Collection Management Initiative Research Plan

A study of collection management strategies in a digital environment
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Principal Investigator, Brian E. C. Schottlaender
University Librarian, University of California, San Diego

Co-Principal Investigator, Gary S. Lawrence
Director, Library Planning and Policy Development
University of California, Office of the President

Senior Project Analyst, Claire Le Donne
University of California, Office of the President

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Objectives

The Collection Management Initiative is exploring the complex issues associated with integrating and managing research library journal collections composed of shared print and digital journals. The study will evaluate the factors that affect reliance on shared digital resources to relieve pressure on physical facilities and capital budgets to house and manage print materials. By temporarily removing print journals from some campus libraries to storage facilities and providing access through digital "equivalents" or requests for the print from storage, while also maintaining the journals on the shelf in control libraries, the project will gather data on the impact on the volume of usage, users and scarce library resources.

The specific project objectives are to:

- Study the behavior and attitudes of users when selected print titles, for which electronic access is provided, are relocated to a remote storage facility and primary use is of the electronic version.

- Ascertain the variety of factors affecting the acceptability of digital titles as a substitute for the equivalent print titles.

- Document any changes in usage of digital and print versions of selected journal titles when the print is relocated to storage.

- Examine the consultation and decision-making processes needed for selection, processing, relocation and administrative management of print materials relocated to remote storage.

- Document the costs incurred and avoided when print copies of journals are relocated to a storage facility and the primary access is to the electronic version.

The results of this research effort will be used to assess the institutional implications for library organization and operations, including facilities planning, capital budgeting, systems and resource management and to evaluate institutional strategies and policies for managing research library materials in a mixed print and digital environment.

Research Questions

To address these objectives a series of research questions have been formulated.

1. What differences in the amount of use of print and digital versions of a *Study Title* result from the *Experimental Treatment*?

2. What characteristics of *a Study Title's* content and presentation explain differences in use of print or digital?

3. What characteristics of users explain differences in use of print or digital?

4. What characteristics of the users access environment explain differences in using print or digital?

5. What characteristics of the purpose of the use of a *Study Title* explain the choice to use print or digital?

6. What costs and liabilities are incurred due to the *Experimental Treatment*?

7. What savings and benefits accrue as a result of the *Experimental Treatment*?

For each of these research questions the measures, methods and sources of data needed to formulate answers is specified in **Appendix A.**

Definitions

Control Site: Campus location retaining both print and digital access to ***Study Title***s.

Control Treatment: In local collections, that have access to ***Print Study Title***s and to digital counterparts, no limit is placed on access to print or digital forms.

Digital Study Title: Serial publication in digital format that has a print counterpart and for which the University has a license for access.

Experimental Site: Campus location from where ***Print Study Title***s are withdrawn.

Experimental Treatment: In local collections, which have access to ***Print Study Title***s and to the digital counterparts, access to print is limited by placing titles in storage.

Print Study Title: Serial publication in print format that has a digital counterpart.

Provider: Publisher or aggregator delivering ***Digital Study Title***s and supplying data on use.

Storage Location: Regional Library Facility or campus site which holds ***Study Titles*** during ***Experimental Treatment.***

Study Title: A serial publication for which the University has at least two or more subscriptions, with similar holdings coverage, located at two or more campuses and a license to access the digital counterpart.

Study Title Piece: A bound volume or unbound issue of a ***Study Title***.

Use: Each request for a ***Print Study Title***, either volume, unbound issue or article copy from a ***Storage Location*** and each instance of re-shelving of a volume or unbound issue at the ***Control Site*** during the study period; for a ***Digital Study Titl***e uses reported by the ***Provider.***

User: All library patrons accessing either the print or digital versions of the Study Titles including undergraduate and graduate students, faculty, staff, other UC affiliated patrons and non-UC patrons of the library.

Study Summary

From a pool of 2683 journals, available in both print and digital form, 285 titles were selected for study. For each journal title, one University campus serves as an ***Experimental Site***, and one campus serves as a ***Control Site***. At the beginning of the study, ***Experimental Sites*** will remove to storage the print issues of the journal corresponding to the available digital holdings. The ***Control Sites*** will leave all print issues of the ***Study Title*** on the shelf. Equivalent digital access to the ***Study Titles*** will be available to both experimental and control libraries during the study period. Library users at experimental libraries will be able to recall print issues of the ***Study Titles*** from storage. Comparative measurements will be made to determine the similarities and differences in use of the ***Study Titles*** under the experimental and control situations based on data gathered from library circulation and recall reports as well as statistics from ***Provider***s on digital access.

The statistical analysis of use of the ***Study Title***s will be amplified by surveys to identify behaviors, beliefs and observations of University faculty, students and library staff on the use of the ***Study Title***s in both the print and digital form. Cost-benefits analysis will be included through the submission of expense worksheets and special cost studies from both control and experimental libraries.

