

LIBT 300: INTRODUCTION TO LIBRARY SERVICES



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LIBT 300: Introduction to Library Services (Li)

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Glossary

Detailed Licensing

Licensing

*A detailed breakdown of this resource's licensing can be found in **Back Matter/Detailed Licensing**.*

1: TECHNICAL SERVICES AND INFRASTRUCTURES

1.1: Introduction to Technical Services and Catalog Records

1.2: Integrated library system

1.3: Electronic Resource Management Systems and Related Products (Elsa K. Anderson)

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1.1: Introduction to Technical Services and Catalog Records

http://lili.org/forlibs/ce/able/able5/presentation_html5.html

1.2: Integrated library system

An **integrated library system**, or **ILS**, is an enterprise resource planning system for a [library](#) used to track items owned, orders made, bills paid, and patrons who have borrowed.

An ILS is usually comprised of a relational database, software to act on that database, and two graphical user interfaces (one for patrons, one for staff). Most ILS separate software functions into discrete programs called modules, which are then integrated into a unified interface. Examples of modules include: acquisitions (ordering, receiving, and invoicing materials), [cataloging](#) (classifying and indexing materials), circulation (lending materials to patrons and receiving them back), serials (tracking magazine and newspaper holdings), and the OPAC (public interface for users). Each patron and item has a unique ID in the database that allows the ILS to track its activity.

Larger libraries use ILS to order and acquire, receive and invoice, catalog, circulate, track and shelve materials. Smaller libraries, such as private homes or small organizations and institutions (e.g. churches and synagogues), often forgo the expense and maintenance required to run an ILS and instead use a simpler library computer system which has limited functions.

General information retrieval systems have become more advanced. Search engines such as Google and online sellers such as [Amazon](#) have created user-friendly interactive systems which appear more attractive to users. Library communities are also making efforts to develop more sophisticated, user-friendly systems equipped with a federated search engines. A federated search engine can retrieve information from multiple subscription based databases ([deep web](#)), library holdings, and general web sources with one search query. Library communities are also increasingly looking into open source programs.

History

Integrated library systems (ILS) were often known as *library automation systems* or *automated systems* in the 1970s and early 1980s. Before the advent of computers, libraries usually used a card catalog to index its holdings. Computers were used to automate the card catalog, thus the term *automation system*. Automation of the catalog saves the labor involved in resorting the card catalog, keeping it up-to-date with respect to the collection, etc. Other tasks automated include checking out and checking in books, generating statistics and reports, acquisitions and subscriptions, indexing journal articles and linking to them, as well as tracking interlibrary loans.

Since the late 1980s, windows and multi-tasking have allowed business functions to be integrated. Instead of having to open up separate applications, library staff could use a single application with multiple functional modules.

As the Internet grew, ILS vendors offered more functionality related to the [Internet](#). Major ILS systems now offer web-based portals where library users can log in to view their account, renew their books, and be authenticated to use [online databases](#).

OPAC (Online Public Access Catalog)

An **Online Public Access Catalog** (often abbreviated as **OPAC** or simply **Library Catalog**) is an online database of materials held by a [library](#) or group of libraries. Users typically search a [library catalog](#) to locate books, videos, and audio recordings owned or licensed by a library.

Early online catalogs

Although a handful of experimental systems existed as early as the 1960s, the first large-scale online catalogs were developed at [Ohio State University](#) in 1975 and the Dallas Public Library in 1978.

These and other early online catalog systems tended to closely reflect the card catalogs that they were intended to replace. Using a dedicated terminal or telnet client, users could search a handful of pre-coordinate indexes and browse the resulting display in much the same way they had previously navigated the card catalog.

Throughout the 1980s, the number and sophistication of online catalogs grew. The first commercial systems appeared, and would by the end of the decade largely replace home-grown systems. Library catalogs began providing improved search mechanisms,

such as basic keyword searching, as well as ancillary functions, such as the ability to place holds on items that had been checked-out.

At the same time, libraries began to develop applications to automate the purchase, cataloging, and circulation of books and other library materials. These applications, collectively known as an integrated library system (ILS) or library management system, often include a library catalog module as the public interface to the system's inventory.

Stagnation and dissatisfaction

The 1990s saw a relative stagnation in the development of online catalogs. With the advent of the Web, library catalog interfaces gradually transitioned from terminals to web browsers, and would in time incorporate links to online resources, book covers, and other features aimed at improving the interface. The underlying search technology in most library catalog systems, however, did not advance much beyond those developed in the 1980s.

At the same time, organizations outside of libraries began developing more sophisticated information retrieval systems. Web search engines like Google and popular e-commerce websites such as Amazon.com provided simpler, yet more powerful, systems based on probabilistic and vector-based queries.

As library users have grown more and more accustomed to these sites and search engines, they have become increasingly dissatisfied with the difficult and sometimes arcane search mechanisms of older library catalog systems. This has, in turn, led to vocal criticisms of these systems within the library community itself, and in recent years to the development of newer (often termed 'next-generation') catalogs.

Next-generation catalogs

The newest generation of library catalog systems are distinguished from earlier OPACs by their use of more sophisticated search technologies, in particular faceted search and features aimed at greater user interaction and participation with the system, including tagging, reviewing, and RSS feeds.

They are usually, although not always, independent of the integrated library system, with modules or drivers that allow for the synchronization of data between the two systems. While older online catalog systems were almost exclusively built by ILS vendors, libraries are increasingly turning to next generation catalog systems built by enterprise search companies and open source projects led by libraries themselves.

Union catalogs

Although library catalogs typically reflect the holdings of a single library, they can also contain the holdings of a group or consortium of libraries. These systems, known as union catalogs, are usually designed to aid the borrowing of books and other materials among the member institutions via interlibrary loan. The largest such union catalog is WorldCat, which includes the holdings of over 10,000 libraries worldwide.

Related systems

There are a number of systems that share much in common with library catalogs, but have traditionally been distinguished from them. Libraries utilize these systems to search for items not traditionally covered within a library catalog, specifically journal and newspaper articles and digitized materials.

These include bibliographic databases—such as Medline, ERIC, PsycINFO, and many others—which typically index journal articles and other research data. There are also a number of applications aimed at managing documents, photographs, and other digitized or born-digital multimedia items. Particularly in academic libraries, these systems (often known as digital library systems or institutional repository systems) assist with efforts to digitize archival materials or archive works created by faculty and students.

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Library computer system

A **library computer system** is the software used to catalog, track circulation (where appropriate) and inventory a library's assets. It is intended for home, church, private enterprise or other small to medium sized collections. Larger libraries will typically use an integrated library system to manage the more complex activities such as acquisitions and the reference interview.

Software criteria

Distributed software vs. web service

Library computer systems tend to fall into two offerings: software to be purchased on a perpetual license or purchased as a subscription service. With distributed software, the customer can choose to self install or have the system installed by the vendor on their own hardware and is responsible for the operation and maintenance of the application and the data or can choose to be supported by the vendor with an annual maintenance contract. Some vendors charge for upgrades to the software, and some do not. Customers who subscribe to a hosted service upload data to the vendor's remote server via the Internet and may pay a periodic fee to access their data.

Data entry assistance based on ISBN

Many applications can reduce a major portion of manual data entry by populating data fields based upon the entered ISBN using [MARC standards](#) technology via the Internet.

Barcode scanning and printing

With most any software, users can eliminate some manual entry by using a barcode scanner. But some software is designed, or can be extended with an additional module, to integrate scanner functionality. While most software vendor provide some type of scanner integration, not all will print labels with barcodes.

Examples

Open-source

Evergreen

Evergreen is an open source, consortial-quality **Integrated Library System** (ILS), initially developed by the Georgia Public Library Service for PINES (Public Information Network for Electronic Services), a statewide direct-lending consortium with over 270 member libraries.

Evergreen development began in 2004, when GPLS determined that no available ILS software could meet the needs of PINES. Evergreen 1.0 went live in September, 2006.

The Evergreen ILS is being used worldwide. Beyond PINES, organizations with live Evergreen implementations include SITKA a library consortium in British Columbia; the Indiana Open Source ILS Initiative; the Michigan Library Consortium; as well as smaller libraries such as Kent County Public Library in Maryland and Marshall Public Library in Marshall, Missouri. Other organizations committed to Evergreen include Project Conifer in Ontario, Canada.

The original core developers of Evergreen have formed a commercial company around the software, Equinox Software which provides custom support, development, migration, training, and consultation for Evergreen.

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Koha

Koha is an **integrated library system** (ILS) and was the first open source ILS. Koha was created in 1999 by Katipo Communications for the Horowhenua [Library Trust](#) in [New Zealand](#). The first installation went live in January of 2000.

PMB

PMB (PhpMyBibli) is a fully featured open source **integrated library system**. The project was initiated by François Lemarchand in October 2002, Director of the Public Library of Agneaux; it is now maintained by PMB Services (a French Company).

NewGenLib

NewGenLib is an **integrated library management system** developed by Verus Solutions Pvt Ltd and the Kesavan Institute of Information and Knowledge Management in Hyderabad, [India](#). NewGenLib version 1.0 was released in March 2005. On 9th January 2008, NewGenLib was declared Open Source Software under GNU GPL Licence by Verus Solutions.

Proprietary

- Dynix from SirsiDynix
- Horizon from SirsiDynix
- Symphony from SirsiDynix
- Talis (UK and Ireland)
- Unicorn from SirsiDynix
- Voyager from Ex Libris, formerly from Endeavor
- Millenium from Innovative Interfaces, Inc.
- Virtua from VTLS
- ILMU from Paradigm Systems and Universiti Teknologi MARA (UiTM)

See also

- [Information science](#)
- [Library](#)
- [Library science](#)
- [Open source](#)
- [Search engine](#)

Notes

1. ↑ [Georgia Public Library Service](#), Georgia Public Library Service. Retrieved January 28, 2009.
2. ↑ [SITKA](#), SITKA. Retrieved January 28, 2009.
3. ↑ [Michigan Library Consortium](#), Michigan Evergreen. Retrieved January 28, 2009.
4. ↑ [Kent County Public Library](#), Kent County Public Library. Retrieved January 28, 2009.
5. ↑ [Marshall Public Library](#), Marshall Public Library. Retrieved January 28, 2009.
6. ↑ [Project Conifer](#), Project Conifer. Retrieved January 28, 2009.
7. ↑ [Equinox Software](#), Equinox Software Inc. Retrieved January 28, 2009.
8. ↑ [NewGenLib](#) Retrieved January 10, 2009.

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External links

All links retrieved March 3, 2018.

- [A historical chart of major ILS vendors](#)
- [MARC Records, Systems and Tools](#) – Network Development and MARC Standards Office, Library of Congress
- [Florida Academic Library Services Cooperative](#)
- [Cybrarian - Webbased Integrated Library Management Software based on SaaS model](#)
- [Evergreen project website](#)
- [Koha Website](#)
- [NewGenLib](#) – at Verus Solutions

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- [Koha_\(software\)](#) history
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1.3: Electronic Resource Management Systems and Related Products (Elsa K. Anderson)

Abstract

ERMS software is available to help with electronic resource management, but each system and company provides a different option. Chapter 4 of Library Technology Reports (vol. 50, no. 3) "Electronic Resource Management Systems: A Workflow Approach" covers some of the major available ERMS products, including vendor ILS add-ons and stand-alone systems, open source options, and home-grown development. The chapter also provides an overview of library service platforms and a brief discussion of how the ERMS impacts other library software such as discovery interfaces, ILS systems, link resolvers, and interlibrary loan software.

This chapter is intended to highlight a few of the major ERM systems available to libraries at the time of this writing. It is by no means comprehensive and should not be taken as the final word on any of these systems or vendors. Described below are a few of the major products and vendors available for vendor ERMSs, open-source systems, and the newly available library service platforms. It is important to keep an open mind when evaluating products. All the products in this chapter have changed and improved significantly even during the writing of this report and will continue to do so. While I do not have direct experience with each product, I have tried to interview librarians and libraries that use each of these and to incorporate some of their (anonymous) comments, as well as literature reviews and case studies, into this chapter. Several of these vendors have both an individual stand-alone ERMS and a library service platform; both are discussed here, but in separate sections.

Vendor Systems

The following ERMSs are all available from commercial providers. Many of these systems are from well-known library software vendors. This is intended to be a brief overview of some of the available options for electronic resource management. It is not an exhaustive list or a complete review of any of these products.

EBSCO ERM Essentials

EBSCO is one of the major library vendors of both software and content. It provides journal aggregator services but also has subscription databases that can be independently licensed. EBSCO has been expanding its software for managing electronic resources into a complete software suite, including software management, content, and a single search discovery platform.

EBSCO is well known for its journal aggregation software, EBSCONET, which comes with its journal subscription management service. The software allows easily adding new titles to subscriptions, as well as traditional journal processes like managing claims and looking up information on journal subscriptions and history. An additional service can also incorporate usage statistics for journals into the system, allowing EBSCO to consolidate COUNTER statistics information for journal subscriptions. This allows EBSCO to generate cost-per-use information for each subscription within the tool, as well as to create larger aggregating reports.

EBSCO's stand-alone ERM tool, ERM Essentials, is a newer entry into the ERM arena, but the company is well positioned to offer such a service by building on its extensive content metadata and relationships and subscription management information and expertise. EBSCO ERM Essentials consists of a knowledge base, an A-Z list, and a link resolver, as well as some reporting functionality. EBSCO can field a knowledge base with journal and publisher information for any of the journals it offers through its subscription service. In addition, since EBSCO is also a content database publisher, there are presumably certain synergies available in the data. EBSCO A-to-Z will generate a list of journals included in subscriptions, pulling holdings availability information and links from the knowledge base. The EBSCO link resolver product, LinkSource, is also new, but it is integrated into EBSCO ERM Essentials.

EBSCO ERM Essentials

<http://www2.ebsco.com/en-us/ProductsServices/ERM/Pages/index.aspx>

Ex Libris Verde

Ex Libris began as a traditional ILS vendor, offering two different ILS systems due to a company merger. It was one of the very first companies to open the web-scale search market and to supply a federated search product with an integrated link resolver (Primo), a federated search engine (MetaLib), a link resolver (SFX), and an ERMS (Verde). It continues to develop and market its products and is a significant player in the library software marketplace.

The two ILSs available from Ex Libris, Voyager and Aleph, both have their own acquisitions systems built in. Ex Libris also provides a stand-alone system, Verde, which is built to integrate either with an Ex Libris ILS, with an ILS from another company, or with other library management systems. Verde has been popular for its integration into the other Ex Libris electronic resource products like SFX, Primo, and MetaLib. Alma, a new product from Ex Libris, will be discussed later in this chapter as part of the examination of the new, all-in-one library services platforms.

Verde, as a stand-alone ERM product, offers ERM functionality, including a knowledge base of resources, a single point where staff can get information about electronic resources holdings and status at the library, and contact and administration information. Verde also has workflow functionality to support trials, acquisitions, licensing, usage information, and renewal procedures. Donna Ekart described her experience with Verde implementation and workflow in a 2008 article, where an initially unpromising start was turned around through focus on the library and the tool.¹ Eric Hartnett, Apryl Price, Jane Smith, and Michael Barrett described an experience with implementing Verde and the workflow tools available at the Texas A&M University Libraries.² Guoying Liu provided a case study of Verde implementation within a consortium, noting that the individual library's needs and situation are the most important factor in the decision to get or implement any ERMS.³

Verde also has full licensing functionality and the ability to define licensing workflows within the system. The statistics functionality available in Verde includes SUSHI compliance to download statistics automatically. If the library also uses the cost and acquisitions modules, then Verde makes finding cost-per-use information possible. This statistics-gathering functionality also includes an area to note problems with access or other vendor issues for further attention and review during renewals.

One historical issue with Verde has been a data silo problem, where the knowledge base for Verde contained the same information but was separate from the knowledge bases for the SFX link resolver and the Primo single search product. Ex Libris has addressed this issue in its new system, Alma.

Ex Libris Verde

www.exlibrisgroup.com/category/VerdeOverview

Innovative Interfaces Millennium

Millennium from Innovative Interfaces has a reputation as an ILS with considerable acquisitions functionality. Because the ERM product ties so closely to the acquisitions system, Innovative Interfaces's ERMS is designed primarily as a knowledge base management system with licensing and contact functionality, but with limited intrinsic acquisitions functionality of its own. Pricing model, subscription to print, cancel restrictions, multiyear price caps—all would be found stored in the Millennium acquisitions module within acquisitions records. Although the ERM module is sold as a stand-alone, it lacks most acquisitions functionality on the assumption that it would be used in conjunction with the acquisitions module. This acquisitions system is elaborate and sophisticated and can easily handle fund accounting, setting up invoices, and splitting costs between departments or universities.

In order to differentiate the acquisitions and ERM modules, the ERMS focuses on managing and synchronizing knowledge base information between the ILS and other systems, allowing imports of journal title lists by package from link resolvers like Serials Solutions's 360 Link and Ex Libris's SFX. Managing these imports is complicated, and it is helpful to have the functionality available in the ERMS for that. However, it is important to note that uploading all the holdings records from databases into the ILS implies making the catalog and the OPAC the systems of record for holdings. The upload process allows for creating basic MARC records. One particular concern with batch-loading records into the ILS is always having an easy way to batch-remove those sets of records, although Innovative is particularly good in this respect and also features well-developed reporting functionality. The ERMS is tied to the Millennium reporting function, which is complicated but powerful and sophisticated. The reporting information from Millennium will depend more on what reports the librarian is able to run; it is flexible enough to provide almost any reports.

Because this functionality is so important to the Millennium ERMS, several of the case studies on implementing and using this system focus on the requirement for importing the journal lists, or coverage loads. Denise Pan described an implementation experience that focused on creating coverage loads but, because of insufficient communication, was confusing for the library staff and required revisiting the entire workflow a year later.⁴ A 2011 survey of Millennium ERM users found that more than half of the libraries had difficulty with implementation, but that almost all reported positive impact on workflow. Most libraries also found

a significant improvement in patron access to resources.⁵ Another case study described a positive experience with implementing the ERMS and a commercial link resolver at the same time.⁶

One librarian interviewed about using the Millennium ILS and Millennium ERMS said that they work extremely well together. A specific selling point mentioned was the robust alerts and renewals information; the librarian recommended Millennium as a good way to store and share usernames and passwords in a centralized location. The system was considered extremely strong as a central repository for all electronic resources information, which could then be used as the basis for homegrown patron interface systems or other innovations. Innovative has recently released another product, Sierra (or, as Innovative refers to it, the Sierra Services Platform from Innovative Interfaces), which is an all-in-one library services platform.

Innovative Interfaces Millennium

<http://www.iii.com/products/millennium>

Serials Solutions 360 Resource Manager and 360 Counter

Serials Solutions's 360 Resource Manager was an early entry into the ERM field, and top people at the company were part of the very early ERM and digital management meetings that gave rise to the DLF ERMI report and standards work.⁷

360 Resource Manager is based around Serials Solutions's original link resolver product, so this is a product with extensive focus on a vendor-maintained, frequently updated, carefully curated knowledge base. One advantage of the Serials Solutions knowledge base is that its software is cloud-based, accessed through the Internet, and hosted by Serials Solutions. This means that individual libraries are not responsible for maintaining or updating software and that updates to the knowledge base by the company take effect for individual libraries in real time. Because the software is cloud-based, though, it may offer fewer customization options for libraries with extensive technical support. 360 Resource Manager brings administrative information and tracking, a license module with templates, budget tracking and fund accounting support, and contact information management to integrate with the link resolver product. It also includes several types of maintenance and management reports, as well as integrating with an add-on reporting product to manage and compile COUNTER statistics.

360 Counter includes administrative information and a SUSHI harvesting tool to automatically download and compile COUNTER statistics from any compliant vendors. The tool has an ability to pull statistics reports together into a dashboard. 360 Counter includes the ability to have reports pulled and the SUSHI capability to compile them automatically. The Serials Solutions link resolver also includes usage data for click-through statistics within the link resolver, but for download and COUNTER-compliant statistics, particularly for compiling statistics from many different providers, using a dedicated statistics aggregation product is faster and simpler.

Serials Solutions 360 Resource Manager

www.serialssolutions.com/en/services/360-resource-manager

Open-Source ERMSs

Open-source software poses its own challenges. If the institution has technical knowledge and support, access to IT resources and someone willing to learn the software, or if a vendor offers support for a fee, using open-source software may be extremely feasible. Open-source is particularly attractive to very small libraries where cost is a primary motivator and the collection is relatively small. At the other end of the scale, a library or consortium may be so large and complicated that it must look outside of traditional options to find software that can contain all the necessary functionality, as the University of Notre Dame did for ERM software or the public library system of Georgia did when developing the Evergreen ILS software package.

One advantage of open-source is that the software is free. Anyone can download and install the source code, and there are few restrictions on its use. The disadvantage to this kind of software is the difficulty of supporting it. Installing and running open-source software may require more on-site expertise than commercially managed software. Generally, however, there are companies that can be hired to provide technical support and implementation, and open-source software may be the less expensive and more flexible option under many circumstances.

Some of the libraries and companies that have developed their own ERMSs in-house have gone on to offer those systems to other libraries. This is extremely beneficial for the library community, and these systems can be the perfect option for smaller libraries without the resources to develop their own in-house software. The systems discussed below do not constitute an exhaustive list,

but, according to their own websites, all are used by more than twenty libraries, and all have active user communities for support.

CORAL

CORAL is a system developed by the University of Notre Dame and is available open-source. It is a lightweight software solution and has an active e-mail discussion list. CORAL is organized into four distinct modules based on functionality: manage resources, record licenses, track organizations, and report usage. These modules follow the main functionalities of the ERMS and can be downloaded separately or together.

In addition to its active discussion list, CORAL has free demos on the university website. The program is a small database and must be installed on a server, but does not require a dedicated server of its own. It also has a web interface for entering and reporting data, giving it an attractive and simple appearance. To use CORAL, the library needs to have access to a server and to have someone available to install and maintain the software.⁸

Kristen Blake and Maria Collins's article noted that a major benefit to using CORAL is the ability to synchronize journal holdings data with the SFX link resolver.⁹ A 2011 case study by Sharon Whitfield pointed out that although her library had some small problems with authentication, the e-mail discussion list was extremely helpful as a technical support resource, and implementation was generally smooth. The functionality continues to be developed and allowed the software to be used on a desktop to start with, facilitating staged implementation and getting used to the resource.¹⁰ Another case study of three libraries reported that CORAL was popular for its low cost, and the major difficulties reported were common to many ERMSs, such as problems with interoperability with other systems or the need to perform a full implementation process and integrate the system into workflow.¹¹ Texas A&M University actually began to use CORAL after two unsuccessful attempts to use other ERMSs, which resulted in a careful evaluation process and the selection of CORAL. All three libraries cited in the article note that CORAL's flexibility and adaptability are a major selling point for the software. The College of New Jersey also selected and implemented CORAL and reported a positive experience.¹²

CORAL

<http://erm.library.nd.edu>

CUFTS

CUFTS is an open-source system developed by the Simon Fraser University Library as part of a suite of open-source products, including a link resolver called GODOT and a knowledge base called Open Knowledgebase. The entire suite taken together is called reSearcher and was designed for academic libraries.

CUFTS provides license tracking support, renewal alerts, and contact information management. It is also set up to provide an A-Z list for patron discovery. The entire project is open-source. Resources in the knowledge base can be updated either through the web interface or by using an uploader tool.

One librarian interviewed about CUFTS said that implementation took several months but that completing the implementation and using CUFTS was extremely helpful. The library was able to implement CUFTS when other products were too expensive, allowing it to spend the money on additional content. The amount of control the library got as a result of using the reSearcher suite was a huge selling point. The interviewee mentioned that the open-source community for reSearcher was still small and the statistics tracking not yet robust, but overall the library was extremely satisfied with CUFTS and the reSearcher suite. CUFTS and reSearcher require a server and can be locally hosted by the library for no cost outside of hardware and maintenance or hosted and maintained by Simon Fraser University for a low fee. In a 2006 article Kevin Stranack described in detail the CUFTS ERMS and some of the options available, including the link resolver and knowledge base functionality.¹³ A 2010 article described the process of workflow change and implementation at San Francisco University and further development of the software.¹⁴

CUFTS

<http://researcher.sfu.ca/cufts>

ERMes

ERMes was developed in-house by the University of Wisconsin-La Crosse. It is an extremely simple system built in Microsoft Access, and it is free to download by any interested party. It has an active discussion list and a blog. It might be a very good choice for libraries that do not have much systems support or no servers or absolutely no additional money for software. At the time of this writing, there are seventy-one libraries advertised as using this system. There are also add-ons provided by other users to create an A-Z patron database list.

The ERMes system is designed to manage license, contact, and cost information for databases, as well as to compile COUNTER database statistics into a report. There are PDF training manuals and documentation explaining how to implement the system in order to gain the maximum benefit. Because of the setup of the database, it is important to implement it in the suggested order unless the library has a very thorough understanding of Access and is able to work with sophisticated table relationships and queries. One nice feature is a staff interface with menu and drop-down options to make entering data and pulling reports simple and convenient. William Doering and Galadriel Chilton, the developers of ERMes, have written two articles about the creation of ERMes and its further development.¹⁵

This system could be very beneficial to very small libraries since the only technical requirements are a license for the Microsoft Office suite and some sort of shared library network space where the database can live and everyone can access it. The simplicity of this approach allows anyone moderately comfortable with Access and database structure to create new reports to generate specific information, and libraries can customize and add on as long as they understand the underlying database well.

ERMes

<http://murphylibrary.uwlax.edu/erm>

Homegrown ERMSs

Many libraries have chosen to develop their own ERMSs instead of going with a commercial product. Just a few of the case studies are listed here, along with major points.

The Smithsonian Institution Libraries decided to develop their own ERM system largely for the internal purpose of e-journal management and the external purpose of creating the patron-facing A-Z list. The system allows license and vendor-tracking information and real-time updates but lacks link resolver functionality and requires manual knowledge base updates.¹⁶ Concordia College has also written a case study on getting a custom database created by a company called Zoho after doing an extensive analysis of library needs and available commercial products.¹⁷

Other libraries have written about the experience of creating an ERMS from an assortment of free and Web 2.0 software. Adam Murray suggested this approach, using a combination of wikis, blogs, and Google Docs.¹⁸ Lenore England and Li Fu wrote about their experience of using a combination of LibGuides and its website and wiki-like functionality and a homegrown database tool to manage their electronic resources.¹⁹ Denise Pan has also written about using blogging as a component of electronic resources management as an addition to the library ERMS.²⁰ Another 2013 article points to Google Sites as an electronic resource management tool preferred to a vendor ERMS.²¹

Library Service Platforms

The above discussion attempts to summarize a few of the pros and cons of each approach and to give a basic outline of available software from each vendor. However, there are several vendor products that do not fit into the categories above.

All of these vendors discussed in this chapter are distinguished by a long history in the library software market with a more traditional product, such as an ILS or a link resolver, and have recently added a stand-alone ERMS. Now each of these vendors is pushing to develop and market a new product that goes beyond stand-alone additions to a software suite. Each one is trying to develop an all-encompassing set of products that attempts to completely solve the problems of managing electronic resources in the digital age. However, each company is taking a slightly different approach to the problem based on its particular expertise.

Marshall Breeding called the next generation of library automation software *library service platforms*.²² These are new products,

just starting to be available, that combine all the functionality of library software into one or two modules. This software generally promises to combine link resolver and ERM functionality with patron discovery and a single search module, as well as print item management traditionally done in the ILS. This new kind of software is available from most of the major vendors, although at the time of this writing, not all of the products are available for production use.

Regardless of the original specialty of the company, whether ILS, link resolver, or something different entirely, the functionality libraries need now is the ability to see and organize their workflow to include all resources at the same time. The ERMS is beginning the transition from a specialty piece of software to part of a unified and complete software management system that can also include print management and unified patron discovery services as well as life-cycle management for all library resources. Sharon Yang did an analysis of the library service platforms listed here that may be a helpful resource when beginning an evaluation.²³

OCLC WorldShare

OCLC has provided the MARC records for most libraries within the United States for many years. It was one of the first library technology companies and has nonprofit status as a member library cooperative. For many years, OCLC has offered a variety of software related to the library services it offers, such as software to support interlibrary loan and cataloging. In recent years, it began to expand its services to offer a free public catalog available on the Internet to show unified library holdings information to any member of the public looking for a book. This service was one of the first efforts to reach out directly to patrons and was incorporated into search results such as Google Books. This service is known as WorldCat Local, soon to be WorldCat Discovery Services.

Libraries can subscribe to a more sophisticated version, allowing them to update holdings more easily and to use that software as their ILS public interface instead of the OPAC.

OCLC then expanded its software suite repertoire with a link resolver product, which went through several iterations before settling into the current WorldShare License Manager software. It incorporates electronic resource management, a link resolver, the popular EZproxy proxy server—which allows libraries to manage off-campus access restrictions—licenses (using templates), and acquisitions. This acquisitions functionality includes generating orders, cataloging records, and generating fund and budget reports. This product is available as a stand-alone and incorporates all the ERMS functionality of other products previously mentioned. Marshall Breeding provided a description of this product when it was first released in 2009.²⁴ Hope International University published a case study of its migration in 2012, saying that one issue was lack of individualized control over settings, but that generally the new software was a positive for both library staff and patrons.²⁵

The WorldShare License Manager product also integrates with WorldShare Management Services, the OCLC library services platform. WorldShare Management Services incorporates the ERM functionality with the additional single search platform functionality and the print management capability of the catalog. The stated goal is to allow for flexible resource management, integrated into and defining a library's workflow and incorporated into the entire library management software. This product is still new and was one of the first of its kind. The advantage to this approach is ease of unifying all the different functionalities and eliminating silos.

OCLC WorldShare Platform

<http://oclc.org/worldshare-platform.en.html>

Ex Libris Alma

Ex Libris is another company that spans many definitions. It started as a more traditional ILS vendor, although, unusually, it supported two different ILSs—Voyager and Aleph—due to a merger. From there, it developed the extremely popular link resolver SFX, the federated search engine MetaLib, and the single search interfaces Primo and Primo Central. These systems were paired with the ERMS, Verde.

All of the products mentioned above started as separate systems, with some connections built in. These connections were particularly successful in some cases, such as the integration of SFX, Voyager, and Aleph with Primo. However, a lingering issue for Ex Libris was the separate knowledge bases in SFX, Verde, and Aleph or Voyager. The Ex Libris response was a new product, Alma, which integrates these functionalities and workflows.

Alma is structured to have a unified knowledge base and a workflow that integrates all the functionality to keep this information all together in one place and facilitate easy tracking and sharing. Alma allows for acquisitions workflow, ERM information, notes fields, and a single search interface for patron discovery. More information is available on the Ex Libris website.

Ex Libris Alma

www.exlibrisgroup.com/category/AlmaOverview

Serials Solutions Intota

Intota from Serials Solutions is another library services platform that combines a unified knowledge base with a complete resources management suite and patron discovery. Serials Solutions is able to take advantage of the current resource management workflow because it began as a link resolver company, so its linking and electronic resources management are sophisticated. Taking advantage of its SaaS platform and link-resolving software puts Serials Solutions in a good place to offer a library services platform.

Serials Solutions also has some experience in the patron search interface business with its single search platform, Summon. Summon has the advantage of being powered by the same knowledge base as the link resolver, but it can integrate with other platforms as well.

The literature available from Serials Solutions suggests that it was designed with a variety of unified library workflows in mind, including management and assessment of print materials. More information is available on the Serials Solutions website.

Serials Solutions Intota

www.serialssolutions.com/en/services/intota

Kuali OLE

Kuali OLE open library environment is a new project, only just released for general use. The Kuali OLE Foundation is a group with several foundation libraries working together to build an integrated library services platform. This project was originally started by a grant from the Andrew W. Mellon Foundation. Kuali OLE also allows institutions to become members for a moderate fee and encourages contributions of code and bug fixes.

Kuali OLE's software is separated into modules, and each handles some portion of managing resources, known in the documentation as *entities*. The software was designed to manage a variety of resources and to incorporate workflow management, as well as to integrate smoothly with other software systems. Because this system was developed by and for libraries, it is intended to be extremely functional and to address the core needs of libraries, particularly large academic institutions. However, the system is very new and still funded and developed by grants, so it is not entirely clear what the future will hold. A recent article by Michael Inkler and Robert McDonald provided extensive information about the project.²⁶ More information is available online.

Kuali OLE

<https://www.kuali.org/ole>

Innovative Interfaces Sierra

Sierra is a library services platform offered by Innovative Interfaces as a new product that complements its ILS, Millennium. Sierra has the functionality of the ILS, including circulation, cataloging, and acquisitions. It also has complete ERMS functionality, including the ability to manage licenses and track administration information and contacts for products.

One librarian interviewed about an experience with Sierra praised the license functionality. The librarian noted that the customizable license records made it very easy to store a great deal of complex information, keep it linked to the source records and resources, and also choose certain fields and pieces of information to be available to patrons. The interviewee mentioned that the library had notable success in importing MARC records for ebrary e-books and e-journals. The library also found the acquisitions tracking functionality extremely helpful. A case study was published in 2012 with a glowing account of Sierra's functionality and features.²⁷

One other major point about the Sierra system is that it advertises itself as an interoperable tool based on standards. It offers application programming interfaces (APIs) that can be used in many different ways and the ability to have it hosted on local servers or in the cloud. This is a rare selling point, but an important and extremely helpful one, particularly for those libraries lucky enough to have significant in-house technical support.

Innovative Interfaces Sierra

<http://sierra.iii.com>

Related Software

ERMSs and library service platform software are responsible for most of the management of electronic resources. But electronic resources have become an extremely important part of the overall libraries resource picture, and so the connection between the ERMS and other major pieces of library software is important to consider when looking to implement an ERMS or change the electronic resources environment.

For good integration, it is important to consider the library discovery software. It is not necessary to have the same vendor for ERMS and discovery software, but it is a good idea to make sure the two systems can be integrated and to see if other libraries have implemented the same combination successfully. Likewise, more ERMSs are starting to incorporate link resolver functionality. It may not be necessary to use the link resolver in the ERMS, but it is a good idea to make sure the knowledge bases are similarly comprehensive and to investigate what maintaining two knowledge bases is going to involve. The ILS is a crucial piece to managing most libraries, and many different levels of integration and electronic resource management within the ILS are possible. The last important separate piece that relies on the ERMS but generally does not integrate is interlibrary loan software. Integration is starting to be possible within certain systems, but if the library has a smaller budget for software, these new options may be out of reach. It is worth investigating to see whether license information in the ERMS can be set up in a way that is easily accessible to interlibrary loan staff or, if licenses are stored in the interlibrary loan systems, whether this information can be easily pulled and aggregated into the ERMS.

Discovery—Federated and Indexed

One important piece of library software is the discovery service tool. A Google-like single search interface has increasingly become the goal for many librarians and library vendors over the last several years. While even a few years ago the technical and logistical challenges were daunting, many vendors have risen to the challenge and now provide products that work on either the federated or the preindexed single search model. This report is not intended as a comprehensive guide to single search interfaces, but I will briefly discuss the logistics and a few of the pros and cons of each model before discussing how discovery tools impact decision making about and implementing an ERMS. A study by Melissa Hoffman and Sharon Yang found that the use of discovery search tools doubled between 2009 and 2011.²⁸ Marshall Breeding provided an overview of the discovery services available, common problems, and areas for future development in a 2013 article.²⁹ A paper from 2012 (Ruddock and Hartley) investigated selection of single search systems, which are referred to as metasearch resources.³⁰ Other libraries chose to develop their own tools, as described in a case study from the Houston Academy of Medicine, Texas Medical Center Library.³¹

Much of the recent research on discovery tools focuses on their impact on information literacy, searching, and on patron discovery.³² Continuing research presented at the 2013 Charleston Conference evaluated four of the available commercial discovery tools in an effort to measure the effect they have on usage statistics and found that discovery service tools generally do increase usage statistics although not uniformly across tools or publishers using a particular tool.³³

A federated single search product can simultaneously search multiple databases, including the OPAC, subscription databases, abstracting and indexing databases, and local repositories. Implementing this type of search usually requires some preselection of databases into facets or subject areas. When the patron enters the search, he or she is given the option of choosing the subject. The search terms are then sent to the selected databases, the search is run on those databases, the results are returned, and the federated search product ranks the results from the selected databases by relevancy. One well-known federated search product is Primo from Ex Libris. As Primo is one of the best known of the discovery products, there are multiple case studies on its implementation and use.³⁴

Preindexed search is also a single search product, but one based on a different concept. The preindexed search also provides a single search box to search across resources like the OPAC, subscribed article databases, abstracting and indexing databases, e-

books, and local repositories. However, these products actually index the contents of each resource rather than running a search directly against each database. The single search vendor hosts the search index, and search queries are run against the pre-made index. The vendor updates this index at regular intervals. The updates can be run at different frequencies for different kinds of information. For example, MARC records from the ILS might be updated every day, but a subscription database might be updated each week.

This pre-created index has the advantage of providing a fast search. Options for preindexed and federated searches are available from multiple vendors as SaaS (software as a service). The most famous of these is probably Summon, although EBSCO Discovery Service (EDS) works on a similar model. Multiple case studies exist for Summon, offering experience and opinions on using it.³⁵ Additionally, several studies either compare Summon to EDS or survey multiple libraries on their experience with Summon.³⁶

The distinctions between preindexed and federated searches are starting to disappear as the software and search technology gets faster. Most companies seem to be moving to a hybrid approach, where content is pulled into a local index, where possible, but searched through a federated style search when an agreement cannot be set up with the publisher. This results in the popular “suggested database” or “recommended resource” links that are presented alongside the main search results panel. Both kinds of single search products depend on the search company owning or licensing the right to index and full-text search that content and on search and licensing agreements between software and content companies. These agreements can be tricky to implement, and some publishers refuse to allow their content to be indexed in this way. However, the amount and depth of content in these agreements keep expanding, creating better and more complete data to draw from. Only a few years ago very few companies would allow more than basic metadata for books to be searched. Now, more and more are offering keyword-level searching of full-text books and articles, as the ranking search algorithms continue to improve.

There are currently four major single search products on the market from the major library vendors. Each product has a strategic advantage and is offered either alone or as part of one of the library service platform products that started to come on the market in 2012. Serials Solutions offers Summon, which is well integrated with its suite of ERM and link resolver products. EBSCO offers EBSCO Discovery Services, which has extremely good indexing of EBSCO’s large content databases as well as other content and integration with its journal subscription management tools. OCLC’s WorldCat Local has the advantage of being free and integrated with Google Books. Ex Libris offered one of the very first federated search products on the market with Primo, which integrates with its very popular SFX, Aleph, and Voyager systems. A case study is available from Tonia Graves on selecting and implementing a search product based on Marshall Breeding’s recommendations.³⁷ For a breakdown of each single search product with features and platforms, Marshall Breeding offered a guide, ranking, and survey of discovery products in 2010 and an update on discovery in general in 2012.³⁸

None of the products listed above, or other single search products available on the market, require an ERM system. All of these can be purchased as stand-alone software and will work with whatever other software the library has. But it will be necessary to specify what electronic resources the library has for each of these products. The subscribed and print resources for the library will become the single search product’s knowledge base, which can be specified in several different ways.

