Controlling Access to and Use of Online Cultural Collections

A Survey of U.S. Archives, Libraries and Museums for IMLS

Final version: December 17, 2009
An earlier version of this work was posted in May 2009
There are three changes between the May and December versions:

Table 57 update
Figure 22 update
Table 58 update

These changes are reflected in the smaller publications stemming from this report.

The survey cover letter and survey questions are posted separately from this document labeled as COC_IMLS_surveyletter and COC_IMLS_surveyquestions.

Kristin R. Eschenfelder, Ph.D.
eschenfelder {} at {} wisc {}dot {}edu

Associate Professor
School of Library and Information Studies
University of Wisconsin-Madison

Preferred citation:

Eschenfelder, K.R. (March 2009) *Controlling Access to and Use of Online Cultural Collections: A Survey of U.S. Archives, Libraries and Museums for IMLS (Final Version 12/17/2009).* University of Wisconsin-Madison School of Library and Information Studies: Madison, Wisconsin.

Table of Tables

Table of Figures

1. Introduction

This report describes the results of an Institute of Museum and Library Services (IMLS) funded study to investigate the use of technological or policy tools to control patron access to or use of digital collections of cultural materials created by U.S. archives, libraries and museums. The technological and policy tools serve primarily to control copying or other reuses of digital materials. These collections include digital surrogates of cultural materials such as historic photographs, books, and manuscripts, audio files of music and oral histories, fine art and design images, maps, and physical archival and museum objects. Other examples include born digital files such as digital thesis and dissertations, GIS files, natural and social science data sets, or born-digital folkloric audio and video collections.

As stewards of cultural materials, cultural institutions have always "managed" access to their collections and use of collections materials. The profession has long debated questions about the circumstances under which restrictions to access are appropriate. For example, concerns about privacy might lead an archive to restrict access to personally identifiable medical information to researchers or family genealogists. Or cultural rules may preclude access to religious or ethnic materials to members of certain groups. Cultural institutions have also debated the appropriateness of restrictions on how patrons can make use of collection materials above and beyond simply viewing them. For example, a museum may encourage viewing of an art object but disallow making even amateur photographic reproductions of that object without permission. In another example, most cultural institutions seek to control commercial republication of their digitized materials, requiring permissions and use fees prior to reuse. The ethics statements of national archival, library and museum associations all refer to the need to balance ensuring legal and legitimate use of cultural materials while facilitating wide access to, and use of, collections.

The Internet and networking technology has changed the access and use question in important ways: Online material has a distributed audience. If a collection is on the open Web, this could include everyone with sufficient bandwidth. But authorization technology also allows for greater refinement of an audience through use of tools such as passwords, user IDs or internet protocol (IP) number range restrictions. Use of authorization technologies allows institutions to control access to select groups of people regardless of their geographical locations.

Further, the audience can arguably do more with the cultural objects they view than in a physical environment. Because of the way computers work, viewing a digital surrogate for a cultural object equates with making a copy of it (at least temporarily). In many cases, the user can easily redistribute the work, alter it, or remix it into a new work.

The internet and networking have also facilitated the commoditization of cultural objects. License agreements can be quickly exchanged via click through license agreements or even the more basic email attachment or fax machine. Electronic commerce software and authority infrastructures means that charges can be assessed, amounts due can be paid via credit cards, and accounts can be quickly cleared with lower transaction costs than writing and mailing checks.

Finally, "technological protection measures" or hardware and software systems that facilitate control of digital works can place some limitations on the subsequent (or "downstream") uses that patrons can make of digital works. These technologies are not foolproof, but combined with

policy tools such as terms of use statements or end user license agreements, they can limit the range of uses allowed to patrons. All of these changes wrought by computerization and the Internet complicate the traditional balance between ensuring legal and legitimate uses and promoting access and use of collections.

We currently have little knowledge about the extent to which U.S. cultural institutions seek to control who should be able to access a collection and what they should be able to do with collection materials. Given the new possibilities, are U.S. cultural institutions employing them to create "controlled online collections," or network accessible collections where access to the collection is controlled, or use of the materials is controlled? Or, have U.S. cultural institutions instead focused on creating "open" online collections accessible to anyone with Internet connections, and with few use restrictions (e.g., printing or save restrictions) on digital works.