Data Gathering Instruments

To adequately address the research questions, a variety of data collection methods and instruments will be used. These methods and instruments are not specific to any one question but provide data that when used in combinations will address the research questions. Examples of each of these instruments, with a description of data fields and administration, are available in **Appendix B**.

The data gathering instruments are:

- **User Request Survey**: a series of questions to be answered by users who ask to use an *Experimental Title* in storage. This instrument accompanies all *Study Title*s or copies of articles from *Study Title*s requested from *Storage Locations*.

- **Return Request Forms**: copies of standard forms completed by library staff or users when making a request for returns or copies from experimental *Study Title*s.

- **Experimental Use Worksheets**: quarterly activity reports from Storage Facilities summarizing, by *Study Title*, return requests and fulfillment details.

- **Control Use Worksheets**: quarterly activity reports from *Control Site*s summarizing, by *Study Title*, the number of uses as measured by reshelving counts.

- **Control Use Data Slips**: slips, inserted in each piece of a *Study Title*, for staff at *Control Site*s to record all reshelving instances by date.

- **Digital Use Reports**: transaction data from *Providers* for electronic access to *Digital Study Titles* from *Experimental* and *Control Sites*.

- **Phase I Cost Worksheets**: Financial reports from campuses and storage facilities on actual costs and staff effort in establishing the *Experimental* and *Control Treatment*.

- **Phase II Special Cost Studies**: a series of campus focused examinations of cost increases or decreases in subscriptions, licensing fees, binding, copying, handling, or other areas that may be impacted by the *Experimental Treatment* when applied over an extended time.

- **Formative Interviews**: interviews with select users to inform the design of a system wide survey on user preferences and behaviors.

- **Structured Interviews**: interviews with a broad range of users and library staff familiar with the Study Titles to examine preferences and behaviors with in the specific context of a particular *Study Title*.

- **User Preference Surveys**: a widely administered survey to users of both print and digital forms of journals, incorporating questions developed in the Formative Interviews on characteristics of journals, users, purpose of use and the user environment that influence the acceptability of digital or print.

- **Comment Cards**: cards at service locations in *Control* and *Experimental Site*s and a web site comment function offering users and staff a vehicle to contribute reactions, suggestions and ideas on the *Experimental Treatment*.

- **Storage Reports**: reports from storage facilities with measurements of volumes and linear feet used by each *Study Title*.

- **Study Title Characteristics Worksheet**: an examination of each *Study Title* in both digital and print form against a standard list of typography and content features drawn from literature and tested in the Formative Interviews.

- **Consultation Process Survey**: a survey administered to CMI Campus Liaisons on the effectiveness of the consultation and decision making processes needed to achieve the experimental condition.

Methodology

Selection of Study Titles

To begin the research process print journals for which the University had also acquired licenses for digital access were identified; approximately 6000 journal titles[1] from all disciplines. The *Providers* of these journals were then assessed as to their capability of providing relevant use statistics. Fifteen *Providers* were identified as capable of delivering use statistics[2]. Eligibility of specific journals for the study also required that at least two or more campuses had equivalent print holdings as well as digital access. This was determined by the examination of the journal holdings statements in the CDL Periodical Titles database.[3] Applying these criteria for title participation resulted in a qualified pool of 2683 research journal titles. Following guidelines developed by the project's Operations Advisory Committee and using work sheets generated from the research database each campus selected titles from this pool for withdrawal from the stacks, based on their knowledge of collection use, faculty interest, subscriptions, and holdings. After this first round of selections, the CMI staff in consultation with campuses matched selections with those of other campuses to create a final list of *Study Title*s. The final list of *Study Title*s totals 285 journals.

Examining Use of Print Versions of Study Titles

The number of uses of *Study Titles* is needed to determine if placing journals in storage has an effect on the volume of uses of either print or digital formats and for providing use data to compare with the expressed preferences for print or digital gathered in the User Preference Survey. Use of the print *Study Title*s at *Control Sites* is measured by the Control Use Data Slip. Data slips are placed inside of each *Study Title* piece with the instructions to all appropriate library staff to record every instance of reshelving. These slips are examined and tallied on the Control Use Worksheet by individual title each quarter. The Control Use Worksheet is sent to the Project for inclusion in the use analysis.

Use of the print copy of a *Study Title* sent to storage by *Experimental Sites* is measured in two ways; by copies of the original Return Request Form for the item from the particular *Experimental Site* and quarterly Experimental Use Worksheets from the *Storage Facilities*. To assure that *Study Titles* remain in or are returned to the appropriate control or *Experimental Sites* all physical pieces of a *Study Title* are marked with an identifying external spine and cover label. The labels are color coded to distinguish between control and experimental volumes and include appropriate handling instructions.