Usually, the single search product will pull from a library catalog to display print items and their status on the shelf. If the library has an institutional repository, those resources are also frequently pulled in. Another common knowledge base is the link resolver. This is generally a key resource for setting up a single search platform and one of the primary ways that electronic resources are tracked. When the link resolver knowledge base can be used for single search software, it simplifies maintenance of the holdings.

The single search product needs holdings information about journals as well as books and databases and information about vendor and purchase history. Having these products active through the link resolver allows them to be available through the single search product. If an ERM product is involved, this can also be an easy way to add information such as license terms and usage restrictions and to keep subscription information updated automatically. These are important to have available because if there are special or restrictive license terms on access, or even something simpler like an individual registration required to get credit for reading continuing education articles, this will need to appear in the patron interface, which means finding a way to present it in the single search interface.

Generally libraries have a system that becomes the system of record for library resources. For most libraries, the ILS is the system of record for print resources, and in some cases for electronic resources as well if the library has solved the problem of MARC records for a large, changing collection. One important factor when selecting a single search product is to be sure that if the single search product has its own knowledge base of resources, the search knowledge base is either the same as or integrates smoothly with the knowledge base the library uses for most resources. It’s important to keep the library from duplicating effort, which happens when it maintains separate knowledge bases of the same information. Another important thing to check is that the search knowledge base has the title lists and publishers for the most important library resources. Two articles analyzing this

relationship with the ERM and ILS knowledge base in relation to discovery services were published in 2010.³⁹

Having an ERMS can help with implementing a single search platform, but it is not essential. One helpful piece is if the library can use its ERMS as the knowledge base for electronic resources for the single search platform to avoid having duplicate knowledge bases. Another advantage is that having an ERMS may mean that all the information necessary to implement a single search—lists of platforms, lists of journals and providers, cost information for all resources—is already compiled in an easy-to-use format, which will simplify getting the single search platform implemented. Libraries that are able to proactively manage their knowledge base, make sure important resources are available and show up in results, track and update knowledge base title lists, and make sure they are doing everything possible to report problems, are more likely to have a good patron experience.

Integrated Library System

One of the main elements of library software that has to be considered when examining electronic resources management is the integrated library system. In some senses, this is the most complicated piece to integrate precisely because it is so integral to the library. The ILS generally holds all the MARC records for the library, allowing all the records for books, journals, and other materials to be found in a variety of ways. The ILS contains all the circulation and item management records, as well as the patron database of people who are eligible to use the library. The ILS usually contains some reporting and acquisitions information as well.

Since an important aspect of managing electronic resources is reducing duplication of work across different systems, one major thing to investigate when evaluating ERM systems is how the ERMS will interact with the library's ILS. Because ILSs are generally designed around a MARC record format, if the ILS will be a central piece of electronic resource management then an ERMS that can manage MARC records exports and imports may be extremely important. Electronic resources require some information that is not standard across ILSs, such as platforms and constantly changing title lists, so it is important to ensure that the ILS and ERMS can integrate and also to understand the extent of the integration. The functionality the ILS has regarding electronic resource management will also help to determine what pieces the library should look for most with the ERMS. If the library has acquisitions and budget tracking fully implemented within its ILS, it may not need that in the ERMS and may want to focus on other elements, such as link-resolving management.

Every library situation is different, but generally the integrated library system is a very important piece and evaluating electronic resource management workflow will require working with it carefully to make sure the library has arrived at the most useful solution with both existing software and additional products such as an ERMS.

Interlibrary Loan Software

Interlibrary loan software generally stands alone and uses the shared knowledge base of library collections and journal holdings. The biggest of these is the OCLC interlibrary loan knowledge base containing most of the holdings for libraries in the United States. Some smaller regional or subject-specific databases are also common, such as DOCLINE from the National Library of Medicine for medical libraries. Regardless of the system, it is the library's responsibility to get its print and electronic holdings correctly reflected in the knowledge base. It is to the library's advantage if it is able to have its knowledge base holdings match its resource record and have a somewhat automated process, as this will require less work. The more closely the OCLC holdings match the library's actual holdings, the more ILL requests it will receive. The process to automatically update holdings depends on the systems involved. If the library is able to get batches of MARC records from OCLC, it may be able to get holdings for those records set automatically, although updating them would still be a manual process.

The trickiest issue with electronic resources in interlibrary loan is the licensing terms. Even if the library is able to get all of its electronic holdings into OCLC, whether or not a journal article can be lent will depend on the publisher license agreement. Since each publisher may have different terms, libraries usually cannot just set up batch deflection of all electronic resources without restricting themselves from getting requests they would be able to fill.

At this time, most ILL software either does not have a licensing term knowledge base or is not able to integrate with other systems to pull this information smoothly. The best-known ILL software, ILLiad from OCLC, does have licensing add-ins that can pull standard information. OCLC's other product, WorldShare Manager, has license management integrated into the knowledge base and ILL functionality, and a case study on using ILL with WorldShare Manager reported a favorable experience.⁴⁰ Some libraries have found that a simpler option is to add a link or click-through to a page explaining licensing restrictions to the link resolver screen, where patrons and ILL staff can easily see the terms and familiarize themselves with the restrictions.⁴¹

Link Resolvers

Link-resolving software allows linking from citations to the library that subscribe to the full text of an article, wherever the citation is from. This allows linking from citations in abstracting and indexing databases, in Google, or in subscription databases, to subscribed full text. Link resolver software is based on the OpenURL standard. Generally, link resolver software involves a database or knowledge base of publishers, databases, journals, and journal holdings and requires library staff to select library subscriptions in the knowledge base. Vendors generally maintain link resolver knowledge bases, and the accuracy and timeliness of updates to the knowledge base are a major factor in evaluating link resolvers. The link resolver was recognized as an essential piece of the electronic resources management puzzle as early as 2004 and 2005.⁴² Jill Grogg was an early author in explicating this complicated area and in explaining OpenURL, link resolvers, and link resolver alternatives.⁴³

In order to implement a link resolver, it is necessary to go into the knowledge base and select the providers and databases licensed by the library, then to communicate with each provider to add library-specific link resolver information at the citation level within the database. Multiple articles are available on selecting and implementing a link resolver from the available options.⁴⁴ The most common problems described with link resolvers are broken links due to problems in the knowledge base, something that a set of standards initiatives—KBART, IOTA, and PIE-J—have been designed to address.⁴⁵ More discussion of link resolver standards is included in chapter 1.

In some ways, an ERMS and a link resolver are extremely similar, particularly in the need for a consistent, complete knowledge base of subscribed and purchased content of a library's holdings. The main difference between the ERMS and the link resolver is the amount of information contained in the knowledge base in addition to the list of holdings. The link resolver will likely have some notes fields available to store administrative information, but an ERMS frequently has an entire administrative management module, the ability to track payments, a licensing module, and more sophisticated reports. A library that is happy with its link resolver and has all the other functionality covered through other systems might not need an ERMS at all, depending on workflow and the other library system capabilities.

The interactions between the ERMS and the link resolver are important. Both products manage electronic resources. Both may impact the way patrons see and have access to electronic resources, and depending on the system, both may pull holdings information from the same databases. The subscription information in the knowledge base requires regular updating and may require more intensive maintenance if the knowledge base feeds multiple systems. Additionally, since the accuracy of the knowledge base depends on the software vendor pulling constantly changing information from publishers, there will always be a certain amount of inaccuracy. Discovering how much, reporting the inaccuracies, and updating records and performing maintenance to keep the link resolver working smoothly all require a certain amount of staff time. Close integration between the ERMS and the link resolver, or having them pull from the same knowledge base, will reduce the total amount of staff time needed to manage resources by reducing duplicate knowledge base systems.

Ticket Management Software

One additional, optional piece of software used by some libraries is a ticket-tracking system for electronic resource problems. There are a variety of solutions available, including incorporating library troubleshooting into the help desk ticket queue or reference question management software. These systems do not have to be complex and can be as simple as a spreadsheet, but having some sort of tracking software to document reported issues with electronic resources can be extremely helpful for problem resolution and pattern recognition. Without some sort of system, it can be difficult to transfer problems among the different parties involved in troubleshooting, and it is harder to verify that each reported question or issue has been responded to and resolved. Library troubleshooting can be difficult in another way, because typically ticket troubleshooting software is designed for short-term issues. If a library is reporting on missing content to a publisher and waiting to get confirmation of content located and loaded, a ticket might stay open for weeks or even months. Library problems are also difficult because there are a variety of issues that may be reported: a patron who has lost his username and password for all institutional resources, a subscribed journal not reflecting library access, a misconfiguration in the proxy server for off-campus access, a patron needing help with access to additional content such as continuing education modules, or content not loaded onto publisher websites. These issues might come from or be referred to library IT support, reference, or a serials and electronic resource department. Of course, any of these issues can happen in combination, resulting in a problem that has to get passed through multiple hands in order to be resolved.

Basically, any software can work as the library's troubleshooting ticket tracker, but a few software options are extremely popular. A case study from the University of Colorado Denver Auraria Library identifies technology and teamwork as the "essential components of successful troubleshooting" and describes its process of troubleshooting using free blog software with a

template.⁴⁶ Another case study recommends having frequently asked question pages and library distribution lists so that multiple people are aware of the problem and can take a team approach to troubleshooting issues.⁴⁷ A third study produced a survey showing that administrative troubleshooting is stored in e-mail for 53 percent of the libraries surveyed, leading to the library creating “troubleshooting records” to go along with administrative records for electronic resources.⁴⁸ Eric Hartnett and Carole Thompson have written a case study of using screencasting, or streaming video, as an effective tool to capture and troubleshoot e-resource problems.⁴⁹ Laura Tull, Janet Crum, Trisha Davis, and Rockelle Strader described using Innovative Interfaces’s ERM incident log entry in the resource record for recording problems.⁵⁰ Jeffrey Perkins’s 2008 article stressed the importance of clear workflow and good communication as essential to the troubleshooting process, with checklists of common problems available to help troubleshoot.⁵¹

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Open Educational Source:

Electronic Resource Management Systems and Related Products

1. ALA TechSource
2. <https://journals.ala.org/index.php/ltr/article/view/4491/5255>
3. no cost, "Permission to use, copy and distribute documents delivered from this website and related graphics is hereby granted for private, non-commercial and education purposes only..."

1.4: Digital Asset Management Systems

Prepared by Richard W. Boss Libraries increasingly seek to offer digital assets as well as print and audio-visual materials to their patrons. These digital assets may include full-text files, PDFs, still images, audios, and videos that have been created electronically or have been converted to machine-readable format for preservation or to provide electronic access that is location independent. There are a number of products available that have been specifically designed to enable organizations to load digital assets, create associated metadata, and provide users with search tools to access the assets. “Digital asset management” is sometimes called “digital collections management” or “digital media management.” The last is actually a sub-category of the first and is used specifically for the management of audio and video assets. All three terms have sometimes been confused with “electronic resources management.” Digital access management (DAM), the term used in this TechNote, deals with the management of digital files; electronic resources management (ERM) deals with the management of subscriptions to electronic resources supplied by others. ERM is the topic of a separate TechNote.

History

Digital asset management began in the first half of the 1990s as a tool for use by large businesses and organizations. The first systems were developed in-house by large companies with archival requirements. By the middle of the decade, there were commercially available products from companies such as IBM and Content Management Systems, but they were aimed at Fortune 1000 companies that needed to archive a large number of documents. In 1993, the Luna Imaging, Inc., (www.lunaimaging.com), with financial support from the J. Paul Getty Trust and Eastman Kodak Company, began developing Luna Insight as a digital asset management product to import, store, manage, and display collections of still images, audios, and videos. The target market was museums, not libraries. In 1994, North Plains (www.northplains.com) introduced TeleScope, a highly scalable software package that could be used by small organizations as well as large, and by those that wanted to make a wide variety of formats available rather than archiving a single document type. However, there was no support for standards such as MARC, Dublin Core, EAD, and Z39.50.

When the Library of Congress began its American Memory Project (<http://memory.loc.gov/ammem>) and the University of California began development of its California Digital Library (www.cdlib.org) in 1996, there were still no products that were suitable for libraries.

By 2001 there were some 98 products available and more than 5,000 organizations had implemented digital asset management programs, but there were still no products that targeted the library market. For that reason, the majority of libraries that implemented programs were large academic research libraries that had the financial and human resources to adapt the available products to their needs. Only a year later, OCLC and several vendors of integrated library systems launched development efforts on digital asset management systems suitable for libraries of all sizes and types.

Products Designed for Libraries

Endeavor’s ENCompass for Digital Collections, ExLibris’ DigiTool, Innovative Interfaces’ MetaSource, OCLC’s CONTENTdm, Sirsi’s Digital Media Archive, and VTLS’ VITAL were all in general release by 2005. Hundreds of libraries implemented digital asset management in the next few years. However, by the fourth quarter of 2009, the number of products specifically designed for libraries had gone down because of the merger of Endeavor and ExLibris.

As of 2009, libraries had available ExLibris’ DigiTool (www.exlibrisgroup.com) Innovative Interfaces’ Media Management (www.iii.com), OCLC’s CONTENTdm (libservices@oclc.org), SirsiDynix’s Hyperion(www.sirsi.com), and VTLS’ VITAL (www.vtls.com). SirsiDynix had embarked on a major rewrite of its Hyperion product and expected a new generation product to become available by mid-2010.

All of these products have the ability to import, catalog, edit, store, search, retrieve content and metadata (data about the data), and generate statistics. They generally do not include hardware and software for digitization. It is assumed that libraries will do that in-house on their own equipment or will contract it out to a firm that specializes in digitization.

Importing Documents and Metadata

The ability to import digital documents is a standard component of all of the products. The documents can be downloaded from a digital storage medium, by FTP, or directly from any scanning device that conforms to the TWAIN standard for interfacing software applications and imaging devices. The documents can be images (GIF, JPEG, PDF or TIFF), plain-text, HTML, audio, or video. Generally only a few parameters are required to load documents. It is also possible to load metadata that already exists for the documents being imported.

As the scale of digital asset management projects has increased, there has been a shift away from the manual loading of records one at a time to bulk loaders that can import thousands or tens-of-thousands of documents with a single set of load commands.

Cataloging

There are several cataloging options, including MARC, EAD, TEI, and Dublin Core, but the most widely used is Dublin Core. Several products offer the option of cutting and pasting information from the actual document to facilitate cataloging. Most of the systems do not limit the number of fields of metadata that can be created. At a minimum, the metadata will include the name of the author, title, language, the source, date, condition, access restrictions, and content description. The metadata can be linked to a single document, also known as an object, or to many.

After the documents have been cataloged, virtual collections can be created. A single document can appear in several virtual collections.

Editing

Digital content can be edited, including reducing high-resolution JPEG or TIFF documents to lower resolutions or creating thumbnails. Metadata can not only be created, but edited on a digital content management system.

Storage

Storing digital files demands substantial computer resources. For example, a collection of 250,000 documents accessible to 40 concurrent users requires at least 100 GB of disk storage and a multi-processor server rated at 2.3 GHz or better, and 8.0 GB of RAM. If more than 25 percent of the documents are images, audio, and video, an even more robust hardware platform is required. Libraries that want to avoid investing in server hardware and software can utilize the hosting service of any of the vendors that focus on digital asset management for libraries.

Searching

Searching can be done directly against the digital asset management system or through an interface from a library's patron access catalog, portal, or Web server. A patron access catalog or Web server would be only a gateway to the digital asset management system, but a portal could be used to simultaneously search the documents on the digital asset management system, but also against other electronic resources within the library or on the Web. Because they have been developed for libraries, the systems support Z39.50 in addition to XML and HTTP gateways.

Searching may be limited to specific documents, media types, individual collections, multiple collections, or may encompass all collections.

Searching can be done either against both the full-text of the documents and the associated metadata, or against just the metadata. Non-text documents searching is, of course, limited to searching the metadata. In most cases, searches can be natural language, Boolean, proximity, wildcard, truncation, date and date range, and pattern. Pattern searching makes it possible to find words with incorrect or missing characters either in the search term or the body of the text.

Most of the system return merged result sets. Some also return relevancy-ranked results.

All of the systems include an image viewer for JPEG and TIFF files, enabling image manipulation and printing.

Increasingly, the products allow data harvesting via OAI-PMH, the Open Archives Initiative Protocol for Metadata Harvesting.

Security generally includes patron authentication to control access to the documents based on the profile of the documents and the users. For example, some documents may be subject to copyright, access restrictions required by donors, or the desire of a library to charge for printing or downloading. Some categories of users may not qualify for access because they are not registered borrowers, are not adults, or are delinquent borrowers.

Statistics

All of the systems include a number of reports that summarize loading, cataloging, editing, and searching activity.

ILS Interface

Most of the products cannot only function as a standalone system, but can also be interfaced with an integrated library system.

Standards

There are a number of standards relevant to digital asset management. The following are described on the Library of Congress Web site (www.loc.gov/standards)

- MARC 21 - Representation and communication of descriptive metadata about information items
- MARCXML - MARC 21 data in an XML structure
- MODS (Metadata Object Description Standard) - XML markup for selected metadata from existing MARC 21 records as well as original resource description
- MADS (Metadata Authority Description Standard) - XML markup for selected authority data from MARC21 records as well as original authority data
- EAD (Encoded Archival Description) - XML markup designed for encoding finding aids
- METS (Metadata Encoding & Transmission Standard) - Structure for encoding descriptive, administrative, and structural metadata
- MIX (NISO Metadata for Images in XML) - XML schema for encoding technical data elements required to manage digital image collections
- PREMIS (Preservation Metadata) - A data dictionary and supporting
- XML schemas for core preservation metadata needed to support the long-term preservation of digital materials
- TextMD (Technical Metadata for Text) - XML schema that details technical metadata for text-based digital objects
- ISO/DIS 25577 - Information and documentation -- MarcXchange
- ISO/DIS 20775 - Schema for Holdings Information
- ALTO (Analyzed Layout and Text Object) - Schema for word positions and physical layout for metadata
- Z39.50 - Supports information retrieval among different information systems
- SRU/SRW (Search and Retrieve URL/Web Service) - Web services for search and retrieval based on Z39.50 semantics
- CQL (Contextual Query Language) - Formal, user-friendly query language for use between information retrieval systems

Other relevant standards include XML, MPEG2, JPEG2000, TEI, Dublin Core, OAI- PMH, and PREMIS, Information about any of these standards can be found on the Web.

Costs

The cost of digital asset management systems is related both to the number of documents and number of concurrent users supported. An entry-level system supporting up to 10,000 documents and five concurrent users can cost as little as \$15,000 for hardware and software, and as little as \$4,000 a year in annual support. Libraries that require a very small system may wish to consider a hosted service. Most of the vendors mentioned in this TechNote will mount the documents on a hosted server at the vendor's site for an annual subscription fee of as little as \$2,500.

As the size of the system increases, it becomes more cost effective to purchase the system. A system supporting 250,000 documents and 40 concurrent users will cost a minimum of \$70,000, plus approximately \$11,000 per year.

Sources of Information

Currency is extremely important when seeking information about digital content management. The Web sites of the vendors cited in this TechNote are highly current. Also highly current is D-Lib Magazine (www.dlib.org). It characterizes itself as the “magazine of digital library research.” The Digital Library Federation (www.diglib.org), a consortium of “libraries and related agencies that are pioneering in the use of electronic information technologies to extend collection and services” also has highly current information on its Web site. Another useful source is the Digital Libraries Initiative (<http://dli.grainger.uiuc.edu/national/html>), a group that is developing standards and best practices.

A somewhat older document that is still useful is the National Information Standards Organization's (www.niso.org) 2004 “A Framework of Guidance for Building Good Digital Collections.”

The largest digital asset management program undertaken by a library is that of the Library of Congress (www.loc.gov/library/libarch-digital.html). Two good examples of digital collections maintained by public libraries are the image collections of the Chicago Public Library (www.chipublib.org/index.php) and the image, text, audio and video collections of New York Public Library (www.nypl.org/digital).

Open Educational Source:

Digital Asset Management Systems

1. Public Library Association
2. <https://alair.ala.org/bitstream/handle/11213/258/Digital%20Asset%20Management%20Systems.pdf?sequence=80&isAllowed=y>
3. No cost, “Permission to use, copy and distribute documents delivered from this website and related graphics is hereby granted for private, non-commercial and education purposes only...”

2: COLLECTION DEVELOPMENT

2.1: Collection Development Sequence

2.2: Managing the Electronic Resources Lifecycle: Creating a Comprehensive Checklist Using Techniques for Electronic Resource Management (TERMS)

2.3: STUDIES ON SERIALS MANAGEMENT IN LIBRARIES: A REVIEW

2.4: Legal Requirements Program Regulations of the Federal Depository Library Program

2.1: Collection Development Sequence

1. [Collection Development Basics](#) (1 contact hour)
2. [Collection Development Policy](#) (1.5 contact hours)
3. [Building A Collection](#) (1.5 contact hours)
4. [Collection Maintenance](#) (2 contact hours)

2.2: Managing the Electronic Resources Lifecycle: Creating a Comprehensive Checklist Using Techniques for Electronic Resource Management (TERMS)

Abstract

One of the core functions of the electronic resources librarian (ERL) consists of managing various stages of the electronic resource lifecycle. In order to do this effectively, it is extremely helpful to have a detailed guide on hand. An e-resources acquisition checklist can assist the librarian in covering all aspects of evaluation, acquisition, renewal, and cancellation of e-resources such as databases, e-books, e-journals, and more. Such a tool can be indispensable, especially for new ERLs attempting to get a grasp on the logistics of electronic resources management. Using the newly created Techniques for Electronic Resource Management, the author details the process by which librarians navigate the e-resources lifecycle.

The e-resources acquisition lifecycle has become increasingly complex and follows more of a circular, iterative process than the workflow in place when print resources dominated the library landscape. Especially for a new librarian in the field of collection development and particularly the subfield of e-resources management, this workflow can be overwhelming. A detailed guide is critical for success, and Techniques for Electronic Resource Management (TERMS) serves as a resource created to fill that need. TERMS is a project initiated by Jill Emery of Portland State University and Graham Stone of University of Huddersfield in 2008, building on Oliver Pesch's e-resources lifecycle. Emery and Stone expanded Pesch's model, eventually defining six components or "TERMS" that make up the iterative electronic resource management process. Through crowdsourcing and peer commentary, they solicited feedback, further clarifying and elaborating on each component. During 2012, a TERMS wiki was created based on this feedback.¹ The wiki is an attempt to create an ongoing and continually developing set of best practices for e-resource management in libraries.

The author of this article is currently Electronic Resources Librarian at Montana State University, Bozeman. In 2013, he became involved with the TERMS wiki as a co-editor, with a specific role in editing the section "Acquiring New Content." In this role, the author sought out the opportunity to discuss TERMS and promote this new resource at the North American Serials Interest Group (NASIG) 28th Conference in 2013. In addition to the TERMS wiki, the project has recently been covered in an entire issue of *Library Technology Reports* devoted to TERMS.² Librarians interested in contributing to the ongoing development of TERMS are encouraged to contact the appropriate section editor designated on the wiki.

TERMS can be thought of as a detailed checklist outlining workflow across the e-resources lifecycle. There are a variety of reasons why such a checklist may be of value: to create a reference point for the collection development team, to organize workflow and create efficiencies, to foster effective communication within and across teams throughout the library, to exercise responsible stewardship of resources, and to document iterative processes that can be improved. This checklist could take many forms, depending on the preferences of individuals and how information may be best represented and manipulated. It could be in the form of a simple Word document or Portable Document Format (PDF), spreadsheet, database, flowchart, resource management system, and so on. The most important consideration is crafting something that will work for you and your organization and will be open to revision in the future.

There are six stages in the iterative e-resource lifecycle as defined by TERMS: investigation of new content, acquiring new content, implementation, ongoing evaluation and access, annual review, and cancellation and replacement review.

INVESTIGATION OF NEW CONTENT

When investigating new content, it is important to know what we wish to achieve. Gauging the demand and purpose is critical, that is, whether the resource is being demanded by faculty or students, is intended for teaching, research, or professional development, and so on. Is it in response to a course, research agenda, or part of a patron-driven acquisition (PDA) profile? It may be a simple electronic replacement for print. Specifically in cases of journal subscriptions, interlibrary loan (ILL) request history is valuable in measuring the potential for future use. Of course, there are always budgetary considerations that may be driving our decision making.

There are a number of preliminary criteria involved in evaluating potential resources. Is the resource appropriate for the intended audience? Does the platform have an intuitive interface? Is the resource configurable with your authentication/Internet Protocol (IP)/proxy mechanism? Are Counting Online Usage of Networked Electronic Resources (COUNTER) usage stats available? Does the resource integrate into the library's Web-scale discovery tool? Are machine-readable cataloging (MARC) records available and what is the quality and cost? What kinds of administrative control are available to the librarian on the publisher's platform?

In some cases, it may be advantageous to form a team to investigate new content. Those on the team may include an e-resource manager, collection development librarian, budget manager, subject liaison librarians, or faculty outside the library. Single journals and smaller purchases may not require a team, while very large projects may require a project template.

During the review and trial period, there are a number of important considerations. Can the demand be satisfied with existing resources? Conducting overlap analysis can be very helpful in identifying coverage and duplication across other resources. A librarian may take advantage of product reviews and comparison studies such as the *Charleston Review*, *Choice*, and so on. The timing and length of the trial are important. For instance, summer may not be the best time, and two months is better than two weeks in order to gain more participation and more feedback. There are many ways to publicize a trial, such as a blog, wiki, Web, e-mail, or even word of mouth through liaisons. One may attempt to gather usage stats for a trial, as well.

Once the evaluation moves further along, it is advantageous to communicate back to the provider. Asking if consortial arrangements are available is worthwhile, unless deeper cost reductions may be realized in individual purchases. Multi-year deals are also worth pursuing, if feasible. Understanding the fee structure and contract is crucial, and librarians should not be timid to inform the vendor when looking at similar products, as this may gain more favorable terms or pricing. Always refer back to the specification document in order to make sure everything is on track. Nearing the end of this first stage, the resource can be scored against the original criteria and the criteria themselves can be weighted, based on institutional priorities. Such a review can take anywhere from a few hours to months, depending on the resource.

ACQUIRING NEW CONTENT

In this second stage, it is important to check if the library and vendor are in agreement as to all the criteria originally laid out. Is a purchase order necessary? Is there a specific contract for purchasing terms? What is the annual renewal process? Are special details necessary for certain types of resources, such as demand-driven acquisition (DDA) programs?

During contract negotiation, there are a number of considerations. It is crucial to create a list of “deal breakers” and “must haves,” defining what items on a license constitute “red flags” and which elements must be present in order to sign. There are some alternative options besides traditional licenses that are worth mentioning, such as employing a model license that the vendor might adapt to, or utilizing the National Information Standards Organization's Shared Electronic Resources Understanding (NISO's SERU) in lieu of a license altogether.³ When it comes to pricing, it is advantageous to have the vendor base the price on the full-time equivalents (FTE) that will actually be using the resource versus the total FTE of the institution. It may also be worthwhile to conduct overlap analysis at this point and see if the vendor will adjust the price based on what percentage of the content is covered in the library's existing resources. Remember that everything is negotiable!

During the final stage of licensing, you will want to conduct a comprehensive license review before forwarding to the signing authority. Do not rush! Make sure you understand the legal terms so that you can protect yourself and your institution. It is wise to store a countersigned electronic copy of the license on a server that is backed up, and to record the administrative data in the electronic resource management (ERM) system or appropriate system. Such data may include payment terms, service terms, license terms, and renewal details.

IMPLEMENTATION

The first stage of implementation involves testing the product. You want to make sure the Uniform Resource Locator (URL) is stable and is pointing to the appropriate interface. Proxy and Internet Protocol (IP) access will need to be set up and all the relevant access points need to be tested. These may include the A to Z journal list, catalog, database list, LibGuides, and Web-scale discovery tool. The admin interface is worth checking out in order to ascertain that usage statistics and Open Uniform Resource Locator (OpenURL) is configured properly. If applicable, also make sure that MARC records look good and are imbued with enough metadata for discovery.

Depending on the library and the resource, marketing may actually involve a marketing plan. Consider the needs, wants, and interests of your users and target specific user groups, especially with discipline-specific resources that will be valuable for

certain groups. Identify the objectives of the service or product and develop a marketing matrix that outlines the actions, responsibilities, and timing associated with the marketing plan.

Training and documentation are important in order to provide users with the understanding necessary to use the new resource. If you are replacing an older resource, be sure to update any guides and Web pages. Library documentation about the new resources is an option, but vendors usually have good documentation and other resources in the form of free webinars, podcasts, conference calls, and even on-site visits. They want you to use their resources and are usually happy to provide the tools that will help boost usage, so that you will retain those resources.

The actual launch of the resource may involve a soft launch for larger projects, such as a Web-scale discovery tool, or may be launched in one fell swoop. Before and after the launch, feedback can be gathered via surveys, focus groups, statistics, and other measures. Compare multiple access points for the resource and make sure they are all working consistently. The timing of the launch is also important and has an impact on the success of the marketing effort.

ONGOING EVALUATION AND ACCESS

Once the resource is in place, it is important to continue to evaluate it over time. In order to gain a useful picture, set consistent data points to measure across different resources over time. COUNTER-based statistics provide standardized metrics for measuring use of journals, databases, e-books, and other formats.⁴ The Journal Usage Factor project in the UK has taken real usage data from COUNTER-compliant publishers in order to explore how online journal usage statistics might form the basis of a new measure of journal impact and quality.⁵ The Institute for Scientific Information (ISI) Impact Factor and Eigenfactor differ from previous measures in that they provide metrics for evaluating the quality and overall importance of individual scientific journals. Such measures can factor into resource evaluations in conjunction with COUNTER usage stats. Other aggregated library statistics pulled from Web pages, the discovery tool, OpenURL, or the integrated library system (ILS) may also be helpful in forming a complete picture of use.

We can check the implementation according to a review schedule in order to make sure access is enabled and nothing is awry. This can be done on either a monthly, quarterly, or annual basis, and custom alerts may be set up for this purpose in the library's ERM system. Check links at various access points and via remote authentication. Check for full-text access of content and also for general usability issues that may arise when navigating from the library website through to a provider's platform.

At various points in the e-resource lifecycle, we can ask the users if their needs are being met with a particular e-resource. There are structured methods for acquiring feedback, such as LibQual+ and formalized surveys. Unstructured examples include Web comments and the data compiled from tracking e-resource access issues. Comments such as this can be recorded in an ERM system or spreadsheet in order to represent them in an organized manner. Regardless of the methodology, we want to develop a consistent approach that lends itself to coherent reporting and analysis.

It is advantageous to proactively monitor platform changes and journal title transfers between publishers. The Transfer Code of Practice has aimed to standardize how publishers report this, and mechanisms such as the Enhanced Transfer Alerting Service enable librarians to gather latest transfer notifications via Really Simple Syndication (RSS). This way, during the renewal period, information is on hand and there is not as much guesswork. The ERM system and subscription service can aid the verification effort as well. It is difficult for one person to keep track of this type of information, and it is beneficial to employ a team approach to managing subscriptions and exercising quality control.

Maintaining feedback channels with vendors and communicating problems and issues is certainly important. It's a good idea to keep detailed records on each provider, including correspondence, scheduled maintenance, and specific problems that arise over time. This information may factor into the renewal decision, and such feedback may even help to improve the product down the road. Some vendors have defined user groups that form active communities on the Web, and it is often helpful to become a part of the conversation and gain an active voice.

ANNUAL REVIEW

One of the most important aspects of the annual review stage is to know the schedule of renewal for each resource and to plan accordingly. It's important to check the license for the required notice period for subscriptions, so that you will have time to notify the publisher or provider of non-renewal. Renewals may occur throughout the year depending on the resource, so it may be efficient to review resources in batches, for instance, on a quarterly schedule. It is typical to review new resources more critically, but established resources should also be reviewed closely to avoid legacy resources that are no longer providing sufficient value.

In addition to other criteria, one of the most obvious is the increase in price from the previous year. Based on the renewal timeline, input can be solicited from subject teams so that qualitative data are gathered, in addition to quantitative data.

A more proactive approach is to contact the vendor in advance of the renewal invoice, so that costs and any new terms and conditions may be reviewed. Prices increases can be analyzed against the existing agreement to make sure the rate of increase is in keeping with the agreed upon terms. This period also offers an opportunity to consider other pricing options if available. For instance, perhaps it would be advantageous to move from a simultaneous use model to a site license, a subscription model to a one-time purchase, or from an annual license to a multi-year deal.

As mentioned previously, COUNTER statistics are very important in making informed decisions, and this is particularly true at renewal time. Of course, some statistics are better than none at all, and it is possible to massage non-COUNTER compliant stats into COUNTER format—although this can be labor-intensive. When examining such statistics, we can compare resources along various measures such as hits, searches, and full-text downloads. COUNTER metrics have become even further nuanced in recent releases, with distinctions between current journal usage, or, Journal Report 1 (JR1) and archival journal usage, JR1a. There are many possible analyses, and based on usage statistics, we can make a variety of determinations. We might flag a resource for cancellation, realize that more training or outreach is needed to promote a resource, or choose to increase or decrease the number of simultaneous users licensed for a particular resource.

When communicating information to stakeholders, whether inside or outside the library, it is important that data are represented clearly. Longitudinal data across years are more valuable and serve to set numbers into the context. We can perform overlap analysis using tools built into the ERM system, or utilize open source tools such as Joint Information Systems Committee of the United Kingdom Academic Database Assessment Tool (JISC UK ADAT) and CUFTS from Simon Fraser University.^{6,7} Atypical resources such as streaming video or data sets might be harder to compare to journal packages and databases, yet the latest release of COUNTER is making strides in accounting for such resources. In addition to usage, we might also take into account other factors, such as errors and usability issues, in our final analysis.

CANCELLATION OR REPLACEMENT REVIEW

Ultimately, we must make a choice to retain, renegotiate, or cancel each resource. Reassessing the market for substitutions may be advantageous in some cases if the content is valuable but the package or platform is suboptimal. If a new license is required at this stage, it should be reviewed to be sure that there are no game changers. Talk of cancellation may open negotiation with the vendor. In truth, we should expect flexibility from vendors especially in this time of tight budgets and multiple priorities across campuses. Finally, we might look internally elsewhere on campus for funds if the library can no longer support a resource that is valued by certain sectors in the community.

CONCLUSION

In the world of e-resource management there are many pieces to juggle, and we often find ourselves overwhelmed. A resource like TERMS can assist in navigating the e-resource lifecycle, particularly for those who are new to this area of the profession. The TERMS wiki and *Library Technology Reports* go into much greater detail. These resources will be valuable into the future, as TERMS is updated and improved with input from the user community.

Additional information

Notes on contributors

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Notes

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Open Educational Source:

Managing the Electronic Resources Lifecycle: Creating a Comprehensive Checklist Using Techniques for Electronic Resource Management (TERMS)

1. The Serials Librarian
2. <https://www.tandfonline.com/doi/full/10.1080/0361526X.2014.880028>
3. Free access

2.3: STUDIES ON SERIALS MANAGEMENT IN LIBRARIES: A REVIEW

Abstract

Serials are very important information sources in Libraries and information centers. It is very important for students, teachers and researchers. Libraries are conducting studies on serials, its acquisition, organization, use and maintenance as part of serial management in libraries. These studies are very useful for library professionals to improve serials management in libraries. This is a literature review study on the serials management in libraries. It discusses the works published in the form of books and journal articles. It also covers the studies on pricing, access, management, archiving, etc. These studies will be highly useful to those who are engaged in the serial management work in libraries and information centres.

INTRODUCTION

Serials are important sources of current information. Nowadays all academic libraries are creating and maintaining a serials collection within their budget and space. The ALA Glossary of Library and Information Science defines the Serial as “a publication issued in successive parts, usually at regular intervals, and, as a rule, intended to be continued indefinitely. Serials include periodicals, annuals (reports, yearbooks, etc.) and memoirs, proceedings, and transactions of societies.”[1] Due to the proliferation of knowledge and scholarly writing, library users find it difficult to get all relevant information in time. The costs of serial publications are also rising and publishers as well as librarians are struggling to meet the user’s varying needs for journals. All these factors pose problems in the management of serials acquisition and its access. The different formats, delivery options, subscription and licensing issues, standardization and bibliographic control, archiving and many other issues makes serials management a big problem and so often neglected.

Until recently, librarians were thinking of migrating from their print collection to a mixed collection of print and electronic serials. Now, the situation has forced librarians to rethink and as a result of the flooding development of various technologies, electronic resources are dominating in the serials collection. But this migration again caused problems in managing the collection, with the complications like licensing, access, quality and reliability of electronic resources. Thus the area, „management of serials“ needs a lot of attention in libraries, especially in college and university libraries. In this context, the studies conducted on serials management are reviewed and reported here to have a thorough understanding of the topic. It is seen from the reviews that a large number of studies had taken place on every specific aspect of „serials“, but the studies were mainly conducted abroad. The journals like The Serials Librarian, Serials Review and Serials (now, Insights: the UKSG Journal) which are exclusively dedicated to serials literature covered numerous articles on serials management in American academic libraries.

It is to be noted that the serials section in Indian university libraries are not at all regarded as an important section. The services provided were not much satisfactory up-to the last decade and it is clear from the available literature that not many studies were conducted in this area in Indian context. The periodical use studies, showed the dissatisfaction of the users about the collection and services. According to Ramansu Lahiri, „ there is a lack of any standard methodology for the processing of serials operations in India.”[2] He has also reported that while surveying the doctoral theses accepted at Indian universities from 1957- 87, no work was seen relating to the serials administration. Lahiri evaluated the serial control systems of the universities of north east region in India and stressed the need for better co-operation between user community and library management and between university management and library management.

