by' dropdown is set to 'Collection Title', and a 'Find a collection' input field is present. An orange banner indicates 'Showing 48 of recently updated collections' with a 'Reset' button. Below this, a collection titled 'Spring 2017' is shown, owned by Stephen Edward Pannuto (University of Chicago), with 2 items and last updated on 03/21/17. On the right, a 'Featured Collections' section highlights 'Ancestry and Genealogy' with a book cover image and a description: 'Online content related to genealogy, family history, ancestry, etc.'


HathiTrust Digital Library<sup>1</sup>

The screenshot shows the Trove National Library of Australia homepage. At the top is the Trove logo. Below it, a text block states: 'Find and get over 537,548,188 Australian and online resources: books, images, historic newspapers, maps, music, archives and more'. A search bar shows '10,190 searches this hour' and a 'Search' button. Below the search bar are checkboxes for 'Available online', 'Australian content', and 'In my libraries'. A grid of categories includes 'Digitised newspapers and more', 'Government Gazettes', 'Journals, articles and data sets', 'Books', 'Pictures, photos, objects', 'Music, sound and video', 'Maps', 'Diaries, letters, archives', 'Archived websites (1996 - now)', 'People and organisations', and 'Lists'. A 'Trove spotlight' section features 'The Australian WOMEN'S WEEKLY 1933 - 1982'. On the left, a 'Learn about Trove' section provides a guide and information on how to correct newspaper text or order a copy. Below that is a 'Contribute' section with statistics: 8,661 newspaper text corrections today, 1,648 images from users this month, 17,473 items tagged this week, 2,902 comments added this month, 597 works merged or split this month, and 704 lists this month. It also includes a 'News' section with '30 new Tasmanian titles in Trove' and social media links for Twitter and Facebook.

Trove – National Library of Australia<sup>2</sup>

# The Evolving Scholarly Record

“Now, increasingly, there is an interest in a variety of other outputs: working papers, research data, preprints, and so on.” (Dempsey, 9)



Open access to 1,252,080 e-prints in Physics, Mathematics, Computer Science, Quantitative Biology, Quantitative Finance and Statistics

Subject search and browse:

10 Mar 2017: [New members join arXiv Member Advisory Board](#)

06 Mar 2017: [arXiv Scientific Director Search](#)

10 Feb 2017: [Attention Submitters: our TeX processing system has been updated](#)

11 Jan 2017: [The annual update from the arXiv team is now available](#)

See cumulative "What's New" pages. Read robots [beware](#) before attempting any automated download

## Physics

- **Astrophysics** ([astro-ph new](#), [recent](#), [find](#))  
Includes: [Astrophysics of Galaxies](#); [Cosmology and Nongalactic Astrophysics](#); [Earth and Planetary Astrophysics](#); [High Energy Astrophysical Phenomena](#); [Instrumentation and Methods for Astrophysics](#); [Solar and Stellar Astrophysics](#)
- **Condensed Matter** ([cond-mat new](#), [recent](#), [find](#))  
Includes: [Disordered Systems and Neural Networks](#); [Materials Science](#); [Mesoscale and Nanoscale Physics](#); [Other Condensed Matter](#); [Quantum Gases](#); [Soft Condensed Matter](#); [Statistical Mechanics](#); [Strongly Correlated Electrons](#); [Superconductivity](#)

arXiv.org – Cornell University Library<sup>1</sup>



Welcome to the UC Irvine Machine Learning Repository!

We currently maintain 360 data sets as a service to the machine learning community. You may [view all data sets](#) through our searchable interface. Our [old web site](#) is still available, for those who prefer the old format. For a general overview of the Repository, please visit our [About page](#). For information about citing data sets in publications, please read our [citation policy](#). If you wish to donate a data set, please consult our [donation policy](#). For any other questions, feel free to [contact the Repository librarians](#). We have also set up a [mirror site](#) for the Repository.

Supported By:  In Collaboration With: 

| Latest News:  | Newest Data Sets:   | Most Popular Data Sets (hits since 2007):   |
|---|---|---|
| <p>04-04-2013: Welcome to the new Repository admins Kevin Bache and Moshe Lichman</p> <p>03-01-2010: <a href="#">Note</a> from donor regarding Netflix data</p> <p>10-16-2009: Two new data sets have been added.</p> <p>09-14-2009: Several data sets have been added.</p> <p>07-23-2008: <a href="#">Repository mirror</a> has been set up.</p> <p>03-24-2008: New data sets have been added!</p> | <p>11-23-2016:  <a href="#">NIPS Conference Papers 1987-2015</a></p> <p>11-16-2016:  <a href="#">Amazon book reviews</a></p> <p>08-14-2016:  <a href="#">Dota2 Games Results</a></p> <p>08-05-2016:  <a href="#">Facebook metrics</a></p> | <p>1284589:  <a href="#">Iris</a></p> <p>870699:  <a href="#">Adult</a></p> <p>659485:  <a href="#">Wine</a></p> <p>569005:  <a href="#">Car Evaluation</a></p> |