Examining Use of Digital Versions of Study Titles

Use of the digital versions of *Study Title*s is measured through statistics collected by the *Providers* of the online version of any given *Study Title*. Participating *Providers* all provide on-line digital use statistics. Although there are minor differences in the way these statistics are gathered the pre-selection of *Providers* based on this capability eliminated *Providers* with significant differences. Each participating *Provider* site is visited and an analysis identifying equivalencies in reported data prepared. The analysis results in a measure for each *Provider* that counts access to *Study Title*s at the article, table of contents and summary level; using the number of views and downloads (PDF, HTML and special formats) to compare with the

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[1] California Digital Library, Key Indicators of Collections and Use, July 1, 2000 – June 30, 2001. Prepared October 15, 2001 by: Rosalie Lack, John Ober.
[2] Appendix E, Table 1
[3] California Digital Library Periodical Titles, http://www.cdlib.org/collections/

number of reshelving instances. It is also the basis for specifications to assure that over time the *Provider* data is consistently downloaded for comparison.

Examining Differences in Print and Digital Forms That May Influence Use

The acceptability of the digital form of a *Study Title* may be a result of the characteristics of presentation and content of the *Study Title* in the different media. To account for this a Study Title Characteristics Analysis will be undertaken. By using the Study Title Characteristics Worksheet, a profile of the print and digital features of each *Study Title* will be developed. This will result in a list of characteristics present or absent in both forms of the *Study Titles*. In addition, a subject classification of *Study Titles* will examine possible subject factors that may influence use. This information will be used along with Control, Experimental and Digital Use Data to determine if or to what degree these characteristics are related to the number of uses. These characteristics will also be used in the User Preference Survey to craft questions on preference.

Examining User Preferences

Three approaches will be used to examine user preferences, behaviors and attitudes. The first is the User Request Survey. This survey accompanies each filled request for a *Study Title* or article copy from a *Study Title* when returned from the *Storage Location* to the local library or user. It asks questions regarding the purpose of using the print rather then the digital version and examines user awareness of the availability of digital. This survey will provide *Study Title* specific preference data that can be compared to actual print and digital use of that title.

The second qualitative method of assessing user preferences is through a User Preference Survey administered to faculty, students and staff throughout the University system. This survey will be based on Formative Interviews with representative journal users to determine the focus and scope of the survey. Results will be examined for specific characteristics of journals, users, purpose of use and the user environment that may correlate with a preference to use journals in print or digital form. The usage data and preferences from the User Request Surveys with the preferences from the broad User Preference Survey will describe patron behaviors and attitudes toward using digital.

The third method that will contribute to the examination of user preferences is a analysis of volunteered comments. The Comment Card Analysis will help identify possible situational factors not recognized elsewhere. To solicit comments, comment cards will be supplied at all study locations. As will a comment feature on the CMI project and participating campus library web sites to facilitate patrons contributing their thoughts.

Examining Decision Making Processes

This research requires coordination and consensus between campuses concerning the selection, processing, implementation and operations of the experimental and control conditions. The CMI Project effected the required coordination by establishing new working groups, advisory committees and guidelines to provide the necessary level of consultation and joint decisions. This structure and process is examined through the Consultation Process Survey and a descriptive analysis of the results will contribute to policy and program recommendations.

Examining Costs and Benefits of the Experimental Treatment

The costs of selecting and relocating *Study Titles* to storage will be captured by the Phase I Cost Worksheets, prepared by participating campuses and storage locations using guidelines from the project. The costs of operations to campuses and storage locations during the *Experimental Treatment* will be identified through a series of Phase II Special Cost Studies including Storage Reports that will specify by *Study Title* the number of volumes per linear foot requirements of the Experimental Condition. Costs of *Study Title* print subscriptions and digital licensing will be examined through a special study of university - publisher agreements. This data will be examined for potential savings in, local library space, processing, binding, acquisitions and serials management.

Data Management and Reporting

This research effort will generate a substantial amount of raw data. To manage, analyze and provide reports to answer research questions and to provide access for possible subsequent studies, a database organized around *Study Title* will be developed. This will provide for rapid and repeatable tabular analysis at critical points in the research. Although much of the data is being provided in a manner that may be attributable to a particular library user or survey respondent the database will not record data in an attributable fashion. Use data for the *Study Titles* will be made available in tabular form at quarterly intervals through out the study. The project will maintain a web site and will post research plans, guidelines, data and analysis as it comes available.

Appendix A
Specifications for Research Questions

1. **What differences in the amount of use of print and digital versions of a Study Title result from the experimental treatment?**

   Method
   Quantitative and tabular analysis of Control Use Worksheets, Experimental Use Worksheets, and Digital Use Reports will provide empirical data on the different levels of use between print and digital forms. Examining the prior year's digital use at the *Control Site* will provide data to adjust for the expected rate of increase in digital use not attributable to the experimental treatment.

   Measures
   Total return requests for a *Study Title* from the *Storage Location* will demonstrate the number of uses where print was preferred to digital. When return requests are compared to the total number of reshelving instances from the *Control Site* the proportion of use not satisfied by the digital alternative can be determined.

