



## **SURVEY RESULTS**



## EXECUTIVE SUMMARY

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### Introduction

Metadata is often called “data about data.” It has been used by various communities creating geo-spatial data, social and scientific datasets, enterprise applications, data warehouses, educational resources, and bibliographic data. In the traditional library world, catalog records are metadata, as they contain information about the library’s collection of “data,” i.e., the books and journals that make up its collections. Increasingly, libraries have been adopting emerging metadata standards such as Dublin Core, EAD, MODS, and TEI to describe, discover, preserve, manage, and provide access to electronic resources and digital objects. This is accomplished through three types of metadata: descriptive metadata that describes the intellectual content of the object; structural metadata that ties each object to others to make up logical units; and administrative metadata that manages the object or controls access to it.

This SPEC survey investigated how metadata is implemented in ARL member libraries: which staff are creating metadata and for what kinds of digital objects, what schemas and tools they use to create and manage metadata, what skills metadata staff need and how they acquire them, and the organizational changes and challenges that metadata has brought to libraries.

### Background

This survey was distributed to the 123 ARL member libraries in February 2007. Sixty-eight libraries (55%) responded to the survey, of which 67 (99%) reported creating metadata for digital objects at their institutions. One respondent started as early as 1989 and five followed in the subsequent five years. The first sharp increase occurred in 1995 and 1996, when 11 additional libraries began metadata activities. This increase coincided with the creation of the Dublin Core metadata standard at a March 1995 invitational workshop held in Dublin, Ohio. Between 1998 and 2001, 30 more libraries began creating metadata. The activity reached a peak at the turn of the millennium, with 10 libraries entering the metadata arena in 2000. Another peak in 2003, with nine start-ups, followed the availability of DSpace and other institutional repository software. The final five start-ups began between 2004 and 2007.

### Metadata Projects and Practices

The primary factor driving the creation of metadata is the responding libraries’ involvement in digitization projects (66 of 67 responses or 99%). Metadata also plays an important role in institutional repositories (54%). Other initiatives and projects that have promoted the use of metadata are: Web content management, datasets, subject-based and edu-

cational repositories, metadata registries, digital media labs, EAD-finding aids, and online journal publishing. As one respondent commented, metadata is distributed throughout several parts of the library and is more broadly applied than solely to digitization projects. Consequently, metadata has been created to describe and provide access to a wide variety of digital resources, including images, text, collections, audio, maps, video, datasets, EAD finding aids, theses, and Web pages.

### **Metadata Standards**

The metadata schemas most widely used by survey respondents are MARC (91%), Encoded Archival Description (84%), Dublin Core (78%), and Qualified Dublin Core (67%). Other commonly used schemas include Text Encoding Initiative Header, Metadata Object Description Schema, and Visual Resources Association Core Categories. A few respondents reported using an array of other schemas for geospatial data, learning objects, works of art, MPEG multimedia files, statistics, databases, etc. Some respondents commented that local or “home grown” metadata standards have been developed.

Survey respondents apply a wide range of controlled vocabularies to metadata, including thesauri, indexes, subject headings, authority files, terms, and ontologies. More than half of the responding libraries use LCSH, LC Name Authority File, and Art and Architecture Thesaurus. A significant number use the LC Thesaurus for Graphical Materials I and II, Getty Thesaurus of Geographic Names, and Getty Union List of Artist Names. About a quarter use MeSH and the Geographic Names Information Service. As with schemas, there are a number of other controlled vocabularies in use, including locally created ones.

### **Metadata Creation and Management**

When asked whether metadata is created manually or automatically, all but one respondent reported

that metadata is created manually. Nine of these also create metadata automatically and 16 also create metadata automatically with human intervention. Eighteen of the respondents reported using all three methods.

The majority of respondents has multiple metadata creators, primarily catalogers (87%), archivists (72%), metadata librarians/specialists (59%), and subject librarians/specialists (49%). Support staff (66%) and student workers (57%) are important contributors to metadata creation and 42 institutions (62%) reported that content creators provide metadata. Database librarians, programmers, preservation librarians, special collections librarians, curators, digital initiatives librarians, and digital programs librarians also contribute metadata. Given the collaborative nature of metadata-related initiatives and projects, it is not surprising that 35 institutions (52%) have accepted metadata from project partners outside of the libraries and 20 (29%) have accepted metadata from vendors.

Survey respondents identified over two dozen software products and tools that they have used for metadata generation. The most commonly used include spreadsheet software such as Excel, relational databases such as Access, Oracle, and MySQL, and MARCEdit. Many respondents also use XML editors with support for XML editing and validation, schema and DTD editing and validation, and XSL editing and transformation such as Oxygen, XML Spy, Stylus Studio, and XMetaL. Quite a few respondents also listed locally developed tools. Almost everyone uses a combination of products for creating and editing metadata.

In addition to metadata editors and generators, there are various sophisticated digital repository and content management systems in use that support metadata creation, editing, and delivery. Other than locally developed systems, DSpace and

CONTENTdm are by far the most frequently used software. Other commonly used systems include Fedora, Luna Insight, DLXS, and Greenstone. More than a dozen other systems were also identified.

Interoperability is essential to facilitate the exchange and sharing of metadata and to enable cross-domain searching. The survey responses indicate that various attempts have been made to achieve metadata interoperability. Fifty-three respondents (83%) report that they have adopted the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). Forty-seven libraries (73%) use metadata crosswalk. Other advanced methods and standards are being used to promote metadata interoperability and management, including METS (45%), RDF (25%), metadata registries (20%), and application profiles (20%).

### **Metadata Quality Control**

Respondents were asked how they maintain quality control for metadata and to briefly describe their quality control methods. Fifty-six libraries (83%) reported that metadata are manually checked and approved before publishing. Forty-one (73%) indicated that metadata created by users or content creators are checked and approved by library staff. One respondent stated that their library checks 10% of in-house created metadata as well as 10% of vendor created metadata. Other quality control methods include authority control, XML and schema/DTD validation, and compliance with application profiles. Some respondents mentioned that they use locally developed scripts or a variety of open-source and commercial quality control software.

The comments indicate that different quality control measures are used for different projects. Some believe that more and more content creators will create metadata, which will need more efforts on quality control. One respondent mentioned that they are "currently investigating more automated

methods of metadata checking. This is especially important for content creators." Some commented that metadata creation is time-consuming and expensive; another that the challenge is to reconcile metadata quality vs. metadata cost.

### **Organizational Change**

Fifty-five libraries (85%) reported organizational changes in response to the demands of metadata services while ten reported no organizational changes. Existing positions were redefined to incorporate metadata responsibilities at 36 libraries (62%). Twenty-six institutions (45%) created at least one new metadata position; twelve of these positions were given primary responsibility for managing metadata activities. A variety of titles are used, some of which include the term "metadata," for example: "Metadata Librarian," "Metadata Specialist," "Catalog/Metadata Librarian," and "Metadata Architect." Other titles are: "Text Processing and Mark-up Coordinator," "Digital Projects Coordinator," "Digital Collections Librarian," "Digital Content Librarian," "Digital Services Librarian," "Digital Projects Archivist," and "Electronic Resources Librarian."

Seven separate new units for metadata services were created with the names "Metadata Unit," (two responses) "Metadata Services," "Quality Control Unit," "Digital Access," "Digital Resources Metadata Section," and "Cataloging and Metadata Services." Thirteen respondents incorporated metadata services into existing departments and renamed them. For example, "Cataloging Services" became "Cataloging and Metadata Services;" "Special Collection Team" was renamed "Special Collections and Metadata Section;" and "Access, Support, and Accounting" changed to "Scholarly Resources Integration Department." A larger number of respondents (21 or 36%) incorporated metadata services into existing departments without making any name changes.

About half of the respondents reported that metadata activities are distributed across several departments of the library. Several libraries created temporary term positions to provide additional assistance. A few libraries are in the planning stages of reorganizing to accommodate metadata activities.

### **Metadata Staffing**

Nineteen libraries reported that metadata librarians have primary responsibilities for the management and coordination of metadata activities in their organizations. Another 19 answered “Other librarian;” many of them are the heads of units such as Cataloging, Digital Programs, and Library Technology. At ten libraries, a metadata team/committee/working group plays the leadership role. Archivists play a primary role at three libraries.

Survey respondents were asked the number of full-time and part-time positions and total FTEs for ten different categories of staff who contribute to metadata-related services. Forty-five respondents reported they have staff working full-time on metadata activities, most commonly in the positions of metadata librarian, cataloger, and support-staff, followed closely by programmer and archivist. Fifty-two respondents have staff working part-time on metadata activities. The top four part-time positions are cataloger, archivist, student worker, and support staff. There are significantly more individuals involved on a part-time basis (a total of 583 reported) than full-time (349 individuals). These 932 individuals spend the equivalent to 521.24 hours on metadata activities.

Thirty of 61 responding libraries employ between one and eight individuals, both part-time and full-time, for metadata-related activities; their total is 148 individuals at 84.5 FTE. The average is 5 individuals and 2.82 FTE. Thirty others employ between ten and 68 individuals for a total of 641 indi-

viduals at 368 FTE. Their average is 21 individuals and 12.26 FTE. The remaining library employs 143 metadata staff at 69 FTE.

Not surprisingly, since more than half of the libraries reported that metadata activities are distributed across the institution, most respondents rely on a wide variety of staff to cover metadata operations. Some recurring combinations of staff include metadata librarian(s), cataloger(s), programmer(s), and support staff; archivist(s), programmer(s), support staff, and students; cataloger(s) and support staff; and metadata librarian(s), cataloger(s), archivist(s), and support staff. The libraries that are managing digitization projects, digital repositories, data sets, and Web content have the largest number of staff and the widest range of staff categories.

### **Metadata Staff Training**

On-the-job training, library school, and professional association-sponsored workshops are among the top three sources from which metadata staff received their initial metadata training. The majority of the respondents reported using the following opportunities to keep up-to-date on metadata knowledge and skills: electronic discussion lists, professional journals and readings, conferences, discussion with peers, blogs and online readings, on-the-job training, and professional association-sponsored workshops. Twenty-four of the responding libraries hold in-house workshops for initial staff training and 19 of these also hold workshops for keeping staff up-to-date. An additional nine respondents hold workshops to keep staff up-to-date. Software documentation, subscription-based online tutorials, and consulting with other institutions provide other learning opportunities.