BOOKS ON MANAGEMENT OF SERIALS

Thomas Nisonger[3] addressed the collection management issues of serials in his book “Management of Serials in Libraries.” It contained chapters on use studies, journal ranking and the application of citation analysis to serials management. According to Nisonger, the first book on serials (The Problem Presented by Periodicals in College and University Libraries by Pearl Holland Clark) was published in the year 1930 and the classic textbook of Serials is Andrew D. Osborn’s Serial Publications: Their Place and Treatment in Libraries (1980). Books on serials are too many to be surveyed. However, some of the important books are, Peter Gellatly’s[4] Good Serials Department published in 1990, Chiou-sen Dora Chen’s[5] Serials Management: a Practical Guide (1995) and Managing Serials (1996)[6] and also Introduction to Serials Management (1982)[7] by Marcia Tuttle. Some of the

more recent books include, *The Serials Management Handbook: a Practical Guide to Print and Electronic Serials Management*, edited by Tony Kidd and Lyndsay Rees-Jones (2000)[8] which contained articles on various topics like need for serials, production, delivery, budgeting, ordering, processing and usage studies; *Introduction to Serial Work for Library Technicians* by Scott Millard (2004)[9] in which all aspects of serials work like, ordering, processing, problem solving etc are outlined; and *Serials in Libraries: Issues and Practices* by Steve Black (2006)[10]. Black surveyed the serials environment and discussed issues in online access of serials, budget, managing print collection, and bibliographic control. He also addressed the serials crisis in depth and the use of serials.

JOURNAL ARTICLES ON MANAGEMENT OF SERIALS

During the survey of literature on „serials“, it is seen that there are several thorough literature reviews on the topic. These studies presented a proper overview of the serials related issues and the serials management trend in USA and in advanced countries.

Riddick[11] presented a review and bibliography of serials literature published in 1992 and discussed the issues: cataloging and specifications; networked information and electronic publishing; CD-ROM serials; collection development; serials pricing and serials management. Corbett conducted survey on serials literature from 2000-2003 and reported that the topic of electronic journals dominated the literature. The major issues identified were, cost, management and archiving. In another review of literature from 2004 -2005 Genereux[12] reported that the issues like the collaboration, communication and linkages between scholars, publishers, subscription agents and librarians were of great coverage during the period. The impact of electronic serials was also discussed. Carr[13] conducted a review of literature of the period 2006-2007 and the trend of transition of libraries from print to electronic was identified. In a 2008-2009 review Collins[14] opined that : "as serials professionals face reduced budgets, cancellations, and evolving publication models, Web 2.0 concepts of openness, interoperable systems, interactive communities and networking are reshaping the manner in which people communicate, access scholarly content, and develop tools to support library collections". She identified open access and Web2.0 as the major themes of literature. In the latest review of 2010-2011, Sutton[15] found that "the serials literature reflected the need for all members of the serials chain to demonstrate flexibility in the face of constant change" and the review was presented under the themes access, metrics, workflows and processes and user behaviour.

The themes identified in other articles found in the survey are presented here under the broad headings like pricing, access, management and archiving. It is to be noted that the changing trend toward e-resources is reflected in the literature, so electronic journals and their issues in management are seen mostly.

STUDIES ON PRICING OF SERIALS

Cost of the serial publications is going to be a primary concern for librarians. Technological advancements will not solve all economic difficulties. The huge increase in subscription costs affects the collection sizes and expenditure. The serials literature covers many examples of librarians, changing their policies to meet the user's needs in the current information environment. A thorough understanding of the publishing scene is essential for negotiating effectively.

Houbeck[16] studied the serials price increase due to change in exchange rates, domestic inflationary practices, increased production costs etc. He discussed the serial budget problem in libraries and also the issues which led to journal price increase. He advised librarians to monitor the journal prices, publisher, and distributor and the need for proper planning in journal purchase. Ortelback, Shultz and Hagenhoff[17] studied factors influencing journal pricing. The publishers' attitude towards profit positively influences price. According to Fisher[18], the editors have great influence over the price of serials and discussed the revenues and expenses in journal publishing industry. Basu and Ghosh[19] studied the impact of price hike on special libraries and pinioned that action and negotiation at the government level is needed to purchase foreign journals. According to Venkatesan and Usha Krishan [20], purchase of journals directly from publishers is better than purchasing through agents and they also suggested the exchange of duplicate copies of periodicals to other libraries. Garg [21] discussed the acquisition procedures through State Trading Corporation (STC), a governmental agency in India with its advantages and disadvantages. Pichuraman and Gopalakrishnan[22] made a cost analysis of periodicals and investigated the impact of hike in subscription rates, fluctuation of foreign currencies and predicted the cost trend of periodicals for future on the basis of statistical techniques. Reddy[23] presented the trends in price of periodicals by applying statistical indicators and co-efficient of variation. He suggested the need for adequate grants from the government for Universities in India and also the need for a national Periodical Centre. The practice of longer period subscription was also discussed. Biswas, Chatterjee and Sen[24] also suggested longer subscription in a case study of costbenefit analysis of periodicals. They are of the opinion that cost of a journal is not directly related to its use.

By the year 2000, librarians started to purchase journals in bundled packages called „Big Deal“, to reduce the cost of individual subscriptions. Frazier[25] opined that, as the package prices increase, libraries find it difficult to go for big deal. According to Ebert[26], big deal helped the smaller libraries to enrich their collections. Carr[27] argued that “the publishers should offer packages with terms and pricing structures that are more accommodating to the needs of the libraries. Corbett[28] reported that from 2000-2003, “the price increase trend for journals continued, fueled in part by publisher mergers, and librarians combated it with the economics found in bundled packages and consortia based subscriptions”. There are several articles mentioning the advantages of big deal like increased access, special pricing, lower unit prices, control over price increases, streamlined workflows etc. The disadvantages reported are, inability to manage local collections and reduced flexibility to change to alternative models. These studies identified the challenges to the sustainability of the „big deal“. Torbett[29] commented that there is no satisfaction with big deal nowadays but librarians still believe that the advantages are more indicative than difficulties. It is to be noted that, there is chance that some of the titles in the package may never be used. Armstrong[30] discussed the impact of big deal or collection sales and presented a model of collection sales in which two kinds of journals (for-profit and non-profit) and two kinds of publishers (commercial and non-profit) were involved.

The provision of journal content free to the user via internet which is called the „open access“ (OA) came into the scene by the year 2003. The disadvantages and price increase of the big deal method caused the libraries to adopt OA method as to provide access to scholarly output and thus to slow down journal price increase. There are several studies reporting types of OA publishing, its sustainability and cost analysis of OA models. Bosch[31] outlined 7 basic components needed for a sustainable business model for scholarly communication and examined the OA model in terms of these components. He argued that although OA is promising, no model is going to be sustainable for all. Pinfield[32] examined four scenarios for the future of scholarly communication and concluded that subscription and the OA movement can be viewed as complementary models. For coexistence, he suggested some major changes to be instituted by OA administrators and publishers.

The topic of consortial activities has been discussed a lot in the literature. Anand and Malhan[33] highlighted the duplication in terms of Chemistry journals in the university libraries of 4 Indian states and calculated the wastage of money due to this. They further suggested the need for resource sharing in journals collection building. In Indian context, the UGC-INFONET Digital Library Consortium provides a boon to the researchers in information access. Arora, Trivedi and Kembhavi[34] examined the impact UGC-INFONET had made on research and development activity in the Indian universities. Perry's[35] survey responses indicated that consortia have a major role in acquisitions process.

Another alternative model to subscriptions is found to be the „pay-per-view“ (PPV) model. In this model, articles are purchased on individual basis. The advantages of this model includes, increased availability of journals and back files, immediate access to articles, cost-effective for low-use journals and it acts as a collection development tool. The limitations of the PPV model are, filtering of free or chargeable content, and specific budgeting. Carr[36] in his study described all these points regarding PPV and his survey showed that support is needed for PPV similar to subscription or packaging and it is cost-effective. He is of the opinion that PPV is the answer to user's needs. Weicher and Zhang[37] reported one library's experiences using individual subscription and PPV by throwing out the „big deal“ and found that improvements in the PPV infrastructure will provide mediated access which needs cooperation and communication within the academic community.

Some other types of journal procuring models are, gifts or donation and exchanges. In gift or exchange model, a lot of journals are received; but it also needs processing and shelving. So decision regarding what to accept in gift or exchange should be made in consultation with faculty and based on user's needs. Khode and Dhar[38] (2005) discussed the exchange arrangement activity in a research library, Indore. This was with 60 selected libraries in India and abroad. Ojha[39] suggested a system for exchange of periodicals which included steps like, evaluation, selection, preparing mailing lists, processing etc.

STUDIES ON ACCESS TO SERIALS

Many studies were conducted on bibliographic control of serials, cataloguing and various access options. As in other areas, electronic serials were also having an impact on serials cataloguing and cataloguing workflow. Some have treated electronic serials as a different item by providing title lists not catalogues. CONSER is an important initiative in serials cataloguing. It is the Cooperative Serials Program of the Program for Cooperative Cataloguing (PCC) of Library of Congress, and an authoritative source for bibliographic records, documentation, and training materials for serials cataloguing.

Bevis and Graham[40] reported the efforts done at a small university library at Alabama to manage and provide access to its electronic journal collections using traditional cataloguing methods. Molto[41] developed a means for identifying significant subject and function changes in serials with title changes and also recommended ways to recognize new serial works in cataloguing. She recommended modifying the Resource Description and Access (RDA) rules for major changes in the title proper of a serial. Terrill[42] provided an outline for evaluating serials displays in the online catalogue based on his experience of a

project at a university library. According to him, the evaluation should be based on user needs.

Stubley[43] in his study provided an overview of the method used for serials display at Sheffield University. According to him, the main points that matters are the observation of serial use, a desire to encourage use, discrete location and ease of use by both staff and users. He opined that no display system for serials seemed to be perfect because of the disadvantages related to labelling, arrangement of current serials and loan policy. Leathem[44] outlined cataloguing treatment options for online serials. Saratchandra Kumar[45] discussed the objectives of periodicals display and presented the merits of each type of display methods.

Brandsma[46] studied the journal access program launched in the University of North Carolina, known as Journal Finder Service. The service allowed the users comprehensive serial access, both print and electronic, whether owned by the library or not, through a single interface. Journal Finder helped in; finding statistics related to access points, renewing subscriptions, photocopying service, interlibrary loan, PPV and in all matters of serials collection management.

Pichuraman and Gopalakrishnan[47] studied the Quick Glance Service introduced at the Madras Institute of Technology Library and found to be an effective tool. The service included circulating new periodicals among teaching staff on receipt.

O'Hara[48] conducted a survey of 145 academic libraries to know how they are making their electronic serials accessible. The survey suggested that libraries are generally relying on online catalogue, link resolvers and meta search engines. Link resolvers help by enabling users to link from a citation in a database to options that the library has to offer for accessing that content. Meta search engines help a user to search multiple databases simultaneously.

Tobia[49] discussed a survey conducted on e-journal collection at University of Texas and said that there exists a need for a phase change from print to electronic. She stressed the need for web based OPAC and the library web sites participation in e-journal access.

STUDIES ON MANAGEMENT OF SERIALS

Serials require continuous management process. The management functions cover all aspects of serials like, publisher price, bibliographic details, design etc. When a print journal goes electronic, it presents additional possibilities which are expensive and not easy to control. New journals are emerging every time. It again poses questions before the scholarly community. The changes in collection formats have also changed the serial workflows and processes. Libraries nowadays became more user-centred.

The change or shift from print to online is mainly due to the decreased budget in libraries and in response to the rapid technological innovations. The literature review showed that the problems faced by the serial managers and the steps to their solutions are of much concern at present. Henderson and Bosch[50] pointed out that the tightened economic barriers are the root cause for the shift to electronic. But according to Spagnolo, Pennington and Carter[51], the shift is due to the increased and changing patron needs. According to Sullenger[52], the movement to replace print serials with electronic only serials has a limit, as all titles cannot be obtained electronically. As to her experience, only 56% of journal titles were moved to electronic only subscription, others remained as print. Sullenger concluded that 70% will be the highest proportion that can be expected to obtain for electronic subscription. Montgomery[53] addressed issues like identifying and managing organizational impact of the transition from print to online collection. She is of the opinion that the organization also requires skills in leadership and management in order to succeed. Halijwale, Manjunath and Pujar[54] reported that many publishers had started to provide free online access to e-journals against print subscription. They discussed the modalities like administrative procedures in getting free online access.

Hoskins[55] presented the influence of OA initiatives on journal cancellation in university libraries in South Africa and revealed that OA initiatives had a very limited influence on journal cancellations. Hoskins and Stilwell[56] remarked that the libraries, affected by the increase in price of journals, decided to cancel subscriptions. Lauridsen[57] described one university library's strategy to cancel journals in order to meet with the problem of space shortage. It included cancellation of print journals with limited use and reliable electronic access and discarding the print collection which has secure e-access and archiving. Burgard and Easton[58] provided an overview of the ways libraries use the World Wide Web as a tool in serials management. He mentioned that the WWW can be useful in facilitating the journal cancellations process. Metz's[59] article outlined the tips for a successful serials cancellation project. It highlighted the need to collect and measure use data in cancellation process.

Robb and McCormick[60] discussed the case of a cancellation project at a small library. According to them, metrics data are good for serials management only if interpreted intelligently. Degener and Waite[61] stated in an article, the need for libraries to measure electronic journal collection and the challenges in this task. They presented a practical statistical model that can

be used to count electronic journals available through a variety of access arrangements. Lightman and Manilov[62] reported an e-journal evaluation process conducted at the Northwestern University Library which combined citation analysis with non-statistical techniques. King et.al.[63] discussed a framework of library economic metrics including service input and output, performance, usage, impact and cost and benefit comparisons. Balasubramanian, V.[64] discussed the Database management system developed for serials control. Computerised control of periodicals was discussed by Prasad and Rao[65]. System analysis in serials control was discussed by Balasubramanian and Satyanarayana.[66]

The functioning of the periodical section was discussed and suggestions for improvement were outlined by Kar and Siddiqui.[67]

There are numerous studies on the use of serials, especially e-journals, consortia use, usage pattern of different categories of users etc. Satyanarayana [68] conducted a study of use of periodicals in Andhra University Library and reasons for non use were outlined. A study on use of periodicals by medical practitioners done by Biradar, Anita and Ushalatha[69] proved that about 75% relied on periodicals for information on new procedures and medicine. Gupta, Krishanjal and Ravindran[70] studied the maintenance of periodicals collection to study the active life of journals. The problems faced by libraries in the subscription of periodicals were discussed in different studies by Singh[71], Basu[72] and also Venkatesan and Usha Krishnan. [73]

Harvell[74] introduced a methodology for evaluating new and existing journal subscriptions to ensure they are actually core at the University of Sussex. It was based on a system of scoring against a set of criteria like impact factor, citations, faculty use, inter-library loan, high online usage and costs. Usage statistics would help a lot in collection development. Usage based impact is a new initiative in this area. Pesch[75] described a usage factor project sponsored by UKSG and COUNTER and how it worked in developing a credible usage based measure for journal impact. Satyanarayana[76] is of the opinion that collection development in the e-content world is one of the most challenging functions in the libraries of the world today. It needs the libraries to redefine their purpose and functions. He had outlined many business models in the collection development process like, perpetual access rights, limited period access, subscription model, PPV model, ownership etc. Lynch[77] reviewed the key changes that have led to the „Serials crisis“ and discussed the strategy issues librarians should consider in dealing with this.

More studies are coming on the topic of automation of serials functions. The automated system has certain advantages like, predicting the arrival, check-in, routing list, binding schedule, cataloguing, location etc. The disadvantages include high cost and it requires more time to input data in MARC format. For automated serials control, several integrated library systems were introduced with serials components and modules. Balasubramanian and Satyanarayana[78] discussed the systematic processing of serials with more importance to claiming non received issues.

According to Shontz,[79] Data Research Associates (DRA) made remarkable contributions in library automation systems and launched Classic and Taos systems. Savage and Wilkinon[80] highlighted the Horizon integrated library system and its unique aspects in serials management. Green[81] is of the opinion that limiting the funds for serials hindered the development of integrated electronic information systems. Describing the Source OECD, the online library of Organization for Economic Co-operation and Development, he argued that “if monograph publishers had offered their books to libraries in suitable monograph serial bundles on subscription there would be some significant cost efficiencies to be gained.” Martinsen[82] studied the Ulrich's Serials Analysis System (USAS), which is used to manage and rationalize periodical holdings across 36 libraries in Oxford. Although there were problems associated with uploading serials data into USAS, it proved to be a powerful tool for local, regional and national collection management.

STUDIES ON ARCHIVING OF SERIALS

Even though archiving is an issue of importance, it has less concern in literature due to the library's migration to electronic only without any proven archiving practices for electronic resources. There are discussions in literature regarding the archiving of electronic materials and comparison to archiving of print resources. To solve the problem of space shortage, collaborative or remote storage was adopted. The missing issues posed a major complication in archiving.

In an earlier study conducted by Green[83], the serials binding practices at 2 universities in USA and UK are studied and it is seen that, due to the application of newer technologies binding is cheaper in USA than in UK. Fonyo[84] discussed the difficulties caused by new technologies and the problems in social and political system in the development of Hungarian libraries. She argued that for smaller countries the archiving is neither practical nor economical and national and international cooperation is needed. Ferris[85] suggested the need for a national strategy for the preservation of library serials. It is also suggested that national co-operation is needed for maximum utilization of resources. The projects like, NEWSPLAN, and the RLG art Serials Preservation Program which had involved in cooperative preservation of serials were discussed to know their achievements and their problems. Gaur and Tripathi[86] discussed the need for preservation of electronic journals, challenges in archiving of print and electronic journals, strategies for preservation etc. They suggested that all the stakeholders should get together to initiate and

develop a strategy for preserving electronic content and the National Library should take the lead. The various digital preservation systems like CLOCKSS, LOCKSS, PANDORA, PubMed etc were also discussed. Renwick[87] recorded the collaborative project of 8 university libraries in New Zealand due to shortage of storage space, in which the low used print journals were stored with a commercial storage provider.

CONCLUSION

The serials literature surveyed, presented the economic crisis in the US as a cause for the transition in library's processes. Librarians should also participate in the transition process by achieving skills and embracing the technological advancements to reap more from the scholarly world. Although the literature highlighted a number of problems in the transition activities, the solutions to these regarding the cost, management, access and archiving are not plenty. As Anderson[88] commented, "the future for libraries implies more laptop and fewer patrons in the library and more free online content." The future libraries will require more ease and speed in information provision and there will be chances for less staff and low budget. So the librarians will have to work hard to provide evidence that their services and staff output are worthy and that is the great challenge of today.

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Open Educational Source:

Studies on Serials Management in Libraries: A Review

1. International Journal of Digital Library Services
2. <http://www.ijodls.in/uploads/3/6/0/3/3603729/12535.pdf>

2.4: Legal Requirements Program Regulations of the Federal Depository Library Program

<https://www.fdlp.gov/requirements-guidance/legal-requirements>

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3: TECHNICAL SERVICES FUNCTIONS

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3.1: ACQUISITIONS

3.1.1: Library acquisitions

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3.1.3: Licensing Electronic Resources to Serve the Library's Mission

3.1.1: Library acquisitions

Library acquisitions is the department of a [library](#) responsible for the selection and purchase of materials or resources. The department may select vendors, negotiate [consortium](#) pricing, arrange for standing orders, and select individual titles or resources.^[1]

Libraries, both physical and digital, usually have four common broad goals that help dictate these responsibilities. These goals are significant to libraries in order to maintain the basic principle of access.

1. To acquire material as quickly as possible
2. To maintain a high level of accuracy in all work procedures
3. To keep work processes simple in order to achieve the lowest possible unit cost
4. To develop close, friendly working relationships with other library units and vendors

There are generally five steps taken in order to acquire material for a library collection, whether physical or digital.

1. Request processing
2. Verification
3. Ordering
4. Reporting (fiscal management)
5. Receiving orders

There are eight types of acquisition methods followed by libraries:

1. Firm orders – Orders that are determined by name specifically. For example, a specific book, textbook, or journal that the library wants.
2. Standing orders – Open orders for all titles that fit a particular category or subject. For example, these are usually developed for serials and the library knows that it will want anything published in that particular series. A benefit to this style of ordering is that it is automatic—the acquisitions department does not have to order the next in series.
3. Approval plans – Similar to standing orders except they cover quite a few topic areas, are sent from the vendor, and the library is only charged for the specific titles that they accept into their collection. Under these circumstances the library is free to return anything it does not wish to add to its collections. A benefit to this style of ordering is that the acquisitions department can sometimes make better decisions with the materials in hand versus an order form.
4. Blanket orders – Largely a combination of both a firm order and an approval plan. Blanket orders are the library making a commitment to purchase all of something. For example, a library makes a contract with a certain publisher or vendor and will purchase everything that this publisher or vendor has available in regards to a topic. A benefit to this style of ordering is an automatic [acquisition](#) of materials for a particular field, which can be especially beneficial to specialized or academic libraries.
5. Subscriptions – Generally utilized for journals, newspapers, or other serials that a library will acquire. Like standing and blanket orders, a library only has to develop a contract once with a vendor or publisher and the items are automatically delivered when printed. Often, subscriptions are for a specific length of time and must be renewed at the end of the contract.
6. Leases – Contracts that allow access to particular resources for a period of time. Leases are most commonly utilized with electronic resources such as databases, journals, and web-based materials. The library is paying for access to the material versus paying for ownership of the material.
7. Gifts – In some cases libraries may allow gifts that people give to the library. It is the job of the acquisitions department to determine whether or not the gift will be kept and incorporated into the library's collection. This method is typically used by large academic institutions, and the persons giving the gifts are mostly alumni of that institution. A library's collection development policy usually states whether the library accepts gifts.
8. Exchanges – Exchanges can be broken into two subcategories: exchange of unwanted duplicate/gift materials AND the exchange of new materials between libraries. Again, the institutions that usually have a process for this type of acquiring are larger academic or research libraries. This is also a process of consortia.^[2]

The [American Library Association](#) offers Fundamentals of Acquisitions courses throughout the year to provide basic procedures for library acquisitions concepts commonly used for all library formats.^[3]

See also

- [Digital Collections Selection Criteria](#)

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3. [^] "[Fundamentals of Acquisitions](#)". *ala.org. Association for Library Collections & Technical Services (ALCTS)*. Retrieved 2020-04-25.

Source

Library acquisitions

1. Wikipedia
2. https://en.wikipedia.org/wiki/Library_acquisitions
3. CC BY-SA 3.0

3.1.2: Demand-Driven Acquisitions.

Part I: http://downloads.alcts.ala.org/ce/20120919_Demand_Driven_Acq_Part1.wmv

Part II: http://downloads.alcts.ala.org/ce/10032012_DemandDrivenAcquisitions_PartTwo.wmv

Source information

Demand-Driven Acquisitions.

1. Association for Library Collections & Technical Services (ALCTS)
2. Part I: http://downloads.alcts.ala.org/ce/20120919_Demand_Driven_Acq_Part1.wmv
3. Part II: http://downloads.alcts.ala.org/ce/10032012_DemandDrivenAcquisitions_PartTwo.wmv
4. No cost (all ALCTS' archived webinars are free)

3.1.3: Licensing Electronic Resources to Serve the Library's Mission

Licensing electronic resources must be undertaken in a way that supports the library's mission by providing access to the highest possible number of databases, electronic journals, eBooks, and streaming media at the lowest possible cost. While the specific objectives and strategies of libraries will vary, skilled librarians must undertake a number of complex tasks in order to successfully license electronic resources. Some of the most important of these tasks or objectives include: negotiating the best possible terms in complex license agreements, maintaining positive working relationships with library vendors, communicating important information to internal and external constituencies, tracking changes in business models and relevant technologies, providing data for collection analysis, as well as coordinating their work with library administrators. This webinar series will cover these and other topics that address the needs of librarians working with the licensing of electronic resources.

This six-part series includes the following sessions:

August 22, 2018 - [Fundamentals of Licensing Electronic Resources](#)

August 29, 2018 - [Managing & Implementing Licensing Agreements for Electronic Resources, Part I](#)

September 5, 2018 - [Managing & Implementing Licensing Agreements for Electronic Resources, Part II](#)

September 12, 2018 - [Negotiation & Cost Containment Strategies for Electronic Resources](#)

September 25, 2018 - [Legal Issues in Licensing Electronic Resources](#)

October 3, 2018 - [Licensing Electronic Resources for Consortia](#)

Learning Outcomes

During this six-part webinar series, attendees will learn the fundamental structure of contracts, commonly used terms, and how to address indemnification clauses, constraints on use permissions, problems of legal jurisdiction, perpetual access rights, and some more recent developments such as the pursuit of text and data mining rights. Contributors will also explore some complex legal issues and other aspects of electronic resources management including how to maintain positive working relationships with vendors, track important changes in business models and technologies, and control costs. Above all, attendees should understand how licensing does not occur in a vacuum, but must be well grounded in a complex chain of information exchange within and beyond the library, all of which should be undertaken to support the library's mission as understood and implemented by the library administration.

Who Should Attend

Librarians and staff working that work on licensing and/or collection development.

Presenters

Jennifer W. Bazeley, Associate Librarian, Coordinator of Collection Access and Acquisitions, Miami University Libraries

Lori Duggan, Head of Electronic Resources Acquisitions, Indiana University Libraries

Tomas A. Lipinski, Dean of the School of Information Studies, University of Wisconsin Milwaukee

Monica Moore, Electronic Resources Librarian, Hesburgh Libraries, University of Notre Dame

Amy Pawlowski, Deputy Director, OhioLINK

Registration

Cost

	Fee (single webinar)
Participant	(\$USD)
ALCTS Member (individual)	43
Nonmember (individual)	59
Groups. Applies to group of people that will watch the webinar together from one access point.	129

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Computer with Internet access (high-speed connection is best) and media player software. Headphones recommended.

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none

Contact

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For all other questions or comments related to the webinars, contact Megan Dougherty, Program Officer, Continuing Education, at 1-800-545-2433, ext. 5038 or mdougherty@ala.org.

Reference

"Licensing Electronic Resources to Serve the Library's Mission", American Library Association, July 10, 2018.

<http://www.ala.org/alcts/confevents/upcoming/webinar/Licensing> (Accessed January 2, 2022)

Document ID: 97c05e3f-2c1d-454f-86ef-289f9b88b2fe

3.2: VENDORS AND PUBLISHERS

3.2.1: Shelf-ready: Is it Worth the Money?

3.2.2: Do Libraries Still Need Book Vendors and Subscription Agents?

3.2.1: Shelf-ready: Is it Worth the Money?

- What is shelf-ready?
- When we buy a book, it takes a lot of processing to get it to the shelf for patron use
- Shelf-ready aims to shift that processing from us to our book vendors (in this case, Yankee)
- Instead of spending our time copy cataloging, stamping, barcoding, tattle-taping and labeling books, Yankee will do all of that for us
- There are many potential benefits to shelf-ready
- The purpose of this study was two-fold:
 1. Can we better utilize our human resources in cataloging by switching to shelf-ready?
 2. Should we move all approval books to be shelf-ready?

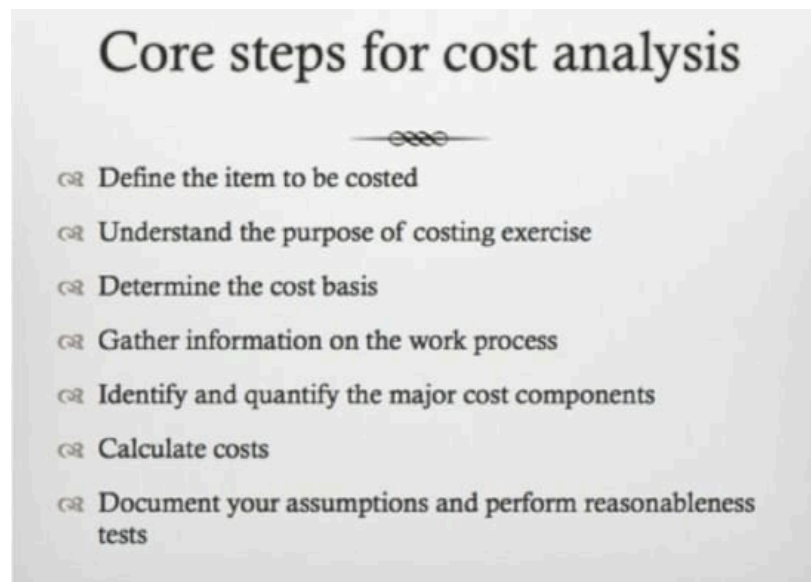


Figure 3.2.1.1

- “Define the item to be costed” - can be a product, a service, any work activity, also known as “cost objective” establishes the scope of the analysis
- Identification of cost components and the calculation of costs “other steps provide context and ensure results are accurate, explainable, repeatable, and achieve desired result”
- Understand the purpose of the costing exercise” - clarify the question cost analysis should answer and how information will be used
- “Determine the cost basis” - what data is available for the activity to be costed. Should you use actual costs or projected costs (estimates and can be based on historical data)
- “Gather information on the activity or work process” - define work involved in detail, step by step description of the work, detail how it will be performed and list resources needed to accomplish the work
- Identify and quantify the major cost components - “costs fall into one of the following categories: supplies and equipment, services, labor, or indirect costs” (Calvi 3)
- Expenses can be either direct (those clearly associated with a specific cost object) or indirect (also known as overhead) - “common to more than one cost object and are not directly traceable to a specific product” (Calvi 7)
- Supplies - “any materials that are consumed in the process of carrying out a particular activity” (Calvi 8) don’t forget to include shipping, staff time in ordering
- Equipment - “is used over and over again without being substantively consumed” (Calvi 8) “can be incorporated into a cost analysis by amortizing the expenditure over a certain time span and assigning a portion of the equipment’s cost to each item produced during that time”(Calvi 9) “total equipment cost divided by quantity of items produced during its life span = unit cost of equipment” (Calvi 10) exclude multipurpose equipment
- Service - meaning outsourcing (vendor charges + shipping, insurance, labor costs, supply and equipment costs, working with vendor, selecting, processing, packing, unpacking, performing quality control (Calvi 11)
- Labor - If staff performs only the activity being costed and productivity rates are known (divide the staff’s total compensation

(salary plus benefits) by quantity of items produced during that time period. In adjusted labor rate method - workers divide their time among a variety of activities - measure time spent on an activity, multiply that time by staff's compensation rate. To do this first define the activity listing all tasks, determine average completion time

- Calculate costs
- "Document your assumptions"
- "Perform reasonableness tests" - assess the validity of a cost analysis



Figure 3.2.1.2

- Does not measure
- Equipment: purchase and maintenance of computers, telephones, fax machines, copiers, staplers, tape etc
- Space: cost of owning building, maintenance, heat, power, water, toilet paper, soap etc
- Staff: interviewing and hiring, training, consultation, non-productive time, mistakes, absenteeism staff development, other assignments
- Acquisitions processes: ordering (pre-order searching, order creation
- payment - invoices, statement reconciliation, processing payment, library business office, university business office
- shipment errors, returns
- retaining and maintaining records
- Integrated online system - Implementation, initial purchase cost, maintenance and ongoing costs, personnel loading records, orders, invoices.
- Processing for payment - create electronic copy in ILS, library business office, university business office cuts check, library business office verifies and mails.

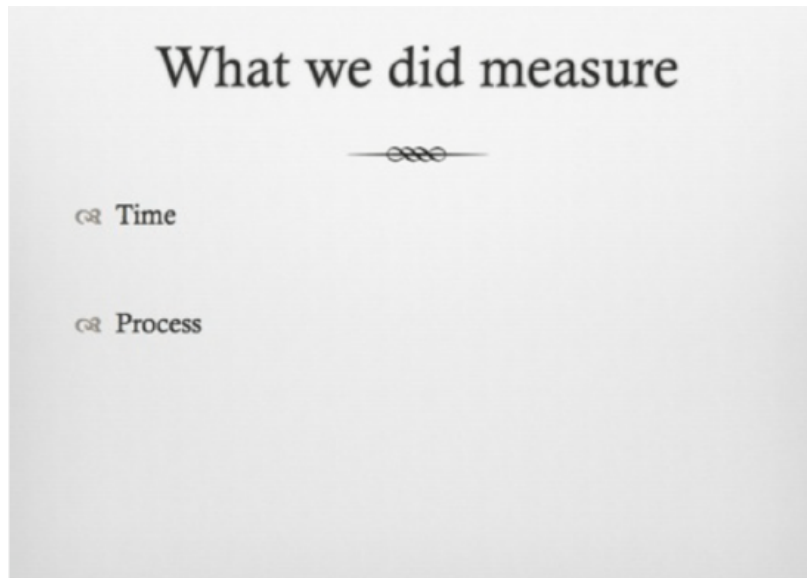


Figure 3.2.1.3

- What we did measure
- Time (from the time the box was opened until book sent to circulation to be put on shelves)
- Process (followed book through its Technical Service pathway)

Yankee Workflow Study

Circulation _____

Technical Service P. _____

Review Room (Approval Books)

Date in _____ Date out _____

Acquisitions

Date in _____ Date out _____

Date in _____ Date out _____

Received by _____

Cataloging

Date in _____ Date out _____

Date in _____ Date out _____

Cataloged by _____

Cataloging

Date in _____ Date out _____

Date in _____ Date out _____

Cataloged by _____

Cataloging

Date in _____ Date out _____

Date in _____ Date out _____

Cataloged by _____

Lettering

Date in _____ Date out _____

Circulation

Date received _____

Required modifications for Staff Ready Books

Need new label _____

Need new barcode _____

Other requests _____

Figure 3.2.1.4

Sub-accounts

ACCOUNT	NAME	TREATMENT
8116-02	Rush	Nothing
8116-04	Partial Shelf-ready (Juvenile, Music Literature)	Bib record, order, physical processing
8116-05	Special Collections	Bib record, order
8116-07	Shelf-ready	Bib record, order, physical processing, spine label
8116-10	Firm Order Exceptions	Nothing
8116-11	Approval	Bib record, order
8116-13	Continuations	Nothing

Figure 3.2.1.5

- Have 7 sub-accounts depending on the way books are sent and the level of processing
- 02-none -Rush
- 04-Bib record, order, physical processing (JUV, MUSIC, Literature (P Call #))
- 05-Bib record and order (Special Collections)
- 07-Bib record, order, physical processing, spine label (Shelf-ready)
- 10-none, exceptions another volume in set, replacement
- 11-Bib record, order, invoice (Approval)
- 13-none (continuations)



Figure 3.2.1.6

- Traditional path - Firm order, Continuations, Special Collections, Rush - these follow mostly the same path

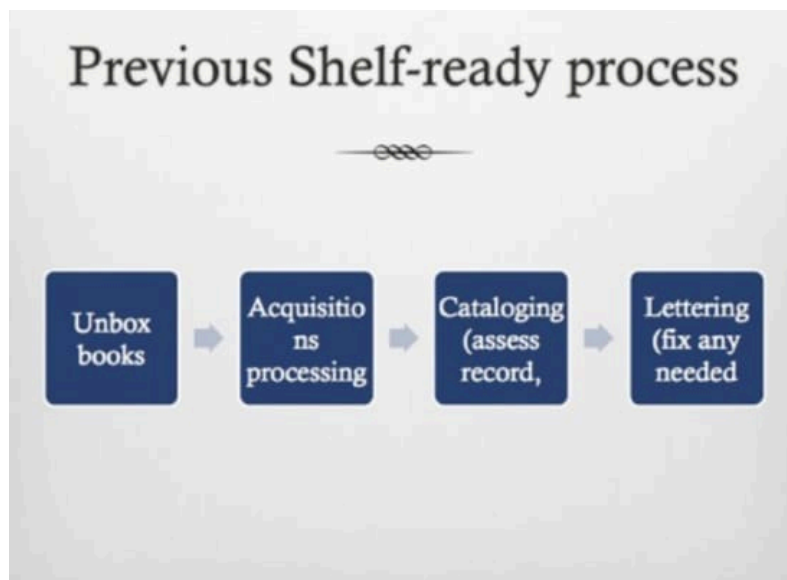


Figure 3.2.1.7

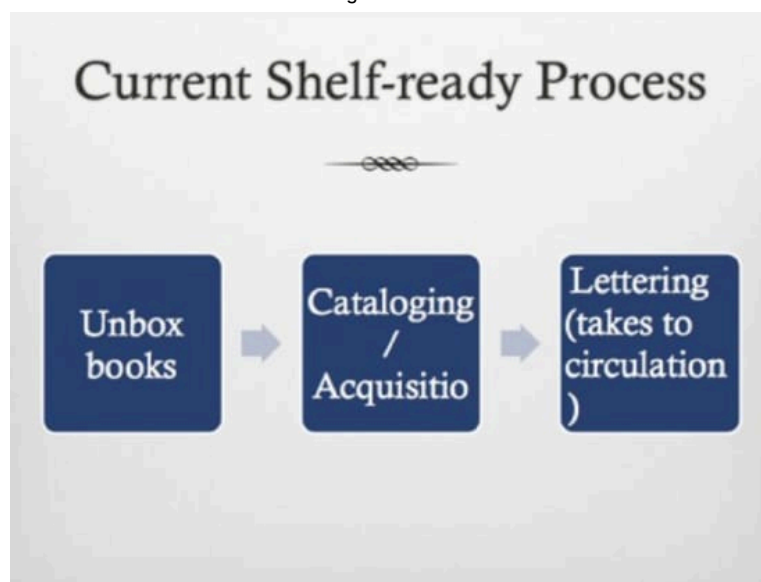


Figure 3.2.1.8

Cost Comparison

$$\frac{\text{Cataloging Salaries}}{\text{Number of Books Cataloged}} = \$47.64$$

Figure 3.2.1.9



Figure 3.2.1.10

- \$5.28 per book vs \$5.60 per book (salary, processing, materials etc)

Cost Comparison

Account	Total Average	Acquisitions	Cataloging	Sample Size
Rush Order	\$8.65	\$0.73	\$5.08	3
Partial Shelf-ready	\$5.60	\$0.31	\$1.86	14
Shelf-ready	\$5.28	\$0.42	\$0.83	186
Firm-order	\$7.12	\$1.34	\$2.69	16
Approval	\$5.60	\$0.31	\$2.09	1,214
Continuations	\$7.58	\$1.92	\$2.26	26

Figure 3.2.1.11



Figure 3.2.1.12

- 3.59 days per book for shelf-ready vs. 36.66 days per book for approval
- Patrons get access to books 33 days sooner

Days Comparison

Account	Average Days in Acquisitions	Average Days in	Average Days in	Average Days From
Rush Order	0.00	0.67	0.00	0.67
Partial Shelf-ready	0.00	9.85	3.29	12.86
Shelf-ready	0.27	6.22	0.74	3.59
Firm-order	0.00	19.81	9.64	24.10
Approval	0.10	11.67	8.68	36.66
Continuations	0.00	9.45	10.08	23.50

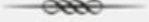
Figure 3.2.1.13



Figure 3.2.1.14

- 5:06 per book for shelf-ready vs. 9:59 per book for approval

Time Comparison



Account	Average Processing Time	Average Processing	TOTAL AVERAGE
Rush Order	4:00	12:00	16:00
Partial Shelf-ready	2:09	4:40	6:50
Shelf-ready	3:24	4:53	5:06
Firm-order	9:35	17:11	26:45
Approval	2:15	7:42	9:59
Continuations	4:02	8:32	12:32

Figure 3.2.1.15

Source Information:

Shelf-ready: Is it Worth the Money?