   Total reshelving events compared to the total digital use of a *Study Title* at a *Control Site* will show the preference for each in the population of journal users and can be compared to the proportion of users who state a preference for print or digital in the User Preference Survey.

   The total number of HTML, PDF, and proprietary format views and downloads by the *Experimental Site* and the *Control Site* can be compared to determine if digital use increases when print is not immediately available. If there is no increase in digital use, when adjusted for expected growth of the new technology, this may provide a measure of the chilling effect of the experimental treatment on journal use.

   Issues
   Establish a statement of equivalency between types of available library data and types of available *Provider* data to consistently measure *Study Title* use through the Publishers Data Matrix.

2. **What characteristics of *a Study Title's* content and presentation explain differences in use of print or digital?**

   Methods
   A taxonomy of characteristics will be applied to the Study Title Characteristics Worksheets, the Structured Interviews and the User Preference Survey. Use data for *Study Titles* that contain similar characteristics as the preferred characteristics expressed in the User Preference Survey will be examined. The User Request Survey and the Structured Interview will provide title specific data on characteristics of journals that result in quantifiable number of uses of print. The request behavior can be compared to the generalized data on characteristics effecting choice from the User Preference Survey.

   The taxonomy of characteristics will be drawn from the library literature, tested and refined during the Formative Interviews. Analysis of each *Study Title* in digital and print form will be conducted by visiting the *Provider* on-line site and a participating library site. These descriptive examinations will use the same taxonomy of characteristics as the User Preference Survey.

Measures
The correlation between characteristics present in a *Study Title* with the number of uses of print and number of uses of digital version of that *Study Title* will be compared with survey results on characteristics necessary for a user to prefer using digital formats.

Issues
Are *Study Title* characteristics applicable to both print and digital forms? How to handle significant differences between digital and print forms. Should questions about characteristics in the Formative Interviews be administered in two ways; once as a value list and once open-ended?

3. **What characteristics of users explain differences in use of print or digital?**

Methods
Tabular analysis of data from the User Request Surveys, Structured Interviews and User Preference Surveys to examine for demographic factors that might influence preferences or use of print or digital forms.

Measures
- The proportion of users that prefer using digital versus print by user type (faculty, graduate, undergraduate students, academic and non-academic staff and others).
- The proportion of users by age that prefer using digital versus print.
- The proportion of users by sex that prefer using digital versus print.
- The proportion of users by degree of education that prefer using digital versus print.
- The proportion of users by year degree granted that prefer using digital versus print.
- The proportion of users by discipline that prefer using digital versus print.

Issues

4. **What characteristics of the users access environment explain differences in using print or digital?**

Methods
An analysis of User Request Surveys, Structured Interviews and User Preference Surveys for such factors as awareness of digital alternatives, capability of network environment, work location, technology and access method to library resources. The analysis of volunteered comments may also reveal environmental factors.

Measures
The number of and degree that factors in the environment either support or impede the use of print or digital can be expressed. This will contribute to identifying those factors that have the most influence and those factors that maybe addressed to improve the acceptability of digital.

Issue
Factors in the environment that impact use, need to be explored in the Formative Interviews.

5. **What characteristics of the purpose of the use explain the choice to use print or digital?**

    Methods
    Tabular analysis of User Request Surveys and Structured Interviews on the purpose of specific *Study Title* uses and User Preference Survey analysis of preference under different use scenarios along with analysis of Comment Cards will identify purposes for which print or digital are more acceptable.

    Measures
    The specific purposes for the use of a particular Study Title in print form as reported in the User Request Survey and Structured Interviews can be compared with the stated preference for digital or print under different use scenarios in the User Preference Survey.

    Issues
    Purposes of use need to be explored in the Formative Interviews.

6. **What costs are incurred due to the experimental treatment?**

    Methods
    Quantitative analysis of the Phase I Cost Worksheets and the Phase II Special Cost Studies will identify the costs of placing journals in storage and shifting primary access to the digital version.

    Measures
    The additional collection management costs at *Experimental Sites* and *Storage Locations*, for selecting, storing and requesting returns of *Print Study Titles* can be compared to usual collection management costs at libraries designated as *Control Sites* to provide evidence on potential operational costs when relying on digital.

    Issues
    Based on the work in the Cooper paper a more detailed analytical approach is being developed.

7. **What savings accrue because of the experimental treatment?**

    Methods
    Tabular analysis of *Storage Location* Shelf Measurement Reports will reveal potential space that can be reclaimed at local libraries by shifting use to digital. A Print Subscription / Licensing Special Study will identify licensing costs and terms that might effect subscription cancellation savings.

    Measures
    *   Number of linear feet of shelving reclaimed at Experimental Sites.
    *   Amount of possible savings in processing, binding, acquisitions and serials management savings.
    *   Amount of subscription/licensing costs for each *Study Title*.