Metadata staff members from the responding libraries attend a wide variety of international, national, regional, and local conferences and workshops on metadata-related topics. Conferences

sponsored by professional organizations such as IFLA, ALA (ALCTS, LITA), ARL, and ASIS&T provide ample programs and opportunities for metadata staff. The annual Dublin Core conferences bring together leading metadata researchers and professionals from around the world. Metadata is a frequently discussed topic at digital libraries conferences including the Joint Conference on Digital Libraries, Digital Library Federation Forums, and International Conferences on Open Repositories. OCLC regional networks, regional library associations, and consortia provide educational opportunities for staff at all levels.

### **Metadata Librarian Qualifications and Responsibilities**

Forty-eight of the responding libraries have at least one metadata librarian position; 42 of these require an MLS degree. Knowledge of emerging metadata standards and experience with MARC cataloging are required by all but a few libraries. Soft skills such as communication skills, problem-solving skills, and ability to work cooperatively and independently are also required by over 70% of respondents. About one third of the responding libraries require advanced knowledge of metadata crosswalks, interoperability, and experience with integrated library systems. Experience with institutional repositories and digital content management systems, and knowledge of XML and OAI are listed as desirable qualifications by about half of the respondents.

The survey responses indicate that at most of the responding institutions, the metadata librarian plays a leadership role in metadata activities while performing the following functions: consulting on metadata options in terms of metadata standards; working with systems personnel, subject specialists, project partners, and even end-users on metadata-related issues; documenting metadata policies, procedures, and guidelines; and training staff.

### **Metadata Challenges**

The survey respondents were asked to list the top three metadata challenges facing their libraries. Many respondents face the challenge of implementing organizational changes. Typical comments identified the challenges of “creating the right internal organization for providing metadata services,” “developing/accommodating workflow for metadata creation,” “developing workflow between departments,” and “managing projects that cross so many departments/divisions of the libraries and that involve other units across campus.”

The proliferation of emerging standards poses the challenges of reaching decisions on metadata standards to use for various projects, as well as implementing consistent standards and tools and keeping up-to-date on emerging standards. Consequently, interoperability becomes the most critical issue. Survey respondents commented on the lack of “system-wide infrastructure,” the lack of “system interoperability,” and the difficulty of “interoperating existing online collections with new collections which are supported by other platforms,” and the “cost and difficulty of creating good, consistent metadata across multiple formats and implementation systems.”

Another common challenge is the lack of staff and resources for metadata creation and management. Likewise, some libraries had difficulties “finding competent people to do specific tasks,” “training new personnel,” and “retaining personnel once trained.” Quite a few respondents urged automating metadata creation as much as possible.

Other challenges that survey respondents mentioned include authority control, preservation of metadata along with digital objects, sustainability and scalability of metadata creation, and “meeting increasing demand for metadata skills and support throughout the library.”

## **Conclusion**

The survey responses provide a general overview of the current state of metadata implementation in ARL member libraries. Comments indicate that many libraries are in a period of transition as they attempt to determine the best organization, staffing, and system infrastructure. Metadata involves staff from many different units and many respon-

dents are implementing appropriate workflow, streamlining metadata production, and developing policies and guidelines for best practices. As the survey data reveal, metadata interoperability is among the top challenges that libraries face due to the proliferation of standards, tools, and options available in a rapidly changing environment where infrastructure and rules are not well established.



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## SURVEY QUESTIONS AND RESPONSES

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The SPEC survey on Metadata was designed by Jin Ma, Catalog/Metadata Librarian at Baruch College, The City University of New York. These results are based on data submitted by 68 of the 123 ARL member libraries (55%) by the deadline of March 19, 2007. The survey's introductory text and questions are reproduced below, followed by the response data and selected comments from the respondents.

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One definition of metadata is simply "data about data," information about the objects in library collections, whether these are in traditional or electronic formats. The working definition proposed in the ALCTS Committee on Cataloging Task Force on Metadata Summary Report (June 1999) expands this basic definition: "Metadata are structured, encoded data that describe characteristics of information-bearing entities to aid in the identification, discovery, assessment, and management of the described entities."

In the standard library world, catalog records are metadata, as they contain information about the library's collection of "data," i.e., the books and journals that make up its collections. Metadata records in the traditional library fulfill several functions, including allowing users to find items, allowing them to assess their usefulness, and allowing librarians to administer them correctly. The same principles apply to objects within the digital library and for the purposes of this survey metadata refers to information about digital objects.

Metadata can take several forms, some of which will be visible to the user of a digital library system, while others operate behind the scenes. The Oxford Digital Library defines three types of metadata that can apply to objects in a digital library: **Descriptive metadata:** information describing the intellectual content of the object, such as MARC cataloging records, finding aids or similar schemes.

**Administrative metadata:** information necessary to allow a repository to manage the object: this can include information on how it was scanned, its storage format etc (often called *technical metadata*), copyright and licensing information, and information necessary for the long-term preservation of the digital objects (*preservation metadata*).

**Structural metadata:** information that ties each object to others to make up logical units (for example, information that relates individual images of pages from a book to the others that make up the book itself). (See <http://www.odl.ox.ac.uk/metadata.htm>.)

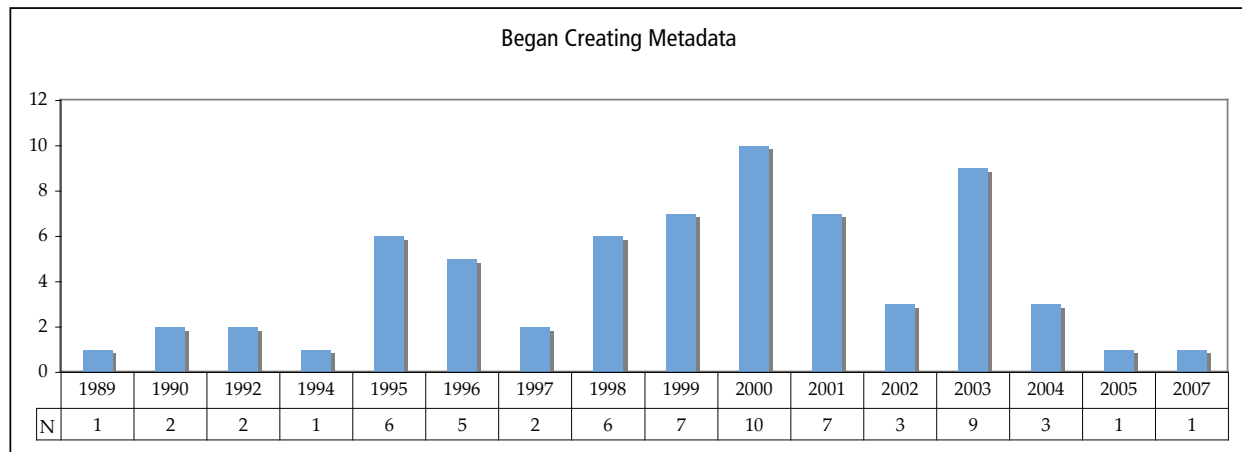
The purpose of this survey is to investigate which staff in ARL member libraries are creating metadata and for what kinds of digital objects, what schemas and tools they use to create and manage metadata, what skills they need and how they acquire them, and the organizational changes and challenges that metadata has brought to ARL member libraries.

## BACKGROUND

1. Is your library creating metadata for digital objects at your institution? N=68

<b>Yes</b>	67	99%
<b>No</b>	1	1%

2. In what year did your library first begin creating metadata for digital objects? N=66



3. Who is responsible for creating metadata for your institution's digital objects? Check all that apply. N=68

Cataloger	59	87%
Archivist	49	72%
Support staff	45	66%
Content creator	42	62%
Metadata librarian/specialist	40	59%
Student workers	39	57%
Project partners outside the library	35	52%
Subject librarian/specialist	33	49%
Database librarian	20	29%
Vendors	20	29%
Programmer	17	25%

Preservation librarian	16	24%
Users	3	4%
Other	11	16%

Please specify other metadata creator.

- Automated Systems Digital Archivist
- Contractor
- Curator
- Digital Initiatives Librarians
- Digital Programs Librarian
- Electronic Publishing Center staff
- Metadata Assistants
- PhD students for ETDs
- Special Collections librarian and project staff
- Student volunteers

## **METADATA PROJECTS AND PRACTICES**

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4. Please indicate for which of the following kinds of projects/initiatives metadata have been created by library staff. Check all that apply. N=67

Digitization projects	66	99%
Institutional repositories	36	54%
Web content management	28	42%
Datasets	23	34%
Subject-based repositories	18	27%
Learning objects and educational repositories	16	24%
Metadata Registry	15	22%
Digital media lab	14	21%
Other	10	15%

**Please specify other kind of project.**

Archival finding aids

Archives'digital collections

EAD finding aids

E-book/database cataloguing

Electronic Theses and Dissertations

Host for a regional encoded archival description database (Northwest Digital Archives)

NDII (National Digital Image Initiative) digital preservation grant

OhioLINK Digital Media Center

Online journal publishing

**5. Please indicate for which of the following types of digital resources metadata have been created by library staff. Check all that apply. N=67**

Image	67	100%
Text	64	96%
Collections	59	88%
Audio	45	67%
Map	42	63%
Video	34	51%
Datasets	25	37%
Other	3	5%

**Please specify other type of resource.**

EAD finding aids

Theses

Web pages

6. What metadata schemas has your library adopted? Check all that apply. N=67

MARC (MACHine Readable Cataloging)	61	91%
EAD (Encoded Archival Description)	56	84%
Dublin Core	52	78%
Qualified Dublin Core	45	67%
TEI Headers (Text Encoding Initiative)	37	55%
Metadata Object Description Schema (MODS)	28	42%
Visual Resources Association (VRA) Core Categories	24	36%
FGDC Content Standard for Digital Geospatial Metadata (CSDGM)	10	15%
IEEE Learning Object Metadata (LOM)	5	8%
Categories for the Description of Works of Art (CDWA)	4	6%
MPEG Multimedia Metadata	4	6%
ICPSR Data Document Initiative (DDI)	3	5%
ONIX (Online Information Exchange)	2	3%
GILS (Global Information Locator Service)	2	3%
Instructional Management Systems (IMS):		
IMS Learning Resource Meta-data Specification	2	3%
Other	20	30%

**Please specify other schema.**

APIS

CDP, AgNIC (Agriculture Network Information Center)

Custom schemas

Darwin Core/Specify; 'home grown'

ETD-ms (Electronic Theses and Dissertations Metadata Set), CANCore, Canadian Culture Online Metadata Element Set

Local uvaDescMeta and uvaAdminMeta standards

MADS (Metadata Authority Description Schema), EML (Ecological Metadata Language)

MARCXML, NNDP (National Digital Newspaper Program) DTD, UFDC (UF Digital Library Center) METS, DAITSS (Dark Archive in the Sunshine State) METS

Medieval Manuscript Metadata Schema (local standard)

Metadata Encoding and Transmission Standard (METS)

METS

METS as a wrapper, PREMIS, audioML, videoML

METS, ETDdb

METS, various technical metadata standards including MIX (Metadata for Images) and forthcoming standards from the Audio Engineering Society, locally-developed standards such as those for the Variations2 Digital Music Library

Microsoft Access (to describe online dbases)

Miso 239.87

N.B.: LC accepts ONIX data from publishers for use in enhancements linked to LC Online Catalog; doesn't itself produce data in ONIX.