Moreover, we have little knowledge about the technology or policy tools cultural institutions employ to control access and use. Technology tools might include a range of hardware or software "technological protection measures" which might be part of a larger system such as a digital library, collections management, or digital asset management system. They may include use of relatively long-standing access control systems such as passwords, and IP range restrictions. Policy based include formal measures such as terms of terms of use statements, end user license agreements, or copyright status notes included in item metadata. The report acknowledges that one of the most important forms of control is the decision to not digitize something.

This study was funded by the Institute of Museum and Library Services as part of a 2006 Laura Bush Early Career Development Grant (RE-04-06-2006). Its purpose is to investigate the impact of technological protection measures on the development and use of digital collections created by U.S. cultural institutions including archives, libraries and museums. The survey sought to increase knowledge of how innovative cultural institutions are making use of technological and policy tools to control access to and use of collections. The study also aimed to increase understanding of the reasons why institutions seek to control access to and use of collections.

Study Goals

The study had the following goals:
1. Assess what technical and policy tools cultural institutions are employing to control access to and use of online digital collections.
2. Investigate motivations for controlling access to or use of collections (e.g., copyright, privacy, protecting traditional restrictions, income generation etc.).
3. Investigate discouragers to the implementation of access and use control systems (e.g., preference for open collections, lack of resources, institutional mission, etc.).
4. Gauge interest in implementing technical systems to control access to and use of collections.
5. Determine what types of assistance IMLS could provide.
6. Identify institutions with innovative controlled online collections for follow up case studies on policy, technical and managerial details.

The survey was aimed at "innovative" archives, libraries and museums that had at least one collection for which they sought to control access or use. This report refers to this type of collection as a "controlled online collection" (COC).

Work on the survey development began in 2007 and the analysis of the survey data occurred during the winter of 2008 and 2009. Follow up work developing case studies will continue in 2009.

Definitions and Terms:

Controlled Online Collection (COC):
An online collection where access to the collection is controlled or use of the collection is controlled. Control may be enforced by either a policy tool or a technological tool, but the tool must be employed with the intent to control access and or use. This excludes collections that are intended to be freely available to all possible users and contain no restrictions on subsequent reuse (i.e., commercial republication, incorporation into a new amateur work).

Technological Protection Measure (TPM):
In this report, technological protection measures, or "TPM" refer to technology based systems or tools (or "technology tools) that seek to limit access to or use of a work. TPM are more formally defined in national and international policy and legal documents as tools that prohibit uses not approved by owners of copyrighted works.[1] As copyright grants owners of works a wide array of rights, a TPM refers to any system that limits others' ability to make use of a work without permission. But while TPM are typically associated with controlling *copyrighted* works, they can also be employed to control works not protected by copyright. For example, an institution may employ a TPM to control use of non copyrighted materials because of concerns regarding privacy and personally identifiable information in those works. This report investigates TPM use on works *regardless* of copyright status.

Many people use the term "DRM" or digital rights management system to refer to this set of tools; however, the term "digital rights management" refers to the much broader set of concerns and tools associated with managing rights from both a licensor and a licensee perspective. For example, DRM would include technological or managerial systems to help institutions keep track of to whom they have licensed out rights to use an image. While DRM is a commonly employed term to refer to rights restricting technologies, in order to avoid confusion with broader rights management systems, this report employs the narrower term TPM.

---

[1] For example the WIPO Handbook on Intellectual Property refers to technological measures: "5.229 No rights in respect of digital uses of works, particularly uses on the Internet, may be applied efficiently without the support of technological measures of protection and rights management information necessary to license and monitor uses." "Technological measures ... are used by authors in connection with the exercise of their rights under this Treaty or the Berne Convention and that restrict acts, in respect of their works, which are not authorized by the authors concerned or permitted by law." (pg. 273)

By TPM this report do *not* refer to systems that block or filter Internet traffic in order to protect children from exposure to indecent or obscene materials. While the term "technological protection measure" is also used to refer to filtering systems, this report does not include any investigation of filtering systems or their use.

Policy Tool:
Formal and informal organizational level policies provide another set of tools to control access to and use of collections. This report investigated four types of policies: copyright status statements, acceptable use statements, intellectual property policies and "rationale for restriction" statements that provided an explanation for any access or use restrictions inherent in a collection. The report also investigated uses of signed and click through end user license agreements. Additionally, the study considered networked rights metadata as a policy tool. Rights metadata might be used by staff to make decisions about permitted access or use. Moreover, posted web metadata might also act as a form of acceptable use statement, arguably informing the public about permissible uses. Finally, rights metadata might be used by some TPM system to make automated access or use decisions.