    Issues
    Based on the work in the Cooper paper a more detailed analytical approach will be developed.

Appendix B
Specifications for Data Gathering Instruments

1. **User Request Survey**

A series of questions to be answered by users who ask to use an *Experimental Title* in storage. This instrument accompanies all *Study Title*s or copies of articles from *Study Title*s requested from *Storage Locations*.

Data Elements

- Title and Issue of Journal
- User Demographics
    - Campus Name
    - Department
    - Undergraduate student
    - Graduate student
    - Faculty
    - Staff
    - Other UC
    - Not UC
    - Department / Discipline
- Type of Use
    - Unaware that an online version was available
    - Professor insisted I use the print source, not the online version
    - Prefer to read the material in the print format
    - Prefer to browse or scan the volume/issue in the print format
- User Environment
    - Vision problems make use of print preferable
- Journal Content and Presentation
    - Online version incomplete, need material only available in print
    - Images or photos do not possess adequate resolution in electronic version
    - Maps or special features do not work in the online format

Administration/Guidelines

Storage Locations for Experimental *Study Titles* enclose a User Request Survey in the requested *Study Title* volume, unbound issue, or photocopy/FAX. Staff at campus pickup points ask the patron to fill out the survey and return it. A follow-up email is used to encourage users to complete the survey. Completed surveys are matched with a copy of the Return Request Form retained by the Storage Location to track return surveys. The survey is also available via email and in the publicity section of CMI Staff web site. The survey includes a place for the requesters to indicate willingness to participate in further interviews. (See complete guidelines at http://ucop.edu/cmi/staff/guidelines_p2storage.html#su2)

2.   **Return Request Forms**

Copies of standard local library forms completed by library staff or users when making a request for returns or copies of experimental *Study Titles* in storage.

Data Elements

- Title and issue of title
- Recipient Library of loan/copy
- Media loan or copy

Administration/ Guidelines

Return Request Forms are completed either on-line or in print form by the user, often with guidance from library staff. They are not uniform in design but they always accompany a request. During the Experiment, the Storage Location will make a copy of all requests for Study Titles, retaining these to match against Return Request Surveys to ascertain Survey completion rate as well as provide a list of potential participants in the formative interviews.

3. **Experimental Use Worksheets**

Quarterly activity reports from Storage Facilities summarizing, by *Study Title*, return requests and fulfillment details.

Data Elements

- ISSN, Title and study coverage dates
- Number of requests by *Study Title* by study period
- Number of requests filled by loan/copy

Administration/Guidelines

Methods for recording use of experimental titles vary; SRLF is using ORION 2 so that use statistics can be extracted from the local system. The NRLF and other storage facilities will maintain a log and file of requests as the method of tracking usage *Study Titles*. The campuses of Santa Barbara, Davis and San Diego are using local storage facilities. The counts of each use of a volume or unbound issue will be entered on the Excel Worksheets that contain *Study Titles*, holdings in study and period being counted and emailed to CMI staff.

4. **Control Use Worksheets**

Quarterly activity reports from *Control Sites* summarizing, by *Study Title*, the number of uses recorded on the Control Use Data Slips.

Data Elements

- ISSN, Title and study coverage dates
- Number of all reshelving instances including in-library use, circulation, and document delivery for each *Study Title* at a particular *Control Site*.
- Number of bound volume versus unbound volume uses.

Administration/Guidelines

Campus specific preformatted worksheets containing *Study Titles*, holdings in study and period being counted are supplied by the CMI Project for completion on a quarterly basis. Local library staff will examine the Use Data Slips in each *Study Title*. The Control Use Data is summarized on the quarterly Control Use Worksheets and sent to CMI staff by each *Control Site* for addition to the research database.

5. **Control Use Data Slips**

   Slips, inserted in each piece of a *Study Title*, for staff at *Control Sites* to record all reshelving instances by date.

   Data Elements

   - ISSN, Title and study coverage dates
   - Number of unique date stamps/notations during study period

   Administration/Guidelines

   Each volume of a *Study Title* is marked with customized CMI labels on front covers and spines for easy recognition. A customized Control Use Data Slip for recording data is attached inside the front cover of marked volumes. Staff record each instance of reshelving with a dated entry on the slip. On a quarterly basis entries on slips are counted and recorded on the Control Use Worksheets. At the end of the experiment the Use Data Slips will be removed from *Study Titles*, returned to the CMI Project and tabulated to verify the interim quarterly counts.

6. **Digital Use Reports**

Transaction data from *Provider*s for electronic access to *Digital Study Title*s from Experimental and *Control Site*s.

Data Elements

- Provider Name
- ISSN, Study Title and study coverage dates.
- Number of unique views.
- Number of unique downloads.

Administration/Guidelines

On-line examination and download of *Provider* data provides record of the number of times the *Digital Study Title* is accessed from the *Control Site* and from the *Experimental Site*. HTML, PDF, and proprietary format views and downloads will be counted. This count does not include front matter, table of contents, images or references.