UCI Machine Learning Repository<sup>2</sup>



# The Licensed Collection

“...the collection is more elastic as titles are added or dropped, as needs, budgets or priorities change.” (Dempsey, 8)

# The Demand Driven Collection

“DDA represents a move away from just in cases, owned collections, based on librarian judgment, towards a model which is built around patron behaviors.” (Dempsey, 9)

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# Enabling Transformation

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# A Range of Options



**Compact Shelving**



**Offsite Storage  
(Regular Stacks)**



**Offsite Storage  
(High Density)**



**Deselection**

# Where Is the Data?

## Library/Group

- Bibliographic
- Item (location, type status)
- Circulation
- Local rules
- Regional partners
- Comparators

## SCS/Vendor

- Filtering
- Remediation
- Aggregation
- Synthesis
- Augmentation

## External

- **WorldCat**
- HathiTrust
- CHOICE/Other Lists
- Internet Archive
- [Commercial availability]

2.



3.

1.



Library's bib, item  
and transaction  
data for  
Monographs



# Independent Action in a Collective Context



Collection

Analysis

Admin

Central Michigan ▾



OVERVIEW

**VISUALIZE**

REMEDIAION

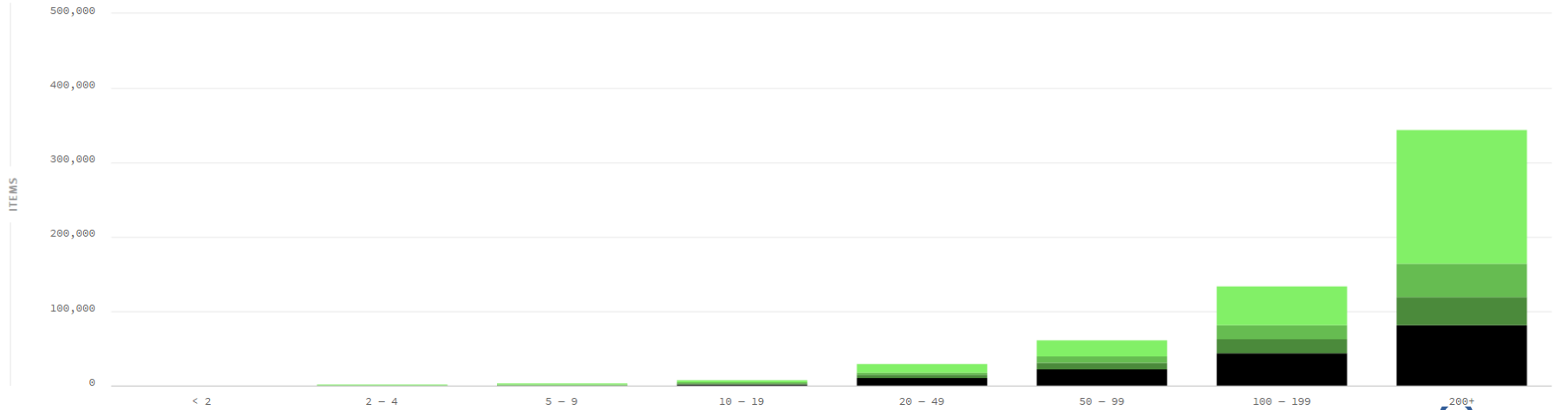
KNOWN ITEM SEARCH

US Holdings ([Same Edition](#))

Distribution: US HOLDINGS

Overlay: RECORDED USES

■ 0 28.48% | 167,287   ■ 1 12.34% | 72,520   ■ 2 13.17% | 77,379   ■ 3+ 45.98% | 270,039