NLM-specific DTDs

PB Core

UBdigit schema (DC based)

**7. Please indicate which of the following controlled vocabularies your library applies to metadata. Check all that apply. N=66**

Library of Congress Subject Headings (LCSH)	63	96%
LC Name Authority File	58	88%
Art and Architecture Thesaurus (AAT)	42	64%
LC Thesaurus for Graphical Materials I: Subject Terms (TGM I)	31	47%
LC Thesaurus for Graphical Materials II:		
Genre and Physical Characteristic Terms (TGM II)	27	41%
Getty Thesaurus of Geographic Names (TGN)	24	36%
Getty Union List of Artist Names (ULAN)	20	30%
Medical Subject Headings (MeSH)	18	27%
Geographic Names Information Service (GNIS)	16	24%

National Agricultural Library Thesaurus (NALT)	4	6%
UNESCO Thesaurus	2	3%
Other	20	30%

**Please specify other controlled vocabulary.**

Binding Terms: a thesaurus for use in rare book and special collections cataloging; Genre Terms: a thesaurus for use in rare book and special collections cataloging; other rare book cataloging thesauri; GSAFD; Index terms for occupations in archival and manuscript collections

Chenhall's Nomenclature

Consortial subject list

DCMI type vocabulary, Human Relations Area Files (HRAF) vocabularies, Grove Dictionary of Art Locations Appendix

Dictionary of Christian Art; POPLINE Thesaurus

In-house thesaurus of subject headings on the American South

LCSH FAST (Faceted Application of Subject Terminology)

Library and Archives Canada Name Authority File

Local authority files

Local name authority database for Georgia-related people, corporate bodies, and places

Local: buildings, ships

Many different locally created controlled vocabularies

MARC relator codes; Alexandria Digital Library Feature Type Thesaurus, Alexandria Digital Library Gazetteer; ISO639 language codes, Indian Affairs Laws and Treaties Appendix I Indian Tribes and Bands

NASA (National Aeronautics and Space Administration) Thesaurus, Local, rbgenr, gsafd

Ontologies

Pulp and Paper Thesaurus of Terms

RBMS Genre Terms (ACRL Rare Book and Manuscripts Section)

Romaine

Subject-specific thesauri such as ERIC

Thesaurus developed in-house for one collection

## METADATA CREATION AND MANAGEMENT

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8. Are metadata records created automatically or manually for your projects? Check all that apply.  
N=67

Metadata is created manually	66	99%
Metadata is created automatically but with human intervention	35	52%
Metadata is created automatically	27	40%
Other	2	3%

Please specify other method.

Created by vendors.

Imported records from e-book vendors.

9. What software or tools does your library use for metadata creation and editing? N=67

Excel	40	60%
Access or other relational database	31	46%
MARCEdit	30	45%
Oxygen	18	27%
XML Spy	18	27%
Dreamweaver	14	21%
Other	47	70%

Please specify other software or tool.

Acquisition station (CONTENTdm)

BB Edit

Berkeley EAD Template Generator

Cocoon forms

CONTENTdm



CONTENTdm

CONTENTdm Acquisitions station and III Millennium; locally constructed tools like: JETL (Java Extraction, Transformation, and Loading); also JHOVE, the open source metadata extraction tool.

CONTENTdm and DSpace

CONTENTdm, ENCompass, Greenstone

CONTENTdm, XMetaL, DSpace, OCLC Connexion

docWorks, local NLM tools (SPER)

DSpace

DSpace interface, OpenCourseWare content management system

Dspace, Open Journal Systems

DSpace; Luna Inscribe

EMACS, XMetaL, locally created interfaces

EXLIBRIS ALEPH, UFDC metadata template

Filemaker Pro

In-house WebGenDB database software developed by UC Berkeley and available for use by other University of California campuses.

In-house workflow management tool

Innovative Interfaces MetaData Builder (ILS Editor for EAD and DC)

Local ERM & Endeavor's Voyager

Local FileMaker databases, Image Magick for technical metadata

Locally developed administrative tool as part of institutional repository

Locally developed databases; XMetaL

Locally developed ingest tools

Microsoft Word, PURL Scripting

MySQL, NoteTab, NotePro, Contentdm Acquisition station, OCLC Connexion, Innovative Interfaces global update capability

NoteTab

NoteTab Pro

NoteTab Pro, ALEPH500

NoteTab Pro, AuthorEditor

Opus Software  
 Oracle  
 Oracle Database  
 Oracle, LUNA Insight, NoteTab Pro, MARC Report, MySQL, Post Gres, Virginia Tech, DSpace  
 Sirsi Unicorn, OCLC Connexion, Custom-developed tools for MODS creation  
 Streetprint, Greenstone  
 Stylus Studio  
 Templates via DSpace, fielded databases in MySql  
 Voyager (our ILS)  
 XMetaL (for EAD finding aids)  
 XMetaL, Contentdm  
 XMetaL, JHOVE, Site Executive Content Management System, NoteTab  
 XMetaL, NoteTab, UltraEdit, MySQL  
 XMetaL, UltraEdit  
 XMetaL; internally developed Web form

**10. What software or system does your library use for building and distributing digital objects?  
 Check all that apply. N=65**

Internally developed system	32	49%
DSpace	31	48%
CONTENTdm	28	43%
Fedora	12	19%
Luna Insight	12	19%
DLXS	11	17%
Greenstone	8	12%
DigitalCommons	6	9%
Eprints	4	6%
ESRI Arc Suite	4	6%
ExLibris' DigiTool	4	6%

Documentum	3	5%
Endeavor's ENCompass	3	5%
Innovative Interfaces' MetaSource	1	2%
Other	24	38%

**Please specify other software or system.**

ARTstor; CDL's EScholarship Repository; Storage Resource Broker (SRB)

CWIS

DynaWeb, Java/XML

Endeavor's Voyager

Endeavor's Voyager & local Coldfusion system

ETD

ETD-db, MySQL

ExLibris Aleph 500, Web pages for online exhibits and finding aids

eXtensible Test Framework (XTF), Open Journal Systems (OJS)

Fedora is only being used in the National Digital Newspaper Program pilot project; also, a 'Fedora clone' is part of the LC Electronic Deposit for Electronic Journals pilot.

ILS

In-house software developed by the California Digital Library for use by all University of California libraries.

Inmagic

Innovative Interfaces ERM (not MetaSource)

Ixiasoft TEXTML

MetaStar, ExLibris Metalib

Most of our digital objects are remotely accessed; local ones are accessed directly through our Web site with no management system.

MSSQL, ALEPH500

OhioLINK DMC, MDID

Olive, DPubS (Digital Publishing Sysytem)

Open Text software, Sitesearch software

Streetprint; Luna is planned for future use

XTF (for content that is submitted to the California Digital Library)

XTF, METS Navigator, internally developed systems

**11. Please indicate which of the following your library has used for metadata interoperability, sharing, and management. Check all that apply. N=64**

Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH)	53	83%
Metadata Crosswalks	47	73%
Metadata Encoding and Transmission Standard (METS)	29	45%
RDF (Resource Description Framework)	16	25%
Metadata Registries	14	20%
Application Profiles	13	20%
Other	7	11%

**Please describe "Other."**

Data dictionary for Contentdm projects

EAD

Locally created MARC exporter for DSpace

MARC

SiteSearch (CDP), Multisite Server (CONTENTdm)

None at this time

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**METADATA QUALITY CONTROL**

**12. How does your library maintain quality control for metadata? N=67**

Metadata are manually checked and approved before publishing	56	84%
Metadata created by users or content creators are checked and approved by metadata librarians, catalogers, or other library staff	41	61%
A tool is used to check metadata consistency and accuracy	21	31%
Other	8	12%

**Please describe other quality control method.**

Compliance with application profiles  
For ETDs, metadata published and then enhanced

MARC, Authority, and Unicode validation

OCLC Connexion validation function

Sorting and filtering

We check a sample of 10% of in-house created metadata. We check a sample of 10% of vendor created metadata. We create customized submission forms for community input so as to standardize fields needed and to provide constant data.

XML validation of schema

**Please specify the metadata checking tool.**

Data validation in locally created input forms; value lists in locally created input forms

DigiTool Meditor

DSpace—mandatory fields

Internally developed systems

Locally developed scripts, XML schema, and DTD validation

MARCCedit

Oxygen and a series of scripts check structure of files

Oxygen, Spotfire

Oxygen; CONTENTdm

Oxygen; XMLSpy; Best Practice Guidelines for EADs; MODS; Digital Object Specifications (specified and sample review)

Perl scripts used for some tasks, including reports for QC

Qualtlx

Saxon

Saxon, Validator, local NLM developed tools

Schematron, XML Schema constraints, local scripts

Stylus Studio

UFDC metadata tools

Validation checks on XML

Variety of open-source and commercial QA software

XMetaL

XML Validation

**Comments about metadata quality control at your library.**

### **Selected Comments from Respondents**

“Content quality control is performed by the Archivist in charge of the physical materials being digitized. Structural completeness and correctness is quality controlled with XML validation by the Digital Programs Librarian.”

“Currently investigating more automated methods of metadata checking. This is especially important for content creators.”

“Different methods of quality control are used for different projects. For learning objects, metadata is created by content creators but enhanced by the metadata librarian (with the addition of controlled vocabulary, etc.). For other projects where metadata is created by a librarian or archivist no enhancement or checking is done.”