(Provide an appropriate reference to the publisher matrix that defines views and downloads for each.)

7. **Phase I Cost Worksheets**

Financial reports from campuses and storage facilities on actual costs and staff effort in establishing the Experimental Condition.

Data Elements

*   **Management Activities:** Includes communication at both the local campus level and at the intercampus level; troubleshooting, problem solving, error checking the titles database, communication to develop local procedures, team-building

*   **Experimental Libraries: Print Journals**

    o   **Publicity – Fixed:** Includes: Build link from local site to CMI website; Provide press release to campus newsletters

    o   **Publicity – Variable:** Includes: Reproduce information signs from adaptable text for empty shelves; Place information signs at empty shelves; Reproduce information handouts from adaptable text for service desks; Place information handouts at service desks; Produce comment cards

    o   **Library Processing – Titles:** Includes: Selection of titles; Prepare for record updates, print records; Revise pulled material; place searches and holds; Tally statistics; Re-file forms or documentation

    o   **Library Processing – Volumes:** Includes: Pull and size volumes; Label spine and cover of volumes for identification; Pack and secure trucks for storage; Transport items to Storage Facility (local or regional)

    o   **Bibliographic Control:** Includes: Update local bibliographic records; up load records to Melvyl

    o   **Training:** Includes: Training for pulling and labeling study titles; Training for recording usage data; Training for service desks; Training for ILL and document delivery staff

    o   **Documenting Costs:** Includes: Recording and estimating time and rate for applicable tasks

*   **Experimental Libraries: Digital Journals**

    o   **Library Processing:** Includes: Catalog title or revise existing cataloging; Verify that electronic issue is accessible; Update holdings information

*   **Control Libraries: Print Journals**

    o   **Publicity – Fixed:** Includes: Build link from local site to CMI website; Provide press release to campus newsletters

    o   **Publicity – Variable:** Includes: Reproduce information handouts from adaptable text for service desks; Place information handouts at service desks; Produce comment cards from adaptable text (optional); Place comment cards (optional).

Appendix B
Specifications for Data Gathering Instruments

- o **Library Processing – Titles:** Includes: Selection of titles; Prepare for record updates, print records; Tally statistics; Re-file forms or documentation

- o **Library Processing – Volumes:** Includes: Pull titles; Label spine and cover of volumes for identification; Fill in Title on Use Data Slip; Reshelf marked and labeled volumes; Measure shelf space.

- o **Bibliographic Control:** Update local bibliographic records Update holdings information

- o **Training:** Includes: Training for pulling and labeling study titles; Training for recording usage data; Training for service desks; Training for ILL and document delivery staff

- o **Documenting Costs:** Includes: Recording and estimating time and rate for applicable tasks

- **Control Libraries: Digital journals**

  - o **Library Processing:** Includes catalog title or revise existing cataloging; verify electronic issue is accessible; update holdings information.

- **Storage Facilities: Print Journals**

  - o **Processing:** Includes: Check-in and shelve items at storage facility; Relocation of titles from with-in storage facility

  - o **Bibliographic Control:** Includes: De-accessioning

  - o **Training:** for pulling and labeling study titles; copying and filing request forms for items; for walk-in requests at facility, document delivery staff to include survey; and staff coordination and supervision

  - o **Documenting Costs – Hours:** Includes: Recording and estimating time and rate for applicable tasks.

  - o **Documenting Costs – Volumes:** Includes: Measuring shelving used: Cost per volume per year for storage of material

- **Storage Facilities: Digital Journals:**

  - o Presently there are no costs associated with storage facilities and digital journals

Administration/Guidelines

Cost taxonomy worksheets are provided to each Campus Liaison by the project for completion based on local cost figures.

8. **Phase II Special Cost Studies**

A series of campus focused examinations of cost increase or decrease in subscriptions, licensing fees, binding, copying, handling, or other areas that may be impacted by the *Experimental Treatment* when applied over an extended time.

Planned Special Studies

Potential Savings to UC from Print Subscriptions: Important to answering the research questions is understanding of the true costs and potential savings from alternate serial acquisition scenarios. This requires knowledge of extant digital and print subscriptions, subscription costs and terms and conditions of the relevant licenses agreements that might restrict the ability to cancel print, or restrict savings that can be achieved through print cancellations. This special study will provide the necessary data to assess actual savings through a case-by-case analysis of the relevant license agreements, and provide an accurate picture of the savings that might be realized through print cancellation

Data Elements

The report will include study title, ISSN, publisher, number of print subscriptions, print subscription cost, digital license terms and conditions, digital license cost and any notes or narrative necessary to understand the data.

Administration/Guidelines

This analysis will be limited to the publishers of these study title except in these cases:

- American Physical Society and SIAM as the digital comes in the "free with print" model will not be included
- JSTOR as the license to these title is through the original publisher.