# Visualizing The Collection



Collection

Analysis

Admin

Central Michigan ▾



OVERVIEW

**VISUALIZE**

REMEDIATION

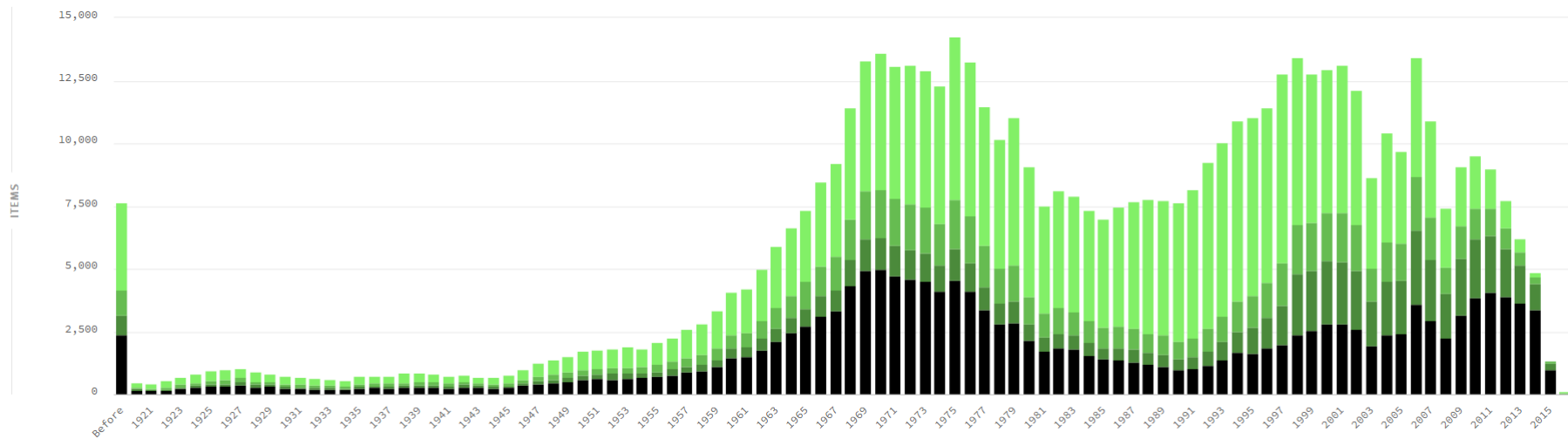
KNOWN ITEM SEARCH

Year Published

Distribution: YEAR PUBLISHED

Overlay: RECORDED USES

■ 0 28.48% | 167,280   ■ 1 12.34% | 72,515   ■ 2 13.17% | 77,379   ■ 3+ 45.98% | 270,038



# Scenario Analysis - Query Builder



Collection

Analysis

Admin

Central Michigan  

OVERVIEW

QUERY BUILDER

Copy of General Withdrawal Candidate List

 QUERY LIST

 EXPORT XLSX

## SUBJECTS

- All subjects
- Specific LC classes

## LOCATIONS

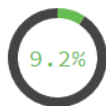
- All locations
- Specific locations

## FORMATS

### Primary Language

example: "eng, spa, fre" [\(?\)](#)

HIDE EDITOR



 MATCHED  
54,253

 COLLECTION  
587,225

|                         |   |
|-------------------------|---|
| Recorded Uses           | = 0                                       |
| Last Charge Date        | no data                                   |
| Pub Year                | before 2005                               |
| Last Item Add Date      | no data OR before 2005                    |
| Edition Matching        | same edition                              |
| US Holdings             | > 150                                     |
| Michigan Holdings       | > 4                                       |
| Allocated for Retention | Not allocated for retention in my library |