- Jared Howland
- <https://www.jaredhowland.com/presentations/shelf-ready-ula/>
- No copyright information

3.2.2: Do Libraries Still Need Book Vendors and Subscription Agents?

Digital content blurs the lines of traditional library acquisition workflows and organization. For example: link resolvers and the loading of order confirmation record files may be handled by systems staff in one organization and by technical services staff in another. Lines are being crossed between acquisitions and interlibrary loan functions, notably with electronic versions of theses and dissertations. Regardless of this blurring of lines, library staff use vendors still in acquiring content for the library collection. The reasons for using vendors have stood for decades, but are changes in the information industry having an impact? In the current environment, what interactions with vendors are most useful to a library?

For this publication, vendor is a general term used to refer to a third party, other than a publisher, that sells content and supporting services specifically to libraries. Most of these vendors still have a focus on either books or serials (aside from some specialty vendors such as for audiovisual materials), but the digital environment is decreasing the distinctions in acquisition transactions between books and serials. For example, serial subscription agents now sell electronic books (e-books). Book vendors (also called booksellers, dealers, or jobbers) now sell book collections to libraries that a few years ago might have been bought direct from the publisher. Several large publishers make book and serial digital content equally available on the same platform (e.g., Springer, Elsevier) and some publishers have experimented with eliminating the use of the subscription agent, so it is possible that for digital content, the publisher may yet absorb the role of the vendor. Additionally, the number of major longtime print book vendors has decreased during the past decade, with those remaining now offering e-books, while a newer type of vendor, the electronic book (e-book) aggregator such as EBL and ebrary, has come into prominence.

Basic Content Services

The traditional basic operation of book and serials vendors has been to sell publications to the library. Historically, the advantages in using a library vendor have been the consolidation of ordering, claiming of outstanding items, and paying consolidated invoices. Book vendors also offer savings through price discounts and consolidated shipments. The approval plan was initially a vendor service to ship print books according to a library's custom guidelines (or profile) to decrease title-by-title selection and ordering. Approval plans later expanded to include music, video, and more recently, e-books. Standing orders and blanket orders meant that the vendors ensured acquisition of each title in a series or each title from a particular publisher rather than library staff tracking forthcoming titles and ordering them individually. For the library, managing book and periodical orders on a title-by-title basis is an overwhelming prospect, and too expensive in terms of the internal labor that would be needed to interact with all of the different publishers. The consolidation by vendors has long freed up valuable time of library workers for other responsibilities. Saving time in purchasing traditional content has become even more important as increasingly time is spent both in finding out-of-print materials more readily on the Internet and in handling the complex work of acquiring digital content.

Specialized Content and Vendors

Some book vendors can supply audiovisual materials, maps, government documents and out-of-print items. For example, Ambassador has both book and media specialists. There are also a few specialty vendors to facilitate the more difficult acquisition of these materials. Without the vendors, these may have to be ordered directly from various suppliers and distributors, which are sometimes hard to identify and contact, thus highly time-consuming and frustrating for library staff. This is particularly true for niches which might require expert understanding of the topic, for both library and vendor staff to be certain of obtaining the exact item needed by the library user. For example, a music professor may require a part for a specific instrument or a particular performance and variations available for the same piece can easily lead to errors. If expertise is lacking in the library, using an expert vendor can be an effective solution in terms of both cost and quality of service to the library patron.

Music

Music is acquired by libraries in multiple formats, including monographs, dictionaries and other reference materials (both print and electronic), scores, DVD and VHS for music video, and for audio, compact discs (CDs), and less frequently now, phonograph records. While monographs about music can be acquired through general book vendors, scores are most often purchased through vendors who specialize in this format, such as Theodore Front Music Literature and J. W. Pepper. However, some major general book vendors, especially outside of the United States, supply music materials as well, and can be very helpful in locating scores

from European publishers. Approval plans for scores are offered by most of these vendors, as well as MARC records for a small fee, which is helpful to those libraries whose staff lack music cataloging expertise. Some music vendors deal in both scores and recordings, but most often they are separate. Large web retailers which are primarily consumer-oriented, such as Amazon, carry a wide variety of commercial audio products but do not always offer the same support services (invoices, preprocessing, etc.). Specialty vendors such as eJazzlines.com and Music Library Service Company offer services such as new CD releases each month and core collections because they cater to libraries. Some are beginning to offer MARC records for CDs.

Audiovisual

Video content has gone from tape to primarily DVD and streaming video. Streaming video can be served from prerecorded files, or it can be distributed as part of a live broadcast in which the video is converted into a compressed digital signal and distributed using a Web server, sending it to multiple users at the same time. DVDs go out-of-print quickly for all but the popular films, so purchasing at the point of release is important. Specialty vendors such as Action! Library Media Service offer new releases and core collections just as specialty music vendors do. The vendor can ensure that the materials are acquired upon “street” release. Expensive pricing continues to be as much of an obstacle as the acquisition process for audiovisual materials, so vendor discounts are not as great as with books. Quality improvements in delivery of streaming video make this a more viable option than in the past for libraries, particularly with new services emerging, such as Digital Campus from Swank. Utilizing the few vendors specializing in audiovisual sales to libraries often is the best way for libraries without their own expertise to make such difficult purchases.

Electronic Books

An e-book may be either the electronic counterpart of a printed book or an original work that was “born” digital, and may be viewed either on a computer or on a hand held device (cell phone, tablet, or e-book reader such as a Kindle or Nook). E-books are undergoing a rapid phase of development and there are multiple business models: transactional payments for portions of books, traditional one-time purchase, standing orders for books in series, and subscriptions to collections. Also, there are several e-book formats competing in the marketplace, including Adobe PDF, ePub, Microsoft Reader, eReader, Open eBook and OpenReader. Both publishers and vendors are marketing e-books to libraries and the services offered will vary greatly depending on the source. Recently, some of the largest e-book vendors have begun partnerships with print book suppliers where e-books are available for ordering in the traditional book vendor’s ordering system.

Electronic Journals

The complications for electronic versions of serials of all types (periodicals, newspapers, annuals, yearbooks, proceedings, transactions; or numbered monographic series), require additional library staff time on support for access, licensing, registration, linking to owned content, maintenance of accurate holdings, and access to archival issues. All of this may have to be updated if a journal is sold or transferred to a new publisher, another management function that did not exist for the library in the era of print, with bound volumes sitting static on the shelves. Subscription agents and other vendors, such as Serials Solutions and Ex Libris, offer newer time-saving services to assist library staff with many of these administrative tracking and updating operations.

Many e-resource management vendors now offer a suite of tools for e-journals that include link resolution, searchable alphabetical title lists (called A–Z lists), collection analysis tools, and MARC record services. The combination allows centralized library management for the plethora of full-text resource subscriptions and more-efficient decision-making regarding electronic full-text collections than when library staff tried to manage updates from each separate publisher and compiled their own usage reports. The availability of updated information gathered by the vendor provides an economy of scale to libraries.

In addition to the consolidation services described above, support from vendors now commonly required by libraries includes:

- Increased customer service and communication tailored to the specific library’s needs
- A customer-friendly interface to a web-accessible catalog of the publications available, with the ability for the library to effect transactions in the vendor’s database (plus training in the use of the database)
- Bibliographic services (order confirmation records and catalog records)
- Reporting capabilities to support collection development decision-making, whether purchasing data or usage statistics
- An ability to work with consortia (licensing, business processes, resource sharing, training, management of trials and introduction of new products)

Customer Service and Vendor Database

Communication, as in most situations, is the key ingredient to the relationship between a library and a vendor. In an increasingly global business environment, it is important for vendors to have customer service departments that are available during peak times and to cover various time zones with toll-free telephone numbers, email, and online chat options. Vendors need personnel who are knowledgeable not only with the vendor's database, but also with any customization implemented by each library client and compatibility of resulting batch files with other systems the library uses, to compete for today's library business. How quickly and efficiently vendors handle technical issues and communicate information on updates or new features also plays a vital role in their effectiveness. In-person and online training tools are necessary for libraries now, since instead of a few expert users in an acquisitions department, decentralized use of the database has become common, enabling librarians who primarily teach and consult with patrons, to be the initiators of purchase transactions. Again the vendor aggregates this work onto a single platform, a key to success with decentralized use, since those who teach have a number of platforms to learn in helping library users and will not willingly take on the additional work in learning multiple selection platforms. A vital role of the vendor is having the means to help the library staff avoid duplicative purchasing, whether the case is the same title chosen by more than one person or if it is between print and electronic versions. The vendor provides the opportunity to see when a choice between formats is possible as well.

Bibliographic and Shelf-Ready Services

Bibliographic services consist of electronic delivery of a file of MARC catalog records, which may cost a small per record fee that is less expensive than local cataloging. With books, each file creates multiple records (administrative, financial, and public description) simultaneously for a batch of items as it is loaded into an integrated library system. In some cases, this may be a two step process with an abbreviated, preliminary descriptive public catalog record embedded with the order details and financial data, which is later overwritten with a complete catalog record containing all desired access points for discovery by library patrons. Both the preliminary order confirmation records and the complete catalog records can be loaded using local automated electronic processes on a standing frequency—(typically daily for orders, while for cataloging it will be in correlation with timing of shipments. This can be done for both print and e-books. Specifically for print books, it is common for a library to pay the vendor for materials processing (e.g., spine label with call number, security strip, ownership stamp, RFID tag or barcode) to make the materials ready to circulate, or “shelf-ready.” These file loads along with the advance processing shorten the amount of time between arrival of an item to the library and its availability for use by the patron, with very little added time prior to shipment from the vendor to the library.

With digital content, the record delivery is the equivalent to the physical shipment of print. Vendors are struggling in providing efficient bibliographic services for e-books because of the limited availability of quality cataloging records. Unlike print books, catalog records for e-books can lag significantly behind the availability of the e-book itself, whereas cataloging records for print books have long been available before the books themselves because of the time lag with physical distribution. Bibliographic service for e-books is a less-effective area of vendor and library interactions currently. Nevertheless, for some libraries, an internal cataloging process may be slower than the multiday lag in vendor record delivery, with the result that the vendor service still may make the item available to the patron more speedily.

In the case of serials, again the content may be ready for use with the flick of a switch upon purchase, but patron discovery is dependent typically upon updates from an electronic management service (through A–Z title list updates or catalog records, or both), offered by vendors such as Serials Solutions or EBSCO. Libraries have benefited from the collective sources of data in the electronic management services, and the actual speed of updating records is greater than when each individual library created its own records, but the time that passes before obtaining catalog links to the content may seem longer because of the rise in expectations of immediacy.

Vendor Interactions with Consortia

Consortia have utilized vendor-managed coordinated book purchasing plans to avoid overlap in members' collections. A vendor can provide a neutral platform for initiating collaboration and assessing results for joint collection development projects. This has been the case in the past with print materials, but has become even more prevalent with digital content.

Conclusion

The continued benefits of vendor intermediation to libraries include streamlined workflows, the reduction of paper processes, and

the ability to capitalize on the aggregated and updated information vendors can make readily available, whether for ordering new materials or for managing electronic content links in library catalogs. Initially, freeing staff time in this manner enabled better service to patrons, sometimes in unexpected ways. For example, finding out-of-print titles became easier with the Internet (such as through Amazon Marketplace), but required more time than purchasing through traditional library vendors. While those time-saving benefits and economies of scale from vendors remain, more recently the strictures of a severe economic recession put pressure on library staff to leverage additional efficiencies for their institutions. Newer vendor services such as making public domain e-books visible through library search tools and catalogs, or automating appropriate purchasing through demand-driven acquisition of e-books, are more critical than ever in order to provide the most-needed library resources to stakeholders in the most fiscally responsible manner. The impact of change has served to strengthen the need for the remaining library vendors, particularly in facilitating new methods of electronic resource acquisition and management.

Contributors

Stephen Bosch, Materials Budget, Procurement and Licensing Librarian from the University of Arizona, has been involved with various aspects of acquisitions, collection development, and library administrative services during his thirty-year tenure at the University of Arizona. He has held positions as Acquisitions Librarian and Coordinator for Collection Development, Information Access Librarian, Financial and Administrative Services Librarian as well as his current position. He has been chair of many committees, teams, councils, and projects focusing on information resource development and management, user needs assessments, licensing issues, and serials/monographs acquisitions both at the University of Arizona and nationally. Of his many publications, the most recent is his book, *Guide to Licensing and Acquiring Electronic Information* published by the American Library Association and Scarecrow Press. He is the 2006 recipient of the American Library Association ALCTS Leadership in Acquisitions Award and was recently elected Chair of the American Library Association ALCTS Acquisitions Section.

Chris Sugnet is the Assistant Dean of the division at the Colorado State University (CSU) Libraries that selects and licenses commercial information resources for the CSU community and includes the college liaisons and the collections and contracts units. College liaisons handle instruction, in-depth research consultation, and collection development for their assigned colleges. He also manages over \$6 million in annual expenditures for access to information products in all formats, including electronic books and journals purchased directly and through various state, regional, and national academic library alliances. He has worked in similar capacities at private and state-sponsored university libraries in the U.S. and UAE since 1974 and holds a BA in English and MA in Library Sciences from SUNY Geneseo and a MA in Anthropology from the University of Arizona. He is currently an editor of an open access electronic journal, *Collaborative Librarianship*, and a consultant on international scholarly publishing.

Cory Tucker is Head of Collection Management at the University of Nevada Las Vegas (UNLV) Libraries. Cory is responsible for administration and coordination of collection development activities for the University Libraries and leads the identification, evaluation, selection, and initial licensing of print and electronic information resources for the UNLV Libraries. In addition, Cory coordinates and implements the collection assessment activities for the Libraries. Cory is an active member of ALCTS and is currently the Chair-Elect of the Collection Management Section. Cory received his undergraduate degree in finance from the University of Tennessee-Knoxville and received his MLS from the University of South Florida.

Lauren E. Corbett, Director of Resource Services for the Z. Smith Reynolds Library at Wake Forest University, oversees collection management and technical services. Lauren has more than sixteen years of experience in library acquisitions and is past-chair of ALCTS Acquisitions Section. She also received the First Step Award from the Continuing Resources Section. Past scholarship includes "Serials: Review of the Literature 2000-2003," published in *Library Resources & Technical Services*. She has a MLIS from the University of North Carolina at Greensboro and a BA in French from Davidson College in North Carolina.

Reference

"Do Libraries Still Need Book Vendors and Subscription Agents?", American Library Association, September 23, 2011.

<http://www.ala.org/alcts/resources/z687/vend> (Accessed January 2, 2022)

Document ID: b408817b-e647-4ea3-b4cb-88fd846f72a2

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3.3: CATALOGING

3.3.1: Introduction to Subject Headings

3.3.2: Introduction to Dewey Classification

3.3.3: Introduction to MARC Cataloging

3.3.1: Introduction to Subject Headings

https://lili.org/forlibs/ce/able/able6/presentation_html5.html

3.3.2: Introduction to Dewey Classification

https://lili.org/forlibs/ce/able/able7/presentation_html5.html

3.3.3: Introduction to MARC Cataloging

https://lili.org/forlibs/ce/able/able8/presentation_html5.html

3.4: PROCESSING AND BOOK REPAIR

3.4.1: Book Repair Basics for Libraries

3.4.2: Basic Library Procedures: Processing Library Materials

3.4.1: Book Repair Basics for Libraries

An ALCTS webinar. Access the session now:

- [Book Repair Basics for Libraries](#) webinar recording (.flv)
- [Book Repair Basics](#) webinar materials (.pdf)
- Please send us your feedback about this webinar: [evaluation form](#)

Participants will become familiar with several types of basic repairs for bound circulating collections materials in school, public, and academic libraries. Tip-ins and basic page repairs, hinge tightening, and a variety of spine repairs are covered. Techniques are illustrated and demonstrated with text, images, and video. Links to other resources are provided. Repairs and conservation treatments on rare and special collections materials are NOT discussed.

NOTE: If you're experiencing problems viewing this .flv file, please consider using VLC Media Player software. [Download it free.](#)

Who Should Attend?

Individuals with little (some preferred) book repair experience will benefit. More experienced attendees will receive helpful hints.

Presenters

Peter D. Verheyen is Head of Preservation and Conservation at Syracuse University. After beginning as work-study in preservation under John Dean at Johns Hopkins where he repaired and rehoused circulating collections, he studied binding and conservation in Germany and Switzerland to become a rare book conservator working in private practice and research library preservation programs. He established the conservation lab at Syracuse for the treatment of special collections materials, and developed a high-density system for storing architectural drawings. In response to a need for efficient rehousing in anticipation of off-site storage he introduced Syracuse to the shrink-wrapping of volumes. He presented Archival 101 as an ALCTS webinar during Preservation Week 2010.

Marianne Hanley is Assistant Conservator in the Department of Preservation and Conservation at Syracuse University Library. Her responsibilities include managing the repair and rehousing of our circulating collections, including the training of work-study students. In addition she is training in bookbinding and aspects of book conservation with conservators David Stokoe and Peter Verheyen. She also presents regularly on disaster preparedness as part of departmental staff training and outreach activities. Because Marianne has worked in both the public and private sectors of libraries, she is collaborating in the development of a basic book repair program that will benefit many different institutions and varying types of skill levels.

Registration

How to Register

No registration required. Access now.

- [Book Repair Basics for Libraries](#) webinar recording (.flv)
- [Book Repair Basics](#) webinar materials (.pdf)

NOTE: If you're experiencing problems viewing this .flv file, please consider using VLC Media Player software. [Download it free.](#)

Tech Requirements

Computer with Internet access (high-speed connection is best) and media player software. Headphones recommended.

Due to the large audience expected with this session, participants will remain muted, so microphones are not necessary.

Attendees must login to the session from a computer with speakers or headphones. Chat will be available for participants to type in questions or comments.

If you have never attended an Adobe Connect Pro meeting before, you may want to watch [Participating in Your First Connect Pro Meeting](#) or [read the Visual Quick Start Guide \(PDF\)](#) before the presentation.

Credits

None

Questions?

For questions or comments related to the webinars, contact Julie Reese, ALCTS Events Manager at 1-800-545-2433, ext. 5034 or jreese@ala.org.

Sponsor

ALCTS thanks Neal-Schuman for sponsoring this webinar.

Reference

"Book Repair Basics for Libraries", American Library Association, July 8, 2011.

<http://www.ala.org/alcts/confevents/upcoming/webinar/pres/091411> (Accessed January 2, 2022)

Document ID: 02e6a431-e346-4e81-84ca-9246b33e854f

3.4.2: Basic Library Procedures: Processing Library Materials

Living in the library world

One library tech's insight into the world of libraries - working the way up from top to bottom - on the way to take over the world!

WHMIS

Introduction

Everyone has a part in providing safety. The same basics are for everyone.

What is WHMIS?

WHMIS stands for Workplace Hazardous Materials Information System

Chemical producers should provide information concerning product on a MSDS Sheet – Material Safety Data Sheet. This is an important standardized form of communication. Containers should be labelled.

Everyone should be trained to know about chemicals, an understanding of controlling hazards – when chemical should be stored and used properly and when they won't be dangerous, and what should be done in a hazard.

Companies must provide/ensure training to all employees handling hazardous materials, a list of hazardous materials in the workplace, and MSDS sheets for all hazardous materials.

Hazard classes

There are 6 classes of hazards. Poisonous materials have a further 3 divisions.

1. Compressed gases
2. Flammable/combustible
3. Oxidizing material
4. Poisonous and infectious material
 1. Immediate and serious toxic effects
 2. Other toxic effects
 3. Biohazard/infectious
5. Corrosives
6. Dangerous reactive

Learn the hazards of each class to prevent and control.

Broader categories can be classified under **FACTOR**

Flammable

And

Corrosive

Toxic

Or

Reactive

Create physical hazard or health hazard. Some can be immediately dangerous. Physical hazards affects the atmosphere and health hazards are toxic, directly affecting workers' health.

Smoking is a health hazard.

What chemicals present physical hazards? Flammable, some corrosives. If stored incorrectly or mixed, they can be dangerous.

Safe works hazard practice

Hazards can be controlled. Know what can – and cannot – be mixed. Safe work practice for all chemicals:

- Wear proper eye protection.
- Follow specific storage procedures.
- Know where to find equipment.

Practices followed when working with any chemical:

- Know what to do when there is an accident
- Know location of nearest safety equipment
- Know how to use safety equipment
- Understand chemical hazards
- Understand hazard controls

Exposures

Some toxics give off more exposure than others, and some can be more quick or more slow to work. Not all chemicals pose health hazards. Under normal circumstances there should be no problems.

Effect: high level exposure over short period of time.

Acute: large short, chronic small long. Equal effects toxic exposure invisible e.g., dust, gas. MSDS will alert you to toxic.

Where can chemicals enter the body?

- Via eyes, absorbed through the skin, swallowed via the mouth, inhaled through the nose

Levels tolerate with harm, average person exposure based on a 5-day, 8-hour work week. Safe dose is the length of higher tolerance longer lasting. If working with a higher, safer chemical, reduce either the time exposed to the chemical or the amount of chemical used.

A chemical is only referred to as toxic if it can cause harm to one or more body organs.

Long period of time – chronic health effect. After working there, something can be short and acute.

Chemicals and toxic materials can be relatively invisible consisting of dust, fumes, gases, vapor and mists.

Exposure to material requires clean hands before eating and smoking, as the primary entry route is probably likely to be via ingestion.

Safe dose refers to how much of a chemical a body can tolerate.

Reactions to a new chemical, such as a skin rash or other acute symptoms, appear immediately.

We should recognize the hazards and know what precautions to take.

Controls

Company engineers to make the work place safer by any means, e.g., enclosing pipes, administer safety protocols, set and use safety procedures, provide equipment and safety materials, i.e. face masks and respirators. Workers should wear equipment when they need to, as these items can be the only thing between themselves and hazardous materials.

Employees should know hazards. They should pay attention to their training. Reading labels is important as they can say a lot of information. WHMIS' distinctive border gives a warning sign and a lot of information about health and safety.

Most WHMIS labels provide 7 pieces of information. These are important to know as they are key to knowing hazards. Some labels can differ. These are:

1. Product identifier
2. Supplier identifier
3. Statement MSDS is available
4. Hazard symbol(s)
5. Risk phrase(s)

6. Precautionary measures
7. First aid materials

Labels should be written in both English and French.

Workplace labels for materials made at – or moved from – the workplace should identify the name of the material, provide instructions to use material, and say ‘see MSDS sheet for more information’

Employer may include only 8 hazard symbols:

1. Compressed gas
2. Flammable and combustible materials
3. Oxidizing
4. Poisonous and infectious materials causing immediate and serious toxic effects
5. Poisonous and infectious materials causing other toxic effects
6. Bio hazardous infectious
7. Corrosive material
8. Dangerously reactive material

Labelling tells you where to go and to see MSDS for more information. Tells you

- a) what it is, and where it came from,
- b) hazardous ingredients and potential hazards,
- c) physical data, what's in
- d) fire and explosion hazards,
- e) reactivity data and what to avoid,
- f) TLV to recognize signs,
- g) preventive measures,
- h) first aid measures,
- i) name/number/date provided

If you see something that looks dangerous, advise supervisor immediately.

Product information Storage procedures

Hazardous ingredients

Physical data Colour, odor, appearance

Fire/explosion data

Reactivity data

Health hazards/toxicological properties

Health effects from overexposure

Preventative measures

First aid measures

Preparation data

MSDS are anything to look at, they all have the same basic information and follow the same format. They don't all look the same.

What provides workplace hazard controls?

Employee training

Workplace ventilation controls

Hazardous materials time limit

Vapor/dust amount in air limited

Personal protective equipment

Supplier labels must accompany hazardous materials with border.

What is included in all MSDS?

- First aid procedures
- Storage procedures
- Product's flash point

- Entry route
- Overexposure signs

Monday, May 7, 2018

Safe work and the supervisor - your responsibilities

Safe work and the supervisor – your responsibilities <https://www.safemanitoba.com/Resources/Pages/bulletin-230.aspx>

Direct link to pdf document

https://www.safemanitoba.com/Page%20Related%20Documents/resources/bulletin_230_-_safe_work_and_the_supervisor_-_2016_0.pdf

Monday, April 30, 2018

Bill C-45 now in effect for employee safety

Amendments to Canadian criminal law have come into effect (March 31, 2004) that holds corporations more accountable for workplace injuries and deaths.

Minister of Justice and Attorney General Irwin Cotler said the legislation is important because it underscores the relationship between corporate liability and public safety, “and it says to employers that those who fail to provide safe workplaces may be dealt with severely through the criminal law.”

In the Bill C-45 amendments to the Criminal Code of Canada, organizations can be held criminally liable by:

- Criminal actions of senior officers who oversee day-to-day operations in addition to the acts of directors or executives
- Officers with executive or operational authority, who become aware of offences being committed by other employees but, in order to benefit the organization, do not take action to stop them
- The actions of those with authority and other employees, demonstrating a lack of care that constitutes criminal negligence

These changes increase the maximum fine that can be imposed on an organization for a summary conviction to \$100,000 from \$25,000.

There is no limit on fines for organizations that commit more serious offences.

The term “organization” is defined as a variety of group structures, including a public body, a company or partnership.

Bill C-45 imposes a legal duty on all those who direct work (including employers) to take reasonable measures to protect employee and public safety. Reckless disregard of this duty causing death or bodily harm could result in a charge of criminal negligence.

The provisions of Bill C-45 stem from a House of Commons standing committee report on workplace safety and corporate liability. This review was prompted by the Westray mine disaster that killed 26 miners in Nova Scotia on May 9, 1992.

More information on Bill C-45 is available on the Department of Justice website at: <http://www.justice.gc.ca/eng/rp-pr/other-autre/c45/>

An online version of the legislation is available at <http://www.parl.ca/>

Monday, April 23, 2018

Workplace safety and health guidelines

Workplace safety and health guidelines <https://www.safemanitoba.com/Resources/Pages/ResourceTypes.aspx?ResourceType=Guides>

Monday, April 9, 2018

Safety bulletins

SAFE Work Manitoba Safety bulletins <https://www.safemanitoba.com/Resources/Pages/ResourceTypes.aspx?ResourceType=Bulletins>

Monday, April 2, 2018

Consolidation regulations of Manitoba

<http://web2.gov.mb.ca/laws/regs/index.php>

W210 The Workplace Safety and Health Act

Title of Act/Regulation	Consolidated Regulation	Date
Administrative Penalty Regulation	89/2014	29 March 2014
Operation of Mines Regulation	212/2011	24 December 2011
Workplace Safety and Health Regulation	217/2006	11 November 2006
Amendments	147/2010	30 October 2010
	107/2011	16 July 2011
	165/2012	29 December 2012
	90/2014	29 March 2014

Monday, March 26, 2018

Employing young workers

Tips for supervisors

Remember your first few days on the job?

How much did you know then?

How much were you taught by your supervisor?

Legislation

Section 4.1 of Manitoba's Workplace Safety and Health Act (WSH Act) outlines your duties as a supervisor. The law says that you, as a supervisor must:

1. Ensure that all workers work in accordance with the provisions of the WSH Act and its Regulations.

2. Ensure that your workers use protective devices and wear the required personal protective equipment.
3. Let your workers know about any potential or actual dangers in the workplace that you are aware of.
4. Take every precaution reasonable in the circumstances for the protection of workers under your supervision.

Did You Know?

... that every year more than 7000 young workers aged 15-24 report injuries to the WCB (Source: Workers Compensation of Manitoba)

... that young male workers are almost twice as likely to be injured on the job than any other group?

... that young workers are often unable to recognize hazards?

... that young workers tend not to ask questions because they want to make a good impression and look “smart”?

... that young workers are an asset to your workplace – with fresh eyes, new ideas and good questions to ask?

... that, as a supervisor, you are legally responsible for your workers?

... that Manitoba students are learning about their rights and responsibilities in the workplace?

... that if you fail to comply with the WSH Act, you could be subject to prosecution?

Here's what you need to do...

- Spend more time explaining the job, providing training and supervising young and new workers.
- Set and explain safety rules and ensure everyone follows them.
- Ensure all hazards are explained and thorough job-specific safety training is provided before the work is assigned.
- Explain the importance of prompt reporting of unsafe conditions and health and safety concerns. Ensure they know it is a priority for you and tell them how to report the hazard so you can act on it immediately.
- Make yourself available to answer questions and provide advice
- Lead by example: wear required protective devices and always reinforce safety on the job
- Establish and maintain open lines of communication

Are you a new supervisor?

Get training in Manitoba's safety and health legislation and in the hazards in your workplace. The *WSH Act* requires employers to appoint competent supervisors: knowledgeable about the work and hazards of the jobs they are supervising.

For general requirements or questions about workplace safety and health, you can call Client Services at (204) 945-3446 or visit the website at <http://www.gov.mb.ca/labour/safety/>

For more information about young workers go to <https://www.safemanitoba.com/Pages/default.aspx>

SAFE WORK

S	SPOT THE HAZARD
A	ASSESS THE RISK
F	FIND A SAFER WAY
E	EVERY DAY

Tips for supervisors

Starting points...

This list, though not comprehensive, outlines information you should cover with your young workers.

- Everyone is entitled to work in a healthy and safe work environment.
- Everyone has the responsibility to contribute to making and keeping the workplace safe.

Discuss:

- Asking for help when they are unsure.
- Proper equipment operation including the mandatory use of guards and lock-out systems.
- Emergency procedures including the location of first aid, fire exits, extinguishers and eye wash stations.
- How and when to use personal protective equipment.
- Your company's health and safety rules.
- Correct lifting techniques.

- Good housekeeping practices.

Training techniques:

- Because people learn differently, use a variety of training techniques with your young worker.
- Guide your young worker through resources for health and safety information.
- Schedule sufficient time in the appropriate learning environment.
- Be hands-on, evaluate their learning and give them feedback.

Bright ideas

- Host a new worker welcoming get together to celebrate their arrival.
- Give a guided tour of the entire workplace.
- Introduce new young workers to key people in the organization. This may include the Health and Safety Manager, Health and Safety Committee members or Health and Safety representatives.
- Use articles and other information about workplace injuries and deaths that have occurred in other workplaces to reinforce the health and safety message.
- Continually reinforce the importance of health and safety.
- Put stickers on equipment warning young workers they shouldn't use it without training or supervision.
- Pair up your young worker with an experienced, safety-conscious worker.
- Recognize safe work practices and if safety rules are not observed, find out why.

Bottom line

YOU have direct responsibility for the safety of your workers, but also a unique opportunity to be a role model for young workers just starting out. Be a part of creating tomorrow's safe and healthy workforce.

To determine specific rights and obligations under the laws regulating workplace health and safety, the reader is directed to the provisions of the Workplace Safety and Health Act and the Regulations made under that statute.

Source Information

Basic Library Procedures: Processing Library Materials

1. Living in the Library World
2. <http://livinginthelibraryworld.blogspot.com/>
3. No copyright information

4: DIGITIZATION

4.1: Minimum Digitization Capture Recommendations

4.2: Public Library Partnerships Project Workshop Curriculum

4.1: Minimum Digitization Capture Recommendations

Preface

While many cringe at drawing similarities between microfilm and digitization, the foundations for digitization lay firmly in the lessons learned from microfilm. Microfilm was originally seen as a cheap and compact alternative to print materials. Institutions could store their rapidly growing collections in a compact format that was easy to reproduce and share. The first standard for microform production was published in 1979 around the time when many academic libraries were taking action on the brittle book problem by establishing preservation programs. Before this date, microforms were made on nitrate or acetate film neither of which have long shelf lives. Libraries could work together on non-duplicative microfilming projects once the standard was established. If a book was microfilmed according to the standard then another library could purchase a copy rather than re-film it. Items that were microfilmed before 1979 frequently needed to be re-filmed because of poor quality images or materials.

The language to describe the benefits of digitization is an echo from the microfilm era: it is touted as a cheap, easily distributed format that can be stored in a compact space. At this point there is no official standard for digitization, but institutions are discussing how they can collaborate and share digitized content. Collaborative projects such as HathiTrust and the Internet Archive raise the question of whether an already digitized book can be a surrogate without re-digitizing it. Some institutions have struggled with the differences between “digitizing for access” and “digitizing for preservation.” Ostensibly, content that is “digitized for access” is expected to have a relatively short shelf life, and content that is digitized for preservation should be sustainable for decades, if not longer.

This document was created as a guideline for libraries digitizing content with the objective of producing a sustainable product that will not need to be re-digitized. Institutions can feel secure that if an item has been digitized at or above these specifications, they can depend on it to continue to be viable in the future. In some cases, institutions may want to request a digital copy to preserve themselves, further safeguarding materials by preserving them in multiple locations.

There have been numerous studies exploring the technical side of how items should be digitized and most institutions engaged in digitization have decided on specifications for themselves. It was not the authors’ intention to duplicate this important work but rather to build on it. The authors reviewed past research, the practices at almost 50 organizations including the recent Federal Agencies Digitization Initiative (FADGI) and other guidelines from governments, universities, and other institutions. The authors also examined samples of digitized works to determine a recommendation of minimum specifications for sustainable digitized content some of which are included in this document. The guidelines given here are in line with most previous recommendations as well as requirements for recent collaborative projects like HathiTrust. The intent is to codify a set of recommendations as accepted minimums for libraries as a whole and not individual institutions or projects.

The scope of this document is narrow. It only speaks to the technical specifications of the digitized content itself and not to the larger issue of digitally preserving said content. Issues such as light spectrums, equipment calibration, staffing expertise, file types, compression schemes and other subjects about producing good digital objects is also out of scope of this document. Citations to other resources are provided throughout; most explore topics at a deeper level than is intended here.

Basis for Recommendations

An adequate surrogate needs to replicate characteristics of the original that users require. When digitizing objects one must be aware that different types of materials are used in different ways and that sometimes requires variations in the digitization specification. The recommendations stated here should fulfill most needs, but may need to be adjusted to a higher specification in instances where the expected use is different than is described in this document.

There are two general categories of media discussed below: static and time-based media. Static media is a term that encompasses common library collections such as books, photographs, maps, and microfilm that can usually be represented by image surrogates. Many resources differentiate between reflective media, where light bounces off the surface, and transmissive media, where light passes through the object. For the purposes of this document, both reflective and transmissive media are covered in the static media section. The nature of the various formats, playback mechanisms, the requirement of specific orders and timings must be captured to represent the object correctly make digitization of time-based media challenging. The section on digitizing time-based media follows the section on Static Media.

For further reference, please see a compendium of institutional guidelines in [Appendix IV](#) that includes types of original materials and links to the guidelines.

Static Media



Figure 4.1.1

Initially in digitization practice, it was common to capture only in black and white, otherwise known as bitonal, for textual documents or line drawings. This practice is now infrequently used for various reasons. When a digital image is created it is essentially made of ordered blocks of color called pixels. Software assigns a color for each individual pixel. It is almost impossible for the scanner's sensors to align with the edges of every physical, so the system must perform some interpretation during the digitization process. Bitonal images appear more pixelated than grayscale even when the size of each pixel is the same. Grayscale images actually depict the shape better because a lighter shade can be chosen for a pixel that does not fully cover an area that has color in the original. To account for this, many practices included increasing the bitonal image capture resolution by 50%.

In the microfilm era, there was a system of determining legible quality called the Quality Index (QI) formula. This formula was updated for digital materials in an AIIM standard: *Resolution as it Relates to Photographic and Electronic Imaging*. Essentially, the index delineates how many pixels are required to represent the smallest significant character in the source (usually a lowercase "e" in text scenarios), which is essentially twice the QI number. Naturally, an acceptable resolution to render an object depends on the size of the characteristics. Color and grayscale images require at least 16-pixels to depict the smallest character with excellent detail resolution (QI-8, or half the amount of pixels). Bitonal images require 24-pixels. As a frame of reference, 400-ppi¹ will capture a 1mm artifact with 16-pixels and 600-ppi will capture that same artifact with 24-pixels. This means that 400-ppi is sufficient to adequately capture a document with 1mm characters (or a 6 pt font) in grayscale or color, and 600-ppi is sufficient to adequately capture the same document in bitonal. This is where some of the early recommendations for using 400-ppi or 600-ppi began. The figure to the right depicts a representation of the QI and differences between bitonal and grayscale representations.



Figure 4.1.2

As resolution increases so does the file size. One must weigh this increase with the functional advantages of additional resolution. Increasing the resolution makes sharper details when the image is blown up. This can be helpful, but there comes a point where increasing the resolution does not yield any gains. For example, a three inch square of uniform color will not be better represented at 3000-ppi than 300-ppi, but it will be ten times the size. There are other issues too. Without perfect focus, the details in an image with very high resolution can be lost in the blur. Most cameras were not intended to take images with microscopic resolution from a distance of feet.

The bit-depth also affects the file size. The color of each pixel is recorded as a binary series, usually in multiples of eight (1,

8, 16, 24, 48...). The higher the number, the more colors are available. For example, there are 256 combinations for a binary 8-digit number and therefore an 8-bit grayscale image has 256 possible shades of gray for each pixel (Black=00000000, White=11111111). A 16-bit grayscale image will be twice the size because it requires 16 instead of 8 bits to record each pixel, but there are 65,536 combinations to represent 65,536 shades of gray. Color images work similarly, but are frequently broken down further into channels. The RGB color model with 24-bits is most common when digitizing library and archives materials. At times this is described as RGB 8-bits per channel (3 channels * 8-bits per channel = 24-bits total). What this means is that each pixel is encoded with a possible 256 shades of red, green, and blue, which in combination allows for 16,777,216 individual colors. The amount of total bits per pixel is relative to the size of the file. A 24-bit color image will be three times the size of an 8-bit grayscale or color image.

The examples used² show differences in resolutions between 200-700-ppi at the original size and blown up ten times, and then fifty times³. Individual examples are included in most of the sections, but they are all available for download [here](#)⁴. Most images were not originally intended to be viewed under magnification⁵. Extreme magnification can sometimes be helpful for special collection materials in limited cases. Generally, these materials should be available physically and extreme magnification is usually more helpful on an actual object than digitally.

A good reference for line detail is a twenty dollar bill, which is adequately resolved at 400-ppi. If an object has elements with finer lines than currency engravings then the resolution may need to be higher than 400-ppi. Conversely, an object with artifacts significantly larger than currency engravings may be adequately digitized at a lower resolution.