The primary source of subscription information will be Melvyl PE.

At this time, there is a need to design additional special studies to further examine costs and savings.

Appendix B
Specifications for Data Gathering Instruments

9. **Formative Interviews**

Objective: Interviews with select users and staff to inform the design of the survey on user preferences for digital and print. Specific areas of interest are the identification of questions that will successfully inform on User Demographics, types of use of journals, the users environment, and characteristics of journal typology and content that might be important to predicting digital or print use and preference.

Possible Data Elements

- User Demographics
  - Age (year of birth)
  - Sex
  - Highest level of education completed
  - Year highest degree granted
  - Academic Area :
  - Arts and Humanities
  - Life and Health Sciences
  - Physical Sciences and Engineering
  - Social Sciences
  - Undergraduate student
  - Graduate student
  - Academic Staff
  - Non-academic Staff

- User Environment
  - Frequency of Library visits
  - Proximity to Library
  - Frequency of print journal use
  - Frequency of digital journal use
  - Campus or home office use
  - Technical capabilities
  - Proximity to computer & printer
  - Habit
  - Convenience of access
  - Success in locating relevant information,
  - Timeliness of delivery
  - Comprehensiveness of print/digital collections
  - Dependability in resolving service problems
  - Ability to browse
  - Security of search information
  - Personal subscriptions

- Types of use
  - General literature review on topic
  - Browsing for discoveries
  - Personal interest
  - Research project
  - Class preparation
  - Browsing for discoveries
  - Specific search
  - Habit
  - Other

Core interview questions

- What are the reasons that you prefer to use digital journals?

- What are the reasons that you prefer to use print journals?

- What are the barriers to you in using digital journals?

- Considering the content and presentation features of journals, which are most important to you when choosing to use the journal in the digital form?

- When thinking of the following activities what is the likelihood that you would use the digital or print version of a journal?

- When you review or browse journals to keep current.

- When you conduct a specific search for the retrieval of relevant journal.

- When you exchange journal content with others.

- When you organize journal content into a personal library or database.

- When you cite others work.

- When you read journals for personal interest or pleasure.

- When you compare and contrast several articles.

- Would your decision to use digital change if the print collection was closer at hand?

- Would your decision to use print change if you had to request the print from a storage location?

- When you find a citation but cannot find the digital article what do you do?

- When a print journal is not on the shelf what do you do?

(For Faculty)

- Do you specifically assign the use of print journals in your courses?

- Do you specifically assign the use of digital journals in your courses?

- What is needed to effectively use digital journals in course assignments?

(For Library Staff)

- What does the move to digital media mean to you?

- What is the effect on service to users and in doing the job well?

- How should the impact of removing journals be mitigated?

- Who should be consulted in storing print journals or should this be done by policy?

- What do think is important about the experimental condition,

- What do they think are the questions to ask in the survey?

- What does the library need to know if storing print journals is to be successful?

(For Students)

- What is needed to make the digital journal more useful to students?

- What is needed to help you use digital journals more effectively in assignments?

- What are the barriers to students in using digital or paper?

Administration/Guidelines

No less then 30 and no more then 80 individuals will be interviewed. Individuals will be selected from the four major academic areas used in the CMI study. Interviews will be with faculty, staff and students. No subpopulations will be purposefully included or excluded. Two representative campuses San Diego and Santa Barbara will be the sites of the Formative Interviews to assure that campuses with different programs of different sizes will be represented and to take advantage of interviewer experience. Subjects will be contacted through library bibliographers, members of the Senate Committee on Libraries, departmental subject specialists, announcements in selected classes and volunteer forms inserted in returned print items from storage. Individuals will voluntarily answer questions concerning their choices and experiences. The interview will take between half and one full hour. Completed interviews will be given a numeric code for tracking and storage in the database. This code will only indicate the campus of origin and the sequence of receipt of the instrument to protect the confidentiality of the individuals questioned.

10. **Structured Interviews**

Interviews with a broad range of users and library staff familiar with the Study Titles to examine preferences and behaviors with in the specific context of a particular *Study Title*.

Data Elements

Questions to faculty, staff and students through interviews on characteristics of digital versus print that prompted use of digital will be specified after the results of the Formative Interviews have been examined.

Administration/Guidelines

These need to be specified after the experience of the Formative Interviews.

11. User Preference Surveys

A widely administered survey to users of both print and digital forms of research journals incorporating information developed in the Formative Interviews, *Study Title* Characteristics Analysis, User Request Survey and Comment Card Analysis.

Data Elements

Questions to faculty, staff and students through an online and paper based survey on characteristics of digital versus print that prompted use of digital will be specified after the results of the Formative Interviews have been examined.

Administration/Guidelines

To be devised.