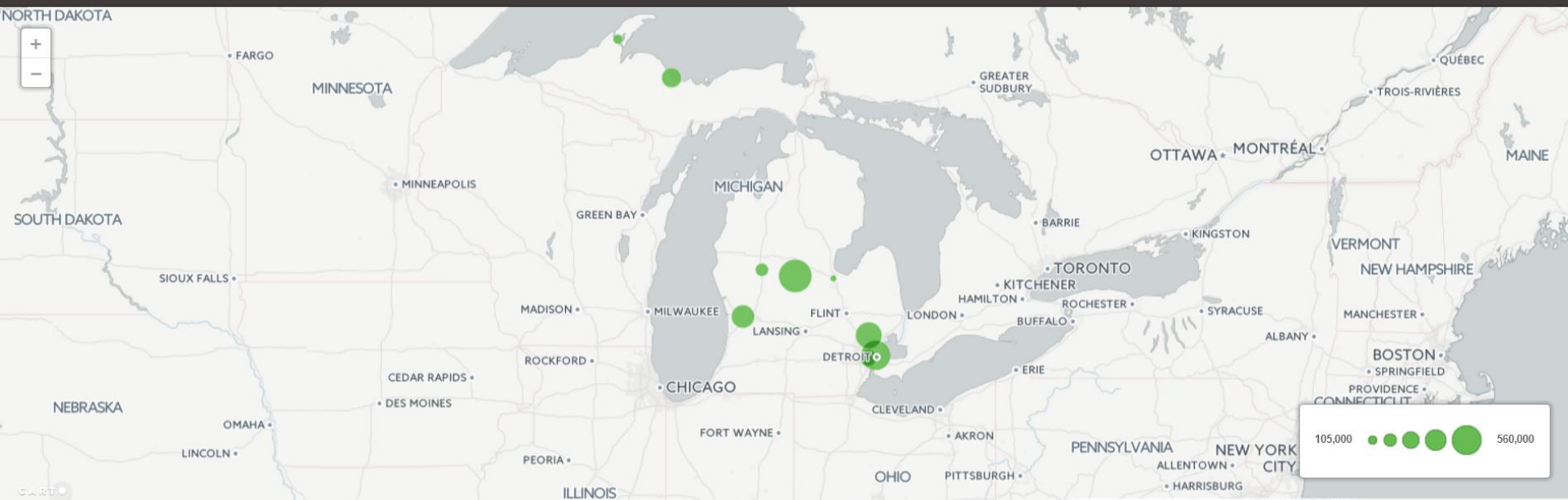
# Group Projects and Shared Print



- GROUP Collection
- GROUP Analysis
- Admin

MI-SPI ▾ ⚙️ ☁️ ? ↗️

OVERVIEW VISUALIZE



# Visualizing Group Collections

ZERO USES

30%

441,407 TITLE-SETS

1-9 USES

53%

782,878 TITLE-SETS

10-19 USES

10%

146,475 TITLE-SETS

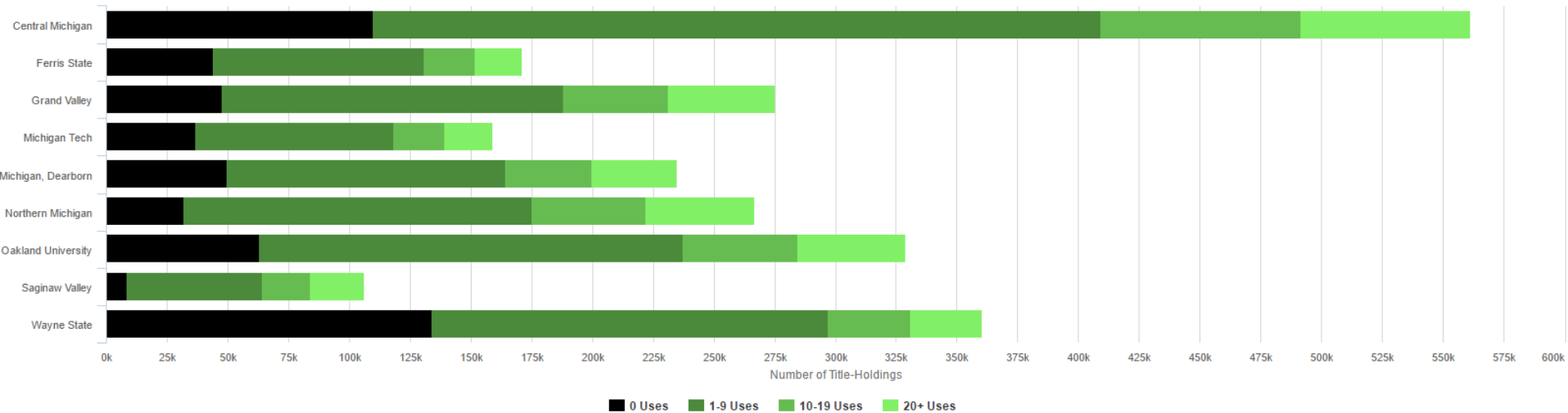
20+ USES

7%

104,136 TITLE-SETS

AGGREGATE USES – TITLE COUNT

LIBRARIES  
9 OF 9



# Scenario Analysis: Model Builder

Criteria [+ New Rule](#)

LIBRARIES

Includes 36 of 36 Libraries

RETAIN ALL

EAST holdings  
FEWER THAN 5

US holdings  
FEWER THAN 40  
(ANY EDITION)

Regional Large Academic Libraries holdings  
FEWER THAN 5  
(ANY EDITION)

CNY Retention Partners holdings  
FEWER THAN 1  
(ANY EDITION)

Publication year  
BEFORE 2011

Ephemera  
NOT EPHEMERA

[+ Add Condition](#)

RETAIN 5

Aggregate uses  
MORE THAN 30

Publication year  
BEFORE 2011

Ephemera  
NOT EPHEMERA

[+ Add Condition](#)

RETAIN 1

Publication year  
BEFORE 2011

Ephemera  
NOT EPHEMERA

[+ Add Condition](#)