2. Key Findings

1. Policy statements defining rights associated with digital collections are still nascent.

Cultural institutions report widespread copyright status statement availability, but reported availability of other policy documents is low. Archives reported the lowest level of policy document availability.

For example, acceptable use statements that "define permitted uses of a collection or object" were not available at around 16% of the responding institutions. Intellectual property policies that spell out the "principles, values and intent about IP assets owned and used by [a cultural institution]" are even less common with a third to a half of each institution type reporting no availability. Finally, a restrictions rationale statement explains restrictions "inherent in controlled online collections" were rare and around half of respondents reported no availability. Moreover, in some cases where the documents were available, they were not accessible to patrons on the website of the collection.

2. Cultural institutions control collections in order to avoid misrepresentation, mislabeling or misuse of cultural objects.

Among archives and museums, the most commonly reported reason for creating controlled online collections was ensuring that representations of cultural object are property described and that home repositories are clearly and properly identified.

The desire to ensure that digital surrogates of cultural objects are not misused or misrepresented was the top motivator for libraries to control collections, and the second most common motivator for archives and museums.

Avoiding legal risks was the third most commonly selected motivator by archives, libraries and museums. Other motivations related to the difficulties of getting explicit permission to re-publish materials in digital libraries also served as significant motivators, especially for libraries.

Exclusivity, revenue and cost recovery are motivators, but they are not ranked as highly as the previously described motivators.

Archives and libraries reported higher motivations related to complying with donor requirements, while archives and museums related higher motivations related to privacy and sensitive collections (e.g., endangered species, religious materials)

3. Non-attribution is also a major concern for cultural institutions as well as unauthorized commercial publication. Non commercial publication, and non commercial modification or derivative use were also ranked as significant concerns. Individual research and study, and non-commercial educational use were not ranked as strong concerns.

4. The primary reason why cultural institutions don't create controlled collection is the belief that open collections have a bigger impact. Concern with the potential legal complexities created by restricting collections also a great discourager, especially for libraries and museums. Institutional mission, policies, statutory requirements discourage creation of COC among archives and libraries.

5. The vast majority of controlled online collections are accessible to the general public, or accessible to "all institutional members." But, cultural institutions are providing more limited access to some materials to groups including: subsets of members, affiliates, individually registered users, and paying/subscribing customers.

6. Different institution types tended to adopt different technological systems to control access to or use of digital collections. Archives reported using digital library software, followed by homegrown or custom systems. Libraries reported using institutional repository software and streaming media servers. Museums reported using collections management software or digital asset management software.

7. Within the tools category, all three institution types commonly relied on low quality resolution or sampling, and use of thumbnails or clips to control collections.
All three institution types also made use of patron registration or permission systems to control access and or use. Use of click through and signed end user license agreements (EULAs) to control collections was also reported across a higher percentage of all institution types.

Tool type did vary by institution type. Visible watermarks were more commonly employed by archives and libraries. Libraries tended to more commonly use network ID authentication/IP range authentication, and streaming.

A smaller percentage of institutions are experimenting with other tools such as bitstream watermarking (museums) popup warnings (libraries and museums), disabling copy save features

of browser (archives and museums), and disabling use features in a (non browser) software interface. Numerous organizations from each category report using cookies or digital certificates. Several examples from each category reporting use of software decoder or viewers -- these may be built into systems such as digital library software or digital asset management systems.

8. Across all three institution types, the highest ranked priority for IMLS was to develop "policy/legal best practices and training."
Technology implementation best practices and training was ranked second by libraries and museums , while archives ranked tracking what cultural institutions in the US are doing with controlled collections second.

3. Background

Few studies of technological protection measure (TPM) use by cultural institutions have been published; however the literature contains extensive discussion of TPM including descriptions of development or implementation of new tools, concerns about the possible negative effects of TPM on society in general and cultural institutions and their users in particular, and discussion of the possible uses of TPM within cultural institutions. This section outlines the contours of the discussion and provides a few example references for interested parties to follow.

Several general audience introductions to technological protections measures are available. For example, Mike Godwin's ALA *Digital Rights Management: A Guide for Librarians* and his Public Knowledge *What Every Citizen Should Know About DRM, a.k.a. "Digital Rights Management* provide a good introduction (Godwin, 2004; Godwin, 2006). Similarly, the INDICARE Project's *Consumers Guide to Digital Rights Management* provides a very simple overview useful for non-technical readers (Groenenboom & Helberger, 2006). Agnew's *Digital Rights Management: a Librarian's Guide* provides an overview of technical aspects for a information professional audience seeking to develop systems (Agnew, 2008). Charles Bailey's scholarly communications bibliography includes a section devoted to articles addressing these issues (http://www.digital-scholarship.org/sepb/pcomm.htm).