The resolution value itself may not always be an adequate gauge of a good digital image because the image may not be at the same size as the original, the image may be out of focus, the image may be interpolated, the equipment may not be calibrated, the equipment may not be functioning properly, or other potential issues. These issues can be difficult to assess using production images alone. Targets allow the user to have a standard and consistent manner to evaluate the equipment and images easily and objectively. Targets usually have several components such as rulers, to ensure that the size of the image is captured correctly, as well as tools to evaluate image quality factors such as resolution, noise, artifacts and tone/color reproduction. Adding some basic information about the object, such as a title, creator, or an identifier, makes the digital object self-identifying in case it gets separated or becomes unlinked from its metadata.

Suggested reading for more details on digitizing static collections:

- Association for Information and Image Management, "Resolution as it Relates to Photographic and Electronic Imaging," Technical Report for Information and Image Management 26-1993 (1993): 18.
- Burns, Peter, and Don Williams. "Ten Tips for Maintaining Digital Image Quality." Trans. *Array Archiving* 2007. Arlington: Society for Imaging Science and Technology, 2007. 16-22. Print. <http://www.imagescienceassociates.com/mm5/pubs/50Arch07BurnsWilliams.pdf>.
- Berns, Roy. "The Science of Digitizing Paintings for Color-Accurate Image Archives: A Review." *Journal of Imaging Science and Technology*. 45.4 (2001): 203-325. Web. 14 Feb. 2013. http://art-si.org/PDFs/Acquisition/JIST_45_4_305_325Berns.pdf.
- "JISC Digital Media." Still Images: creating new digital images. Joint Information System Committee, 2012. Web. 24 May 2012. <http://www.jiscdigitalmedia.ac.uk/stillimages/docs/category/creating-new-digital-media/>.
- Kenney, Anne, and Stephen Chapman. *Tutorial Digital Resolution Requirements for Replacing Text-Based Material: methods for benchmarking image quality*. Washington DC: Commission on Preservation and Access, 1995. Web. <http://www.clir.org/pubs/reports/pub53/pub53.pdf>.
- Peterson, Kit. *Standards Related to Digital Imaging of Pictorial Materials*. Library of Congress, Sep 2004. Web. 24 May 2012. <http://www.loc.gov/rr/print/tp/DigitizationStandardsPictorial.pdf>.
- *Specifications and metrics for Converted Content – a functional solution of the Future Digital System (FDsys)*. Washington DC: U.S. Government Printing Office, 2006. Web. http://www.fdlp.gov/home/repository/doc_download/821-gpos-digitization-specification-33-final.
- "Still Image Working Group." *Federal Agencies Digitization Guidelines Initiative*. FADGI, 27 Mar 2012. Web. 8 Jun 2012. <http://www.digitizationguidelines.gov/still-image/>.
- "Universal Photographic Digital Image Guidelines." N.p., 22 Sep 2008. Web. 24 May 2012. <http://www.updig.org/index.html>.
- Wheeler, Barry. "What Resolution Should I Use? Part 1." *The Signal*. Library of Congress, 5 Dec 2012. Web. 14 Feb 2013. <http://blogs.loc.gov/digitalpreservation/2012/12/what-resolution-should-i-use-part-1/>.
- Wheeler, Barry. "What Resolution Should I Use? Part 2." *The Signal*. Library of Congress, 11 Jan 2013. Web. 14 Feb 2013. <http://blogs.loc.gov/digitalpreservation/2013/01/what-resolution-should-i-use-part-2/>.

Books and Textual Based Materials Without Images (non-rare)

Capture in color (24 bit) whenever possible. 300-ppi will capture details larger than 1.4 mm at a QI of 8. The resolution may be adequately adjusted according to the largest detail to be represented.

Min Resolution	Min Color Space	Min Bit Depth	Notes
300	Gray	8	The research value in r content itself. These im through OCR or other n resolution depends on t 1.4mm is represented b detail representation wi smaller text should be i images should be suffic and should be used whe example are approxima fonts.

For more information on digitizing textual based materials with images, see the [suggested reading for digitizing static media](#).

Example images ([download full set here](#)):

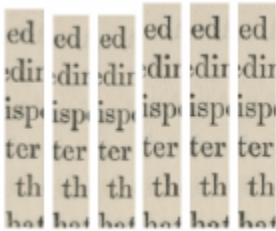


Figure 4.1.3: Image increasing resolution from 200-ppi on the left to 700-ppi on the right.

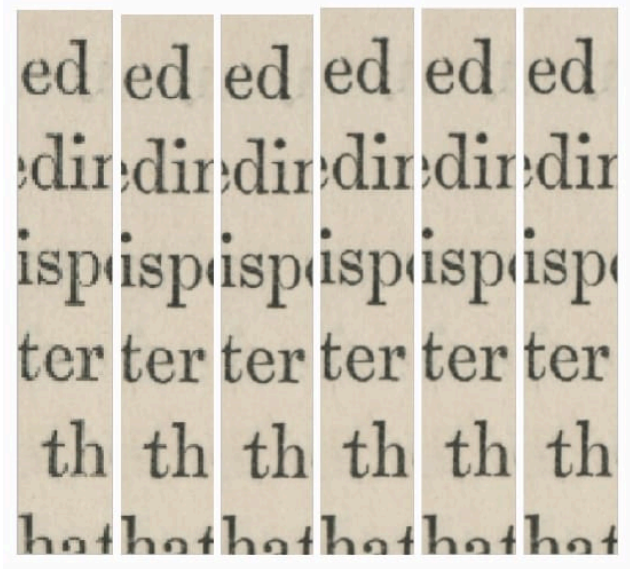


Figure 4.1.4: Image blown up 9x increasing resolution from 200-ppi on the left to 700-ppi on the right.

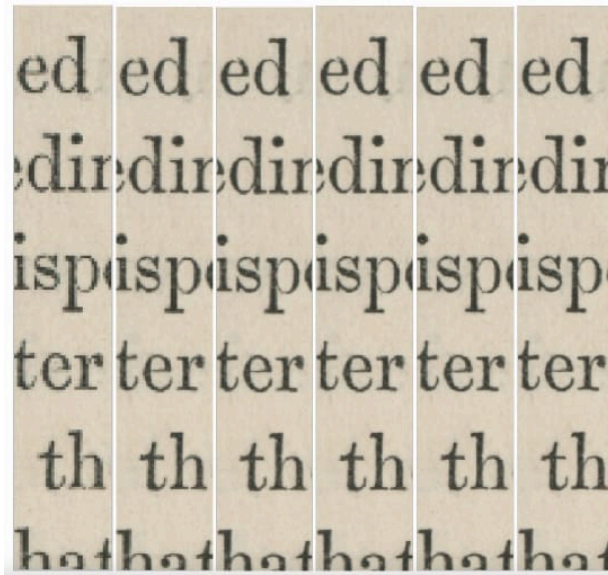


Figure 4.1.5: Image blown up 50x increasing resolution from 200-ppi on the left to 700-ppi on the right.

Books and Textual Based Documents with Images (non-rare)

Min Resolution	Min Color Space	Min Bit Depth	Notes
400	Gray	8	Capture in color (24 bit) where etchings or other pictorial elements are larger than text alone. 400 larger than 1 mm at a QI of 8. adequately adjusted according to the image represented.

Images that are contained within books with textual based documents usually have details that can be important to users. The primary requirement is that the image is clear. Some users are interested in the image production method, requiring the visibility of the individual lines or dots that comprise the image. Moiré patterning may present problems, which can be overcome in the digitization process by changing the angle of capture, software, resolution or a combination of all three.

In most cases, 400-ppi will adequately capture necessary details. As a reference, the hash marks in the background behind the man in the example are approximately 0.25mm apart. While they can be seen even at 200-ppi, increasing the resolution allows greater clarity. One can also see color artifacts at the bottom of the lower resolution images. Grayscale is sufficient for most images, but color can be helpful and should be used whenever possible.

For more information on digitizing textual based materials with images, see the [suggested reading for digitizing static media](#).

Example images ([download full set here](#)):



Figure 4.1.6: Image increasing resolution from 200-ppi on the left to 700-ppi on the right.

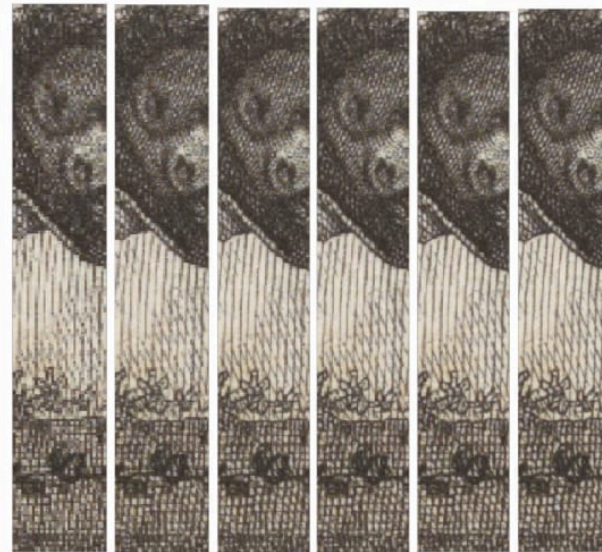


Figure 4.1.7: Image blown up 9x increasing resolution from 200-ppi on the left to 700-ppi on the right.

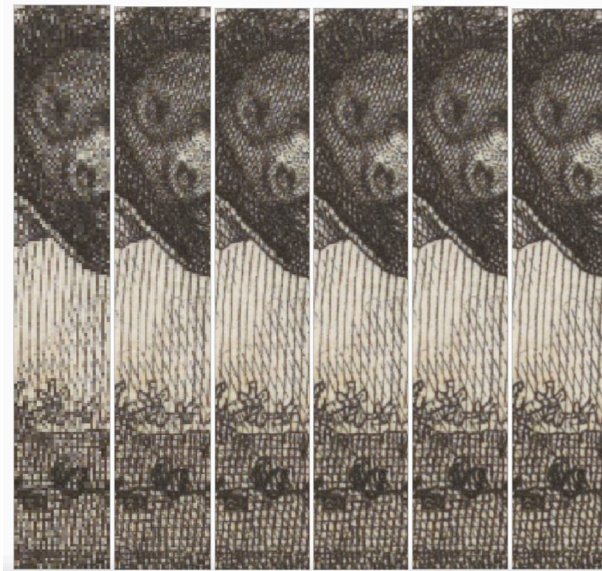


Figure 4.1.8: Image blown up 50x increasing resolution from 200-ppi on the left to 700-ppi on the right.

Rare Books

Min Resolution	Min Color Space	Min Bit Depth
400	Color	24

Several factors influence the resolution required to digitize rare books. Less standardized fonts, or highly ornate and irregular fonts make the minute details in rare books potentially more interesting to scholars; while at the same time, making legibility more difficult. Colors, stains, holes and other markings may be important to the contextual information and should be represented accurately. Color images also help identify obstructions, like stains as opposed to holes, making the document more legible.

Most rare books will be captured adequately at 400-ppi in color. This should capture serifs and other embellishments for any elements larger than 1mm that have fine detail. Contextual evidence in the paper, inks, and illustrations may need to be captured at a higher resolution. The example has relatively large lettering measuring about 2.6mm on the small “e.”

For more information on digitizing rare books, see the [suggested reading for digitizing static media](#).

Example images ([download full set here](#)):



Figure 4.1.9: Image increasing resolution from 200-ppi on the left to 700-ppi on the right.



Figure 4.1.10: Image blown up 9x increasing resolution from 200-ppi on the left to 700-ppi on the right.

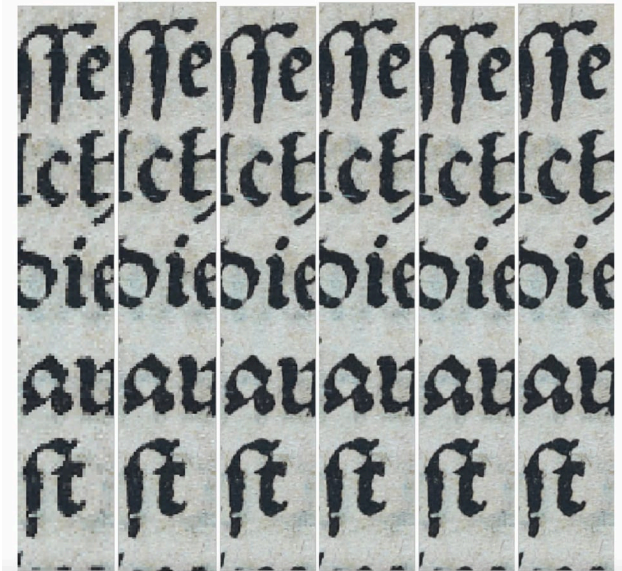


Figure 4.1.11: Image blown up 50x increasing resolution from 200-ppi on the left to 700-ppi on the right.

Manuscripts

Min Resolution	Min Color Space	Min Bit Depth	Notes
400	Color	24	Illegible or difficult to read scripts may require a higher resolution.

Manuscript materials may be written by hand and difficult to read. Additionally, there may be informational value in the inks, pen strokes, or even in the base media. Colors, stains, holes and other markings may be important to the contextual information and should be represented accurately.

Legibility and the most relevant physical information should be easily visible with 400-ppi color images. In the example, the handwriting is large with the small “e” measuring approximately 3mm. Even at this scale, faded ink is noticeably less legible at lower resolutions. In some cases, the resolution may need to be increased for legibility or when extreme magnification is necessary.

For more information on digitizing manuscripts, see the [suggested reading for digitizing static media](#).

Example images ([download full set here](#)):



Figure 4.1.12: Image increasing resolution from 200-ppi on the left to 700-ppi on the right.



Figure 4.1.13: Image blown up 9x increasing resolution from 200-ppi on the left to 700-ppi on the right



Figure 4.1.14: Image blown up 50x increasing resolution from 200-ppi on the left to 700-ppi on the right.

Maps

Min Resolution	Min Color Space	Min Bit Depth	Notes
300-600	Gray / Color	8 / 24	600 ppi will capture highly detailed information and good for reprinting and fine quality maps. Lower resolutions may be appropriate if detail is limited (large print etc...) or will not be printed.

Maps are quite diverse, and flexibility should be given when selecting a resolution. It is common that smaller maps have smaller details, but large maps can often have tiny elements. Digitizing large maps at high resolutions may create exceptionally large files that are difficult to handle without benefit unless the details are also small. Maps may also be created with a higher print resolution than other materials. Moiré patterning may present problems, which can be overcome in the digitization process by changing the angle of capture, software, resolution or a combination of all three.

Maps with large details may be adequately digitized at 300-ppi, though maps with very small details may require 600-ppi resolution or higher. Large file sizes may be worth the extra detail clarity for some items. The example at the right comes from a relatively small map. The “e”s in “Notre Dame aux Neiges” are all approximately 0.5mm and the hash marks are approximately 0.25mm apart. A QI of 8 for a character that is 0.5mm requires 820ppi. The example used here is an example of a situation where increasing the resolution from the minimum has clear benefits.

For more information on digitizing maps, see the [suggested reading for digitizing static media](#).

Example images ([download full set here](#)):



Figure 4.1.15: Image increasing resolution from 200-ppi on the left to 700-ppi on the right.

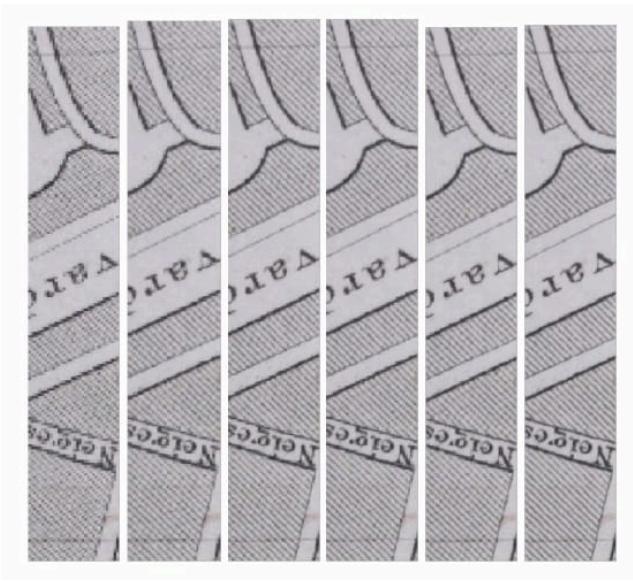


Figure 4.1.16: Image blown up 9x increasing resolution from 200-ppi on the left to 700-ppi on the right.

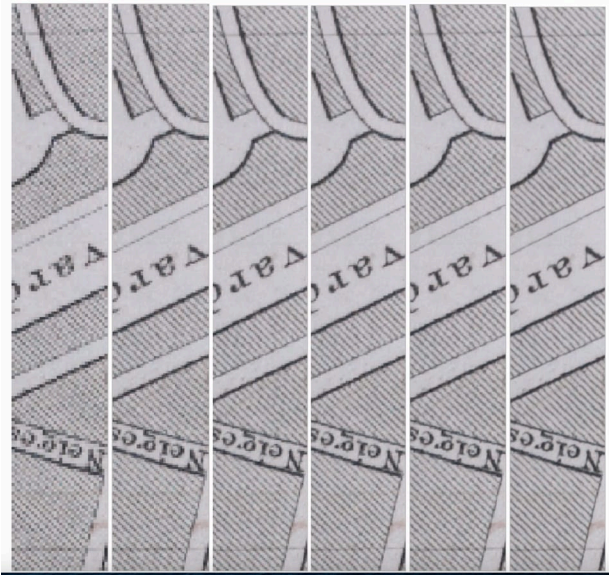


Figure 4.1.17: Image blown up 50x increasing resolution from 200-ppi on the left to 700-ppi on the right.

Photographic Processes

	Min Resolution	Min Color Space	Min Bit Depth	Notes
Aerial Photographic Prints (<8"x10")	400	Gray	8	Use 24-bit color when appropriate. Resolution is based on the commonly used 4000 pixels along the long edge commonly used for photographic digitization. Use 4000 pixels whenever possible ultimately creating a higher resolution.
Aerial Photographic Prints (8"x10" - 11"x14")	400-600	Gray	8	Use 24-bit color when appropriate. Resolution is based on the commonly used 6000 pixels along the long edge commonly used for photographic digitization. Use 6000 pixels whenever possible ultimately creating a higher resolution.

	Min Resolution	Min Color Space	Min Bit Depth	Notes
Aerial Photographic Prints (>11"x14")	600	Gray	8	Use 24-bit color when appropriate. Resolution is based on the commonly used 8000 pixels along the long edge commonly used for photographic digitization. Use 8000 pixels whenever possible ultimately creating a higher resolution.
Aerial Photographic Film (70mm - 4"x5")	1200-2150	Gray	8	Use 24-bit color when appropriate such as infrared or false color UV. Resolution is based on the commonly used 6000 pixels along the long edge commonly used for photographic digitization. Use 6000 pixels whenever possible ultimately creating a higher resolution.
Aerial Photographic Film (4"x5" - 5"x7")	1200-1600	Gray	8	Use 24-bit color when appropriate such as infrared or false color UV. Resolution is based on the commonly used 8000 pixels along the long edge commonly used for photographic digitization. Use 8000 pixels whenever possible ultimately creating a higher resolution.
Aerial Photographic Film (>5"x7")	1450	Gray	8	Use 24-bit color when appropriate such as infrared or false color UV. Resolution is based on the commonly used 10000 pixels along the long edge commonly used for photographic digitization. Use 10000 pixels whenever possible ultimately creating a higher resolution.
Photographic Film (35mm - 4"x5")	800-2800	Gray / Color	8 / 24	Resolution is based on the commonly used 4000 pixels along the long edge commonly used for photographic digitization. Use 4000 pixels whenever possible ultimately creating a higher resolution.
Photographic Film (4"x5" - 8"x10")	800-1200	Gray / Color	8 / 24	Resolution is based on the commonly used 6000 pixels along the long edge commonly used for photographic digitization. Use 6000 pixels whenever possible ultimately creating a higher resolution.
Photographic Film (>8"x10")	800	Gray / Color	8 / 24	Resolution is based on the commonly used 8000 pixels along the long edge commonly used for photographic digitization. Use 8000 pixels whenever possible ultimately creating a higher resolution.
Photographic Prints (<8"x10")	400	Gray / Color	8 / 24	
Photographic Prints (8"x10" - 11"x14")	400-600	Gray / Color	8 / 24	Resolution is based on the commonly used 6000 pixels along the long edge commonly used for photographic digitization. Use 6000 pixels whenever possible ultimately creating a higher resolution.
Photographic Prints (>11"x14")	600	Gray / Color	8 / 24	Resolution is based on the commonly used 8000 pixels along the long edge commonly used for photographic digitization. Use 8000 pixels whenever possible ultimately creating a higher resolution.

Accurately reformatting historic photographs is among the most challenging of the static media types. Text based materials, and even most printing methods, have limits to the size of the smallest discrete elements. Photographs do too, the light sensitive graduals, but they may not be the most effective way to determine resolution. Prints and film are both representational media that can have subtleties in tones and colors. One should consider the intent for the digital object when selecting an adequate resolution. Digitizing for informational content is somewhat different than creating a surrogate for artifactual reasons where granules are clearly seen. Capturing the image such that the important elements are represented is usually adequate when one is concerned with the informational content, though it should be noted that photographs are commonly enlarged or magnified to view smaller elements clearly. The minimum recommendations given here are starting points. Increasing the resolution or bit depth may be required for several reasons. Additionally, it may be necessary to capture individual light sensitive granules when specific information on the original photographic process is important.

Digitization recommendations intended to only represent the image are commonly based on the size of the original. Because prints and film come in different sizes, and to keep images a reasonable file size, most film and prints are grouped in three sizes with 4,000, 6,000, and 8,000 pixels along the long edge for small, medium, and large items. Aerial film is an exception because the grain is much smaller and the artifacts that need to be represented are also smaller, digitized with 6,000, 8,000, and

10,000 pixels along the long edge. Aerial prints have similar grain as photographic prints, and can be captured similarly, though sometimes the discernible artifacts are smaller and may require higher resolution. There are situations where fine details are not captured adequately at the recommended minimum and resolution should be increased accordingly. True black and white images can be captured in grayscale, but color images are preferred for many photographic processes. Aerial photography is usually in black and white, but occasionally uses infrared or false UV film. These latter types should be imaged in color.

Many suggest that digitizing fine art and photographic objects require greater depth and should be imaged at 16-bit grayscale or 48-bit color. There is some evidence that capturing at this higher bit depth and reducing to 8-bit grayscale or 24-bit color provides better images than imaging directly to 8-bit grayscale or 24-bit color. It is frequently recommended to capture photographs in 16-bit grayscale or 48-bit color. There are good arguments for using these increased bit-depths for photographs, but the payoff is not obvious for all objects.



Figure 4.1.18

Capturing granular details of the photographic process is more difficult. This is not about the minimum requirements to adequately capture an object but rather closer to the maximum level an item should be digitized. Once the granules in a photograph are fully captured, there is essentially no more information that can be captured. Photographic prints alone constitute a wide array of surface emulsions from salt prints to albumen, cyanotypes, silver gelatin, printing out paper, carbon, Platinum/Palladium, Photogravure, Bromoil, C-prints and more. Photographs have been produced for over one hundred eighty years with an expansive variance in appearance. Accurately reformatting historic photographs is one of the most challenging digitization processes of Static Media types. The majority of B&W photographs populating photographic archives are silver gelatin prints stemming from the late 1890's to present day. Color printing introduced dye layers creating additional considerations for reformatting. Investigations by the Library of Congress found that granular detail was lost when digitizing historic photographs at less than 1,200-ppi. Not all photographic prints require as high a resolution but one should try to avoid undersampling. Most historic photographic prints generically scanned result with unwanted artifacts due to uninformed workflows typified by flatbed scanning.

Photographic film scanning and post processing is technically challenging and analogous to printing in a darkroom that determines tonal values. High reformatting resolution, proper shadow and highlight values, color encoding and varied substrate issues are critical to proper workflows. Kodachrome is uniquely different than Ektachrome, color film from B&W, glass plates and nitrate, Autochromes to Lantern Slides, all exhibit unique considerations.

Recent tests have shown that granules in black and white negatives from the first half of the 20th century are fully captured by 1,200-ppi but those in the second half of the century have smaller granules and need to be digitized at as high as 2,800-ppi before no further information can be captured. Some early color processes have much larger granules and captures higher than 750-ppi does not provide any more information.

Aerial Films are designed with extremely fine emulsion resolutions for recording precise subject details. Reformatting requires high resolution to preserve all subject information. The Library of Congress conducted a scientific resolution study by analyzing several aerial film types. The samplings resulted in determining the upper thresholds for reformatting resolutions. Information

was discernible upwards of 2,200ppi or greater for the sample films.

For more information on digitizing photographs, see the [suggested reading for digitizing static media](#), or specifically for transmissive photographic media:

- Fleischhauer, Carl. "Information or Artifact: Digitizing Photographic Negatives and Transparencies, Part 1." *The Signal*. Library of Congress, 18 Oct 2011. Web. 24 Apr. 2013. <http://blogs.loc.gov/digitalpreservation/2011/10/information-or-artifact-digitizing-photographic-negatives-and-transparencies-part-1/>.
- Fleischhauer, Carl. "Information or Artifact: Digitizing Photographic Negatives and Transparencies, Part 2." *The Signal*. Library of Congress, 18 Oct 2011. Web. 24 Apr. 2013. <http://blogs.loc.gov/digitalpreservation/2011/10/information-or-artifact-digitizing-photographic-negatives-and-transparencies-part-2/>.
- Wheeler, Barry. "What Resolution Should I Use? Part 3." *The Signal*. Library of Congress, 1 Mar 2013. Web. 24 Apr. 2013. <http://blogs.loc.gov/digitalpreservation/2012/12/what-resolution-should-i-use-part-1/>.
- Williams, Don, Michael Stelmach, and Steven Puglia. *Establishing Spatial Resolution Requirements for Digitizing Transmissive Content: A Use Case Approach*. Williamson: Image Science Associates, 2011. http://www.imagescienceassociates.com/mm5/pubs/TransmissiveResolution_Williams.pdf.

Example photographic print images ([download full set here](#)):

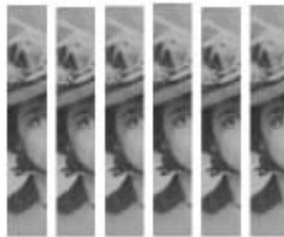


Figure 4.1.19: Image increasing resolution from 200-ppi on the left to 700-ppi on the right.



Figure 4.1.20: Image blown up 9x increasing resolution from 200-ppi on the left to 700-ppi on the right.



Figure 4.1.21: Image blown up 50x increasing resolution from 200-ppi on the left to 700-ppi on the right.

Example photographic film images ([download full set here](#)):

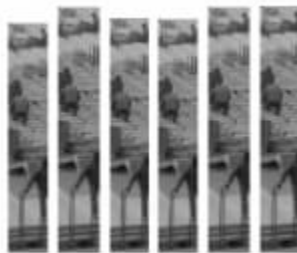


Figure 4.1.22: Image increasing resolution from 200-ppi on the left to 700-ppi on the right.

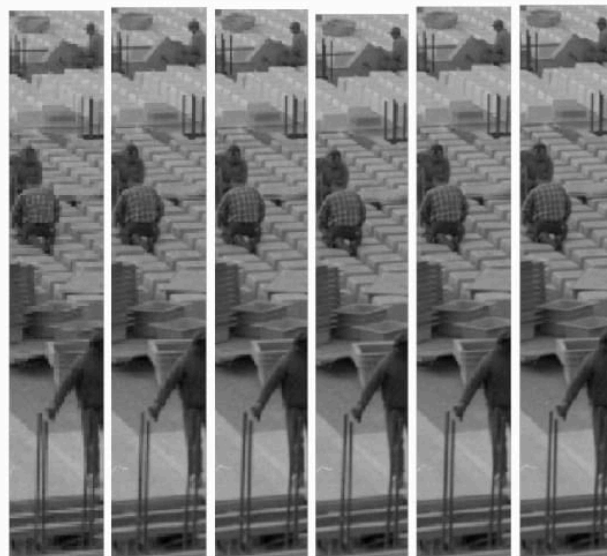


Figure 4.1.23: Image blown up 9x increasing resolution from 200-ppi on the left to 700-ppi on the right.

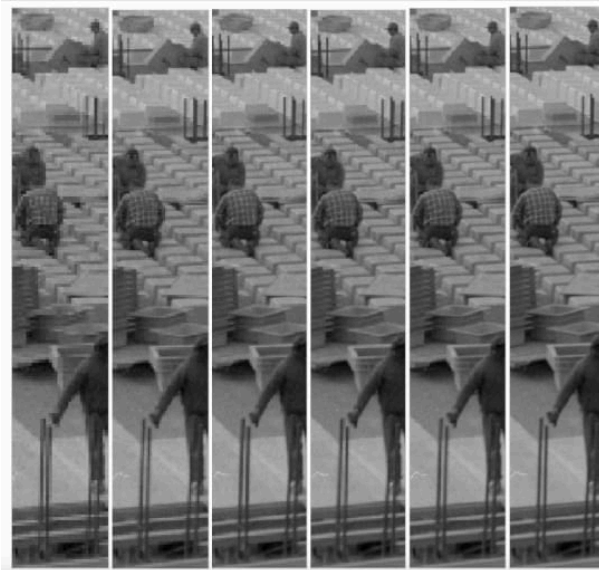


Figure 4.1.24: Image blown up 50x increasing resolution from 200-ppi on the left to 700-ppi on the right.

Posters/Broadsides/Oversize Documents

Min Resolution	Min Color Space	Min Bit Depth	Notes
300	Color	24	The off-set print resolution of posters and broadsides may present screening artifacts creating moiré patterns requiring adjustments. The off-set print resolution of posters and broadsides may present screening artifacts creating moiré patterns requiring adjustments.

After finding equipment large enough to digitize them, the biggest hurdle with large documents is that the file sizes can become large and hard to manage. Most posters, broadsides, and oversize documents are meant to be viewed from a distance and therefore do not have smaller informational elements, though one may need to print from a digital file for exhibition, reproduction, or other purposes.

Most poster, broadsides, and oversize documents will be adequately digitized at 300-ppi in color or grayscale depending on whether the original has colors or shades that should be represented. This should allow for a quality print reproduction, of course some documents may require higher resolution. Moiré patterning may present problems, which can be overcome in the digitization process by changing the angle of capture, software, resolution or a combination of all three.

For more information on digitizing posters, broadsides, or oversize documents, see the [suggested reading for digitizing static media](#).

Art on Paper

Min Resolution	Min Color Space	Min Bit Depth
400	Color	24

Art on paper is a broad category of materials covering many printing, drawing, and illustration techniques. One must be particularly careful selecting appropriate resolutions for the media and intended purpose of the digital product. Many researchers are interested in the production methods of these works so magnification is not uncommon.

Works of art on paper should not be imaged below 400-ppi, 24-bit color, but there are many instances where this will be inadequate and the resolution or bit depth should be increased. It is frequently recommended to capture fine art in 48-bit color. There are good arguments for using the increased bit-depth for fine art, but the payoff is not obvious for all objects. Moiré patterning may present problems, which can be overcome in the digitization process by changing the angle of capture, software,

resolution or a combination of all three.

For more information on works of art on paper, see the [suggested reading for digitizing static media](#).

Microforms

Min Resolution	Min Color Space	Min Bit Depth	Notes
300	Gray	8	Resolution should be calculated at 100% of the size of the original object. 300-ppi will suffice if the film has innately low resolution (e.g. some newspapers), but microfilm of non-oversize materials should be 400-ppi. Use 16-bit gray if the film is continuous tone or 24-bit color if the film is color.

Microforms are essentially photographic film with highly reduced images of textually based or manuscript materials. The film itself has a very fine grain allowing for extraordinary amount of detail in a small space. There can be great variation in the quality of microfilm depending on how it was filmed and the type of film used. In 1979 the first microfilm standard was published helping improve the quality overall.

The digitization resolution should be calculated by the size of the original document, not the film itself. Microforms created in accordance with preservation standards will state the reduction ratio on a frame at the beginning of the roll. Because digitizing from microfilm is not imaged directly from an original, there is some concern of ill-defined letters becoming less legible because of poor registration. Most microforms should be digitized at 400-ppi with 8-bit grayscale, which accounts for some imperfection in the image quality. Very poor quality film may be adequately digitized at 300-ppi as long as reduction in quality does not further degrade the image. Continuous tone film should be scanned at 16-bit grayscale and color film at 24-bit color.

For more information on digitizing microforms, see the [suggested reading for digitizing static media](#).

Three-Dimensional Objects

Min Resolution	Min Color Space	Min Bit Depth
300	Color	24

The intended purpose of imaging a three-dimensional object is very different from the intent of many other types of digitization. Even with the rise of inexpensive 3D printers, one cannot currently make an adequate reproduction from a three-dimensional object, and so the intent is not to digitize so users have a surrogate to use, but rather to give the user general information about the object. Three-dimensional objects will most likely be reimaged at a later point. In libraries, three-dimensional objects are typically photographed at the native camera resolution of 300ppi. The size of the sensor and size of the capture area determine the achieved resolution. It is not uncommon that 3D objects receive several views (potentially presented as a rotating object). Lighting and camera angle of view are essential considerations and details of specific regions may be useful.

For more information on digitizing three-dimensional objects, see the [suggested reading for digitizing static media](#).

Time-Based Media

The time element of time-based media makes it different from other analog materials. On a basic level, they are comprised of tiny elements that fit in a defined order and are each perceived for a defined period of time. The object is the whole that can only be experienced over a period of time. Similar to how a digital image is composed of small pixels, each frame of a video, or tone in a sound recording, is one small piece that requires all of the others to make a complete work. While digitizing time based media, one must be aware of the perceptual limitations, not only with each individual unit, but also the limits in how one perceives changes over time. Time-based media uses this to try and string individual elements into a single continuous work. Some time-based media, like moving images, can incorporate several layers such as visual and audio elements.

Digitizing time-based media has not been performed as regularly nor for as long as static media so there are fewer articles and publications discussing the issues and nuances. While there is still some interpretation when digitizing analog media, because it

is machine based and because of the limitations of the original media, many of the debates of how fine a resolution is necessary, even in terms of a maximum, is more agreed upon than some of the static media types.

Audio

Min Resolution	Min Bit Depth
96 kHz	24

In order to experience an audio recording, a speaker must create compression waves that will move small bones in the ear that will then be perceived as sound. Audio analog to digital converters now capture frequencies beyond the range of human perception, and dynamic range at the limits of the laws of physics. Further “improvements” are not likely to have any measurable or perceptible improvement.

The audio community has coalesced around digitizing analog audio at 96kHz with 24-bits per sample. There are arguments for digitizing some types of audio sources at lower quality, but for consistency and standardization, most institutions comply with this standard for all sources. There is doubt to whether analog audio, or any audio for that matter, would need to be captured with higher quality.

In audio digitization a bit is equal to 6dB of dynamic range. The more bits the more dynamic range you can capture. Also called signal to noise ratio, it is a measure of the range of signals from full scale (saturation) to the smallest signal that can be resolved. A 24 bit system can capture 144dB of dynamic range. At room temperature an ideal electrical circuit will have a theoretical dynamic range of about 130dB, or about 21.5 bits. Even though we cannot capture 144dBs we use 24 bits because computers work in bytes that are groupings of bits. There are 8 bits in a byte, and 3 bytes is 24 bits.

Digital audio should be migrated natively whenever possible. It is useless to convert it with different resolution and bit-depth from the original if a file migration is necessary.

For more information on digitizing audio:

- Bradley, Kevin, ed. “Guidelines on the Production and Preservation of Digital Audio Objects (web edition).” International Association of Sound and Audiovisual Archives, n.d. Web. 20 Feb 2013. <http://www.iasa-web.org/tc04/audio-preservation>.
- “Guidelines: Audio Digitization System Performance.” *Federal Agencies Digitization Guidelines Initiative*. FADGI, 15 Mar 2011. Web. 8 Jun 2012. <http://www.digitizationguidelines.gov/guidelines/digitize-audioperf.html>.
- “Noise Calculator.” *Sengpielaudio*. N.p., n.d. Web. 8 Jun 2012. <http://www.sengpielaudio.com/calculator-noise.htm>.
- Robin, Michael. “Digitizing Audio.” *Broadcast Engineering*. May. (2006): n. page. Web. 20 Feb. 2013. <http://broadcastengineering.com/mag/digitizing-audio-0>.
- Schüller, Dietrich. *Safeguarding of the Audio Heritage: Ethics, Principles and Preservation Strategy*. Version 2. International Association of Sound and Audiovisual Archives, 2005. Web. http://www.iasa-web.org/sites/default/files/downloads/publications/TC03_English.pdf.

Analog calibration references are available from:

- *Audio Analog-to-Digital Converter Performance Specification and Test Method*. Federal Agencies Digitization Guidelines Initiative, 2012. Web. http://www.digitizationguidelines.gov/audio-visual/documents/ADC_performGuide_20120820.pdf.
- “MRL Calibration Tapes.” *Magnetic Reference Laboratory*. N.p., 19 Feb 2010. Web. 8 Jun 2012. <http://home.comcast.net/~mrltapes/>.
- “78 rpm Calibration Disc Set.” *Audio Engineering Society(AES)*. Audio Engineering Society, 2012. Web. 8 Jun 2012. <http://www.aes.org/publications/standards/calibration.cfm>.

Video

	Min Resolution	Min Color Space	Min Bit Depth	Notes
Analog NTSC Video	720 x 486		8	Use 10-bit whenever possible.

	Min Resolution	Min Color Space	Min Bit Depth	Notes
Digital Video Source Tape, where possible to access bits	Native		Native	
Digital Video Source Tape, where not possible to access bits	Decompressed 720 x 486		8 or 10	
Digital Video File	Native			Subject to file format obsolescence evaluation. If deemed obsolete, decompress to 10-bit native raster (horizontal x vertical pixel count).
Video Optical Disc	Native		Native	Reformat to ISO disc image to capture all video, all angles, all subtitle and multiple languages, and menus.

The electronic signal that is video is organized in ways that both facilitate digitization and thwart efforts to do so efficiently. Like film, analog video is divided into discrete elements called frames. The image portion of these frames is further organized into 486 separate horizontal lines. These discrete elements, frames and lines, lend themselves naturally to the discrete nature of digitizing otherwise analog content. Along the lines, however, there is high frequency information modulated (“encoded”) in the electronic signal. In the analog domain this information scans an electron beam across a field of multi-colored phosphors to produce an image on a cathode ray tube (CRT). Video digitization captures 720 pixel elements along each line. In essence, uncompressed video digitization is equivalent to producing 30 TIFFs each second, with a resolution of 720 x 486 and an additional audio track.

The resolution of each pixel falls within a fixed range. As bits are added to resolution, the fixed range is successively subdivided into finer and finer shades and colors. By comparison in audio a bit has a fixed range, 6dB, and the more bits you add the greater the dynamic range. If we have 2 bits of video resolution, we have only black and white values. As we move through 3, 4 and higher resolutions we have finer and finer gradations of gray as well as the extreme values of black and white. In some cases, 8 bits may suffice, but to avoid banding artifacts within the limits of human perception, 10 bits of resolution are required. Static image grayscale scanning works exactly the same way.