GROUP  
Collection

GROUP  
Analysis

Admin

OVERVIEW

MODEL BUILDER

Retention Models

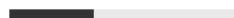
FINAL EAST Retention Model

FINAL EAST Retention Model

### All Included Libraries

Retained Percentage: 36%

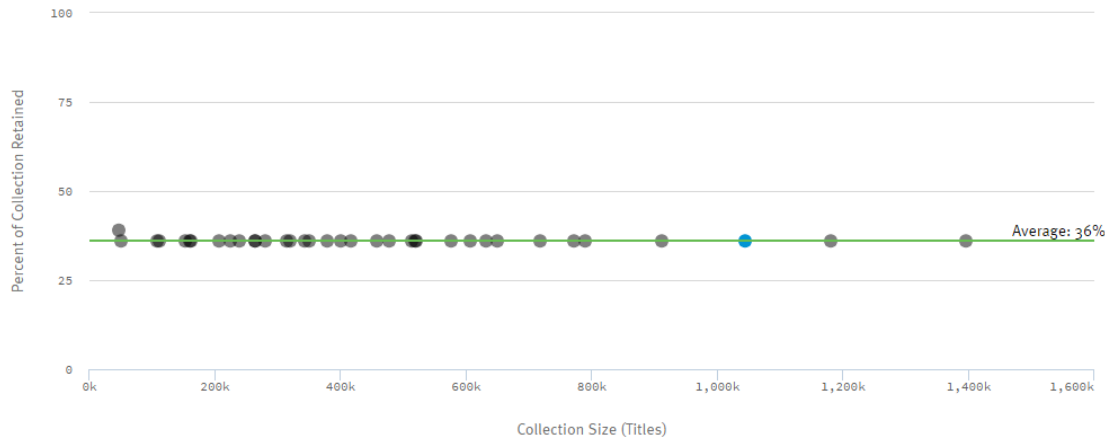
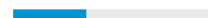
Retained Holdings: 6,003,283



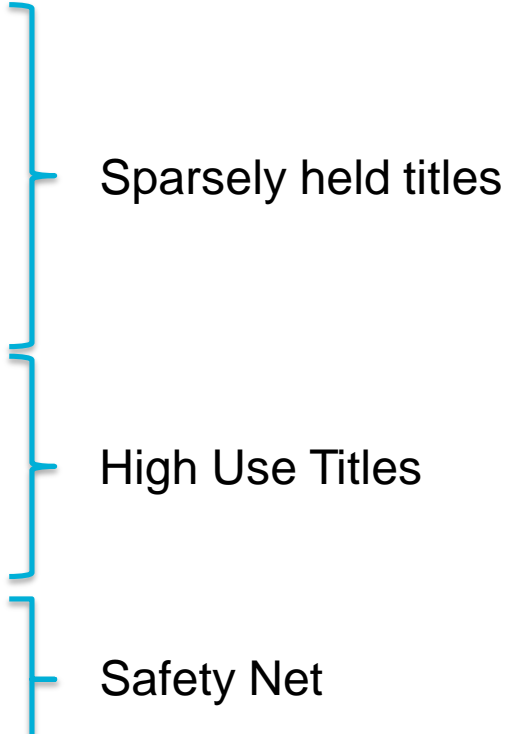
### Boston College

Retained Percentage: 36%

Retained Titles: 378,669



# Eastern Academic Scholars' Trust

- Retain ALL if
    - EAST holdings fewer than 5
    - US holdings fewer than 40 (any edition)
    - Regional Large Academic Libraries holdings fewer than 5 (any edition)
    - CNY Retention Partners holdings fewer than 1 (any edition)
    - Publication year before 2011
    - Not Ephemera
  - Retain 5 if
    - Aggregate uses more than 30
    - Publication year before 2011
    - Not Ephemera
  - Retain 1 if
    - Publication year before 2011
    - Not Ephemera
- 
- Sparsely held titles
- High Use Titles
- Safety Net