“In many projects, metadata is added from multiple sources, so it aggregates over time. Each source is responsible for various parts of the metadata.”

“Metadata Librarian verifies that the data meets standards, but the content verification is left up to the data provider.”

“No different from other MARC records.”

“Not all metadata creation in DSpace @MIT is checked by a cataloger.”

“Others with whom we share metadata tell us the quality is very good and consistent.”

“Our CONTENTdm data dictionary is an attempt to standardize metadata practice and promote consistency for interoperability. There’s significant quality control at the time that the metadata is created but keeping it up-to-date is an ongoing challenge.”

“QC protocol is determined on a project specific basis.”

“Staff & librarians are trained on metadata creation prior to being authorized to create it.”

“Use database sorting to find inconsistencies.”

“User-created metadata coming soon.”

“We need to get better at this aspect of metadata quality. It has been applied in some cases. But, other times, no management has occurred. Starting this year, as we have integrated metadata creation into the library’s central technical services units, it has gotten better.”

## ORGANIZATION CHANGE

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13. Has your library organization changed to provide metadata services? N=65

<b>Yes</b>	55	85%
<b>No</b>	10	15%

If yes, which of the following best describes how your library organization has changed. If incremental changes have occurred, check all that apply. N=58

Redefined librarian position(s) to include metadata activities	36	62%
Metadata activities are distributed across the institution	31	53%
Created a new metadata librarian position	26	45%
Incorporated metadata services into existing department(s)/ unit(s) without making any name change	21	36%
Incorporated metadata services into an existing department/ unit and renamed the department/unit	13	22%
Created a separate metadata services department/unit	7	12%
We are now in the planning stages for reorganizing to accommodate metadata	5	9%
Other	8	14%

**Redefined librarian position(s) to include metadata activities.**

Title of position	Year	Department position reports to	Position reports to
Metadata Librarian	1997	Technical Services	Head of Technical Services
Science cataloger	1997	Catalog Department	Head, Catalog Department
Metadata Librarian	1999	Catalog Department	Section head, Special Collections and Metadata Cataloging
Metadata Analyst	1999	Information Delivery, Organization & Retrieval (IDOR) [technical services]	Director, IDOR
Electronic Resources Librarian	2000	Information Resources	Head, Information Resources

Systems Librarian	2000	Systems	Head, Library Systems
Metadata Librarian	2000, 2003	Metadata & Preservation Services	Coordinator, MPS
Metadata Librarian	2002	Metadata Services	Head, Metadata Services
Digital Initiatives Librarians	2002	Digital Initiatives Department	Digital Initiatives Manager
Electronic Resources Cataloguer	2002	Bibliographic Control	Head, Bibliographic Control
Metadata Librarian	2002	Cataloging and Metadata Services	Head, Cataloging and Metadata Services
Head, Cataloging Services	2002	Content Management Services	Director, Content Management Services
Senior cataloging specialist	2002	Acquisitions and Bibliographic Access Directorate	Any of 30 Bibliographic Access team leaders
Coordinator of Digital Content Development	2003	Digital Initiatives Program	Assistant Dean for Collections and Scholar Services
Metadata Librarian and Digital Archivist	2004	Metadata Services Department	Head, Metadata Services Department
Head of Digital Library Initiatives/Metadata Librarian	2004	Library Administration	Deputy Director
Cataloging Manager --> Head, Catalog and Metadata	2004	Technical Services	Associate Dean
Cataloger	2005	Cataloging/Systems	Directors of Cataloging and Library Technology
Digital Resources Cataloger	2005	Cataloging	Head of Cataloging
Reference Librarian became half Digital Commons Coordinator	2005	Research and Information Services	Area Head of unit
Technology and Metadata Librarian	2005	Technical Services	Director of Technical Services
Digital Projects Metadata Librarian	2005	Cataloging and Metadata Department /Authorities and Metadata Quality Unit	Head, Authorities and Metadata Quality Unit
Head of Content Access Management	2005	University Librarian	University Librarian
Cataloging librarian	2005	Technical Services	Chair of Technical Services
Head, Scholarly Resources Integration Department	2005	Technical Services	Assistant Director for Information Technology and Technical Services



Metadata Librarian for Digital Production	2005	Digital Library	Head of Digital Library
Catalog/Metadata Librarian	2005	Cataloging and Metadata Services	Head of Cataloging and Metadata Services
IS Resource Support Technician	2005	Digital Collections Center	Metadata Head
Principal Cataloger for Metadata	2006	Metadata & Cataloging	Head, Metadata & Cataloging
Metadata & Electronic Resources Specialist	2006	Technical Services	Head of Technical Services
Archivist for Acquisitions and Processing	2006	Special Collections	Head of Special Collections
Metadata/Cataloging Librarian	2006	Monographic Services	Head
Metadata Specialist	2006	Technical Services	Assistant Director for Technical Services
Program Assistant Senior	2007	Special Collections	Digital Initiatives Librarian
Vocabulary Control/ Metadata Coordinator	2007	Central Technical Services	Head, Central Technical Services

**Metadata activities are distributed across the institution. Please explain.**

"A few other units that create digital objects also create metadata for those items. There has been some centralization of this work."

"Cataloging and Metadata Services creates descriptive and subject metadata; structural metadata is often supplied by the vendor who is scanning the objects."

"Collaboration is distributed among the following departments: Acquisitions, Bibliographic Control, Library Data and Server Support, Preservation, Special Collections, Student Multimedia Design Center."

"Content creators & other campus managers."

"Content owners and external partners create metadata and Digital Initiatives unit manages metadata and makes it available in digital library systems."

"Cross functional teams coordinate metadata creation across several library areas."

"Curators create some records, these are finalized by the digital librarian."

"Decentralized organizational structure, with MASC, Systems, Cataloging, and Public Services involved in metadata creation."

"Departments on campus do some metadata, other departments in the library, including the Digital Lab and Archives; we are in the process of consolidating as much as possible in the Catalog Department."

"Description metadata is done in Special Collections; grants are run in Digital Initiatives."

"Electronic Resources Librarian works with staff in Special Collections, Preservation, and Systems in the creation of metadata."

"In addition to Digital Library Services student workers, metadata duties are performed on a project basis by librarians, support staff, and student workers in the following departments: Special Collections; Circulation; Map Collection; Preservation. We are also in the planning stages to incorporate metadata production into the Rapid Cataloging unit of Central Technical Services (without making any name changes)."

"Librarians, staff, and faculty throughout the institution use centralized library technology to create and edit metadata."

"Library I.T. staff also create some metadata as part of the ingest process for digital objects in our institutional repository."

"Management, creation, and maintenance occur in Information Technology, Digital Library Initiatives, Design, Metadata & Cataloging, and Special Collections."

"Many special collections departments do some metadata work for their projects as well as linking digital objects from their collections into existing metadata."

"Metadata activities are also carried out in the Law Library of Congress (Global Legal Information Network), Congressional Research Service, Office of Strategic Initiatives, and US Copyright Office."

"Metadata activities occur in Digital Programs, Technical Services, Manuscript and Rare Book Library, Preservation, and other units."

"Metadata creation for some digital projects is provided by the Art Department and digital projects group."

"Metadata services involve many areas: Cataloging and Metadata Department, Digital Library Center, Special and Area Studies Collections Dept, Government Documents Department/Map & Imagery Library, Preservation Dept, GIS program."

"Some in archives, some in technical services."

"Systems, Cataloging, Archives & Special Collection, Academic Departments."

"Takes place in Special Collections/Archives (Research & Access Division), and in Digital Services Unit (Collections & Technical Services Division)."

"This is the case for the institutional repository."

"Various committees and task groups are concerned with metadata activities."

"We also have a Cataloging Department and a Special Collections Cataloging Department. There is also another unit on campus that works with faculty creating content for courses. There are metadata experts in that unit."

"We've created a working group to deal with non-MARC metadata."

"Work is done in History of Medicine Division, Preservation Section, and NCBI, in addition to the Cataloging Section."

**Created a new metadata librarian position.**

Title of position	Year	Department that metadata librarian reports to	Position that metadata librarian reports to
Metadata librarian	1998	Technical Services	Head, Technical Services
Text Processing and Mark-up Coordinator	2000	Digital Library Center	Director, Digital Library Center
Digital projects coordinator	2000	ABA, Technology Policy, or Collections and Services directorates	Director
Electronic Resources Librarian	2001	Monographs Department	Head of Monographs
Digital Collections Librarian	2001	Preservation Team	Team Leader for Preservation
Metadata & Cataloguing Librarian	2002	Bibliographic Services	Coordinator, Bibliographic Services
Metadata Librarian	2002	Technical Services and Digital Access	Head of Technical Services and Digital Access
Metadata Specialist	2003	Cataloging & Metadata Services (CAMS)	Head of CAMS
Metadata Architect; Digital Technologies Librarian	2003; 2005	Digital Library Initiatives; Special Collections	Head, DLI; Head, Special Collections
Metadata Librarian then Digital Content Librarian	2004	Digital Repositories	Coordinator, DR
Metadata Librarian (2 positions)	2004, 2006	Scholarly Resources Integration Department	Head, Scholarly Resources Integration Department
Metadata specialist	2005	Catalog	Section head, Special Collections and Metadata Cataloging
Metadata Specialist (temp.)	2005	Metadata Analysis & Specification Unit	Metadata Librarian & Digital Archivist
Catalog/Metadata Librarian	2005	Cataloging Department	Head, Cataloging Dept.
Metadata Librarians	2005	Content Access Management	Head of Content Access Management
Cataloging & Metadata Librarian	2005	Technical Services	Chair of Technical Services
Head, Technology and Metadata Services	2005	Digital Scholarship Services (unit provides consulting directly to faculty doing content creation)	Director, Digital Scholarship Services
Digital Services Librarian	2005	Bibliographic Services	Head, Bibliographic Services
Metadata Librarian	2006	Technical Services	Head of Cataloging

Digital Projects Archivist	2006	Digital Library of Georgia	Assistant Director, Digital Library of Georgia
Metadata Librarian	2006	Digital Library Services	Head, Digital Library Services
Digital Initiatives Librarian	2006	Collections, Preservation and Digital Initiatives	Associate Dean
Electronic Resources Cataloger	2006	Catalog Department	Head, Catalog Department
Assistant Professor and Cataloger	2006	Special Collections & University Archives	Department Head
Metadata Librarian	2006	Cataloging	Head of Library computing and media services
Digital Librarian	2007	Digital Services	Manager of Digital Services