Many have voiced concerns that use of technical protection measures will have a variety of negative impacts including: erosion of fair use rights, stunting of creativity, slowing the pace of science, and violating users' privacy (Burk, 2003; Cohen, 1996; Cohen, 2003; Lessig, 1999; Lessig, 2006). Burk and Gillespie argue that TPM restrictions are a moral affront as they negate users' autonomy in deciding how to use (or misuse) a work (Burk & Gillespie, 2006). Gillespie warns that if restrictions become taken for granted, TPM may reduce expectations about what one ought to be able to do with digital works (Gillespie, 2007; Gillespie). This erosion of expectation and autonomy may reduce public support for fair use rights in a digital age(Burk & Gillespie, 2006)

Within the cultural institution community, many have argued passionately that TPM are antithetical to cultural institutions' missions to preserve and provide access to works. TPM may

reduce libraries ability no negotiate changes in access or use terms in licenses by reifying those choices into underlying delivery systems (Adler, 2005). TPM may create user dissatisfaction, generate systems interoperability problems, block archival needs, and require increased staffing to handle support and training requirements (Agnew & Martin, 2003; Ayer & Muir; Bailey, 2006; Coyle, 2004).

Despite these ethical and practical concerns, TPM are used by cultural institutions because they offer a number of attractive affordances. TPM facilitate compliance with statute, license or professional norms for intellectual property rights, cultural heritage/cultural property rights, donor's requests, creators' moral rights. Moreover, they help protect the privacy of those portrayed in collections materials (Agnew, 2008; Foroughi, Albin, & Gillard; Ross, Donnelly, & Dobreva, 2004)

TPM (typically combined with licenses) facilitate protection of works that do not have copyright protection but require stewarding, expanding access to works whose use and users require a higher level of scrutiny. For example, collections of religious or ethnic materials are often controlled in respect of traditional cultural access and use rules. Uncontrolled access to and use of these materials could harm the groups which traditionally control them. As the anthropologist and indigenous cultural property scholar Michael Brown notes, "The uncontrolled replication" of digital indigenous cultural works "threatens to strip cultural elements of their history and undermine their authenticity." (Brown, 2003) Cultural institution professionals may feel a responsibility to ensure that their materials are not republished in a way that disparages the source community or misrepresents the material or its role in source community culture.

These concerns underlie an ongoing debate across cultural resources communities about "proper" use of cultural materials given the ease with which they can be copied, transmitted and reappropriated. Some fear degradation of works and their source cultures by consumers that care more about consuming an authentic experience than understanding cultural differences (Russell, 2006). Others charge that cultural institutions' focus on a ensuring an accurate narrative overlooks their potential contributions to the more quotidian enjoyment of life through injection of new works to popular culture (Holtorf, 2005). The balance between concerns about misuse and misrepresentation and the potential benefits of freer access to digitized surrogates of cultural works is ongoing.

The shrinking of public support for cultural institutions may also play a role in TPM adoption and use. Some in the cultural institutions arena have called for greater self-sufficiency and income generation through licensing of cultural materials for for-profit purposes, while continuing to provide free access or lower cost non-commercial reproductions of materials (Bower; Wall, 2003). Some have criticized digitization projects for lack of attention to sustainability and suggested that TPM can facilitate sustainable business models such as permissions and payment processes (Pantalony & Green, 2005; Ross et al., 2004).[2] Others have

---

[2] The claim that charging user fees is necessary to support cultural institutions is currently under intense debate within the cultural resources community. Numerous institutions are experimenting with new models under which non commercial users can obtain high resolutions digital surrogates without going through permissions processes or paying even modest use fees. The end user licenses employed to control downstream uses of digital surrogates in these permissions processes is also the subject of intense debate (Hamma, 2005; Max Planck Institute for the History

pointed to use of TPM in order to ensure authenticity of documents in an environment where making unauthorized copies and republishing altered versions is easy (Bide, 2002).

3.1 TPM Best Practices:

If TPM are already in use for at least some types of content, what "best practices" can the adopters of TPM use to stay as true as possible to their missions of preservation, education, and promotion of access? Several sources either suggest or have generated "best practices" for publisher use of TPM. While this content is mainly geared at consumer media or e-book publishers, it has value for cultural institution digital library publishers as well.