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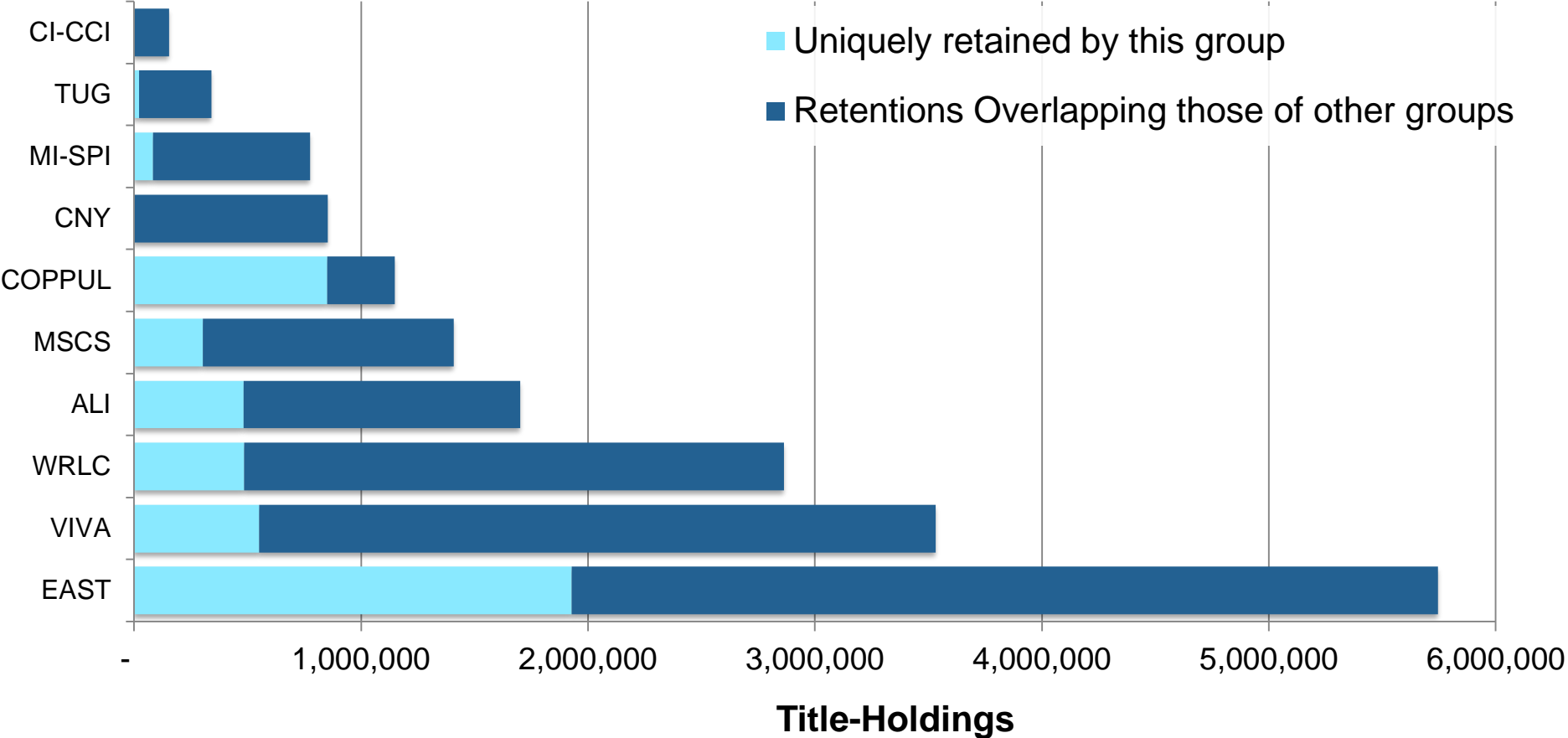
# Impact – Group Projects

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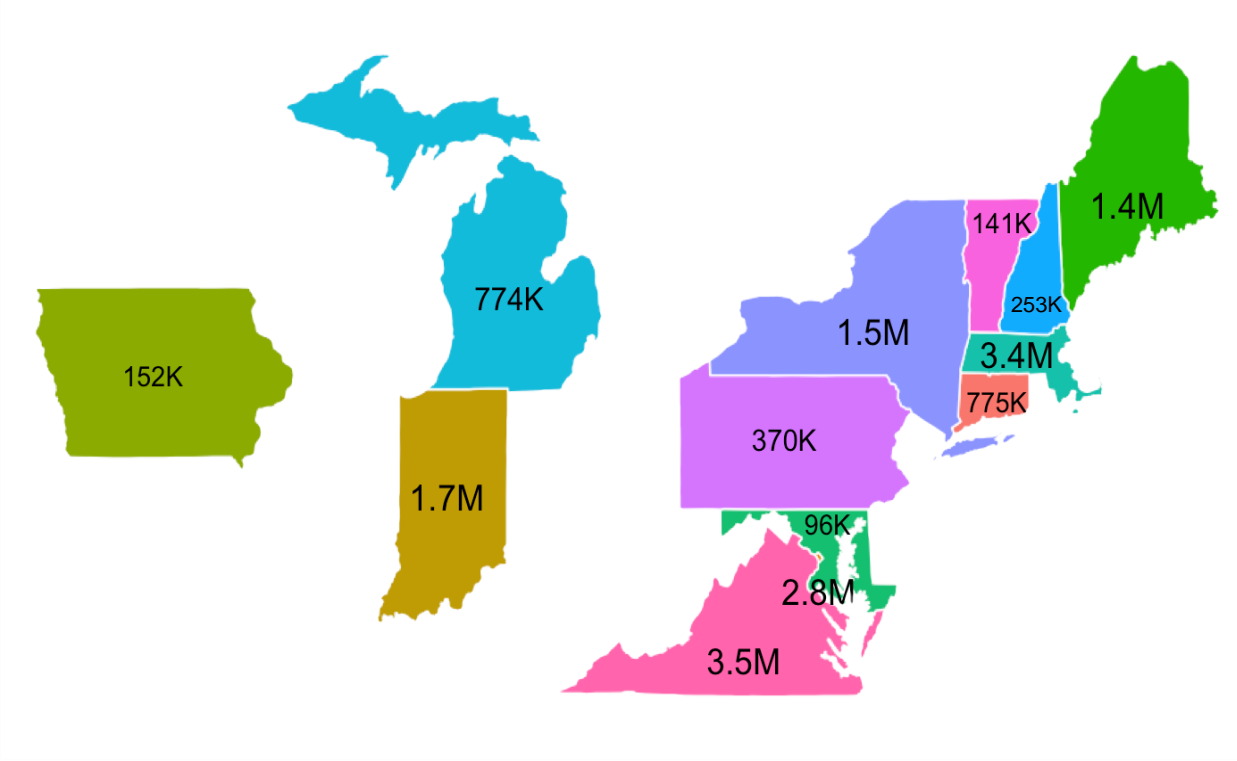
# Shared Print Retentions at a Glance