**Incorporated metadata services into existing department(s)/unit(s) without making any name change.**

Name of department/unit	Position that department/unit reports to
(1) Bibliographic Control; (2) Library Electronic Technologies & Services (LETS)	(1) Associate Director, Collections; (2) Associate Director, Information Services & Systems
2 departments: Access & Branch Services; Digital Initiatives & Special Collections	Chairs of both departments
Bibliographic Services	Associate University Librarian, Collections
Bibliographic Control Department	Assistant Director for Library Technical Services
Catalog Department	Head, Catalog Department
Cataloging	AUL Collections
Cataloging	AD for Collection Management, Organization, and Preservation
Cataloging Section	Chief, Technical Services Division
Cataloging; Systems; Special Collections & Archives; Reference; Architecture; Veterinary Medicine	Heads of respective units
Digital Initiatives	Assistant Dean for Collections and Scholar Services
Digital Initiatives Department and the archives department	Associate Director, Technology & Resource Services
Digital Library and Information Systems Division	Associate Director for Digital Library and Information Systems
Digital Programs	Director of Preservation and Digital Programs
Fine Arts Library; Special Collections Technical Services	Associate University Librarian for Collections and Public Service; Director, Special Collections

Geography and Map Division	Division Chief
Manuscripts, Archives, and Special Collections (MASC)	Head, MASC
Monographic Services Division	Resource Acquisition and Description/Information Technology Services
Preservation Team	Collections Services
Reference Services	Head, Reference and Information Literacy
Special Collections	Head of Special Collections
University Archives and Records Center	University Archivist

**Incorporated metadata services into an existing department/unit and renamed the department/unit.**

Previous name of department/unit	New name of department/unit	Year	Position that department/unit reports to
Cataloging Team	Catalog and Metadata Services Team	2003	Collections Services
Acquisitions Directorate, Cataloging Directorate	Acquisitions and Bibliographic Access Directorate	2004	Associate Librarian for Library Services
Catalog Department/ Metadata Analysis & Specification Unit	Metadata Services/ same name	2005 created in 2004	AUL, Collection Services
Special Collections Team, Catalog Department	Special Collections and Metadata Section, Catalog Department	2005	AUL for Technical Services
Monographic Cataloging and Serials Cataloging	Content Access Management	2005	Head of Content Access Management
Access, Support, and Accounting	Scholarly Resources Integration Department	2005	Assistant Director for Information Technology and Technical Services
Cataloging	Metadata & Cataloging	2006	AD for Materials Management
Cataloging Services	Cataloging and Metadata Services	2006	Assistant Dean for Technical and Collections Services
Cataloging Department	Cataloging and Metadata Services	2006	Associate University Librarian for Digital Library Systems
Cataloging	Bibliographic/Metadata Services	2007	Deputy Director
Cataloging	Cataloging and Metadata Services	2007	Head of Cataloging and Metadata Services

**Created a separate metadata services department/unit.**

Name of department/unit	Year	Position that department/unit reports to
Metadata Unit	1999	Metadata Analyst & Head of Cataloging
Metadata Services	2002	Head of Library Technical Services
Quality Control Unit	2002	Digital Library Center
Digital Access	2002	Head of Technical Services and Digital Access
Metadata Unit	2003	Head of CAMS
Digital Resources Metadata Section	2004	Head, Cataloging & Metadata Center
Cataloging and Metadata Services	2006	Assistant Director of Technical Services

**We are now in the planning stages for reorganizing to accommodate metadata.**

Name of future department/unit	Position that department/unit will report to
Currently unknown	Currently unknown
Currently unknown	Currently unknown
Digital Collections Working Group	Two librarians, one each from our Cataloging Department and our Technical Services Department in the Rare Book, Manuscript and Special Collections Library, will be reassigned as Metadata Librarians, remain in their current reporting lines, and collaborate with our digital collections working group.
Metadata Services	TBD
Special Collections and Archives	Library Director

**Other. Please describe the organizational structure for metadata activities.**

"Created Digital Initiatives unit and included this in the Associate Dean's responsibilities."

"Hired extra-help term position for duration of project."

"New position (2004): Digital Projects Librarian."

"Project based."

"Digital Collections Center."

**Comments about organizational change.**

## Selected Comments from Respondents

"All of our librarians have added some type of metadata responsibilities to their workload. A few of our staff have taken on metadata responsibilities, including testing for our institutional repository. Their position descriptions are being accordingly revised."

"DLG charges for metadata and other digital library services provided for digitizing content from public libraries as a part of an LSTA-funded initiative."

"Fall 2007 we hired a retired librarian in the Scholarly Resources Department to work half time with the development of a campus-wide expertise and reporting system. The incumbent in this position is working with programmers to define metadata fields and structures, standards for various content, and input (interface) and output (reports) design. We are now hiring an Administration and Professional position, Coordinator of Metadata Input and Quality Control, who will help write documentation for workflows, train students and staff in creation/input, and monitor quality control. We have shifted the responsibilities of one of our staff to include the technical metadata coding for an electronic journal that we are now publishing."

"In 2006, the Digital Library Center merged with the Special Collections Library. The Metadata Librarian reports to Technical Services but is also a member of the Digital Library Center team."

"In many projects, metadata is added from multiple sources, including the Digital Initiatives Unit, the Woodson Research Center (special collections), and Cataloging and Metadata Services. Digital collections are managed by project, with participants from many departments."

"Metadata creation is distributed throughout the University Libraries departments."

"Metadata librarianship here is quite complicated due to the fact that metadata librarians (MDL) were present in Mann Library (Agriculture Library) in 1998. Between 1998 and 2002 there were 3 FTE MDL at Mann Library. In 2002, Olin Library (The Main Library) carved out a Metadata Services Unit which was situated in Library Technical Services. As late as 2006, this Unit consisted of 3.25 FTE MDL, 2 FTE Metadata assistants, and 2.25 Programmer Analysts. As of 2007, Metadata Services consists of 3 FTE MDL and 2 FTE Metadata Assistants. Metadata Services is part of Discover Systems & Services which is part of the Information Technology and Technical Services Department headed by the Senior Associate University Librarian."

"Our Cataloging Department took on a large metadata creation project with funding from a grant. During a 4-month period 5 catalogers were involved in this project. However, no additional interest has been expressed from that department in being involved in metadata creation."

"Our Metadata Unit is within our Cataloging Department. The positions (1 librarian and 0.5 FTE support staff) are funded completely through paying clients (examples, OpenCourseWare and some DSpace communities) and grants."

"Our organizational structure is still evolving although metadata creation has begun in several areas, currently coordinated by cross functional teams. As the work is operationalized, other changes may be made."

"Over the years, metadata creation has become widely distributed inside and outside the library. TEI is now created by other universities with guidance and quality control provided by the Sheridan Libraries."

"The Cataloging Department does not seem to embrace creating metadata for digital objects, i.e., those

that go into an institutional repository of for the Archives' digital collections. They focus solely on MARC and DC for physical and licensed e-resources found on the online catalog. Hence, metadata responsibilities have been disbursed to our Digital Initiatives and Archives departments. Our Catalog/Metadata Librarian position, currently reporting within our Cataloging Department, will be vacant soon. We anticipate moving this position out of Cataloging, or reconfiguring altogether to do work not related to metadata."

"The new Digital Initiatives Librarian position includes metadata as well as project planning, scanning and other digital activities. Other personnel in Special Collections and Technical Services also share some of the metadata responsibilities."

"There has been growth of Systems Department to support Digital Initiatives."

"This person manages the digital objects platform (ContentDM) and among other things works on metadata crosswalks, interoperability and management."

"Using UFDC/dLOC (Digital Library of the Caribbean) tools in various units of each of several Caribbean partner institutions."

"We added the creation of metadata for digital objects to numerous cataloging positions informally, that is, without a formal redefinition of the position."

"We also redefined one staff position to be responsible for metadata 25% of the his time; depending on the format being digitized (e.g., maps or audio). We distribute metadata creation to catalogers who specialize in those formats."

"We are currently lobbying the university administration to create a Digital Initiatives Librarian to lead metadata activities."

"Within the Acquisitions and Bibliographic Access Directorate, emphasis has been on mainstreaming digital and book cataloging to ensure that both are done to same standards for subject analysis and description."

## **METADATA STAFF**

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### **14. Who has primary responsibility for management and coordination of metadata activities in your library? N=64**

Metadata librarian	19	30%
Other librarian	19	30%
Metadata team/committee/working group	10	16%
Archivist	3	5%
Other professional	2	3%
Other	11	17%



## Metadata Librarian

Position Title	Reports to
Cataloging/Metadata Librarian	Head of Cataloging and Metadata Services
Digital Librarian	Manager of Digital Services
Digital Services Librarian	Head, Bibliographic Services
Electronic Resources Cataloger	Head, Catalog Department
Electronic Resources Librarian	Head of Monographs
Electronic Resources Librarian	Head, Information Resources
Head of Digital Library Initiatives/Metadata Librarian	Deputy Director
Head, Cataloging Services (Chair of metadata steering group)	Director, Content Management Services
Head, Metadata Services	Director, Discovery Systems & Services
Metadata & Cataloguing Librarian	Coordinator, Bibliographic Services
Metadata & Electronic Resources Specialist	Head of Technical Services
Metadata Librarian	Section head, Special Collections and Metadata Section, Catalog Department
Metadata Librarian	Coordinator, Metadata & Preservation Services
Metadata Librarian	Head, Digital Library Services
Metadata Librarian	Head of Technical Services
Metadata Librarian	Head of Technical Services and Digital Access
Metadata Librarian for Digital Production	Head of Digital Library
Vocabulary Control/Metadata Coordinator	Head, Central Technical Services

## Other librarian

Position title	Reports to
Associate Dean for Collections & Technical Services	Dean of the Library
Catalog and Metadata Services Team Leader	Head of Collections Services
Coordinator of Digital Content Development	
Digital Initiatives Librarian	
Digital Initiatives Librarian	Associate Dean for Collections, Preservation and Digital Initiatives
Digital Services Librarian	Special Collections Head
Director for Acquisitions and Bibliographic Access	Associate Librarian for Library Services
Director of Library Technology	Dean of Libraries