Lossy compression is always bad in digitizing analog video. Even “visually lossless” compression is a bad thing. Compression algorithms change over time. The compromises that one compression codec utilizes to fool the eye today may be exaggerated in the codec of tomorrow, yielding visible artifacts. These artifacts will be uncorrelated to the picture making them even more visible and annoying.

Most born-digital video is compressed at inception. As with all born-digital objects an institution must decide if they are going to support that file format and codec or not. If they are, store the digits as they are. If the file format and codec are not going to be supported within the institution’s repository, the file should be decoded/decompressed to a similar frame size and bit depth as the original and captured as an uncompressed video to avoid generational loss.

For more information about digitizing video, please see [“Refining Conversion Contract Specifications: Determining Video Formats for Medium-term Storage,”](#) a white paper commissioned by the Library of Congress on specifications for digitizing video.

Moving Image Film

Film is the last area where there are large numbers of people who believe analog duplication, that is film to film, is the proper form of preservation. Preservation on film is expensive, time consuming, creates hazardous waste and is subject to the same challenges of all analog-to-analog duplication.

There is significant disagreement whether digitization will ever create an appropriate surrogate for film. One side argues it is only a matter of time until the resolution of digitization surpasses the amount of information that can be captured in photographic film. The other side argues digital projection will never match luminesce of light projected through film onto a screen. Digits may capture the information on film, but it will never reproduce the experience of projected film.

We may look back upon two recent events as catalysts for moving into a file-based solution for film preservation. Recently, Kodak filed for bankruptcy and an earthquake in Japan shut down the only factory where HDCAM tape is manufactured. The

demise of Kodak removes a major player in the manufacturer and processing of film. The inability to purchase tape for \$130,000 professional video machines hastened the migration toward file-based workflows. As data storage has become larger and cheaper, the economics of working on computers are fast becoming significantly less than purchasing, handling, editing and storing film.

While major motion picture studios can be expected to continue to do high end color separation, photo-chemical preservation of major films, and to care for the analog preservation work performed to date, the rapidly falling cost and increasing resolution of digitization will make it harder and harder for smaller institutions to justify film-to-film preservation.

The authors feel that there are currently too many unknowns to make a well informed recommendation on digitalizing moving image film at this time.

This topic is discussed in detail in the following document produced by the Academy of Motion Pictures Arts and Sciences:

- “Digital Dilemma 2.” Academy of Motion Picture Arts and Sciences, 2012. Web. 8 Jun 2012. <http://origin-www.oscars.org/science-technology/council/projects/digitaldilemma2/download.php>.

Recommended Minimum Capture Summary

	Min Resolution	Min Color Space	Min Bit Depth	Notes
Books and Textual Based Materials Without Images (non-rare)	300	Gray	8	Capture in color (24 bit) whenever possible. 300-ppi will capture details larger than 1.4 mm at a QI of 8. The resolution may be adequately adjusted according to the largest detail to be represented.
Books and Textual Base Documents With Images (non-rare)	400	Gray	8	Capture in color (24 bit) whenever possible. Fine lines in etchings or other pictorial elements require more definition than text alone. 400-ppi will capture details larger than 1 mm at a QI of 8. The resolution may be adequately adjusted according to the largest detail to be represented.
Manuscripts	400	Color	24	Illegible or difficult to read scripts may require a higher resolution.
Microforms	300	Gray	8	Resolution should be calculated at 100% of the size of the original object. 300-ppi will suffice if the film has innately low resolution (e.g. some newspapers), but microfilm of non-oversize materials should be 400-ppi. Use 16-bit gray if the film is continuous tone or 24-bit color if the film is color.
Rare Books	400	Color	24	
3D Objects	300	Color	24	
Aerial Photographic Prints (<8"x10")	400	Gray	8	Use 24-bit color when appropriate. Resolution is based on the commonly used 4000 pixels along the long edge commonly used for photographic digitization. Use 4000 pixels whenever possible ultimately creating a higher resolution.
Aerial Photographic Prints (8"x10" - 11"x14")	400-600	Gray	8	Use 24-bit color when appropriate. Resolution is based on the commonly used 6000 pixels along the long edge commonly used for photographic digitization. Use 6000 pixels whenever possible ultimately creating a higher resolution.
Aerial Photographic Prints (>11"x14")	600	Gray	8	Use 24-bit color when appropriate. Resolution is based on the commonly used 8000 pixels along the long edge commonly used for photographic digitization. Use 8000 pixels whenever possible ultimately creating a higher resolution.

	Min Resolution	Min Color Space	Min Bit Depth	Notes
Aerial Photographic Film (70mm - 4"x5")	1200-2150	Gray	8	Use 24-bit color when appropriate such as infrared or false color UV. Resolution is based on the commonly used 6000 pixels along the long edge commonly used for photographic digitization. Use 6000 pixels whenever possible ultimately creating a higher resolution.
Aerial Photographic Film (4"x5" - 5"x7")	1200-1600	Gray	8	Use 24-bit color when appropriate such as infrared or false color UV. Resolution is based on the commonly used 8000 pixels along the long edge commonly used for photographic digitization. Use 8000 pixels whenever possible ultimately creating a higher resolution.
Aerial Photographic Film (>5"x7")	1450	Gray	8	Use 24-bit color when appropriate such as infrared or false color UV. Resolution is based on the commonly used 10000 pixels along the long edge commonly used for photographic digitization. Use 10000 pixels whenever possible ultimately creating a higher resolution.
Art on Paper	400	Color	24	
Photographic Film (35mm-4"x5")	800-2800	Gray / Color	8 / 24	Resolution is based on the commonly used 4000 pixels along the long edge commonly used for photographic digitization. Use 4000 pixels whenever possible ultimately creating a higher resolution.
Photographic Film (4"x5" - 8"x10")	800-1200	Gray / Color	8 / 24	Resolution is based on the commonly used 6000 pixels along the long edge commonly used for photographic digitization. Use 6000 pixels whenever possible ultimately creating a higher resolution.
Photographic Film (>8"x10")	800	Gray / Color	8 / 24	Resolution is based on the commonly used 8000 pixels along the long edge commonly used for photographic digitization. Use 8000 pixels whenever possible ultimately creating a higher resolution.
Photographic Prints (<8"x10")	400	Gray / Color	8 / 24	
Photographic Prints (8"x10" - 11"x14")	400-600	Gray / Color	8 / 24	Resolution is based on the commonly used 6000 pixels along the long edge commonly used for photographic digitization. Use 6000 pixels whenever possible ultimately creating a higher resolution.
Photographic Prints (>11"x14")	600	Gray / Color	8 / 24	Resolution is based on the commonly used 8000 pixels along the long edge commonly used for photographic digitization. Use 8000 pixels whenever possible ultimately creating a higher resolution.
Oversize Documents	300	Gray / Color	8 / 24	
Maps	300-600	Gray / Color	8 / 24	600 ppi will capture highly detailed information and good for reprinting and fine quality maps. Lower resolutions may be appropriate if detail is limited (large print, etc...) or will not be printed.
Posters / Broadsides	300	Color	24	The off-set print resolution of posters and broadsides may present screening artifacts creating moiré patterns requiring adjustments.
Audio	96000		24	
Analog NTSC Video	720 x 486		8	Use 10-bit whenever possible.
Digital Video Source Tape, where possible to access bits	Native		Native	

	Min Resolution	Min Color Space	Min Bit Depth	Notes
Digital Video Source Tape, where not possible to access bits	Decompressed 720 x 486		8 or 10	
Digital Video File	Native			Subject to file format obsolescence evaluation. If deemed obsolete, decompress to 10-bit native raster (horizontal x vertical pixel count).
Video Optical Disc	Native		Native	Reformat to ISO disc image to capture all video, all angles, all subtitle and multiple languages, and menus.

Appendix I: File Naming Conventions for Digital Collections

Electronic files should be well organized and named in such a way that they are easily identifiable and accessible. The examples in this appendix center primarily on documents, but the guidelines below can easily apply or be adapted to all file formats. The guidelines are considered best practices, however, not all may be relevant to everyone or every situation. These do provide groundwork for designing a consistent and easy to use file-naming standard when creating digital objects.

- Use only alpha-numeric characters for both files and folders.
 - Exceptions are dashes (-) and underscores (_). Periods (.) should be used to separate the base filename from the file extension.
- Do not use special characters.
 - Examples include, but are not limited to: / > < + = ' ^ | \ { } [] # , ; ? ! \$ * & these characters are used by the operating system.
- Use a valid file extension, which is usually has three and sometimes four characters (i.e. .tif .pdf .html, etc.).
- Do not use spaces in file/folder names – use dashes or underscores instead.
- Use leading zeros.
 - When file names need numbering, use zeros as placeholders. Example – a collection of 900 items should be numbered: abc001.tif, abc002.tif, etc.
 - This will facilitate proper sorting.
- When dates are used, choose a standard format.
 - Example: yyyyymmdd, 20110501 or 2001_05_01
- Be brief! Not all systems are the same, or allow for lengthy file names. Long filenames may prohibit portability.
- File names should contain necessary descriptive information, independent of their storage location.
 - Examples:
 - jones_diary_18900420_0001.tif
 - Not: 00001.tif
- If versioning is needed, include a version numeral.
 - v01, v02, etc.
 - Suggestions: for the final version, include the word “final”, without a version number.

Appendix II: Metadata

Hundreds of metadata standards exist within the broader cultural heritage community. A fantastic overview of these often interrelated standards is available in the new resource, *Seeing Standards, a Visualization of Metadata Universe*⁶. Minimally, this should be basic descriptive and technical metadata collection sufficient to allow retrieval and management of the digital copies and to provide basic contextual information for the user. Additionally, the inclusion of preservation metadata through the use of PREMIS is advisable.

Below are the applicable technical and preservation metadata standards related to these recommendations.

General Standards

- *A Framework of Guidance for Building Good Digital Collections*. 3rd ed. Baltimore: National Information Standards Organization, 2007. Web. <http://www.niso.org/publications/rp/framework3.pdf>.⁷
- "Metadata Encoding and Transmission Standard." Library of Congress, Apr 2010. Web. 11 Jun 2012. <http://www.loc.gov/standards/mets/mets-schemadocs.html>.

Technical

Still Images:

- "Metadata for Images in XML Standard (MIX)." *NISO Metadata for Images in XML Schema*. Library of Congress, 18 May 2008. Web. 8 Jun 2012. <http://www.loc.gov/standards/mix/>.
- NISO Z39.87 2006 (R2011) *Data Dictionary - Technical Metadata for Digital Still Images*. Bethesda: National Information Standards Organization, 2006. Web. [http://www.niso.org/apps/group_public/download.php/6502/Data Dictionary - Technical Metadata for Digital Still Images.pdf](http://www.niso.org/apps/group_public/download.php/6502/Data%20Dictionary%20-%20Technical%20Metadata%20for%20Digital%20Still%20Images.pdf).

Audio:

- *AES Standard for Audio Metadata- audio object structures for preservation and restoration*. New York: Audio Engineering Society, 2011. Web. <http://www.aes.org/publications/standards/search.cfm?docID=8>.
- *AES Standard for Audio Metadata- core audio metadata*. New York: Audio Engineering Society, 2011. Web. <http://www.aes.org/publications/standards/search.cfm?docID=85>.
- "Audio Technical Metadata Extension Schema." Library of Congress, 02 May 2011. Web. 8 Jun 2012. <http://www.loc.gov/standards/amdvmd/audioMD.xsd>.
- "78 rpm Calibration Disc Set." *Audio Engineering Society (AES)*. Audio Engineering Society, 2012. Web. 8 Jun 2012. <http://www.aes.org/publications/standards/calibration.cfm>.

Video:

- "Schema Documentation for videoMD.xsd." Library of Congress, n.d. Web. 8 Jun 2012. <http://www.loc.gov/standards/amdvmd/html/doc/videoMD.html>.

Preservation (PREMIS)

- *PREMIS Data Dictionary for Preservation Metadata*. version 2.2. Washington DC: Library of Congress, 2011. Web. <http://www.loc.gov/standards/premis/v2/premis-2-2.pdf>.
- "PREMIS: Preservation Metadata Maintenance Activity." Library of Congress, 1 Jun 2012. Web. 8 Jun 2012. <http://www.loc.gov/standards/premis/>.
- "Schemas for PREMIS." *PREMIS: preservation metadata maintenance activity*. Library of Congress, 16 May 2012. Web. 8 Jun 2012. <http://www.loc.gov/standards/premis/schemas.html>.

Structural

Still Image:

- *Best Practices for Structural Metadata*. New Haven: Yale University Library, 2008. Web. <http://www.library.yale.edu/dpip/bestpractices/BestPracticesForStructuralMetadata.pdf>.

Descriptive

General:

- *Descriptive Metadata Guidelines*. Mountain View: Research Libraries Group, 2005. Web. http://www.oclc.org/research/activities/past/rlg/culturalmaterials/RLG_desc_metadata.pdf.
- "Dublin Core Metadata Element Set, Version 1.1." *Dublin Core Metadata Initiative*. Dublin Core, 11 Oct 2010. Web. 11 Jun

2012. <http://dublincore.org/documents/dces/>.

- *Guidelines for the Creation of Digital Collections: best practices for descriptive metadata*. Champaign: Consortium of Academic and Research Libraries in Illinois, Web. http://www.carli.illinois.edu/comms/board/Metadata_guidelines.pdf.
- "Metadata Object Description Schema: MODS." Library of Congress, 18 Oct 2011. Web. 11 Jun 2012. <http://www.loc.gov/standards/mods/>.

Still Image:

- *DIG35 Specification: metadata for digital images*. Boynton Beach: Digital Imaging Group, 2001. Web. <http://www.i3a.org/wp-content/uploads/docs/dig35-v1.1.pdf>.

Audio/Visual:

- *Access Options for Embedding Metadata in WAVE Files and Plan the Audio Metadata File Header Tool Development Project*. New York: AudioVisual Preservation Solutions, 2009. Web. http://www.digitizationguidelines.gov/audio-visual/documents/AVPS_Audio_Metadata_Overview_090612.pdf.
- *Embedding Metadata in Digital Audio Files*. Washington DC: FADGI, 2012. Web. http://www.digitizationguidelines.gov/audio-visual/documents/Embed_Guideline_20120423.pdf.
- "Information Technology - MPEG-21 Multimedia Framework." Klagenfurt University, 03 Jan 2005. Web. 11 Jun 2012. http://mpeg-21.itec.uni-klu.ac.at/cocoon/mpeg21/_mpeg21Parts.html.

Appendix III: Storage

There are two kinds of preservationists: those who have lost data and those who will. Losing data isn't in and of itself a crisis. It should be little more than a short term inconvenience. Data can be lost due to four causes: an inability to access the information due to file format obsolescence, corruption of data, failure of the physical carrier, and accidental deletion. File format obsolescence is beyond the scope of this document. For more information on tools for checking a file's viability explore JHOVE, DROID, and PRONOM. The solution to both of the other two cases is to retrieve the data from a second copy. The first action, then of any preservation strategy is to have more than one copy. Ideally that additional copy (or those additional copies) should be geographically isolated, and be on a different storage technology. Examples of two different technologies would be hard disc drives and data tape. A system to manage the data for preservation consists of a method to detect errors due to corruption and errors due to loss, either to erasure or media failure. The next stage is to have a system that both self-monitors and when loss is discovered, automatically replaces the loss.

OAIS describes such a system, including the metadata for discovery and management of the content.

- *Open Archival Information System Reference Model: introductory guide*. Dublin: Online Computer Library Center, 2004. Web. www.dpconline.org/docs/lavoie_OAIS.pdf.
- *Reference Model for an Open Archival Information System (OAIS)*. PINK BOOK: draft recommended standard. Washington DC: Consultative Committee for Space Data Systems, 2009. Web. <http://public.ccsds.org/sites/cwe/rids/Lists/CCSDS6500P11/Attachments/650x0p11.pdf>.

The most widely known implementation of the data integrity management portion of OAIS is LOCKSS. Multiple copies of data are stored in disparate locations, with each node monitoring its own health and reporting to the other nodes. When there is loss, the other nodes provide a replacement copy of the lost or corrupted file. If a node is making frequent requests for replacements it is deemed untrustworthy, administrators are notified automatically, and corrective action is taken. LOCKSS can be installed and configured in less than an hour.

- "LOCKSS: Lots of Copies Keep Stuff Safe." Stanford University, n.d. Web. 8 Jun 2012. <http://www.lockss.org/>.

Preservation systems apply "fixity" values to assure files have not changed, and thereby guarantee authenticity. MD5 and SHA-1 checksums are commonly used fixity algorithms. Any computer file, regardless of size, is fed into the algorithm. It generates a "hash" value. If a single bit, or multiple bits are changed within the file, a different hash value results. Due to a high "avalanche" or "cumulative error", the values are very different due to even a small change; that is, it's easy to tell the hash value has changed. It is theoretically possible for multiple bits to change and the same hash value to result. However, you are 50 million times more likely to be struck by lightning twice than for this to happen. It is possible for two files to have the same hash value, but the probability is very low. The MD5 algorithm has fewer combinations than SHA-1 but

there are still 340,000,000,000,000,000,000,000,000,000,000,000,000,000,000 unique combinations. As a practical matter, the high improbability of accidental hash duplication, combined with the extremely low cost of implementation, makes these fixity algorithms highly useful for preservation.

As defined by the Preservation and Reformatting Section of the American Library Association, a key tenant of digital preservation is migration.

- "Definitions of Digital Preservation." Association for Library Collections and Technical Services, 24 Jun 2007. Web. 8 Jun 2012. <http://www.ala.org/alcts/resources/preserv/defdigpres0408>.

Within the window of obsolescence, typically approximately 5 years, data files are migrated to the next generation of storage technology. At the point of migration you confirm the readability of the media by the act of access the file, verify authenticity with checksums, evaluate the file format obsolescence status using file validation tools, perform authority control on file names and embedded metadata, update metadata and perform preservation file retention actions, update checksums as needed, and copy to new media. As computer processing speeds have gotten faster, only verifying and generating new checksums consume much time. Indeed most of the other actions would not be noticeably slower than a simple file copy.

If all you do is copy your master files to another storage medium, by having a second copy in storage at another location, you will have performed an important first step in digital preservation. This first step is more important than having a fully deployed OAIS environment. But it is only the first step.

By exploring the Weblinks and terms above you can find many resources to learn and implement these strategies.

Appendix IV: Institutional Guidelines

- **Bibliographical Center for Research** - Audio, Artwork, Graphic Art, Text Documents, Maps, Photographs, 3D Objects
<http://www.bcr.org/cdp/best/digital-imaging-bp.pdf>
<http://www.bcr.org/cdp/best/digital-audio-bp.pdf>
- **California Digital Library** - Aerial Photographs, Color Documents, Manuscripts, Photographs, Text Documents, 3D objects
http://www.cdlib.org/services/dsc/tools/docs/cdl_gdi_v2.pdf
- **Columbia University** - Illustrations, Transparencies, Manuscripts, Maps, Microfilm, Photographs, Pictorial Materials, Printed Text, 3D Objects
<http://www.columbia.edu/acis/dl/imagespec.html>
- **Cornell University** - Artworks, Graphic Art, Manuscripts, Maps, Microfilm, Photographs, Printed Text, Rare Books, Transparencies
<http://www.library.cornell.edu/imls/image%20deposit%20guidelines.pdf>
<http://www.library.cornell.edu/preservation/tutorial/conversion/table3-1.html>
- **Digital Library Federation** - Color Documents, Illustrations, Printed Text
<http://www.diglib.org/standards/bmarkfin.htm>
- **Digital Library of Georgia** - Manuscripts, Photographs, Printed Text
<http://dlg.galileo.usg.edu/guide.html#04>
- **Digital Library of the Caribbean** - Graphic Art, Manuscripts, Maps, Oversize Documents, Photographs, Printed Text
<http://ufdc.ufl.edu/design/aggregations/dloc/training/en/Section6.pdf>
- **Federal Agencies Digitization Guidelines Initiative** - Artworks, Aerial Photographs, Color Documents, Film, Illustrations, Photographs, Printed Text, 3D Objects
http://www.digitizationguidelines.gov/guidelines/FADGI_Still_Image-Tech_Guidelines_2010-08-24.pdf
- **Government Publications Office** - Film, Illustrations, Photographs, Printed Text
<http://www.gpoaccess.gov/legacy/registry/DigitizationSpecification3.0.pdf>
- **Historical Voices** - Audio
http://www.historicalvoices.org/papers/audio_digitization.pdf

- **Indiana University** - Audio
http://www.dlib.indiana.edu/projects/sounddirections/papersPresent/sd_bp_07.pdf
- **International Association of Sound and Audiovisual Archives** - Audio
http://www.iasa-web.org/downloads/publications/TC03_English.pdf
- **Johns Hopkins University** - Audio, Illustrations, Manuscripts, Photographs, Printed Text, Video
<http://www.library.jhu.edu/collections/institutionalrepository/irpreservationpolicy.html#Standards>
- **Library of Congress** - Audio, Graphic Art, Illustrations, Manuscripts, Maps, Microfilm, Music Scores, Photographs, Printed Text, Rare Books
<http://memory.loc.gov/ammem/about/standardsTable1.pdf>
<http://www.loc.gov/rr/mopic/avprot/audioSOW.html>
<http://memory.loc.gov/ammem/dli2/html/document.html#page>
http://www.loc.gov/ndnp/pdf/NDNP_200911TechNotes.pdf
- **Memory of the Netherlands Project** - Audio, Color Documents, Illustrations, Microfilm, Moving Images, Printed Text, Video
<http://www.kb.nl/coop/geheugen/extra/downloads/Richtlijnen%20en%20procedures%20%204.0%20english.pdf>
- **Michigan State University** - Audio
http://www.historicalvoices.org/papers/audio_digitization.pdf
- **National Anthropological Archives** - Images (General)
http://voom.si.edu/anthro/imaging_standards.htm
- **National Archives and Records Administration** - Aerial Photographs, Color Documents, Manuscripts, Oversize Materials, Photographs, Printed Text, Pictorial Materials
<http://www.archives.gov/preservation/technical/guidelines.pdf>
- **National Library of Australia** - Artworks, Color Documents, Illustrations, Manuscripts, Maps, Microfilm, Music Scores, Photographs, Printed Text, Transparencies
<http://www.nla.gov.au/digital/capture.html>
- **New York State Archives** - Color Documents, Illustrations, Photographs, Printed Text
http://www.archives.nysed.gov/a/records/mr_erecords_imgguides.pdf
- **New York University** - Audio, Video
<http://www.nyu.edu/its/humanities/ninchguide/VII/>
<http://aic.stanford.edu/sg/emg/library/pdf/mcdonough/McDonough-EMG2004.pdf>
- **New Zealand Archives** - Illustrations, Microfilm, Photographs, Printed Text
<http://continuum.archives.govt.nz/files/file/standards/s6/s6-app5.html>
- **NISO Framework Working Group** - Audio, Illustrations, Manuscripts, Moving Image Film, Oversize Documents, Photographs, Printed Text, Video
<http://www.niso.org/publications/rp/framework3.pdf>
- **Oxford University** - Color Documents, Manuscripts, Paintings, Photographs, Printed Text, Rare Books, Transparencies
<http://www.odl.ox.ac.uk/papers/odlprice.pdf>
- **Penn State University** - Color Documents, Illustrations, Printed Text
<http://www.libraries.psu.edu/psu/digipres/bestpractices.html>
- **Rutgers University** - Audio, Color Documents, Photographs, Printed Text, Video
http://rucore.libraries.rutgers.edu/collab/ref/dos_avwg_video_obj_standard.pdf
http://rucore.libraries.rutgers.edu/collab/ref/dos_repteam_digitization_of_analog_formats.pdf
http://rucore.libraries.rutgers.edu/collab/ref/dos_avwg_audio_obj_standard.pdf
- **Smithsonian Institution Archives** - Images (General)
http://siarchives.si.edu/records/electronic_records/records_erecords_digitization_images.html

- **Stanford University** - Audio, Video
<http://lib.stanford.edu/node/8544/moving-image-digitization>
<http://lib.stanford.edu/node/8544/audio-digitization>
- **State Library of Queensland** - Audio, Images (general), Video
http://www.slq.qld.gov.au/_data/assets/pdf_file/0009/139815/SLQ-DS2Capture_v2.05.pdf
- **University of California, Berkeley** - Imaging (general)
http://www.lib.berkeley.edu/LSO/digital_imaging_best_practices
- **University of Illinois at Urbana-Champaign** - Artworks, Illustrations, Manuscripts, Maps, Microfilm, Photographs, Printed Text
<http://images.library.uiuc.edu/resources/digitalguidev3.pdf>
- **University of Maryland Libraries** - Artworks, Audio, Graphic Arts, Illustrations, Manuscripts, Photographs, Printed Text, Rare Books, Transparencies
http://www.lib.umd.edu/dcr/publications/best_practice.pdf
- **University of Michigan** - Illustrations, Photographs, Printed Text
<http://www.lib.umich.edu/files/UMichDigitizationSpecifications20070501.pdf>
<http://www.lib.umich.edu/lit/dlps/dcs/UMichDigitizationSpecifications20070501.pdf>
- **University of Southern California** - Audio, Microfilm, Photographs, Printed Text, Video
http://www.usc.edu/libraries/collections/digitallibrary/documents/USCDL_Formats_and_Resolutions.pdf
http://www.usc.edu/libraries/collections/digitallibrary/documents/USCDL_Audiovisual_Digitization_Overview.pdf
- **University of Southern Mississippi Libraries Digital Program** - Images (General)
<http://www.lib.usm.edu/legacy/spcol/crda/guidelines/index.html>
- **University of Virginia** - Images (General)
<http://guides.lib.virginia.edu/digitization-guidelines>
<http://etext.lib.virginia.edu/services/helpsheets/scan/specscan.html>
- **University of Wisconsin** - Audio
<http://uwdcc.library.wisc.edu/documents/AudioWorkflow.pdf>
- **Yale University** - Audio, Graphic Arts, Maps, Photographs, Printed Text
http://www.yale.edu/digitalcoffee/downloads/DigitalCoffee_SharedPractices_%5Bv1.0%5D.pdf

Notes

1. Pixels per inch. There is frequently confusion between PPI and DPI (dot per inch). A pixel is a representation on a computer screen; this pixel can be of any color. A dot references how something is printed. A printer has a limited amount of colors (usually three plus black) that need to be mixed in different ratios to create other colors. Since this document discusses capturing images and not printing them, it uses PPI. [\[return to text\]](#)
2. The University of Pennsylvania provided the images used in the examples. A special thanks to Chris Lippa for having the materials photographed to the specifications required to make the examples. [\[return to text\]](#)
3. Actual size will depend on the screen settings. The original size of each example is 1" high. If you adjust your monitor's pixel density to 96ppi, the examples should be at the intended sizes. Otherwise, you can measure the height of the example and square it to determine the magnification. For example, if the example measures 3" high, it has been magnified 9x. [\[return to text\]](#)
4. The embedded images are close approximations because of the limits of the presentation software. The original images are available for download for reference of exact differences. [\[return to text\]](#)
5. It may be interesting to note that standard student microscopes, with the three swivel lenses, usually have powers of 40x, 100x, and 400x. One can easily see many plant and animal cells at 100x magnification. An internet search will show many examples. [\[return to text\]](#)
6. Riley, Jenn. *Seeing Standards: A Visualization of the Metadata Universe*. 2009-2010. <http://www.dlib.indiana.edu/~jenlrile/metadatamap/>. [\[return to text\]](#)

7. A new version of this publication is being compiled. [\[return to text\]](#)

Source Information

Minimum Digitization Capture Recommendations

1. American Library Association
2. <http://www.ala.org/alcts/resources/preserv/minimum-digitization-capture-recommendations>
3. No cost, "Permission to use, copy and distribute documents delivered from this website and related graphics is hereby granted for private, non-commercial and education purposes only..."

4.2: Public Library Partnerships Project Workshop Curriculum

Through the Public Library Partnerships Project (PLPP), DPLA has been working with existing DPLA Service Hubs to provide digital skills training for public librarians and connect them sustainably with state and regional resources for digitizing, describing, and exhibiting their cultural heritage content.

During the project, DPLA collaborated with trainers at Digital Commonwealth, Digital Library of Georgia, Minnesota Digital Library, Montana Memory Project, and Mountain West Digital Library to write and iterate a workshop curriculum based on documented best practices. Through the project workshops, we used this curriculum to introduce 150 public librarians to the digitization process.

Now at the end of the project, we've made this curriculum available in a self-guided version intended for digitization beginners from a variety of cultural heritage institutions. Each module includes a video presentation, slides with notes in Powerpoint, and slides in PDF. Please feel free to share, reuse, and adapt these materials.

• Curriculum

- [Planning for Digitization](#)
- [Selecting Content for a Digitization Project](#)
- [Understanding Copyright](#)
- [Using Metadata to Describe Digital Content](#)
- [Digital Reformatting and File Management](#)
- [Promoting Use of Your Digital Content](#)

These modules follow the flow of the digitization process and each is presented by different members of the curriculum writing team. Many thanks to the hubs who collaborated to develop and test this curriculum, the PLPP participants for providing us with feedback on how to improve it, and the Bill & Melinda Gates Foundation for its generous funding.

To learn more about the Public Library Partnerships Project, please visit our [project page](#) or email franky@dp.la.

Source Information

Public Library Partnerships Project Workshop Curriculum

1. Digital Public Library of America
2. <https://dp.la/news/new-self-guided-curriculum-for-digitization/>
3. CC BY-NC 4.0

5: DIVERSITY IN LIBRARY COLLECTIONS

5.1: Creating a Social Justice Mindset: Diversity, Inclusion, and Social Justice in the Collections Directorate of the MIT Libraries

5.2: The Importance of Diversity in Library Programs and Material Collections for Children

5.3: Diverse Collections: An Interpretation of the Library Bill of Rights

5.4: Equity, Diversity, Inclusion: An Interpretation of the Library Bill of Rights

5.1: Creating a Social Justice Mindset: Diversity, Inclusion, and Social Justice in the Collections Directorate of the MIT Libraries

Creating a Social Justice Mindset: Diversity, Inclusion, and Social Justice in the Collections Directorate of the MIT Libraries

February 9, 2017 Report of the Collections Directorate Diversity, Inclusion, and Social Justice Task Force:

- Michelle Baildon, Collections Strategist for Arts & Humanities (Scholarly Communications & Collections Strategy); Science, Technology, & Society (STS) Librarian (Liaison, Instruction, & Reference Services)
- Dana Hamlin, Project Archivist (Institute Archives & Special Collections)
- Czeslaw Jankowski, Tangible Serials Acquisitions Assistant (Acquisitions & Discovery Enhancement)
- Rhonda Kauffman, Bibliographic Metadata Associate (Acquisitions & Discovery Enhancement)
- Julia Lanigan, Collections and Administrative Assistant (Scholarly Communications & Collections Strategy)
- Michelle Miller, Administrative Assistant (Acquisitions & Discovery Enhancement)
- Jessica Venlet, Library Fellow for Digital Archives (Institute Archives & Special Collections), now at UNC Chapel Hill
- Ann Marie Willer (convener), Preservation Librarian (Acquisitions & Discovery Enhancement)

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Bibliography

Appendix

The Collections Directorate of the MIT Libraries sponsored a task force to identify opportunities for archives, technical services, preservation, scholarly communication, and collections strategy staff to manifest the values of diversity, inclusion, and social justice in their daily work. Convening March–October 2016, the task force used the following as the guiding principle in our work:

[The] future of academic libraries [is] where librarians confront and creatively address the lack of racial and ethnic diversity

within our profession and actively pursue a social justice agenda within our libraries and in the communities we serve. This future requires that we acknowledge that many of our current practices reinforce existing structures of inequity and privilege, and that we leverage our services and resources to support, document, and encourage diversity and social justice efforts within librarianship and society.¹

Below, the Collections Directorate Diversity, Inclusion, and Social Justice (DISJ) task force describes some of the overarching social and economic contexts for academic libraries, as well as the core professional values that guide us, and offers recommendations to the Directorate for operationalizing the values of diversity, inclusion, and social justice. The task force aims to demonstrate, through our recommendations, how DISJ values might guide every aspect of our work. We look forward to working together to foster a social justice mindset throughout the MIT Libraries' Collections Directorate.

The Big Picture: Some Contexts of Our Work

Our work at the MIT Libraries is not separate from the large-scale economic, socio-political, and cultural structures and forces that shape contemporary life. These structures and forces are grounded in ideologies that are pervasive to the point of near-invisibility. At the same time, librarians and archivists operate under a set of professional values that provide us with guidance as we respond to these forces, as well as some assumptions that hinder our ability to engage effectively with them.

Economics: Neoliberalism, the Corporatization of Academic Libraries, and the Commercialization of Scholarly Publishing

Neoliberalism is an economic and political ideology that frames all aspects of our society in terms of market exchange, foregrounding the role of the individual as a market actor. Over the past several decades, neoliberalism has become a dominant perspective that is transforming higher education, as well as other social, political, and cultural institutions.

There is a growing professional conversation about the challenges and threats that neoliberalism poses to core values of higher education, libraries, and archives. In a 2014 blog post, Chris Bourg quotes Daniel Saunders' definition of neoliberalism as:

a varied collection of ideas, practices, policies and discursive representations ... united by three broad beliefs: the benevolence of the free market, minimal state intervention and regulation of the economy, and the individual as a rational economic actor.²

As Bourg describes it, neoliberalism "includes the extension of market language, metaphors, and logic into non-economic realms," including into higher education. This is exemplified by a shift in higher education away from the goal "to promote a healthy democracy and an informed citizenry," and toward the commodification of education as a private good, providing "marketable skills" and supporting corporate interests through the creation of new workers.³ With respect to academic libraries, the neoliberal influence is evident in such developments as corporate monetization of resource access and sharing, patron-driven acquisitions, and the 4 emphasis on monetary return on investment (ROI).⁵

A related development is the increasing reliance by academic libraries on corporate solutions for many of our basic functions. Over the past two decades, the balance of library collecting has shifted significantly towards electronic information, and the accompanying issues of digital infrastructure and copyright have disrupted many well-established library activities. For instance, in the digital age libraries have moved from sale and ownership to licensing and access of information, threatening the doctrine of first sale, the basis for library lending. In addition, in a 6 departure from the print-based model of library-created catalogs and library-maintained stacks, we lack the resources to develop analogous homegrown online systems. From the integrated library system (ILS) to discovery layers to e-journal packages, libraries require the ongoing mediation of corporations to provide standard collections and services.

The dysfunctions of the scholarly communication marketplace have their basis in the commercialization of scholarly publishing. The commercialization of both for- and non-profit publishing, as described on the Association of Research Libraries (ARL) website, "has led to egregious price increases and unacceptable terms and conditions of use for some key research resources needed by the scholarly community." In addition to prices inflated far above cost, 7 bundled site licenses (i.e., the "Big Deal") and the reduction of competition through mergers and 8 consolidations are cited by economist Ted Bergstrom as ways commercial publishers have "capitalized on... inelastic demand." Expensive subscription packages from publishing 9 conglomerates dominate library budgets, leaving little flexibility to add new subscriptions from, for example, independent publishers. The great cost of these packages results in access to journals exclusively for those fortunate enough to be affiliates of well-funded universities. These publishers, moreover, claim property rights on the articles that are written, edited, refereed, and read by academic authors

who expect no profit from their work. Barbara Fister warns that we are headed towards “a world in which knowledge is turned into intellectual property, monetized, and made artificially scarce.” This scarcity turns knowledge into “an expensive commodity” that forms the basis of publishers’ immense profit margins while libraries struggle to cover the costs. ¹⁰

Systems of Oppression and Privilege

American society is structured around systems of oppression and privilege that disempower or elevate people according to social and cultural categories such as race, gender, religion, sexual orientation, gender expression, class, and ability. We are likewise situated within global structures of power that have their origins in histories of racialized imperialism, war, and economic exploitation.

Our profession and our specific workplace exist within these contexts of structural inequities and cultural representations, and in fact may serve to reproduce them. In higher education, we see 11 disparities in access at every level by members of marginalized groups (e.g., admission, readiness, hiring, promotion, and inclusion on campus). In publishing and other modes of cultural expression, we see disparities in access by authors and creators to scholarly, popular, and literary publication and media production, as well as disparities in representation.¹²

These systems of oppression introduce (often unconscious) biases into our individual work and behavior. As Chris Bourg has noted, “Librarians [need] to understand the ways in which structural discrimination and inequality (systemic racism, white privilege, heteronormative patriarchy, etc.) operate and how they affect not only our patrons but also the ways in which information is created, distributed, organized, and accessed.” For example, cataloging and 13 archival description are key to the discoverability of information resources, but biases in Library of Congress Subject Headings and other controlled vocabularies have been noted since Sanford Berman’s pioneering work in the 1970s. The way we categorize materials communicates our 14 biases and judgments to our users and limits the accessibility of information. We would expect similar unconscious biases to affect, for example, how a vendor profiles a book, how a selector evaluates a possible new resource, or how we decide to acquire, retain, or preserve specific collections.¹⁵

Values and Ethics of Libraries and Archives

Librarians and archivists are driven not only by practical and local concerns, but also by ideals embodied in professional statements of values and ethics. As stated in the American Library Association’s Core Values of Librarianship and in the Society of American Archivists’ Core 16 Values Statement and Code of Ethics, these values include access, accountability, advocacy, 17 confidentiality/privacy, democracy, diversity, history and memory, intellectual freedom, the public good, preservation, responsible custody, service, and social responsibility.

Our professional values place us in opposition to the systems of oppression and privilege described above. For example, a commitment to diversity and social responsibility demands that we attempt to counteract and ameliorate inequities of access to education and publication based on factors such as race, gender, religion, language, and global wealth disparities. Commitment to democracy and preservation demands that we reckon with the implications of the corporate provision of digital information for libraries’ commitment to access and stewardship. Commitment to the public good demands that we resist the over-commodification of information and the exploitation of intellectual property by corporations.¹⁸

Neutrality

As we confront the ways the library and archives professions have been shaped by—and have reinforced and reproduced—neoliberal values and structures of oppression, we must resist long-standing self-perceptions of librarians and archivists as “neutral.” Neither our repositories, ¹⁹ nor our professional practices, nor ourselves as individual practitioners are able to achieve neutrality.²⁰

Journalism professor Robert Jensen’s 2004 piece “The Myth of the Neutral Professional” argues that all situations entail a distribution of power, and the choice to overtly endorse or contest that distribution is clearly not neutral. We must, however, also understand that “to take no explicit position by claiming to be neutral is also a political choice.” In other words, all settings are ²¹ structured by power imbalances, and a position of “neutrality” will inevitably serve to maintain existing power structures.²²

Chris Bourg notes,

Our traditional practices and technologies are not neutral, and without active intervention we end up with collections that

lack diversity and we end up classifying and arranging our content in ways that further marginalizes works by and about people of color, queer people, indigenous peoples, and others who don't fit neatly into a classification system that sets the default as western, white, straight, and male.²³

Indeed, embracing the ideology of “neutrality” ensures a passive approach to inequities that will perpetuate the status quo.²⁴

Outside of our Scope

In addition to the issues of economic and socio-political justice discussed above, the DISJ task force considered issues of environmental justice, privacy, and intellectual freedom. These are important issues that informed our thinking, but we did not systematically explore them as part of our charge.