- 9 Group Projects
- 129 institutions with committed print retentions
- 7.4 million distinct editions retained
- 18.5 million title-holdings retained
- In 13 U.S. states and 5 Canadian provinces

# Shared Print Retentions by Group

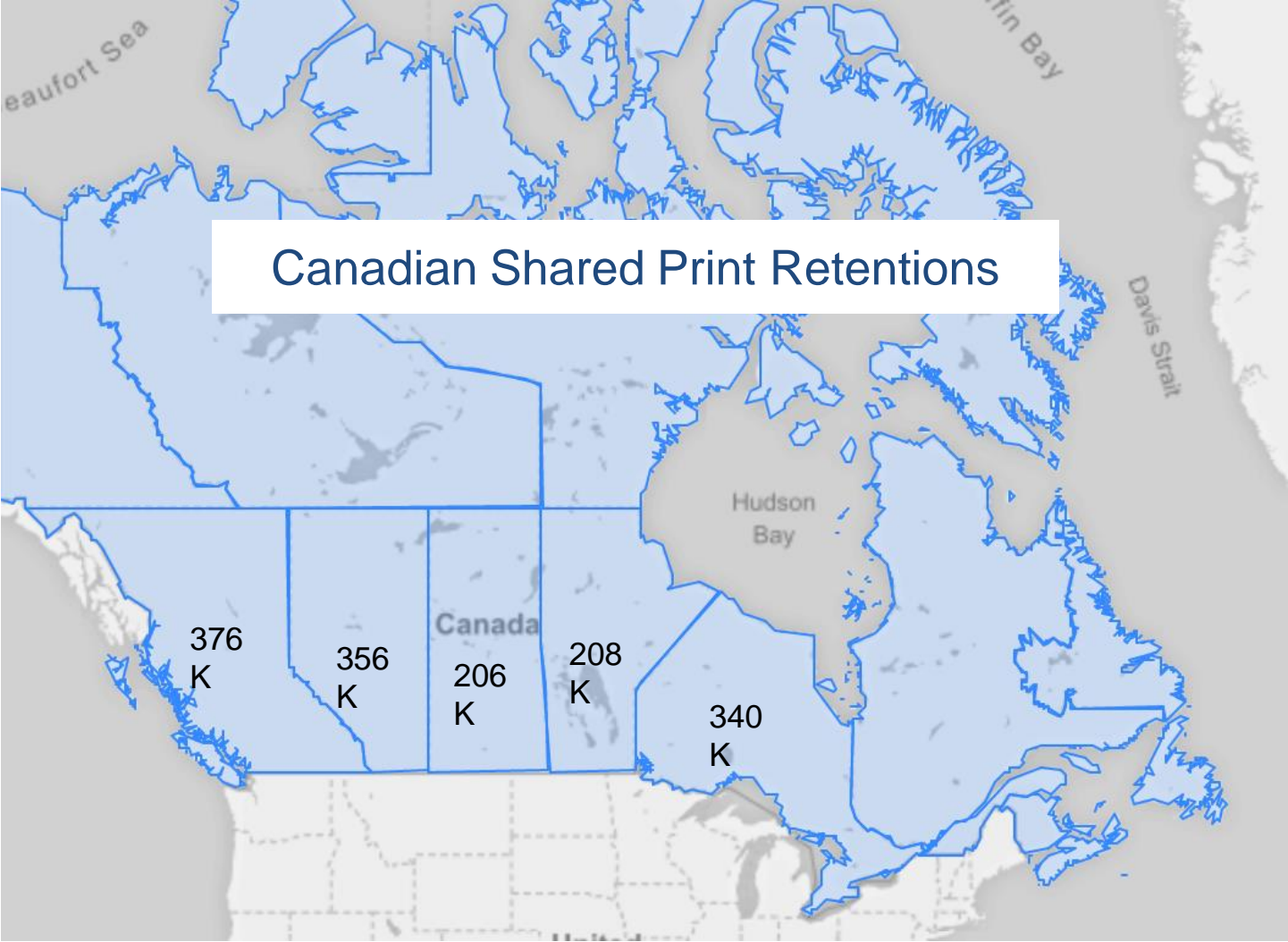


# U.S. Shared Print Retentions by State

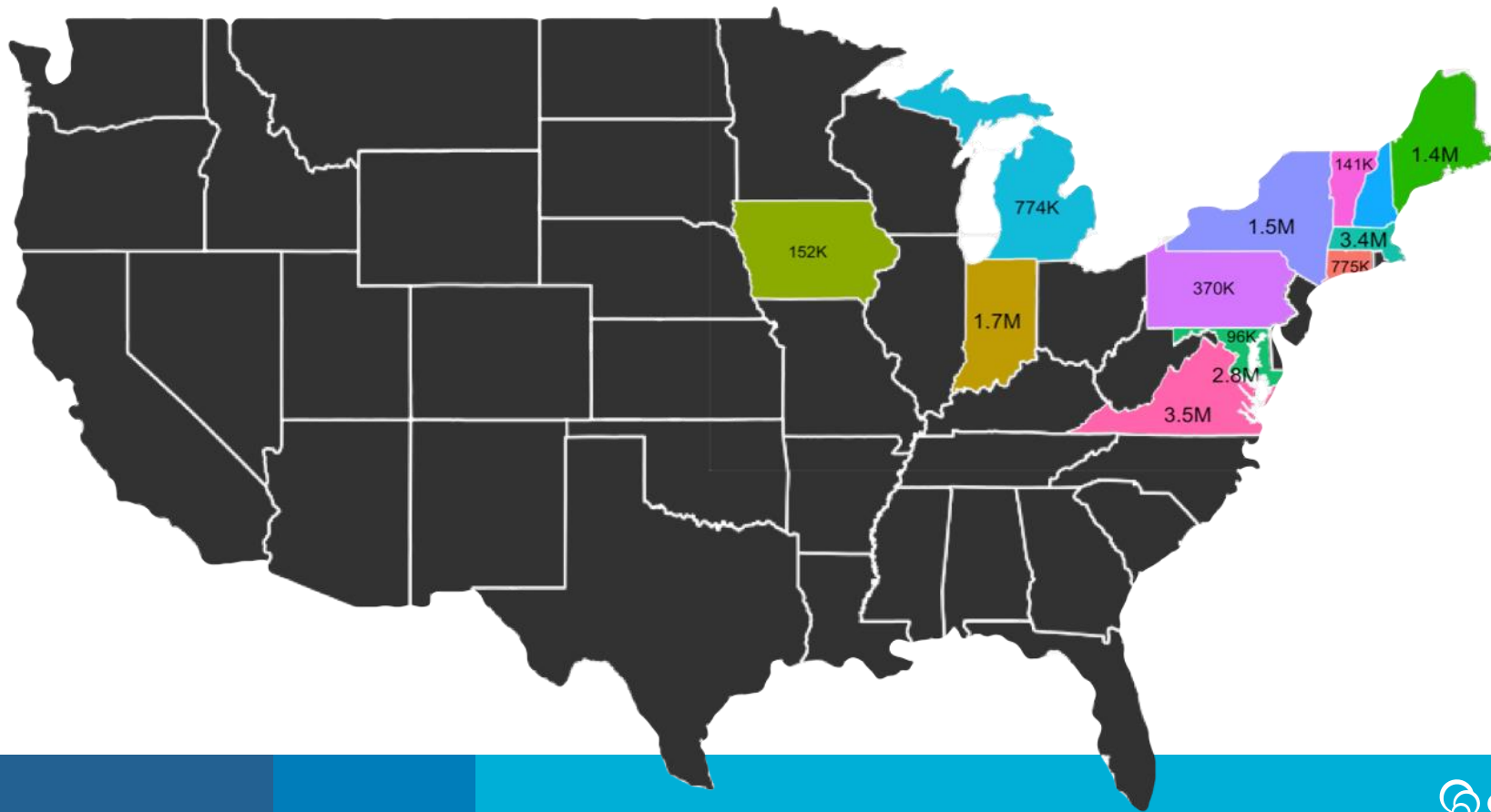




## Canadian Shared Print Retentions



# Which States Will be Next?



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# Questions / Discussion

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# Thank you!

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**Because  
what is  
known must  
be shared.<sup>SM</sup>**