Electronic Publishing Center librarian	Dean
Electronic Resources Cataloguer	Head, Bibliographic Control
Electronic Resources Librarian	Assistant Director, Library Systems and Technical Services
Head of Cataloging	Chief, Technical Services Division
Head of Content Access Management	University Librarian
Head, Catalog and Metadata	Associate Dean
Head, Cataloging & Metadata Services	Associate Director for Collection Services
Head, Digital Programs	Director of Preservation and Digital Programs
Head, Metadata & Cataloging	AD for Materials Management
Head, Scholarly Resources Integration Department	Assistant Director for Information Technology and Technical Services
Web and Digital Initiatives Coordinator	Director of Technical Services

### Metadata team/committee/working group

Number of members	Reports to
2 plus students	Metadata Manager
3	Department head
5	Specific departments of members of the consortium
7	AUL Director of Library Systems
7	Associate University Librarian for Digital Library Systems
8	Co-Director, Digital Library Development Center
9	Assistant Director of Technical Services
Varies	Collaborative process with informal working groups, as needed. This includes staff from the following departments: Acquisitions, Bibliographic Control, Library Data and Server Support, Preservation, Special Collections, Student Multimedia Design Center.
Varies	No one really
Various	Decentralized structure

### Archivist

Position title	Reports to
University Archivist	University Librarian
Archivist	Head of Special Collections and Archives
Assistant Director, Digital Library of Georgia	Director, Digital Library of Georgia

## Other professional

Position title	Reports to
AUL	University Librarian
Metadata Analyst/Programmer	Head of Information Systems Support

## Other

Position title	Reports to
Assistant Director for Technical Services	Director of the Libraries
AUL, Technical Services and Scholarly Communication	University Librarian
Head, Cataloging and Metadata Services	Assistant Dean for Technical and Collections Services
IS Resource Support Technician	Metadata Head
Distributed	No primary for metadata—distributed responsibilities:
Responsibility varies according to project (digitization projects, institutional repository).	
Undetermined at this time	

15. Please indicate the number of full-time and part-time staff and total FTE for each category of staff who contribute to metadata-related services in your library. N=61

### Cataloger N=44

	N	Total Staff/FTE	Minimum	Maximum	Mean	Median	Std Dev
Full-time	20	72	1	15	3.60	2.50	3.95
Part-time	28	122	1	30	4.36	1.50	7.07
Total FTE	44	109.20	0.10	19.00	2.48	1.00	4.12

### Metadata Librarian N=37

	N	Total Staff/FTE	Minimum	Maximum	Mean	Median	Std Dev
Full-time	26	38	1	4	1.46	1.00	0.86
Part-time	13	15	1	2	1.15	1.00	0.38
Total FTE	37	44.85	0.05	4.00	1.21	1.00	0.87

**Support Staff N=35**

	N	Total Staff/FTE	Minimum	Maximum	Mean	Median	Std Dev
Full-time	17	72	1	17	3.77	2.00	4.68
Part-time	23	95	1	24	4.13	3.00	5.10
Total FTE	35	102.50	0.05	17.00	2.93	1.00	3.84

**Archivist N=34**

	N	Total Staff/FTE	Minimum	Maximum	Mean	Median	Std Dev
Full-time	10	23	1	10	2.30	1.00	2.87
Part-time	26	45	1	6	1.73	1.00	1.25
Total FTE	34	36.00	0.10	10.00	1.09	0.50	1.89

**Student workers N=30**

	N	Total Staff/FTE	Minimum	Maximum	Mean	Median	Std Dev
Full-time	5	23	2	10	4.60	3.00	3.44
Part-time	25	149	1	27	5.96	4.00	6.64
Total FTE	30	73.15	0.10	10.00	2.44	1.50	2.70

**Programmer N=21**

	N	Total Staff/FTE	Minimum	Maximum	Mean	Median	Std Dev
Full-time	12	20	1	5	1.67	1.00	1.15
Part-time	12	28	1	9	2.33	1.50	2.31
Total FTE	21	27.73	0.10	2.75	1.32	1.00	1.30

**Subject Librarian/Specialist N=20**

	N	Total Staff/FTE	Minimum	Maximum	Mean	Median	Std Dev
Full-time	9	43	1	24	4.78	1.00	7.79
Part-time	12	65	1	40	5.42	3.00	10.96
Total FTE	20	52.58	0.10	30.00	2.63	0.88	6.80

**Database Librarian/Specialist Preservation Librarian/Specialist N=16**

	N	Total Staff/FTE	Minimum	Maximum	Mean	Median	Std Dev
Full-time	9	23	1	14	2.56	1.00	4.30
Part-time	8	10	1	2	1.25	1.00	0.46
Total FTE	16	27.21	0.25	14.00	1.70	1.00	3.32

**Preservation Librarian/Specialist N=8**

	N	Total Staff/FTE	Minimum	Maximum	Mean	Median	Std Dev
Full-time	5	6	1	2	1.20	1.00	0.45
Part-time	4	21	1	18	5.25	1.00	8.50
Total FTE	8	9.40	0.05	4.00	1.18	1.00	1.31

**Other Staff N=19**

	N	Total Staff/FTE	Minimum	Maximum	Mean	Median	Std Dev
Full-time	12	29	1	10	2.42	1.50	2.64
Part-time	9	33	1	8	3.67	3.00	2.74
Total FTE	19	41.60	0.10	10.00	2.19	1.35	2.32

**Total Number of Individuals Full-time N=45**

	N	Total Number of Staff	Minimum	Maximum	Mean	Median	Std Dev
Metadata librarian	26	38	1	4	1.46	1.00	0.86
Cataloger	20	72	1	15	3.60	2.50	3.95
Support staff	17	72	1	17	3.77	2.00	4.68
Programmer	12	20	1	5	1.67	1.00	1.15
Archivist	10	23	1	10	2.30	1.00	2.87
Database librarian/specialist	9	23	1	14	2.56	1.00	4.30

Subject librarian/ specialist	9	43	1	24	4.78	1.00	7.79
Preservation librarian/specialist	5	6	1	2	1.20	1.00	0.45
Student workers	5	23	2	10	4.60	3.00	3.44
Other staff	12	29	1	10	2.42	1.50	2.64

#### Total Number of Individuals Part-time N=52

	N	Total Number of Staff	Minimum	Maximum	Mean	Median	Std Dev
Cataloger	28	122	1	30	4.36	1.50	7.07
Archivist	26	45	1	6	1.73	1.00	1.25
Student workers	25	149	1	27	5.96	4.00	6.64
Support staff	23	95	1	24	4.13	3.00	5.10
Metadata librarian	13	15	1	2	1.15	1.00	0.38
Subject librarian/ specialist	12	65	1	40	5.42	3.00	10.96
Programmer	12	28	1	9	2.33	1.50	2.31
Database librarian/ specialist	8	10	1	2	1.25	1.00	0.46
Preservation librarian/specialist	4	21	1	18	5.25	1.00	8.50
Other staff	9	33	1	8	3.67	3.00	2.74

#### Total FTE (both full- and part-time) N=61

	N	Total Staff FTE	Minimum	Maximum	Mean	Median	Std Dev
Cataloger	44	109.20	.10	19.00	2.48	1.00	4.12
Metadata librarian	37	44.85	.05	4.00	1.21	1.00	0.87
Support staff	33	101.50	.05	17.00	2.93	1.00	3.84
Archivist	34	36.00	.10	10.00	1.09	0.50	1.89
Student workers	30	73.15	.10	10.00	2.44	1.50	2.70

Programmer	21	27.73	.10	2.75	1.32	1.00	1.30
Subject librarian/ specialist	20	52.58	.10	30.00	2.63	0.88	6.80
Database librarian/ specialist	15	25.21	.25	14.00	1.70	1.00	3.32
Preservation librarian/specialist	8	9.40	.05	4.00	1.18	1.00	1.31
Other staff	19	41.60	.10	10.00	2.19	1.35	2.32

## Other Staff

FT	Staff Category	PT	Staff Category	Total FTE
1	Digital Library Production Specialist			1
1	Digital Projects Librarian	8	Students	5
1	Digital Repository Program Manager			1
1	ITS Digital Integration Librarian			1
1	Systems Librarian			1
2	Manuscript librarians in Special Collections	1	Project staff	2.25
2	Metadata Assistant			2
2	Staff in Electronic Publishing Center			2
2	Student Volunteers			2
5	Image Collection staff; Image Librarian			5
		1	Digital Projects Librarian	0.5
		1	Head, Cataloging and Metadata Services	0.1
		2	Serials Librarian, Coordinator of Digital Repositories	0.4
		3	Systems staff members	1
		4	Digital Collection Services is unit responsible for licensing, rights metadata, ERMS, etc.	2
		6	Digital imaging staff	3
		7	Reference librarian, Preservation librarian	1.35
1	[unspecified]			
10	[unspecified]			

## METADATA STAFF TRAINING

16. What types of training and professional development opportunities have your metadata staff used to gain their expertise? Check all that apply. N=65

	N	Initial Training N=63	Keeping up-to-date N=64
On-the-job training	62	59	52
Conferences	59	27	57
Professional journals and readings	59	24	58
Electronic discussion lists	59	22	59
Peers	58	24	57
Professional association-sponsored workshops	56	35	50
Blogs and online readings	54	16	54
Library school	45	45	7
Workshops in house	33	24	28
Other	12	4	10

Please specify other activity.