Definitions

The ways that people understand the terms “diversity,” “inclusion,” and “social justice” are themselves diverse, but the work of our task force required the foundation of shared definitions. After brainstorming and discussion informed by others’ definitions of the terms, we agreed on the draft definitions below. The definitions should be considered together, with each subsequent definition building on and sharpening the previous one.

- **Diversity** simply means difference. It is the heterogeneity found in the composition of the workforce, our collections, and community.
- **Inclusion** means creating and actively sustaining an organization and community in which all can participate fully, be respected, and be treated in an equitable manner.
- **Social justice** is a commitment to recognizing, addressing, and correcting systemic power imbalances that privilege one group at the expense of another. It is based on the premise that all people are of equal and incalculable value. The work of social justice ²⁵ includes individual and collective action to disrupt the patterns and structures of power in our community, organization, culture, and society.

We propose that the Collections Directorate—or the MIT Libraries and MIT Press, perhaps via the Libraries’ Committee for the Promotion of Diversity and Inclusion—refine these definitions so that the entire organization has a shared understanding of these terms.

Process

The DISJ task force met from March through October 2016. Task force members met regularly, conducted a literature search, and attended conferences and webinars related to their charge. In addition, DISJ met with stakeholders Associate Director Greg Eow (task force sponsor), Director of Libraries Chris Bourg, and the Libraries’ Committee for the Promotion of Diversity and Inclusion.

DISJ gathered feedback from members of the Directorate in several ways. First, we held two feedback forums (open to anyone in the Directorate; 38 attendees in total), in which we provided a summary of our work thus far, shared our draft definitions, outlined our remaining work, answered questions, listed related readings, and asked for input on ways our Directorate could manifest the values of diversity, inclusion, and social justice in our daily work.

Second, we followed up on the feedback forums with facilitated discussions with each department (Acquisitions and Discovery Enhancement, Institute Archives & Special Collections, and Scholarly Communications & Collections Strategy) at a department meeting. During these meetings, one DISJ member took notes while another facilitated a 20-50 minute discussion of specific ideas and strategies for integrating DISJ into that department’s work. To encourage a more intimate conversation among members of the largest department (Acquisitions and Discovery Enhancement [ADE], 28 people), DISJ members led facilitated discussions with each ADE unit at a team meeting (three groups in total: Tangible Formats, Digital Collections & Reformatting, and E-Resources). Lastly, DISJ created, publicized, and monitored an anonymous online feedback form using Google Forms.

The task force felt it was important to share our work within our professional networks. Our poster sessions were accepted by the National Diversity in Libraries conference, “Collaborating for MIT’s Future,” and the New England Library Association, and we are organizing a program for the 2017 American Library Association annual conference.

We anticipate that following receipt of our report, the Collections Directorate Leadership group (CDL) will work as a team to

identify inclusive processes by which their respective departments and programs will choose strategies to be piloted and/or implemented during FY17 and beyond. Cross-departmental collaboration will be necessary to achieve our goals. There are several ideas that are in process or that we are close to doing, or that can be implemented thoroughly with minimal resources; these are the ones that CDL could choose to act upon immediately. We recommend that a plan for periodic reporting and year-end assessment of these efforts be outlined. MIT is known for problem-solving and ingenuity, and the Libraries are no stranger to creative and community-driven solutions. We believe strongly in the ability of the Libraries staff and administration to continue and expand initiatives that encourage diversity, inclusion, and social justice.

Strategies and Ideas

The task force identified broad areas in which the MIT Libraries could advance the values of diversity, inclusion, and social justice: (1) our impact on MIT students, how they interact with the world, and how they learn what they need to know in this world; (2) our impact on the scholarly publishing and academic library marketplace; and (3) our impact on posterity and the scholarly, cultural, and historical record. As we began drafting our report, we added the realm of influence on the communities to which the MIT Libraries belong, including our local, global, and professional communities.

The strategies and ideas below are the task force's suggested responses to the challenges and problems articulated in the earlier "Context" section.

- **Section 1:** The scholarly publishing and academic library marketplace includes responses to the problems outlined in "Economics."
- **Sections 2 and 3:** Representation of marginalized perspectives and Community inclusion and outreach include responses to the problems outlined in "Structures of Oppression and Privilege." The former emphasizes the ways structures of power shape publishing and cultural production as well as many of our professional practices. The latter emphasizes the ways structures of power are manifested in the status and condition of people who are members of the communities to which MIT Libraries belong.
- **Section 4:** Building organizational infrastructure for diversity, inclusion, and social justice addresses the kind of organization we must build in order to carry out the actions described in the three preceding sections.

The strategies and suggestions that follow vary in size and scope. Combined with the Appendix, they represent all of the ideas gathered from the task force, the feedback forums, the online form, the department meetings, and the unit meetings.

We acknowledge that MIT Libraries staff have limited time to complete their current workloads. Some of the strategies and ideas below require additional resources (time, money, and/or staff) that are also limited. The culture of efficiency that permeates many of the Collections Directorate workflows, in addition to periodic budget cuts, has led us to adopt time- and money-saving processes that reduce our ability to make socially responsible decisions about our work. In light of these constraints, CDL will need to work collaboratively to determine which initiatives should be prioritized across the Directorate.

1. The Scholarly Publishing and Academic Library Marketplace

In this section, the task force enumerates strategies for addressing problems in academic libraries' marketplace(s), as well as the intrusion of market logic and corporate interests into higher education and academic libraries.

Earlier in this report, we sketched out some broad challenges for academic libraries posed by neoliberalism and the related developments of the corporatization of academic libraries and the commercialization of scholarly publishing. As we have argued, these changes in the marketplace, which are intertwined with developments in digital technology, destabilize many of the functions central to libraries' purpose and mission. These challenges are difficult to meet by institutions acting alone, and we look forward to collaborations by MIT Libraries within Ivies Plus, ARL, and other consortia and associations.

The task force recognizes that one of the main ways the Directorate will address these issues is through the newly established Scholarly Communications and Collections Strategy (SCCS) department, which is dedicated to transforming scholarly communication toward openness and increased access and is guided by the values of open access, diversity, and social justice. Open access (OA) provides a much needed alternative to the dysfunctions of the economics of the current publishing system, and as a movement has intrinsically liberatory aspects, both in intent and effect. But we must also take into account critiques of OA as a neo-colonial practice, acknowledging the danger of focusing on access but not participation. Our goal should be equitable global scholarly exchange rather than one-way bestowal of knowledge from the Global North to the Global South.²⁸

We encourage the Collections Directorate to embrace the identity of the library as a cultural institution with a larger purpose than serving as a “purchasing agent” for our campus. Although 29 many libraries are understandably focused on issues of efficiency and cost-effectiveness, a values-driven organization cannot rely exclusively on a transactional approach. A more expansive approach recognizes that price is not the same as cost, and a reduction in price can come at the cost of diversity, inclusion, and social justice.³⁰

Suggested Strategies

- 1.1. Review collection philosophy and collection development policies to ensure sufficient coverage of materials intended not only to prepare our students for professional life (private good) but also to help them become responsible global citizens (public good). This would include works that focus on ethics, values, and social and political concerns through a critical lens.
- 1.2. Evaluate the implications and impacts of MIT Libraries’ business decisions under the framework of our values, including diversity, inclusion, and social justice. MIT’s global renown gives the Libraries leverage when negotiating with vendors or approaching them about their practices’ alignment (or misalignment) with these values (e.g., a vendor’s sustainability or labor practices). Consider how MIT Libraries’ business decisions might impact other institutions, the marketplace, and the environment.
- 1.3. Support diversity in the marketplace by identifying alternative vendors (e.g., womenor minority-owned businesses) for materials and services of all kinds, from collections to catering to office supplies.
- 1.4. Combat the commercialization and homogenization of tools created for library and archives access and management by promoting and adopting open-source tools.
- 1.5. Continue to consider the Big Deal, publisher e-book packages, and patron- or demand-driven acquisitions critically and with circumspection, taking into account the risks in ceding collection-building to commercial entities, as well as the role of library selection in building diverse and inclusive collections.
- 1.6. Understand both the utility and the limitations of quantitative measures of collections assessment, such as circulation and usage stats and cost per use, and leave room for values-based evaluation and the role of professional and subject expertise in collections decisions.
- 1.7. Explore ways to use licensing to advance diversity, inclusion, and social justice objectives beyond/in addition to those related to openness of scholarly publishing (e.g., negotiate for universal design/accessibility and patron privacy in addition to author rights and fair business terms).
- 1.8. Maintain an expansive view of copyright issues relevant to the MIT Libraries, focusing on not only author rights and fair use, but also on fundamental questions of digital copyright, such as DRM, the doctrine of first sale, and licensing vs. ownership.
- 1.9. Promote and provide access to open access materials through Barton, Vera, and BartonPlus, for example by cataloging OA material and by listing OA access first when multiple access routes are available.

2. Representation of Marginalized Perspectives

As described above, the work of academic libraries has been shaped by homogenous, heteronormative standards of practice created by majority voices. Even with mandates from professional organizations to provide diverse materials that “actively document those whose voices have been overlooked or marginalized” regardless of “origin, background, or views of 31 those contributing” the information, many voices continue to be marginalized. 32 33

Furthermore, the current publishing stream favors the majority voice of white men and is 34 characterized by an “unequal distribution of power in knowledge production and dissemination” between the Global North and the Global South. In order to disrupt this stream and incorporate 35 non-majority voices, we must deliberately acquire materials through non-traditional publication channels.

Here at MIT, members of the campus community come from all over the world, representing nearly 130 countries. With 47 percent of undergraduates and 18 percent of graduate students at MIT identifying as members of U.S. minority groups, and international students consisting of 10 and 42 percent of the undergraduate and graduate populations respectively, it is imperative that MIT’s library collections represent these populations.³⁶

By acknowledging and disrupting the lack of recognition and representation of non-majority points of view, we can begin to manifest our professional values in the services we provide.

Suggested Strategies

- 2.1. Update our collection philosophy and collection development policies to reflect a concerted effort to collect works by and records of diverse groups and voices, including material in languages other than English.
- 2.2. Consider taking the American Library Association's "Our Voices" pledge and use that initiative's templates to build "distinguished collections of diverse, quality, locally produced literature" at the MIT Libraries.³⁷
- 2.3. Review current monograph approval plans from the point of view of unconsciously biased profiling as well as exclusion of small presses. Engage vendor in a discussion of findings.
- 2.4. Because marginalized groups have not had equal access to traditional publishing streams, ensure that the format of materials does not create unnecessary barriers to their acquisition and preservation. Accept unusual formats, including ephemera such as posters, zines, and postcards, as well as student-created objects and hacks.
- 2.5. Identify alternative publication outlets for materials by self- and independently published authors.
- 2.6. Actively acquire MIT publications and archival materials that capture the student experience and student and social movements at MIT (e.g., student organizational records, protests, and fliers).
- 2.7. Counteract the systemic lack of access to publishing by marginalized groups by providing targeted workshops to MIT students who are members of those groups (e.g., women students and students of color), offering foundational knowledge about the scholarly publishing landscape, its processes, and assumptions.
- 2.8. The MIT Libraries uses the Library of Congress Subject Headings (LCSH) and Names Authorities, yet these have a history of biases against underrepresented groups that include using pejorative terms and Anglicizing names. The MIT Libraries ³⁸ should strive to use inclusive terms and methods in its work.
 - 2.8.1. Continue to suggest and create new Library of Congress Subject Headings and Authority records using non-Anglicized forms of names and within-group vocabularies.³⁹
 - 2.8.2. Following the lead of academic research universities such as Harvard and Columbia, accept vocabularies other than the Library of Congress into the library catalog. This includes the familiar Getty Thesauri (Art & Architecture Thesaurus and the Getty Thesaurus of Geographic Names), as well as those in the Open Metadata Registry.⁴¹
 - 2.8.3. Investigate using tags or terms for archival and special collections in ArchivesSpace (e.g., "women in science" and "technology in Latin America") to allow users/researchers to more easily discover collections by and about marginalized voices.
 - 2.8.4. Make our metadata more widely available for use and reuse by using linked open data in metadata creation as our catalog and metadata infrastructure evolve.
- 2.9. Address the long-standing bias against non-English language material—resulting in their deprioritization and inequitable handling—in order to promote the representation of marginalized voices.
 - 2.9.1. Hire administrative and/or support staff who specialize in both CJK (Chinese, Japanese, and Korean) and Middle Eastern languages to address the need for this expertise—and the current skill deficit—in collection development, acquisitions, and cataloging.
 - 2.9.2. Incorporate non-English-language materials into the daily production-oriented workflows of technical services, with priority equivalent to English-language materials.
- 2.10. Actively showcase and publicize general and special collections that are authored by, or that focus on, marginalized voices, such as LGBTQ persons and African-American women. For example, host physical and digital exhibits featuring these collections and make use of social media to promote them.
- 2.11. Establish small grants or scholarships that support faculty, students, or outside researchers conducting work with these collections.

2.12. To foster a truly global scholarly communication system founded on equitable knowledge exchange, support publications (OA and pay-for-access) from the Global South and other regions underrepresented in scholarly publishing.

2.12.1. Allocate additional resources for the acquisition of international scholarly publications.

2.12.2. Because of the challenge for many authors worldwide in funding article processing charges (APCs), contribute to efforts that explore other means to fund OA publication.

2.12.3. Explore international resource and gifts exchange programs, especially with countries and organizations that presently lack access and resources.

3. Community Inclusion & Outreach

Despite following well-intentioned professional guidelines, library and archives staffs have historically collected materials from within the dominant culture and have neglected—and at times silenced—alternative narratives and nondominant voices. This, together with the fact that the MIT Libraries does not (yet) reflect the diversity of the community we serve, makes building trust and maintaining transparency critical aspects of our outreach efforts.

The strategies listed below articulate the ways that Collections staff can build that trust and identify and meet the information needs of diverse community members. Our community outreach should be extended to the MIT community, to the cities and towns that surround our campus, to other institutions and professional associations, and to subgroups of marginalized members of any of these communities.

The recently released Future of Libraries Task Force report states that our “overarching vision is that the MIT Libraries embrace and accelerate their transformation from a local portal to a global platform” and that we “conceive of our community as a global one, embracing openness, diversity, global social justice, and critical thinking with those communities.” Our task force 42 shares this vision and encourages staff to take seriously our individual and collective influence on the global scholarly community, while we also continue our “exemplary service to local communities of learners, scholars, and information seekers.”⁴³

Suggested Strategies

3.1. Partner with members and groups within the MIT community to (1) assess and meet their information needs and (2) welcome their input about our collections and services.

3.1.1. Build relationships with student affinity groups and Employee Resource Groups. This could include hosting public forums to foster continued 44 conversation, publicizing the “Suggested Purchase” program, and soliciting input for building collections.

3.1.2. Devise a plan to better understand the community’s needs for non-English language materials, including research resources, educational material such as textbooks, and leisure, personal enrichment, and wellness material (e.g., MIT’s MindHandHeart grant-funded collection).⁴⁵

3.1.3. In order to equalize student access to required course materials, update collection development policies to include increased purchasing of textbooks.

3.1.4. Incorporate universal design/accessibility as a criterion for e-resource selection.

3.1.5. Implement universal design/accessibility for Libraries events, classes, exhibits, etc.

3.2. Investigate ways to connect with groups and institutions outside of the MIT community to (1) support their work and (2) partner to advance the values of DISJ.

3.2.1. Share our Directorate’s DISJ initiatives with our colleagues in other libraries, archives, and cultural heritage organizations (e.g., via a LibGuide).

3.2.2. Investigate partnerships with local community groups and Greater Boston institutions such as community colleges, non-profit organizations (e.g., More than Words), and prison book programs.^{46 47}

3.2.3. Host community engagement activities to foster communication (e.g., campus forums to discuss ways to capture

local social movements).

3.2.4. Negotiate licensing agreements to allow walk-in access to electronic resources. Also include access for MIT partners such as programs in Singapore and Russia, developing countries, or local public high schools and community colleges.

3.3. Contribute to the development of a diverse workforce in information science by exposing high school and college-age students to academic libraries. For example, MIT Libraries could resume participation in summer employment programs for local high school and college students. MIT is in a prime geographic location for this type of outreach, and we could potentially make connections through Libraries' staff who currently volunteer in local schools.

4. Building Organizational Infrastructure for Diversity, Inclusion, and Social Justice

Archivists and librarians are increasingly embracing diversity, inclusion, and social justice as values essential to our professions. However, the specific aim of our task force—that we 48 systematically re-envision the daily work of the Collections Directorate through the lens of diversity, inclusion, and social justice—is unusual and perhaps unique in academic libraries. To accomplish what we propose will require a cultural shift and the creation of an appropriate organizational infrastructure within the Directorate. This would include:

- a culture that celebrates the values of diversity, inclusion, and social justice;
- a deliberate reprioritization of our work to advance these values;
- staff members who are knowledgeable about DISJ values and committed to making them central to our work; and
- a culture of mutual respect that extends across work units, departments, directorates, and organizational roles.

Embarking on this paradigm shift in Collections Directorate work within the framework of diversity, inclusion, and social justice requires adequate and continuing staff development and educational opportunities. Let's be clear: we are suggesting innovative changes to the fundamental structures of work we do, and we cannot go about this work without appropriate training and conversation.

The success of our DISJ initiatives depends on all Libraries staff feeling valued, heard, and engaged in their work. For the MIT Libraries to focus on making value-driven changes in which only some can participate would be far from inclusive. A culture that enacts diversity, inclusion, and social justice in the ways we treat and value our staff as people is essential. Hiring, retaining, promoting, and supporting the professional development of those who work in the Libraries—especially our staff from marginalized groups—are activities that must be in the foreground of our thinking. In the words of Chris Bourg, “People are our most important 49 resource.”50

The implementation of DISJ throughout the Collections Directorate will require thoughtful prioritization of our resources (time, money, and staff). Especially, this change in organizational structure will require sufficient staffing, and it will be necessary to address existing issues with inadequately staffed teams, including many unfilled open positions. Overall, these changes will require, at a minimum, clear and consistent messaging from leadership to identify priorities.

Suggested Strategies

4.1. We will need a concerted, collaborative effort to create an organizational culture centered on diversity, inclusion, and social justice.

4.1.1. Adopt definitions of diversity, inclusion, and social justice across the Collections Directorate—or the MIT Libraries and MIT Press—so that the entire organization has a shared understanding of these terms.

4.1.2. Communicate that every member of the Directorate has a role in implementing the MIT Libraries Statement on Diversity. The statement 51 should be actively used to guide the prioritization of the Directorate's activities in the areas of diversity, inclusion, and social justice and to shape general department goals and individual performance goals.

4.1.3. Acknowledging that there is apprehension among some staff about participating honestly in this type of work, frame it as an opportunity for innovation rather than an opportunity for failure. CDL will guide the Directorate in setting the tone for this work.

4.1.4. Recognize and celebrate our work in the areas of diversity, inclusion, and social justice, however small or incremental.

4.1.5. Create an internal communications method (e.g., Directorate blog) for visibility, accountability, support, and mutual inspiration.

4.2. Recognize that diversity-related activities are an essential part of the work of the MIT Libraries by allowing staff to participate in campus and community events. Encourage conversations between supervisors and supervisees about how participation can be balanced with workflow needs.

4.3. Require that every member of the Directorate participate in sessions led by a trained facilitator on (1) unconscious bias and its impact on interactions with coworkers and 52 individuals' approaches to their work and (2) active bystander strategies. The department heads may wish to coordinate their approach to this work so that each group has a similar experience.

4.4. Offer opportunities for Libraries staff to learn about issues of diversity, inclusion, and social justice as they relate to the MIT community, higher education, and the field of information science (e.g. neurodiversity; the needs of international students; and racism and sexism in science and engineering, including obstacles to participation by members of marginalized groups and effects on the research process, etc.).

4.5. Systematically and regularly review and update all policies and procedures through the lens of diversity, inclusion, and social justice. This would include hiring, onboarding, workflows, decision trees, training, etc.

4.6. Building a collection that includes material from around the world, from independent publishers, and from otherwise marginalized perspectives requires time and effort. To achieve this, we must create the appropriate infrastructure for this work. For example:

4.6.1. Adjust the approval plan to optimize the receipt of appropriate and relevant approval books and slips.

4.6.2. Consider ways to distribute selection work among staff (e.g., CPDI or another small group assuming signing privileges to purchase newly published books supporting diversity, inclusion, and social justice) and/or provide additional support for selectors.⁵³

4.6.3. Create opportunities for selectors and strategists to discuss how to incorporate a DISJ framework into selection.

4.7. Practice inclusivity by providing opportunities outside of employees' daily work to participate in Libraries' DISJ-related activities and initiatives. These opportunities can make jobs more enriching and rewarding, as well as fostering a sense of ownership and pride across Directorate staff in our collections and in our daily work. For example, interested staff from across the Directorate could participate in selecting and organizing materials for themed, pop-up curated collections and/or browseries.

4.8. Examine our progress and goals with respect to recent changes made towards more equitable treatment of administrative and support staff (e.g., committee participation, professional development, and travel), and similarly evaluate our treatment of temporary staff and interns.

4.9. Examine the Directorate's dependence on MITemps; consider whether this is in keeping with our values of diversity, inclusion, and social justice.

4.10. Implement an intra-Libraries mechanism for addressing experiences of bias or microaggressions among staff members so as to provide an opportunity for resolution and for learning without judgment or blame.

Conclusion

This report describes strategies for integrating diversity, inclusion, and social justice into the work of the Collections Directorate, as well as the context and importance of this work. In addition to the ideas enumerated above, the task force has recorded in the Appendix all of the recommendations gathered from department meetings, literature searches, and brainstorming sessions. We suggest that work begin immediately to implement selected strategies, as reasonable ideas for positive change can be generated relatively quickly and small improvements can begin right away.

The task force wants to acknowledge the work that is already being done in the Collections Directorate that is related to DISJ. Some of this work can and should be extended or operationalized to become a deliberate part of the Directorate's culture. A partial list of completed or in-process work includes:

- Cataloging staff contributing a rebuttal in support of changes that would make the Library of Congress Subject Headings less derogatory/biased
- Wunsch Conservation Lab research and implementation of conservation techniques that minimize the alteration of original artifacts (their materials and construction)
- Creation of a one-year "Diversity" monograph fund
- Purchase of subscriptions to tribal newspapers requested by Native American students and implementation of circulation from the students' meeting location
- The Institute Archive's "Big Names on Campus" Tumblr, highlighting a diverse cohort 54 of eminent scientists whose names are featured on buildings around MIT's Killian Court, as well as exploring scientists who might be selected were we to choose the names today, 100 years after the project was first planned
- Creation of a Social Justice LibGuide by Lewis Music Library staff that highlights 55 scores, books, videos, and audio recordings related to protest songs, labor rights, LGBTQ rights, women's rights, race, and the 1960s
- Adoption of the Humanities Collection Deployment Principles, guidelines for a Spring 2016 monograph storage project that call for using the core values of diversity and social responsibility in selecting materials for storage⁵⁶
- Following the Association of Research Libraries' recommendation to refrain from signing nondisclosure and confidentiality agreements⁵⁷

As the Future of the Libraries task force report outlines, the MIT Libraries are embarking on an ambitious new phase. The Diversity, Inclusion, and Social Justice Task Force feels confident that the Collections Directorate can effect a Directorate-wide effort to infuse its work with DISJ values and to make significant changes in the culture of our member departments. We eagerly await CDL's decisions about which strategies will be implemented or piloted during the remainder of FY17, and we are ready to tackle whichever larger initiatives are prioritized for the coming years.

Bibliography

The DISJ task force created an online bibliography with Zotero. (We chose Zotero over its 58 competitors because it is open source.) It contains all of the sources cited in this report as well as many others. We are treating it as a living document, so it will continue to expand.

Appendix

In addition to the strategies outlined above, DISJ submits the following ideas for consideration by CDL. These are all of the ideas gathered from the task force, the feedback forums, the online form, and the department meetings. We identified certain strategies and ideas that apply across the directorate and others that are most logically implemented in a specific department or unit.

- Cross-departmental - general
- Cross-departmental - organizational
- Cross-departmental - pipeline and outreach
- Acquisitions
- Archives and special collections
- Cataloging and metadata
- Collection strategy and development
- Conservation and preservation
- E-resources and licensing
- Open access and scholarly communication

Cross-departmental

- Support the idea of collective access as a shared responsibility. Fund tools and strategies that will enable the entire collection to be easily searchable—leveling access to it for everybody on multiple platforms and formats, including mobile devices, downloadable PDF files, etc.
- Share our strategies and resources to diversify collections and promote inclusion and social justice with other cultural

heritage institutions, including those that might not be in our usual channels of communication (e.g., small, non-academic, etc.)

- Fund services, programs, and resources that are inclusive and reflect the diversity of our communities, especially those groups that might be most marginalized
- Identify and fund equipment upgrades and purchases that support the Directorate's DISJ work
- Advocate against the transfer of corporately-published scholarly journals to behind paywalls
- Fund a permanent bookmobile with computer access and desensitizing brick, etc. Use lessons learned from bookmobiles sponsored by the Libraries' Committee for the Promotion of Diversity and Inclusion (CPDI).
- Raise awareness of electronic collections in physical spaces
- Embrace library as cultural institution, higher purpose, not just "purchasing agent"

Cross-departmental - organization

- Challenge the culture of productivity and efficiency
- Need to make room in people's schedules so they can make thoughtful DISJ decisions
- Price is not cost; when is a reduction in price worth a reduction in DISJ?
- Provide financial support and release time for a mentor program within library staff to attend conferences with seasoned librarian or archivist to support employees who are in MLIS programs
- Build or join partnerships/collaborations/consortia that would allow staff more time to take part in DISJ initiatives, particularly across teams and departments (related to Strategy 4.2)
- Develop directorate-wide expectations such as attending relevant MIT HR training (related to Strategy 4.3 and 4.4)
- Develop a sustainable way to fast track people's DISJ ideas into action. Strategies will continue to evolve and pop up, and we need to be able to implement them.
- Be intentional: weeding, buying, open access IS political
- Incorporate DISJ into all mission statements; all statements should be less than 5 years old. This gives opportunity to include new ideas, developments, thought processes re: DISJ and other ideas.
- Each department could discuss how we prioritize our daily work when we factor in diversity, inclusion, and social justice. (Don't always do the easy thing or the status quo. Set quantifiable goals, e.g., one finding aid from an underrepresented group/person per year. Prioritize not just at the individual level but at the unit level under leadership of the department head.)
- Apply the Libraries' search and hiring procedures to conduct searches free of bias and to increase the percentage of underrepresented minority staff. CDL should discuss whether there is anything particular about the way our Directorate thinks about and approaches this (related to Strategy 4.5).
- Specifically initiate education efforts (via speakers, discussion with colleagues, etc.) about how we, with limited budgets, should make decisions about changing selection patterns (e.g., with social sciences, how would the right decisions be made in terms of representation given existing funds?)
- Encourage each department head or team supervisor to guide their staff to find the ways that these goals most meaningfully integrate into their daily work and then to reflect this in their individual performance goals
- Make sure the goals of diversity, accessibility, and social justice are translated into operational objectives, measurable through performance indicators, which are systematically collected and form the basis for organizational improvement for all users, including marginalized persons and minorities
- Provide a sense of welcome and inclusion in our physical and virtual spaces for diverse community members and visitors by ensuring that staff members are trained to be aware of unconscious biases in their interactions with patrons

Cross-departmental - pipeline & outreach

- Support and encourage MLIS students as well as MIT students who are interested in foreign languages and diversity/discoverability issues
- Invite students from local high schools and Simmons College School of Library and Information Science for informational interviews (related to Strategy 3.3)
- Support campus ESL programs, particularly those for employees
- Consider how makerspaces can be used as outreach tools
- Create mechanisms for addressing the psychological and emotional toll that DISJ issues take on people. Provide a place to talk.

Acquisitions

- Acquire materials through self- and independently-published authors, perhaps working with PEN New England (located at

- MIT) or other writing award-granting groups to determine new/appropriate publication outlets
- Publicize locally unneeded and discarded materials and provide access to them for the local community before sending them as recyclables (related to Strategy 3.2.2)
- Promote journals as part of Suggest a Purchase
- Develop workflow for small and overseas book vendors
- Evaluate the benefits and drawbacks of using large vendors and small vendors. For example, large vendors give us access to larger amounts of resources; how does this value compare to our advancing DISJ values when we use smaller vendors with fewer offerings?
- Choose to use Amazon less often
- Use Open Source ERMs

Archives & Special Collections

- After updating the collection policy to reflect a concerted effort to collect records and papers of diverse groups and voices (e.g. women in science, underrepresented minorities), highlight it on the public website, announce in newsletter, etc. This becomes the foundation for outreach to student groups and donors, and guides selection and acquisition of materials.
- Continue to increase efforts to collect records of diverse student and community groups—including sit-ins, protests, and other campus events—as well as diverse faculty papers. More resources are needed to process these collections and make them available; work with new grant writer to explore funding options.
- Increase trust between Institute Archives and donors; get out message that Archives are safe, secure, will preserve materials into the future and with respect, and that fair and equal access to the materials will be given to everyone
- Increase trust between Institute Archives and researchers – make sure all feel welcome to use materials and space; everyone treated at same high standard; publicize more that the Archives are open to everyone
- Look into ways to provide multilingual assistance to researchers, both in person (making use of Library Staff Association’s “language list”) and on our website (look into translation software for website/finding aids; possibility of partnership with MIT’s Department of Global Languages and Literatures for exhibit work or to translate web pages/finding aids/LibGuides)
- Investigate tags or terms to call out materials in ArchivesSpace—e.g. “women in science” and “technology in Latin America”—to allow people to sort and search more easily for collections by and about marginalized voices
- Host forums on campus to discuss ways to capture social movements; host author/faculty talks to share ideas and start conversations
- Emphasize the social justice inherent in archives and show the importance of administrative records/how records can be used as evidence
- Consider how we store and manage our collections and what implications this has on the environment
- Review our guidelines for exhibit design and accessibility; see Smithsonian’s Guide to Accessible Exhibit Design
- Explore idea of taking a post-custodial approach to collections when appropriate; i.e., collaborate with record creators as equals and either consult with and offer professional advice to groups who decide to keep their records, or agree to manage accessioned collections in a manner agreed upon with donors/donor groups. See Nancy Godoy’s work at the Arizona State University archives, and the South Asian American Digital Archives, as examples of potential ideas.

Cataloging & Metadata

- Combat bias in LOC headings; modify Barton load profiles so that these additions to the record aren’t stripped
- Stop Anglicizing names as the “preferred” method of representing an author’s name
- Look into partnering with MIT’s Department of Global Languages and Literatures for cataloging work
- Invest more staff time in OCW (Open Courseware) (currently 💎 of 1 FTE)
- Consider crowdsourcing (would still involve some staff time)
- Add staff effort as OCW expands and grows
- Use DISJ values to inform choices of metadata schema, vocabularies
- Harvest user-created metadata, including allowing tagging in our catalog. The diversity of our users will express itself through the language they create for an item. Materials will become more discoverable, and reflect our users and their preferred vocabulary. We can then analyze the user tags to learn newer terminology and identify trends.
- As our catalog and metadata infrastructure evolves, we should use Linked Open Data or link existing vocabularies created by subject matter experts and use the power of Linked Data and our metadata creation

Collection Strategy & Development

- Revise approval plans to include small presses and non-commercial publishers; seek those that are award winners

- Develop our capacity for selection beyond YBP
- Include student groups and activities to inform selection
- Facilitate access for students to foreign language materials (books, DVDs, etc.) via display in Libraries, and promote access at other institutions in Greater Boston area (e.g. Boston Public Library)
- Process all theses: bachelor's and master's
 - Is the bachelor's thesis fee covering any library fees? If so, can we eliminate them and ask the fee to be reduced? Or eliminate fee altogether?
- Use our purchasing power to influence large vendors to include small presses
- Approval plan:
 - Investigate possible bias in profiling books
 - Recommend that YBP highlight authors of color
- Increase effort to collect international/foreign language science and engineering material. Consider risk of future unavailability of global material if we don't collect it right away. These will serve as primary sources for the history of sci/tech. Consider role as part of collective collection.
- Explore consortial library-managed platforms/repositories for independent publisher content and self-published content
- OA has a well-known focus on equity of access to published literature, but what about equity of access to publication/ the inclusion of multiple voices? Use collection funds to support publishers of underrepresented voices (e.g., developing countries, non-English publications). Perhaps a separate fund.
- Develop tools and better communication and understanding of current research trends among library selectors, acquisition staff, and faculty to enable full use of their knowledge in accessing materials worldwide
- Selectors need time for selection + support for selection + additional participation by other Libraries staff
- Explore open educational resources (OER)
- Offer DDA for foreign-language material
- Seek out information about international students at MIT who return home after graduation. Does this suggest a need for more sci/eng material in foreign languages?

Conservation & Preservation

- Adopt a policy of minimal intervention so as to preserve aspects of original artifacts that demonstrate characteristic techniques or materials of the creator or creating culture
- Review all procedures to identify junctures where unconscious bias can play a role; even if none, add statements affirming a commitment to diversity, inclusion, and social justice in preservation work (e.g., do not treat non-English materials differently than English materials solely because of their language)

E-Resources & Licensing

- Support transparency in pricing while negotiating contracts with publishers for journals and database bundles, thus leveling the field for all institutions
- Ensure patron privacy is respected (place this in the general context of loss of privacy in the digital age)
- Advocate for transparency and against non-disclosure agreements
- During negotiations with publishers, support efforts to limit transition of scholarly journals to corporate publishers
- Organize collaborative support between academic libraries for demanding a fair price for ebooks or Print + Electronic bundles
- Criteria for selecting databases (or even vendors?):
 - Consider axes of power (global, gender, racial, disability) such as: the content comes from a colonial perspective; accessibility issues
 - Who owns the business?
 - Business practices (e.g., monopoly)
 - Sustainability practices

Open Access & Scholarly Communication

- Advocate for Open Access—by supporting well-funded Open Access repositories, connecting our user community to quality OA resources, and increasing the ability of K-12 educators to discover appropriate OA materials—while also exploring and understanding critiques of Open Access and its neo-colonial implications
- Work with faculty to deepen their understanding of serials pricing issues and alternatives, and encourage their involvement in promoting MIT-funded subsidies for authors who publish with scholarly societies with Open Access publishing initiatives

- Promote and include Open Access materials, e.g., Independent Voices by Reveal Digital, an open access collection of an alternative press
 - Open Access collections can be highlighted in the ILS discovery layer
 - Make OA resources more discoverable online (online catalog? Other? Note: Bento boxes currently in development). Can customize what is prioritized when clicking on SFX link. Directory of OA Books are being added to our catalog, but could do more to look at what is actually included and what is missing (e.g., HAU: Journal of Ethnographic Theory). Shift to being selector within OA.
 - Make OA materials available on all mobile devices
 - Find out about other OA offerings (SCCS should search out everything available)
 - Consider advocating for a promotion and tenure policy which incentivizes OA (more here: <http://crln.acrl.org/content/77/7/322.full>)
 - Support well-funded Open Access repositories
 - Partner with Liaison, Instruction and Reference Services department to offer instruction about OA, scholarly communication, and information science issues
-

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Source Information

Creating a Social Justice Mindset: Diversity, Inclusion, and Social Justice in the Collections Directorate of the MIT Libraries

1. 777

5.2: The Importance of Diversity in Library Programs and Material Collections for Children

Abstract



Figure 5.2.1

Children encounter diversity on a regular basis in their interactions with others at home, in school, or around their neighborhood. As our nation continues to diversify, it is essential that children learn to understand the important role of their culture and the cultures of other people in creating an overall global culture respectful of differences. One way that children learn about the world around them and other cultures is through the social messages found in stories. Stories help children understand how society perceives their culture as well as the cultures of their classmates, teachers, caregivers, and others, thereby influencing their social and identity development. Stories can be found in traditional print materials for children or in newer digital formats. Regardless of the format for delivering a story's message, children are greatly influenced by the stories they encounter. One place that children can interact with stories on a regular basis is the library. Through its materials collections and programs, the library introduces children to many stories, starting at a very young age. This white paper emphasizes the importance of developing print and digital library collections that reflect cultural diversity, and details how librarians can promote cultural understanding through library programs that embody the diversity of their communities and the larger world. It concludes that stories reflecting diversity should be routinely included in library programs throughout the year and represented in print and digital material collections and displays.

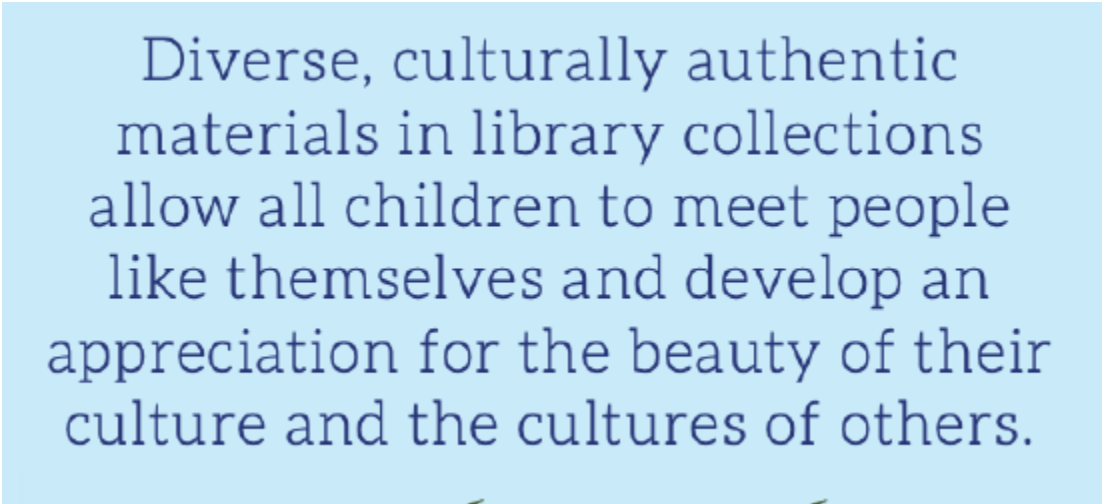
Background

Diversity in library collections and programs refers to cultural diversity. Culture includes shared characteristics that define how a person lives, thinks, and creates meaning. These characteristics include customs, traditions, rituals, food, dress, and language. Typically people from the same cultural group share similar characteristics. Nieto (1999) explains that the idea of culture is complex, extending beyond foods, festivals, fashion, and folklore to include daily experiences influenced by myriad social factors defined by a particular community or region as well as larger national influences. Ethnicity, race, family composition, ancestry, ability, sexual orientation, socioeconomic status, language fluency, citizenship status, religious preference, age, gender expression, education level, and domicile are all aspects of a person's culture. Children experience culture by way of their families' values and practices, in their daily interactions with others in school and throughout the community, and through the stories and characters they encounter in books, television programs and films, music, video and computer games, digital apps, and other forms of print and digital media.