12. **Comment Cards**

Cards at service locations in Control and *Experimental Site*s and a web site comment function offering users and staff a vehicle to contribute reactions, suggestions and ideas on the *Experimental Treatment*

Data Elements

- Name
- Department
- Contact Information
- Willingness to participate further
- Unstructured comments

Administration/Guidelines

Available at service desks, Project and local web sites and other locations in libraries at the discretion of local staff. Completed Comment Cards and on-line comments are gathered and sent to the CMI Project for analysis.

13. **Storage Reports**

Reports from storage facilities with measurements of volumes and linear feet used by each *Study Title*.

Data Elements

- ISSN
- Full text title
- Holdings in experiment
- Provider
- Linear measurement of shelf space used by *Study Title*

Administration/Guidelines

Staff at *Storage Locations* make measurements of shelf space and send reports to the CMI project.

14. Study Title Characteristics Worksheet

An examination of each *Study Title* in both digital and print form against a standard list of typology and content features.

Data Elements

- ISSN
- Full text title
- Holdings in experiment
- Provider
- Features

  - Title reputation
  - Abstract quality
  - Current Issue size
  - Bound volume size
  - Quality of Graphics
  - Article length
  - Citation links
  - Professional announcements
  - Grant and funding opportunities
  - Advertisements
  - Position listings
  - Hyper text linking,
  - Full text reference linking

  - Search capabilities
  - Inclusion of data sets
  - Inclusion of simulations
  - Inclusion of multimedia evidence
  - Recorded presentations
  - Compare/contrast
  - Browse/ Ease of navigation
  - Critical mass of title, enough issues and volumes
  - Equivalence of print to digital
  - Timeliness of publication, before or after
  - Quality printing capability

- Discipline

  - Agriculture & Naturel Ressources
  - Architecture
  - Area Studies
  - Biological Sciences
  - Business and Management
  - Communications
  - Dentistry
  - Education
  - Engineering and Computer Science
  - Fine and Applied Arts
  - Foreign Languages
  - Home Economics
  - Interdisciplinary Studies
  - Law

  - Letters
  - Library Science
  - Mathematics
  - Medicine
  - Nursing
  - Optometry
  - Other Heath Sciences
  - Pharmacy
  - Physical Sciences
  - Psychology
  - Public Health
  - Social Science
  - Social Welfare
  - Theology
  - Veterinary Medicine

Administration/Guidelines

Each Study Titles is examined in both digital and print format by project staff. Findings are entered into the worksheet. Worksheet results are transcribed into the Study Title Database.

15. **Consultation Process Survey**

A survey administered to CMI Campus Liaisons on the effectiveness of the consultation and decision making processes needed to achieve the experimental condition.

Data Elements

- Internal Campus Consultation and Decision Making
- Campus-to-Campus Consultation and Decision Making
- Campus Consultation with CMI Staff

Administration/Guidelines

A written survey to Campus Liaisons returned to CMI Project.

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Appendix B
Specifications for Data Gathering Instruments

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Appendix C
Sources of Data and Research Questions Matrix

**Collection Management Initiative
Applicability of Research Data**

Data Gathering Instruments	Research Questions						
	#1 amount of print & digital use	#2 content & presentation of study title	#3 characteristics of users	#4 access environment	#5 purpose of use	#6 costs incurred	#7 savings or benefits accrued
Control Use Data Slip	x					x	x
Control Use Worksheet	x					x	x
Experimental Use Worksheets	x					x	x
Digital Use Reports	x					x	x
Return Request Forms	x					x	
Study Title Characteristics Worksheet		x	x	x		x	x
User Request Survey	x	x	x	x	x		
Formative Interviews		x	x	x	x		
User Preference Survey		x	x	x	x		
Comment Cards		x	x	x	x		
Consultation Process Survey						x	x
Phase I Cost Taxonomy Work Sheets						x	x
Phase II Financial Studies						x	x
Storage Reports						x	x

Appendix D
Tables

Table 1: Publishers and the number of qualified/selected titles.

Publisher	Qualified Titles	Selected Titles
ACS Web Editions	28	11
American Physical Society	7	3
Blackwell Science	199	18
Company of Biologists	3	1
Elsevier	782	130
IDEAL	161	15
Institute of Physics	30	11
JSTOR	201	44
Kluwer*	438	2
Liebert	28	1
National Research Council Canada	14	2
Project Muse	128	17
Royal Society of Chemistry	29	1
Siam	11	5
Wiley InterScience	308	24

* *Provider* was unable to confirm ability to provide required statistics for most titles.

Table 2: Campuses and the number of selected titles.

Campus	Control Titles	Experimental Titles
UCB	35	22
UCD	8	44
UCI	65	54
UCLA	21	21
UCR	140	0
UCSB	0	44
UCSC	15	31
UCSD	1	60
UCSF	0	9

Table 3: Subject categories and the number of selected titles.

Note that the total number of titles exceeds 285 due to multi disciplinary journals.

Subject Category	Selected Titles
Arts and Humanities	25
Life and Health Science	168
Physical Science and Engineering	118
Social Science	31