Initial training	Keeping up-to-date
Software documentation	Software documentation
Subscription-based online tutorials	
University of Virginia Rare Book School & Oxford Text Archive	
Workshops off-site	Workshops off-site
	Consortial workshops
	Consulting for other institutions
	Contacts at other institutions
	Online preservation courses
	Online training
	Other workshops
	Regional consortia
	Webinars



17. Which of the following conferences and workshops have your metadata staff attended? Check all that apply. N=63

American Library Association Annual Conferences	51	81%
American Library Association Midwinter Meetings	46	73%
OCLC workshops	31	49%
Digital Library Federation Forums	21	33%
Joint Conference on Digital Libraries	20	32%
ALCTS Regional Institute	15	24%
Metadata Applications and Standards: an ALCTS and Library of Congress Workshop	14	22%
METS Opening Day	13	21%
Dublin Core Conferences	12	19%
Metadata and Digital Library Development: an ALCTS and Library of Congress Workshop	8	13%
LITA Regional Institute or National Conference	8	13%
Other	38	60%

**Please specify other conference or workshop.**

- 2<sup>nd</sup> International Conference on Open Repositories
- Access Library Technology Conference
- Amigos
- ARL Workshop on XML
- ASIST Annual Meeting; ILS Vendor User Group Meeting; DSpace User Group Meeting
- ASSIS&T
- Canadian Metadata Forum, Access, Coalition for Networked Information
- Collaborative Digitization Program workshops
- Certificate of advance study in digital librarianship, University of Illinois
- CIC Conference; SAA Workshop
- Coalition for Networked Information

Coalition for Networked Information, LITA National, EDUCAUSE, vendor-specific meetings

CONSER workshops, Ontario Library Association SuperConference

Cornell Preservation Workshop; Rice; School for Scanning; RLG Workshops; SAA

Digitization for Cultural Heritage Professionals (UNC, Chapel Hill), Society of American Archivists Annual Conference, SAA Continuing Education EAD Workshop, and School for Scanning (Northeast Document & Conservation Center)

IFLA

Library school class

LITA Annual, iPres (International Conference on Digital Preservation), Digital Preservation Workshop (Cornell), Open Repositories, Association for Literary and Linguistic Computing

Metadata and the Digital Library, sponsored by Triangle Research Libraries Network; also, training from NC ECHO on implementing the NC-EAD standard

NEDCC (Northeast Document Conservation Center) School for Scanning

NELINET Workshops on METS, MODS, DC, XML

OHIONET (OCLC Network)

OLA, CLA

Open Repositories 2007

Open Repositories Conference Fedora Meeting

Open Repositories; OAIS/TDR workshop

Previous department head and previous librarian involved with technical infrastructure attended and presented at many different conferences around the world.

Regional OCLC Network

SAA meetings

SAA, OLAC, AMIM, VRA

Society of American Archivists

Society of American Archivists annual and regional conferences

Society of American Archivists Annual Conference; ALCTS Pre-Conference; Rare Book School

Society of American Archivists Conferences and Workshops, California Digital Library Meetings and Workshops

TEI conference & workshop

TEI Consortium Conference

Workshops at Mountain Plains Library Association and SLA conferences; SAA's 'MARC according to DACS' workshop

## METADATA LIBRARIAN QUALIFICATIONS AND RESPONSIBILITIES

If your library has a metadata librarian position(s), please answer questions 18 and 19. Otherwise skip to question 20.

18. Please indicate which of the following qualifications are required, desirable, or not mentioned (N/M) in the job description for metadata librarian(s) in your library. Check all that apply. N=48

Qualifications	N	Required N=48	Desirable N=41	N/M N=41
MLS Degree	48	42	4	2
Knowledge of emerging metadata standards	47	42	3	2
Ability to work in a team environment	45	40	3	2
Excellent interpersonal, oral, and written communication skills	44	41	1	2
Excellent analytical and problem-solving skills	44	36	3	2
Working knowledge of MARC cataloging principles and tools	47	35	9	3
Ability to plan, coordinate, and implement projects	45	32	3	10
Knowledge of metadata crosswalks, metadata registries, and other issues related to interoperability	46	19	15	12
Experience with integrated library systems such as Endeavor, ExLibris, or Ill	46	13	26	7
Markup languages such as XML and XSLT	45	9	23	13
Experience with digital content management systems such as CONTENTdm	46	5	20	21
Experience with OAI-PMH	46	2	22	22
Experience with institutional repositories applications such as DSpace	45	1	22	22
Experience with grant writing	46	—	19	27
Scripting Languages such as PHP and Perl	45	—	12	33
Other	14	11	3	X

**Please specify other qualification.**

Required	Desirable
ACA certification can be qualification in lieu of MLIS for archivist track	
All-around "good computer skills"	PCC Programs, foreign language knowledge
Civil and respectful interactions; Diversity and inclusion	
Demonstrated experience with at least one XML DTD (EAD or TEI) and with two or more of the following: DC, LOM 9 or SCORM, MARC, MODS, or METS.	Experience with instructional technology. Working knowledge of cataloging tools such as AACR2, LCRI, LCSH, and other controlled vocabularies. Understanding of principles of database structure and design.
Experience with non-MARC metadata schema; Administrative metadata; Ability to work independently; Adaptability	Digital Library and academic library experience; Training experience
External advocacy for needed standards	
If person does not have a MLIS, a PhD is acceptable	
Potential for meeting requirements of tenure and promotion	Knowledge of authority control structures in library catalogs and other databases
Professional and scholarly activities	
Working knowledge of EAD	
	EAD TEI
	Ability to plan workflows and projects

**19. Please indicate for which of the following activities the metadata librarian(s) have responsibility in your library. Check all that apply. N=45**

Select appropriate metadata schemas for digital projects and related initiatives	42	93%
Work with the systems/IT department in the implementation of metadata	42	93%
Provide leadership for the management and coordination of metadata related activities	41	91%
Establish metadata policies and document metadata procedures and guidelines	41	91%

Consult with subject specialists to plan and facilitate metadata activities	39	87%
Represent library in local, regional, national or global forums/discussions	39	87%
Collaborate with project partners at other institutions	37	82%
Collaborate with project partners outside the libraries, but within the same institution	36	80%
Train staff in the creation, preservation, storage, and management of metadata	35	78%
Manage projects	34	76%
Provide consultation and assistance to end users in the creation and management of metadata	23	51%
Write grants	16	36%
Other	4	9%

**Please specify other activities.**

“Act as liaison for metadata work between the cataloging departments and the Digital initiatives and Archives Department, with some additional involvement from the Systems Department.”

“Job description and specification of precise duties are in development at present.”

“Keep up to date with emerging metadata schema.”

“To clarify: write metadata sections for grants; consult on metadata options rather than select schemas.”

## METADATA CHALLENGES

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20. Please list the top three metadata challenges facing your library. N=56

Communication (with ITD and other library-wide groups)

A fully stable and functional online system in which to work; clear top-down policies

Effective compatibility between RDF storage of metadata and its XML embodiment for analysis, validation

Developing appropriate software for metadata creation/maintenance

Insufficient human resources

Developing/accommodating workflow for metadata creation

Integrating non-MARC metadata production into Technical Services and Digital Access team

Continued development of in-house tools for metadata creation (for generating EAD, TEI, and MODS)

Automating parts of the metadata creation process

Authority control in support of data mining within digital objects

1) Finding time for trained staff to address the potentially large number of digital objects

2) Learning and keeping up to date on standards and schemas

3) Evaluating and adopting tools

1) Re-investing knowledge gained from projects beyond the library to library projects

2) Identifying the right level of metadata required for material

3) Allocation of staff

1) The need to automate metadata creation as much as possible

2) To motivate and move traditional cataloging librarians and staff to apply metadata to digital objects

3) To train and develop staff willing/interested in learning more about applying modern forms of metadata

1. Human organization: determining responsibilities, relationships and lines of communication in an environment of change and multifocal activity

2. Technical architecture for metadata creation and management

3. Time and staffing for metadata creation within project schedules

1. Reconciling metadata quality vs metadata costs

2. Interoperating existing online collections with new collections which are supported by other platforms

3. Documenting the decisions, costs, staffing, and workflows of the various collections in production

1. Time to create proper metadata, particularly technical metadata

2. Lack of stable standards (or increasing number of new standards)

3. Need for automated processes to develop metadata, particularly technical

1. Training staff

2. Implementing change in organization

3. Implementing change in organizational culture

1. Automating metadata creation

2. Sharing/reusing metadata from various projects

3. Integrating cataloging staff into metadata projects

1. Building Repository Infrastructure
2. Training
3. Management buy-in

1. Choosing which scheme will offer most interoperability in the future
2. Finding competent people to do specific tasks
3. Getting metadata from creators

1. Control over materials and priorities
2. Lack of concentrated IT support
3. Access to digital content once created

1. Cost and difficulty of creating good, consistent metadata across multiple formats, implementation systems, etc.
2. Difficulty in maintaining static stores of metadata in systems without anything like “authority control” to police the data and perform functions such as cross-referencing
3. Meeting increasing demand for metadata skills and support throughout the library

1. Creating the right internal organization for providing metadata services
2. Too many standards for creating metadata
3. Trying to stay abreast of new developments, different standards and best practices

1. Determining the best methods for sharing metadata with researchers/other institutions
2. Keeping up to date with appropriate metadata formats for a variety of media types
3. Automated metadata collection

1. Develop local infrastructure for developing and delivering digital projects, including metadata
2. Identify permanent staff to create metadata for future non-grant projects.

1. Developing guidelines for the creation, maintenance, and implementation of administrative and technical metadata
2. Increasing metadata awareness throughout technical services
3. Finding ways to streamline metadata production and collection to handle the ever-increasing amounts of digital content we work with

1. Digital Library Services, the unit responsible for metadata, was established fairly recently (Jan. 2006), so we’re still working to develop efficient project management, workflow, and QC procedures for metadata
2. Developing a plan to incorporate metadata production into Central Technical Services
3. Inability of the institution’s current digital asset management system (CONTENTdm) to accommodate standards such as MODS, METS and EAD; subsequent ‘dumbing down’ of data to Qualified Dublin Core to accommodate the system

1. Funding
2. Software support
3. Staffing

1. Getting subject specialists to agree on one set of metadata standards for like objects
2. Settling on a set of standards without constantly tweaking them
3. Developing a workflow between departments (we manage digital projects in a decentralized fashion, with IT, preservation, collection development and cataloging/metadata units all working together)

1. Integrating metadata creation work into more individual’s daily workflows. We will continue to have more and more of this work

1. Involving more staff in metadata creation activities
2. Making good decisions in a rapidly changing environment in which there are often no existing models to use for inspiration
3. Ensuring the metadata needed for the long-term preservation of digital objects is recorded and stored

1. Keeping multiple databases of redundant data in sync.
2. Keeping the MARC based metadata creation for electronic objects up-to-date
3. Consortial Quality Control

1. Lack of faculty or other position dedicated to metadata creation and coordination
2. Lack of adequate faculty time to manually quality control and enhance metadata
3. Lack of faculty or other expertise needed to automate some metadata formatting

1. Lack of staff time and technical resources

1. Loss of granularity going from MARC to Dublin Core
2. DigiTool's limitation for supporting multiple schema
3. Incorporating new work into existing staff positions and skills

1. Organizational change to include metadata cataloguing position
2. Resources to support and fund position
3. Difficulty of integrating digital resources into all resources (interoperability)

1. Resources for training, staffing, etc.
2. Identifying metadata standards for diverse collections & creating local templates
3. Cross-walking metadata from one schema to another and from one system to another

1. Training new personnel
2. Retaining personnel once trained
3. Opportunities to digitize content always outpaces the ability to generate metadata for digitized objects

1. Training
2. Workflow/bottlenecks
3. Software changes/problems

- 1.) Maintaining currency of metadata under vocabulary control ... as controlled vocabularies continue to grow and evolve (esp. a problem with LCSH). More generally, maintaining compliance and currency with respect to standards.
- 2.) Preservation of the metadata along with the digital object/image itself and maintenance of persistent and long term access to the digital object/image. (Digital archiving)
- 3.) Generally, coordination (and the attendant cooperation required) for the many disparate functions necessary for successful implementation of a digital library program. (Metadata is, of course, a large component a successful program).