In the field of sociocultural psychology, the work of Vygotsky (1986) informs us that language and culture play a significant role in

a child's social and identity development and construction of meaning. Cultural traditions and social practices have the ability to moderate the way children think and learn. A child's self-esteem is largely influenced by the way the child and overall society views the cultural group to which the child belongs. Vygotsky explains that children use expressive media such as books to understand the world around them. Bishop (1997) also acknowledges the power of children's stories to influence a child's perception and suggests that children's literature can serve as a mirror reflecting a child's own life and culture, or as a window allowing children to peer into the lives of others. Books and other print and digital media convey to children how the world perceives people who are like them as well as people who are different. By the time they are toddlers, children have begun to develop a sense of self that is informed by the world around them (HughesHassell and Cox 2010). Children's materials that accurately portray diversity in multiple languages and cultures can have a positive influence on a child's self-image and help him or her build bridges of cultural understanding. All children want to see images that reflect themselves and encounter stories in their native language and within the context of their personal cultures. Diverse, culturally authentic materials in library collections allow all children to meet people like themselves and develop an appreciation for the beauty of their culture and the cultures of others. Children's book author and illustrator Christopher Myers observes that books can also serve as road maps leading children to their destinies. Through the stories they encounter, children develop "an atlas of their world, of their relationships to others, [and] of their possible destinations" (C. Myers 2014).

Children's materials that provide inaccurate, stereotyped depictions of diverse languages and cultures can equally influence children. If children are consistently exposed to books and other media that negatively represent their culture, then it is likely they will internalize these social messages and develop a poor sense of self. Similarly, negative images or misinformation about a particular cultural group reinforces stereotypes in children outside the culture (W. Myers 2014). Children's picture books are some of the earliest forms of media that teach children about diversity in the world. Social messages that young children glean from picture books will likely stay with them for the rest of their lives (Roethler 1998; Henderson 1991).



Diverse, culturally authentic materials in library collections allow all children to meet people like themselves and develop an appreciation for the beauty of their culture and the cultures of others.

Figure 5.2.2

The absence of a child's culture from the stories in print and digital media can also be problematic. When children never see their culture represented in a library storytime or in materials on the library shelves, they receive a resounding message that the librarian does not think their culture is important enough to feature in the library. This invisibility within the library's programs and materials can equally be harmful to a child's self-image. Latina children's book author and illustrator Maya Christina Gonzalez recalls that as a young child she felt lost in the library among the rows of books that reflected the lives of other children but not her Latino culture. Although she would often draw herself on the inside covers of her coloring books, she still did not feel important because there were no "real" hardcover library books depicting her experiences (2011). The problem of cultural invisibility or the lack of diversity in children's materials is a long-standing one. In 1941, Charlemae Hill Rollins observed that few children's books depicting African Americans were available and those that were accessible contained numerous harmful stereotypes. Later in 1965, Nancy Larrick reemphasized the lack of diversity in children's books in her seminal article "The AllWhite World of Children's Books," which chastised publishers for not publishing more books about African Americans. Afterwards, the Council on Interracial Books for Children (CIBC) began publishing additional reports highlighting the paucity of books representing African Americans, Latinos, Asian Americans, American Indians, people with disabilities, and gays and lesbians. In 1980, CIBC published a series of guidelines, Ten Quick Ways to Analyze Children's Books for Sexism and Racism, that are still used by librarians today to evaluate diversity in children's books. In the 1990s, more books representing cultural diversity began to appear in the United States, but compared to the overall number of books published each year, these books were greatly outnumbered by books representing White middleclass families. In 2014, Christopher Myers described this "AllWhite World" as "apartheid in literature,"

where stories about people of color (and other minorities) are relegated to townships, while stories about animals and White characters compose the predominant world of children's literature.



Figure 5.2.3

Every year since 1994, the Cooperative Children's Book Center at the University of Wisconsin–Madison has kept statistics on the number of children's books published about American Indians, Asian Americans, Latinos, and African Americans. In 1994, just over 8 percent of children's books published in the United States represented these populations. Twenty years later, this number is virtually the same, indicating that many children in the United States still do not have as many opportunities to see their cultures represented as White middle-class children do. As previously indicated, this lack of diversity in children's books can be harmful to the social and identity development of children, particularly those representing cultures with untold stories.

It is equally important for children to be exposed to library programs that highlight materials representing the diversity in languages and cultures present not only in their local community but also the larger world (Baker 1955; White 1964; Tate 1971; Larson 2011). Diversity in library programming allows children and their caregivers to develop cultural literacy, or an appreciation of their culture as well as the cultures of other people. Consistently offering programs that highlight cultural and linguistic diversity provides opportunities for children and their families to begin the journey to developing cultural competence, or the awareness of one's own culture and the contributions of other cultures, the ability to interact with other individuals from diverse cultures, and an understanding of how cultures are integrated together within our larger society (Montiel-Overall 2009). When children's librarians introduce diversity in materials and programming and promote cultural competence, they create learning environments that help children develop a positive sense of self, explore the larger world around them, and celebrate the accomplishments of people from diverse cultural and linguistic backgrounds. One way to promote cultural competence in the library is through the literacy initiative *El día de los niños/El día de los libros* (Children's Day/Book Day), or *Día* for short. Developed in 1996 by Latina author Pat Mora along with founding partner REFORMA (The National Association to Promote Library and Information Services to Latinos and the Spanish-Speaking), *Día* is a family literacy program that uses libraries to connect children to books representing cultural and linguistic diversity. Housed at the Association for Library Service to Children (ALSC), a division of the American Library Association (ALA), *Día* emphasizes the importance of connecting all children from all cultural backgrounds with library materials in many languages about many cultures.

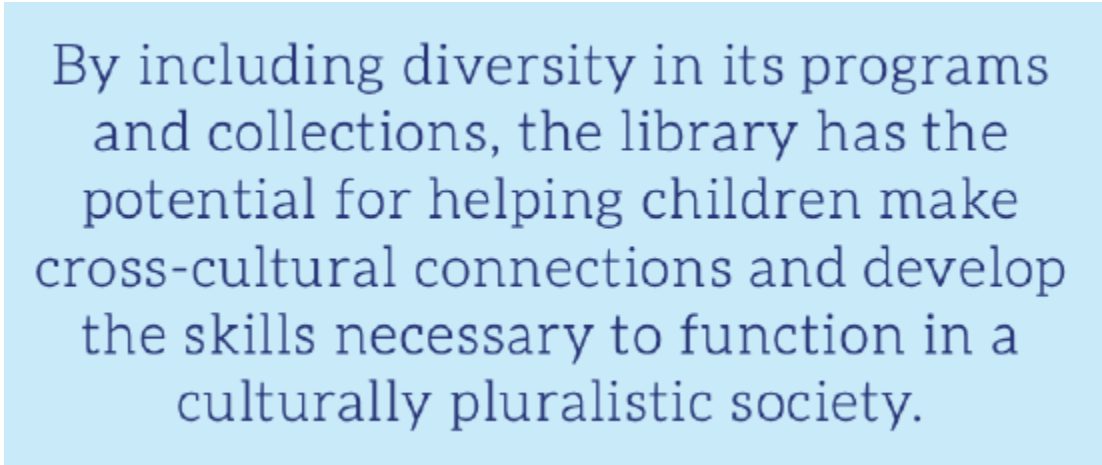
The goals of *Día* include celebrating children and connecting them to the world of learning through books, stories, and libraries; nurturing cognitive and literacy development in ways that honor and embrace a child's home language and culture; introducing families to community resources that provide opportunities for learning through multiple literacies; and recognizing and respecting culture, heritage, and language as powerful tools for strengthening families and communities. (ALSC 2013)

Día can be celebrated year-round with culminating events on April 30, the official day for celebrating children and books. Librarians who recognize *Día* as a daily commitment and incorporate its goals into their regular programming demonstrate their commitment to promoting diversity in library collections and programs.

Position

Recognized as trusted spaces that welcome children to explore, discover, and connect to the larger world, libraries can play an integral role in helping them develop understanding and respect for other people from diverse cultural and linguistic backgrounds. As our nation continues to diversify, it is essential that children learn to understand the important role of their culture and the cultures of other people in creating an overall global culture respectful of differences. By including diversity in its programs and collections, the library has the potential for helping children make cross-cultural connections and develop the skills necessary to function in a culturally pluralistic society.

Both the Institute of Museum and Library Services' *Growing Young Minds: How Museums and Libraries Create Lifelong Learners* (2013) and the Pew Research Center's *Parents, Children, Libraries, and Reading* (Miller et al. 2013) attest to the important role of the library as one of the first teachers of young children, delivering content-rich, age-appropriate early literacy programs and providing access to high-quality, engaging print and digital material collections. When libraries offer culturally authentic materials and displays, they convey the importance of using print and digital media to learn how different cultures share commonalities that make us very similar, but also have unique traits that enrich the world. By delivering culturally responsive programs such as *Día*, libraries (1) link home cultures with the larger social culture to promote traditional literacy; (2) provide an opportunity for silenced voices to be heard; (3) promote lifelong learning and achievement; (4) celebrate linguistic and cultural diversity; and (5) empower children to function in a global society (Diamond and Moore 1995).



By including diversity in its programs
and collections, the library has the
potential for helping children make
cross-cultural connections and develop
the skills necessary to function in a
culturally pluralistic society.

Figure 5.2.4

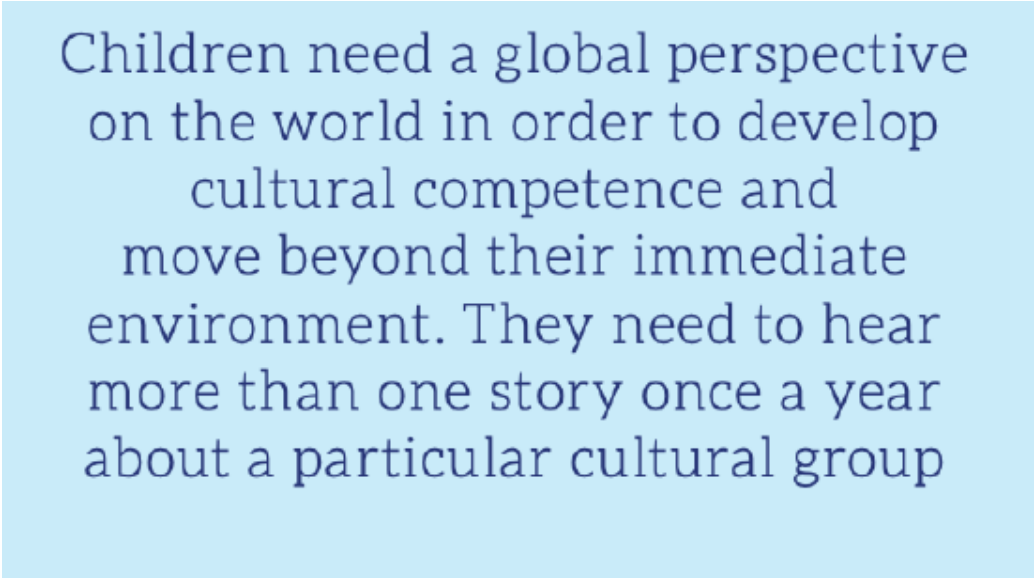
An excellent way to build cultural bridges is to integrate authentic contemporary children's literature about diverse groups into library programs to promote cultural literacy and global understanding, thereby introducing children to the rich cultures of their peers, teachers, or future acquaintances (Moreillon 2013). Studies indicate that by preschool age, young children reveal stereotypes and negative behaviors towards those they perceive as different. These learned attitudes are fostered by the views of parents, caregivers, educators, and peers and by the social messages that reading materials convey about a particular culture. Librarians can help children develop favorable attitudes towards those perceived as the "other" by introducing them to authentic, high-quality literature about diverse cultures. Particularly, positive representations of diversity in children's materials

- provide positive role models for culturally diverse children;
- introduce children to characters with similar experiences and emotions;
- convey the richness and beauty of the diverse cultures in the United States;
- reinforce a distinct cultural identity;
- promote multilingual and literacy development;
- inspire learning of other cultures and general cultural knowledge;
- facilitate acceptance of cultures different from one's own; and
- foster global connections.

When selecting books for the library collection or to use in library programs, it is imperative that children's librarians choose materials representative of a wide range of perspectives and cultures. Opportunities should be provided for children and caregivers to hear stories and interact with characters whose lives and experiences are different from their own. Children need a global perspective on the world in order to develop cultural competence and move beyond their immediate environment. They need to hear more than one story once a year about a particular cultural group. Adichie (2009) warns that a single story can

create or perpetuate stereotypes about a particular culture, offering children their only foray in the experiences of the “other” in society.

Librarians often rely on culturally generic books for storytime programs and exile cultural explorations to holidays and specialized heritage months: Black History Month, Chinese New Year, Native American Heritage Month, Hanukkah, AsianPacific American Heritage Month, Day of the Dead, and so on. If a child is only introduced to books about her culture one time a year, then she internalizes that the librarian thinks she or her culture is not important. What if this one-month venture into cultures includes materials that stereotype, demean, or provide misinformation? What is the culturally diverse child internalizing and what are her classmates learning about her culture? Even the highest quality materials and culturally authentic activities are irrelevant if children learn that their particular culture or the culture of their peers is not good enough to study or talk about throughout the year. While middle-class White children in heterosexual nuclear families have the opportunity to see their culture represented in library collections, programs, and displays on a daily basis, other children are lucky if they get their own special month or day. It is imperative that diversity be included in library programs and displays routinely throughout the year.



Children need a global perspective
on the world in order to develop
cultural competence and
move beyond their immediate
environment. They need to hear
more than one story once a year
about a particular cultural group

Figure 5.2.5

Similarly, if children are not exposed to the lives, cultures, and languages of children from around the world, they miss the opportunity to learn how to function in a culturally pluralistic world. Global understanding is part of being culturally competent. Children that exhibit global understanding can acknowledge how cultural differences, personal decisions, and social issues impact lives at a global level. At the same time, these children engage in local, national, or international social justice projects that reach out to their counterparts around the world.

The road to developing global understanding and achieving cultural competence can start in the children's library by way of collections and programs that include cultural diversity.



Figure 5.2.6

Culturally responsive programs facilitate understanding and acceptance of diversity based upon culture, ethnicity, linguistic ability, religion, physical ability, immigration status, and sexual orientation. However, some librarians may not know how to offer these types of programs; instead they attempt to promote cultural competence and global understanding through a “tourist approach” common in many diversity-oriented library programs. This approach highlights the five Fs—foods, festivals, folklore, fashion, and famous people of a particular culture—rather than exploring the daily interactions of people within that culture. Ostensibly this practice may not seem objectionable, but it cannot be the only way to introduce and explore cultures in the library. Children need opportunities for meaningful engagement with cultures that are different from their own. Librarians have to be cautious when using the five Fs to avoid perpetuating cultural stereotypes and tokenism. Often this approach focuses on cultural elements that are exotic, flashy, or quaint. Introducing children to unusual fashion or “costumes” and festivals from a culture reinforces a sense of exoticism or otherness rather than fostering understanding. Only sharing folktales with children can give them a distorted view of a particular culture. When librarians rely on the five Fs to explore cultural diversity, it is extremely problematic if any of the Fs are not culturally accurate or reinforce outdated stereotypes. It is important for librarians to select materials that include books written and illustrated by people either from the culture being profiled or with considerable knowledge about and experience related to the culture. Librarians should examine the copyright date of the materials to identify outdated content. Some publishers of informational books will use the same photo in multiple editions of a book, only updating the narrative. This becomes problematic when a book meant to represent the contemporary lives of South Africans features photos taken before apartheid ended.

Culturally responsive library programs will introduce different cultures through quality children's materials (print and digital) and promote cross-cultural connections by inviting children to explore topics such as social justice, equality, and cultural authenticity.

Figure 5.2.7

Culturally responsive library programs will introduce different cultures through quality children's materials (print and digital) and promote cross-cultural connections by inviting children to explore topics such as social justice, equality, and cultural authenticity. Culturally responsive programs provide a forum for examining issues of ethnicity, class, and culture. A library fully engaged in promoting cultural competence through collections and programs provides numerous opportunities for children and their families to learn about new cultures. Language is part of a child's culture. Libraries reinforce multilingualism by offering programs introducing children to a variety of languages and encouraging them to play with language acquisition. In a culturally competent library program, librarians share books and other materials about diverse cultures and introduce children to diverse languages through readalouds in multiple languages, or songs designed to teach language learning.



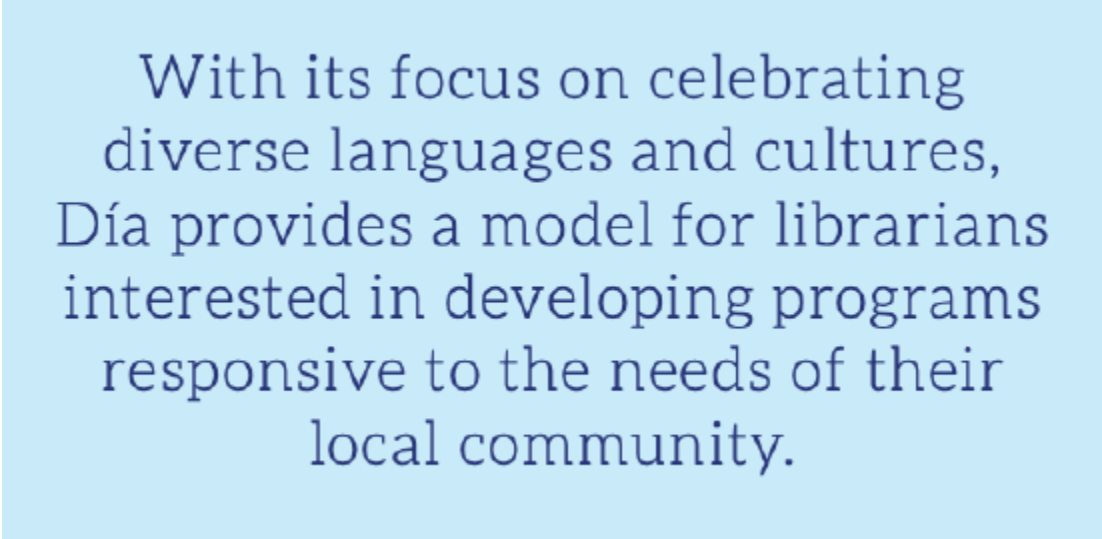
Figure 5.2.8

Through cultural literacy initiatives such as Día, libraries have natural avenues for infusing cultural competence into their programs and services. Día allows libraries to build bridges between home cultures and languages and those of the school, library, larger community, and world. With its focus on celebrating diverse languages and cultures, Día provides a model for librarians interested in developing programs responsive to the needs of their local community. For programs to be successful, Garcia and Hasson (2004) note that librarians must design experiences that focus on the daily realities relevant to target populations. Librarians should keep in mind that particular populations or segments of their community may not readily have access to transportation to attend library programs. In these instances, librarians may want to develop outreach programs that propel the library into culturally diverse communities or partner with local community organizations currently serving these populations.

Library programs should reflect the interests and goals of the target population. The most successful culturally responsive libraries involve diverse communities in the planning process, allowing them to assist in the materials selection, program development and delivery, and marketing. For years, public libraries have embraced Día as the cultural programming model for reaching culturally and linguistically diverse children and families. Día includes a diverse array of materials in multiple languages and about diverse cultures.

While the name Día is the Spanish word for day, Día can also stand for “Diversity in Action.” When librarians embrace the charge of the literacy initiative to embody library programs that represent diversity in action, they understand that the principles of Día can be used throughout the year to promote cultural competence every day in library programs and collections. By making every day a Día day, librarians make a daily commitment to serving all children with resources and programs that foster global understanding, language learning, and cultural explorations. In doing so, libraries are able to deliver content-rich, age-appropriate early literacy programs for all children and provide access to high-quality, engaging print and digital material collections that help children develop a positive identity and make cultural connections.

Conclusion



With its focus on celebrating diverse languages and cultures, Día provides a model for librarians interested in developing programs responsive to the needs of their local community.

Figure 5.2.9

Including diversity in library programming and materials for children is important for all librarians meeting the informational and recreational needs of their local communities. Children’s print and digital materials should represent all types of diversity, including race, ethnicity, gender expression, religious preference, family composition, ancestry, ability, sexual orientation, socioeconomic status, language fluency, and citizenship status. More children’s books representing diverse cultures should be made available to children through library collections to assist in their identity development and to help them make global connections.



Figure 5.2.10

Children and their families should be exposed to library programs throughout the year that celebrate cultural diversity and provide opportunities for developing bridges of understanding. The literacy initiative Día provides children's librarians with recommended materials and programming ideas for incorporating diversity into their daily library practices and emphasizes the library's commitment to serving all children from diverse cultural and linguistic backgrounds. Día offers library administrators and staff a replicable model, useful information, and invaluable resources to assist them in planning and developing culturally responsive and effective programs, collections, and services to meet the informational and recreational needs of their diverse communities.

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Association for Library Service to Children (ALSC) Diversity Resources

- "ALSC/Candlewick Press 'Light the Way: Outreach to the Underserved' Grant" webpage, <http://www.ala.org/alsc/awardsgrants/profawards/candlewicklighttheway>
- "Books on Islam for Children and Teens" webpage, <http://www.ala.org/alsc/compubs/booklists/islambooks>
- El día de los niños/El día de los libros (Children's Day/Book Day) Diversity Initiative website, <http://dia.ala.org>
- "Growing Up around the World: Books as Passports to Global Understanding for Children in the United States" webpage, <http://www.ala.org/alsc/compubs/book...gUpAroundWorld>

Online Collection Development Resources

- American Indians in Children's Literature blog, by Debbie Reese, <http://americanindiansinchildrenslit....blogspot.com/>
- The Brown Bookshelf website, by Varian Johnson et al., <http://thebrownbookshelf.com/>
- CBC Diversity website, by Children's Book Council, <http://www.cbcdiversity.com>
- De Colores: The Raza Experience in Books for Children blog, by Beverly Slapin et al., <http://decoloresreviews.blogspot.com>
- Gay-Themed Picture Books for Children blog, by Patricia A. Sarles, <http://booksforkidsingayfamilies.blogspot.com/>
- International Children's Digital Library website, by the University of Maryland, <http://en.childrenslibrary.org/>
- "Multicultural Reading" webpage, by Cynthia Leitich Smith, http://www.cynthialeitichsmith.com/lit_resources/ diversity/multicultural/multi_biblio.html

Awards for Culturally Diverse Children's Literature

- American Indian Youth Literature Award, sponsored by the American Indian Library Association, <http://ailanet.org/activities/ameri...erature-award/>
- Américas Book Award for Children's and Young Adult Literature (Latino literature), sponsored by the Consortium of Latin American Studies Programs, <http://www4.uwm.edu/clacs/aa/index.cfm>; <http://claspprograms.org/pages/detai...cas-Book-Award>
- Arab American Book Award, sponsored by the Arab American National Museum, <http://www.arabamericanmuseum.org/bookaward>
- Asian/Pacific American Award for Literature, sponsored by the Asian Pacific American Librarians Association, <http://www.apalaweb.org/awards/literature-awards/>
- Carter G. Woodson Book Award (literature depicting ethnicity in the U.S.), sponsored by the National Council for the Social Studies, <http://www.socialstudies.org/awards/woodson>
- Coretta Scott King Book Awards (African American literature), sponsored by the American Library Association's Ethnic

and Multicultural Information Exchange Round Table (EMIERT), <http://www.ala.org/ala/mgrps/rts/emiert/> cskbookawards/index.cfm

- Dolly Gray Children's Literature Award (literature depicting children with disabilities), sponsored by the Council for Exceptional Children's Division on Autism and Developmental Disabilities, <http://daddcec.org/Awards/DollyGrayAwards.aspx>
- Jane Addams Children's Book Awards (literature promoting peace, social justice, world community, and equality of the sexes), sponsored by the Jane Addams Peace Association and the Women's International League for Peace and Freedom, <http://www.janeaddamspeace.org/jacba/>
- Middle East Book Awards, sponsored by the Middle East Outreach Council, <http://www.meoc.us/meoc/book-awards>
- Notable Books for a Global Society (global children's literature), sponsored by the International Reading Association, <http://clrsig.org/nbgs.php>
- Outstanding International Books List, sponsored by the United States Board on Books for Young People, http://www.usbby.org/list_oibl.html
- Pura Belpré Award (Latino literature), sponsored by the Association for Library Service to Children and REFORMA, <http://www.ala.org/alsc/awardsgrants...ia/belpremedal>
- Rainbow List (LGBTQ children's and young adult literature), sponsored by the American Library Association's Gay, Lesbian, Bisexual, and Transgender Round Table (GLBTRT), <http://glbtrt.ala.org/rainbowbooks/>
- Schneider Family Book Award (literature about children with disabilities), sponsored by Katherine Schneider and the American Library Association, <http://www.ala.org/awardsgrants/schn...ily-book-award>
- South Asia Book Award, sponsored by the South Asia National Outreach Consortium, <http://www.sanoc.org/saba.html>
- Stonewall Children's and Young Adult Literature Award (LGBTQ literature), sponsored by the American Library Association's Gay, Lesbian, Bixecual, and Transgender Round Table (GLBTRT), <http://www.ala.org/glbtrt/award>
- Sydney Taylor Book Award (Jewish literature), sponsored by the Association of Jewish Libraries, <http://www.jewishlibraries.org/main/...BookAward.aspx>
- Tomás Rivera Mexican American Children's Book Award, sponsored by Texas State University's College of Education, <http://www.education.txstate.edu/c-p...ject-Link.html>

Multicultural Children's Program Resources

- Colorín Colorado! website, by Reading Rockets, <http://www.colorincolorado.org/>
- "Dai Dai Xiang Chuan: Bridging Generations, a Bag at a Time" webpage, by the Chinese American Librarians Association, <http://daidai.cala-web.org/>
- Lee y serás® (Read and You Will Be) website, by Scholastic, <http://www.leeyseras.net>
- Noche de Cuentos website, by REFORMA (The National Association to Promote Library and Information Services to Latinos and the Spanish-Speaking), <http://nochedecuentos.org/>
- Programming Librarian website, by the American Library Association, <http://www.programminglibrarian.org/home.html>
- "Reading Is Grand! Celebrating Grand-Families @ Your Library" webpage, by the Black Caucus of the American Library Association, <http://bcalareadingisgrand.weebly.com>
- Talk Story: Sharing Stories, Sharing Culture website, by the American Indian Library Association and the Asian Pacific American Librarians Association, <http://talkstorytogether.org/>

Professional Library Associations Dedicated to Culturally Diverse Groups

- American Indian Library Association (AILA), <http://www.ailanet.org/>
- American Library Association's Ethnic and Multicultural Information Exchange Round Table (EMIERT), <http://www.ala.org/ala/mgrps/rts/emiert/index.cfm>
- American Library Association's Gay, Lesbian, Bisexual, and Transgender Round Table (GLBTRT), <http://www.ala.org/ala/mgrps/rts/glbtrt/index.cfm>
- Asian Pacific American Librarians Association (APALA), <http://www.apalaweb.org/>
- Association of Jewish Libraries (AJL), <http://www.jewishlibraries.org/main/>
- Black Caucus of the American Library Association (BCALA), <http://www.bcala.org/>
- Chinese American Librarians Association (CALA), <http://www.cala-web.org/>
- International Board on Books for Young People (IBBY), <http://www.ibby.org/>
- International Federation of Library Associations and Institutions (IFLA), <http://www.ifla.org/>
- REFORMA (The National Association to Promote Library and Information Services to Latinos and the Spanish-Speaking), <http://www.reforma.org/>

Author's Note:

Jamie Campbell Naidoo is a current member of the ALSC Board of Directors. The position, statements, and information provided in this white paper stem from his expertise in the areas of diversity in children's materials and library programming for diverse populations. He authored this paper based upon this expertise and not as a representative of ALSC.

Figure 5.2.11

Source Information

The Importance of Diversity in Library Programs and Material Collections for Children

1. Association for Library Services to Children
2. http://www.ala.org/alsc/sites/ala.org.alsc/files/content/ALSCwhitepaper_importance%20of%20diversity_with%20graphics_FINAL.pdf
3. No cost, "Permission to use, copy and distribute documents delivered from this website and related graphics is hereby granted for private, non-commercial and education purposes only..."

5.3: Diverse Collections: An Interpretation of the Library Bill of Rights

Collection development should reflect the philosophy inherent in Article I of the *Library Bill of Rights*: “Books and other library resources should be provided for the interest, information, and enlightenment of all people of the community the library serves. Materials should not be excluded because of the origin, background, or views of those contributing to their creation.” A diverse collection should contain content by and about a wide array of people and cultures to authentically reflect a variety of ideas, information, stories, and experiences.

Library workers have an obligation to select, maintain, and support access to content on subjects by diverse authors and creators that meets—as closely as possible—the needs, interests, and abilities of all the people the library serves. This means acquiring materials to address popular demand and direct community input, as well as addressing collection gaps and unexpressed information needs. Library workers have a professional and ethical responsibility to be proactively inclusive in collection development and in the provision of interlibrary loan where offered.

A well-balanced collection does not require a one-to-one equivalence for each viewpoint but should strive for equity in content and ideas that takes both structural inequalities and the availability of timely, accurate materials into account. A diverse collection should contain a variety of works chosen pursuant to the library’s selection policy and subject to periodic review.

Collection development, as well as cataloging and classification, should be done according to professional standards and established procedures. Developing a diverse collection requires:

- selecting content in multiple formats;
- considering resources from self-published, independent, small, and local producers;
- seeking content created by and representative of marginalized and underrepresented groups;
- evaluating how diverse collection resources are cataloged, labeled, and displayed;
- including content in all of the languages used in the community that the library serves, when possible; and
- providing resources in formats that meet the needs of users with disabilities.¹

Best practices in collection development assert that materials should not be excluded from a collection solely because the content or its creator may be considered offensive or controversial. Refusing to select resources due to potential controversy is considered censorship, as is withdrawing resources for that reason. Libraries have a responsibility to defend against challenges that limit a collection’s diversity of content. Challenges commonly cite content viewed as inappropriate, offensive, or controversial, which may include but is not limited to prejudicial language and ideas, political content, economic theory, social philosophies, religious beliefs, scientific research, sexual content, and representation of diverse sexual orientations, expressions, and gender identities.

Intellectual freedom, the essence of equitable library services, provides for free access to varying expressions of ideas through which a question, cause, or movement may be explored. Library workers have a professional and ethical responsibility to be fair and just in defending the library user’s right to read, view, or listen to content protected by the First Amendment, regardless of the creator’s viewpoint or personal history. Library workers must not permit their personal biases, opinions, or preferences to unduly influence collection development decisions.²

Reference:

¹ “[Services to People with Disabilities: An Interpretation of the Library Bill of Rights](#),” adopted January 28, 2009, by the ALA Council under the title “Services to Persons with Disabilities”; amended June 26, 2018.

² *ALA Code of Ethics*, Article VII, adopted at the 1939 Midwinter Meeting by the ALA Council; amended June 30, 1981; June 28, 1995; and January 22, 2008.

Main Points to Note About Freud's Psychosexual Theory

Freud believed that:

- Development in the early years has a lasting impact.
- There are three parts of the self: the id, the ego, and the superego
- People go through five stages of psychosexual development: the oral stage, the anal stage, the phallic stage, latency, and the genital stage

We study Freud because his assumptions the importance of early childhood experience provide a framework for later theories (the both elaborated and contradicted/challenged his work).

5.4: Equity, Diversity, Inclusion: An Interpretation of the Library Bill of Rights

The American Library Association affirms that equity, diversity, and inclusion are central to the promotion and practice of intellectual freedom. Libraries are essential to democracy and self-government, to personal development and social progress, and to every individual's inalienable right to life, liberty, and the pursuit of happiness. To that end, libraries and library workers should embrace equity, diversity, and inclusion in everything that they do.

“Equity” takes difference into account to ensure a fair process and, ultimately, a fair outcome. Equity recognizes that some groups were (and are) disadvantaged in accessing educational and employment opportunities and are, therefore, underrepresented or marginalized in many organizations and institutions. Equity, therefore, means increasing diversity by ameliorating conditions of disadvantaged groups.

“Diversity” can be defined as the sum of the ways that people are both alike and different. When we recognize, value, and embrace diversity, we are recognizing, valuing, and embracing the uniqueness of each individual.

“Inclusion” means an environment in which all individuals are treated fairly and respectfully; are valued for their distinctive skills, experiences, and perspectives; have equal access to resources and opportunities; and can contribute fully to the organization's success.

To ensure that every individual will feel truly welcomed and included, library staff and administrators should reflect the origins, age, background, and views of their community. Governing bodies should also reflect the community. Library spaces, programs, and collections should accommodate the needs of every user.

I. Books and other library resources should be provided for the interest, information, and enlightenment of all people of the community the library serves. Materials should not be excluded because of the origin, background, or views of those contributing to their creation.

Library collections, in a variety of material formats, should include a full range of viewpoints and experiences, serving the needs of all members of the community. Historically, diverse authors and viewpoints have not been equitably represented in the output of many mainstream publishers and other producers. It may require extra effort to locate, review, and acquire those materials.

Therefore, libraries should seek out alternative, small press, independent, and self-published content in a variety of formats. Libraries may benefit from cooperative arrangements and other partnerships to share in the work of locating and acquiring diverse materials. Interlibrary loan may complement but not substitute for the development of diverse local collections.

All materials, including databases and other electronic content, should be made accessible for people who use adaptive or assistive technology.

To provide equitable and inclusive access, libraries must work closely with diverse communities to understand their needs and aspirations, so that the library can respond appropriately with collections and services to meet those needs. All community members will feel truly welcomed and included when they see themselves reflected in collections that speak to their cultures and life experiences.

II. Libraries should provide materials and information presenting all points of view on current and historical issues. Materials should not be proscribed or removed because of partisan or doctrinal disapproval.

Beyond merely avoiding the exclusion of materials representing unorthodox or unpopular ideas, libraries should proactively seek to include an abundance of resources and programming representing the greatest possible diversity of genres, ideas, and expressions. A full commitment to equity, diversity, and inclusion requires that library collections and programming reflect the

broad range of viewpoints and cultures that exist in our world. Socially excluded, marginalized, and underrepresented people, not just the mainstream majority, should be able to see themselves reflected in the resources and programs that libraries offer.¹

III. Libraries should challenge censorship in the fulfillment of their responsibility to provide information and enlightenment.

By challenging censorship, libraries foster an inclusive environment where all voices have the opportunity to be heard. Inclusive materials, programs, and services may not be universally popular, but it is the library's responsibility to provide access to all points of view, not just prevailing opinions. Libraries should prepare themselves to deal with challenges by adopting appropriate policies and procedures. Libraries should respectfully consider community objections and complaints, but should not allow controversy alone to dictate policy.

Governing bodies, administrators, and library workers must discourage self-censorship. Fears and biases may suppress diverse voices in collections, programming, and all aspects of library services.² Libraries should counter censorship by practicing inclusion.

IV. Libraries should cooperate with all persons and groups concerned with resisting abridgment of free expression and free access to ideas.

American society has always encompassed people of diverse origin, age, background, and views. The constitutional principles of free expression and free access to ideas recognize and affirm this diversity. Any attempt to limit free expression or restrict access to ideas threatens the core American values of equity, diversity, and inclusion.

Libraries should establish and maintain strong ties to organizations that advocate for the rights of socially excluded, marginalized, and underrepresented people. Libraries should act in solidarity with all groups or individuals resisting attempts to abridge the rights of free expression and free access to ideas.

V. A person's right to use a library should not be denied or abridged because of origin, age, background, or views.

In the Library Bill of Rights and all of its Interpretations and supporting documents, the principle of inclusion is clear and unambiguous.

"Origin" encompasses all of the characteristics of individuals that are inherent in the circumstances of their birth.

"Age" encompasses all of the characteristics of individuals that are inherent in their levels of development and maturity.

"Background" encompasses all of the characteristics of individuals that are a result of their life experiences.

"Views" encompass all of the opinions and beliefs held and expressed by individuals.

Libraries should regularly review their policies with the goal of advancing equity of access to the library's collections and services. Identification requirements, overdue charges and fees, or deposits for service are examples of traditional approaches that may exclude some members of the community.³

VI. Libraries which make exhibit spaces and meeting rooms available to the public they serve should make such facilities available on an equitable basis, regardless of the beliefs or affiliations of individuals or groups requesting their use.

Libraries should not merely be neutral places for people to share information, but should actively encourage socially excluded, marginalized, and underrepresented people to fully participate in community debates and discussions.

Libraries should welcome diverse content in their exhibit spaces and diverse ideas, individuals, and groups in their meeting

rooms, even if some members of the community may object or be offended.⁴

Conclusion

To uphold the Library Bill of Rights and serve the entire community, governing bodies, administrators, and library workers should embrace equity, diversity, and inclusion.

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¹ “[Library-Initiated Programs and Displays as a Resource: An Interpretation of the Library Bill of Rights](#),” Adopted January 27, 1982, by the ALA Council; amended June 26, 1990; July 12, 2000; June 26, 2018 *under previous name* "Library-Initiated Programs as a Resource"; and June 24, 2019.

² “[Diverse Collections: An Interpretation of the Library Bill of Rights](#),” Adopted July 14, 1982, by the ALA Council; amended January 10, 1990; July 2, 2008; July 1, 2014 *under previous name* "Diversity in Collection Development"; and June 25, 2019.

³ “[Economic Barriers to Information Access: An Interpretation to the Library Bill of Rights](#),” Adopted June 30, 1993 by the ALA Council and amended June 25, 2019.

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Source Information

Equity, Diversity, Inclusion: An Interpretation of the Library Bill of Rights

1. American Library Association
2. <http://www.ala.org/advocacy/intfreedom/librarybill/interpretations/EDI>
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