1. Server space/storage for all the metadata that we are creating
2. Public interface to enable searching or integration of different types of resources
3. Sustainability of locally created solutions to serving up metadata

- a. Coordinating the content of all the silos on all 10 UC campuses, so users can search across the entire information space
- b. Implementing consistent metadata standards and tools across the UC system
- c. The scalability of our efforts

Additional new metadata librarians, or resources for training existing personnel



Continuing to provide MARC cataloging while also working on digital projects Building out our metadata to fully accommodate audio and video Getting buy in for digital projects from public services librarians
Co-ordination of activities in differing units Knowledge divide between creators, managers, programmers Cross-repository searching
Cross walking and interoperability Work flow and work load Implementation & automation for delivery of multiple products
Defining essential technical metadata Coordination of various activities throughout the library Keeping up with this rapidly changing field and the proliferation of standards
Finding metadata tools: finding, installing and using appropriate software tools for the kinds of metadata creation we'd like to do
For our digital collections, reconciling one standard schema for multiple collections
From the strategic plan, 2008–2013: determining the bibliographic description framework needed in the digital era; adapting traditional collection development strategy to acquire digital content; workforce transformation.
In-house expertise and time to explore metadata standards for digital objects Roles and responsibilities within the organization for cataloguing digital objects Expressing all relevant metadata for digital objects (ex. administrative, technical metadata) within metadata standards used in our systems
Incorporating creation of a growing need for metadata into the ongoing workflow of the library
Lack of staff to cope with increasing resources No plans yet in place for local repository Finding our place in provincial consortial repository activities and trying to ensure that we get benefits and contribute
Lack of staff Lack of staff Lack of staff
Lack of staff Lack of system-wide infrastructure Lack of articulated vision for our Digital Library
Mainstreaming workflows so that everything is not handled on a project basis New knowledge: Keeping up with new developments; knowing what works, and what is possible Project Management: Managing projects that cross so many departments/divisions of the Libraries and that involve other units across campus
No standard policies Not enough staff Difficult to coordinate different digitization project schema with each other
Not sufficient personnel More training and quality control needed

<p>Slow development cycles          Inadequate usability studies          Staffing</p>
<p>System interoperability          Data migration          Controlled vocabularies and authority work</p>
<p>The lack of standards that are interoperable and clear          No fulltime metadata librarian          Too much stuff to describe</p>
<p>Training staff on emerging metadata standards          Reaching decisions on metadata standards to use for various projects          Implementing without programming skills and necessary software tools</p>

## ADDITIONAL COMMENTS

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21. Please enter any additional information regarding metadata at your library that may assist the author in accurately analyzing the results of this survey.

### Selected Comments from Respondents

“We are very decentralized so many departments are engaging in projects that may involve metadata creation. We recently adopted CONTENTdm to support some of these projects and promote interoperability among them. Our ‘metadata librarian’ is primarily a MARC-based cataloger of e-materials who also works with various groups/projects on use of other metadata. We recently hired a digital library director and are seeking funding for a metadata architect to work more closely with digital projects on technical issues beyond traditional descriptive metadata overseen by catalogers.”

“The scope of the survey is not entirely clear. I have included MARC/AACR cataloging of digital objects such as Web pages, e-books, etc. Question 14: no one person or unit has primary responsibility for both management and coordination of metadata. Coordination is invested in a committee: Metadata Implementation Group. Management is decentralized. The main units are Monographic Services, Digital Initiatives, and Special Collections.”

“At our institution the catalog librarian and metadata librarian functions are combined so it was difficult to select one or the other in this survey and the results may not be clear. The fact that we are still doing much of our digital initiatives and metadata creation work in projects that involve cross-functional teams could also create confusing results. If some activities or functions are done by parts of positions in several areas, it was difficult to record this in the staffing representation.”

“At the moment no metadata has been created here; we expect that will change in a year from now.”

“Currently, the libraries are undergoing an extensive self examination and assessment of their current digital program/project. We are in the process of making recommendations and changes that will better serve the

digital needs of the university community as a whole. Survey questions have been answered based upon what has been decided so far but must be taken as tentative due to the highly fluid situation at present. No formal job description yet exists for the position of Vocabulary Control/Metadata Coordinator and additional positions including an overarching Digital Projects Manager may be added in the near future. No metadata or digital program-related jobs are yet reflected on the institutional organization chart.”

“In question 10 it was noted that we are using Digital Commons. This is currently true but in the next few months we will be switching to CONTENTdm.”

“Library in the very early stages of assessing organizational structure to support new work.”

“Metadata creation has been recognized as an important part of digital collections created within the Libraries. The metadata librarian has been involved in digital projects from the beginning ensuring quality metadata for users and systems.”

“Metadata for text for scholarly resources has been used since 1992. Metadata for Special Collections text, images, and collection descriptions has been used since 1995.”

“Metadata is distributed throughout several parts of the Libraries and is more broadly defined here than just to digitization projects, including federated search software, open URL resolver, and our OPAC which contains records for digital resources.”

“Metadata management at the libraries has evolved organically, in response to specific collections and the requirements of various digital software tools. Digital preservation considerations have also influenced how we handle metadata. Basically, we have folded metadata management into existing units and positions with little or no reorganization or reclassification.”

“Metadata to date provided only through Archives & Special Collections Projects.”

“[We are] in the process of creating a digital repository for the library. Therefore we expect that one year from now our answers to this survey might be quite different.”

“No metadata work is ongoing with the exception of EAD finding aids. Past metadata was created on grant-funded projects only.”

“Our library and our university as a whole recently began a new strategic planning phase, and the library has looked at this effort as an opportunity to redefine and reorganize some of its assets to account for metadata creation. Those plans are in the works and we should see some of those results over the next few months. In particular, we expect to see the designation of two Metadata Librarian positions. The information in this survey response reflects our current situation, but if we were to take the survey again in even a month or two, our responses might be very different.”

“Right now, we have MARC records in our ILS, a local simplified ERM system that enables access to e-journals & databases, and Web subject guides including limited resources. We are planning for an institutional repository, and support ScholarsPortal, the Ontario university libraries collective portal and repository, which continues to grow.”

“The institution’s digital project work began on a large scale in early 2000, when the libraries obtained the first of three consecutive IMLS grants to support digitization. These awards, along with the libraries’ support of the Northwest Digital Archives as the database host sire (2003–), have helped the libraries maintain a strong

digitization program. The institution has utilized external funds (grants, endowments, monetary contributions) to the fullest extent possible.”

“There is no connection between metadata librarians (catalogers) and digital projects. Metadata created for digital projects is done by scanning staff or has been done by extra-help staff hired by project managers to work with content providers to create item and collection metadata for the project.”

“We are beginning to establish more formal metadata positions with responsibilities to provide services other than traditional MARC monographic and serials cataloging. Metadata is often created through different mechanisms with different staffing on a project-by-project basis.”

“We enter most electronic resources into our regular Voyager catalogue. Records are also created for electronic reference materials, e-journals, and journal indexes and theses. The theses records created in DSpace are duplicated in the MARC-based catalogue.”

“We follow an assembly process: 1. Curatorial departments collect/create content objects and describe them. 2. Content objects and metadata are transferred to our digital asset management system. 3. As part of the transfer, persistent identifiers (ARKs) are created and, if possible, technical metadata is extracted. Otherwise, it is acquired from the upstream agent (curatorial vendor). 4. Extraction, Loading, and Transformation staff assemble content objects and metadata into METS-based digital objects according to the object specification for the collection/content class. The object specifications include rules for remediating source metadata. 5. METS objects are selectively reviewed for compliance to the specifications. 6. Process is complete and the objects are ready for management.”

“We have been doing digital library work, including metadata creation, for about ten years now. Most of that work was related to grants and was outside the main library. I put 2001 as the initial date to show the date the library started understanding this work needed to become integrated with traditional technical services units. Previously, we were devoting about 93 percent of our work to traditional print cataloging. This past year, I would say we are devoting about 20 percent to electronic and digital collections and this will increase more each year from now on.”

## RESPONDING INSTITUTIONS

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University at Albany, SUNY  
University of Alberta  
Arizona State University  
Auburn University  
Boston College  
Boston Public Library  
Brigham Young University  
University of British Columbia  
University at Buffalo, SUNY  
University of California, Davis  
University of California, Irvine  
University of California, Los Angeles  
University of California, San Diego  
University of California, Santa Barbara  
Case Western Reserve University  
University of Chicago  
Colorado State University  
University of Connecticut  
Cornell University  
University of Delaware  
Duke University  
Emory University  
University of Florida  
University of Georgia  
Georgia Institute of Technology  
University of Guelph  
University of Hawaii at Manoa  
University of Illinois at Urbana-Champaign  
Indiana University Bloomington  
University of Iowa  
Iowa State University  
Johns Hopkins University  
University of Kansas  
Kent State University  
University of Kentucky  
Library of Congress  
Louisiana State University  
University of Louisville  
University of Manitoba  
Massachusetts Institute of Technology  
Michigan State University  
Université de Montréal  
National Library of Medicine  
University of Nebraska–Lincoln  
University of North Carolina at Chapel Hill  
North Carolina State University  
University of Notre Dame  
Ohio State University  
University of Oklahoma  
Oklahoma State University  
University of Oregon  
Pennsylvania State University  
University of Pittsburgh  
Purdue University  
Rice University  
Rutgers University  
Smithsonian Institution  
University of Southern California  
Southern Illinois University Carbondale  
University of Tennessee  
University of Virginia  
University of Washington  
Washington State University  
University of Waterloo  
Wayne State University  
University of Western Ontario  
University of Wisconsin–Madison  
York University