It is important to remember that much of the TPM debate has taken place against the 1998 passage of the highly controversial Digital Millennium Copyright Act (DMCA) and subsequent Copyright Office Rulemakings for exemptions to circumvention prohibitions in 2000, 2003 and 2006.[3] This initial controversy raised awareness about potential problems associated with TPM, and the concerns raised by library and archives advocacy during the Rulemakings are suggestive of the types of issues that cultural institutions will need to grapple with as they adopt and employ TPM to control access to and use of their own collections.

National and international advocacy organizations that represent cultural institutions (e.g., the Library Copyright Alliance, EBLIDA, Digital Futures Coalition) were active participants in the Copyright Office rulemaking processes. Analysis of their comments suggests criteria for TPM that conform to cultural institution values:
- TPM should be user friendly.
- TPM should not prohibit traditional non-infringing uses.
- TPM should protect patron privacy, and manage usage data responsibly.
- TPM should conform to standards.
- TPM should clearly label all restrictions.
- TPM should not be used to enforce overly strong or non-negotiable terms of use.
- TPM should allow exceptions for non-infringing purposes including deposit and preservation,

---

of Science, Jan 11 2009; Pantalony & Green, 2005; Rights and Reproductions Information Network (RARIN), 2004; Tanner & Deegan, 2003). Cultural institutions typically provide copies of works with the caveat that the use is restricted to that which is defined in the license. This limits downstream uses and arguably keeps future users coming back to the home institution for further use permissions. Some charge that cultural institutions have no business controlling downstream uses of works not protected by copyright; further, evidence suggests that cultural institutions make inappropriate copyright claims in these licenses (Dryden, 2008; Mazzone, 2006). The author plans to address these issues in a separate manuscript.

[3] The reader will recall that the DMCA changed copyright law such that the unauthorized distribution of "keys" or tools to "break into" or circumvent "locks" or TPM would be criminalized. Staying with the lock and key analogy, the law distinguishes between two types of locks and keys: access keys and copy keys. For locks that prevent access to a work, the law forbids both the unauthorized use and distribution of keys. For locks that prevent copying a work, the law permits the lawful use of the keys for non-infringing purposes, but forbids distribution of the keys. The law also required that the Copyright Office consider exemptions to these prohibitions in a rulemaking procedure every three years.

- Organizations employing TPM should develop dispute resolution processes to facilitate exceptions.
- System licenses should not claim precedence over statutory exceptions to copyright (EBLIDA, 2003; EBLIDA, 2004; Fox, 2000; Jaszi, 2002; Library Copyright Alliance, 2004; Lockwood, 2000).

In 2003, the ALA and the Association of American Publishers collaborated to sponsor the report, *What Consumers Want in Digital Rights Management* (Slowinski, 2003). While the report focused primarily on consumer purchased e-books, it also briefly reported on academic library electronic book projects and their treatment of rights issues. The reports study of commercial e-books noted relevant concerns in the areas of privacy, interoperability, usability, accessibility and device independence:

- TPM should respect user privacy
- A TPM should be able to render a work across different operating systems,
- The software needed for rendering or reading a work should have high usability.
- Systems should have assistive features such as text-to-speech
- Content that is tightly tied to software or hardware that may become obsolete

In its review of academic electronic book projects, the author searched for information about how six academic prominent e-book projects dealt with use restrictions. The report notes that most projects made no information available about use restrictions inherent in their digitized books. But the report highlighted the following use issues that e-book project developers will confront:

- Should system allow extraction of text for incorporation into other works (e.g., school report)?
- Can system allow annotation of an online work for personal research?
- How much of a work can be printed?
- Will the system allow downloading of a work?
- Will system allow emailing a copy of a work to friend or colleague?

The DigiCULT project's report on rights management and payment technologies for the cultural heritage sector examined four case studies (Ross, Donnelly, & Dobreva, 2004). It suggested that TPM meet the following seven criteria:

1. Prevent or inhibit unauthorized use of content without unnecessarily constraining authorized use;
2. Describe (or represent) the rights that the user has acquired in the content (e.g. to print, to copy, to exchange) in ways that make it possible for software and hardware applications to use the information to manage access;
3. Detail whether or when a license in the content expires;
4. Make the barriers to use as transparent to the consumer as possible and certainly only invoke restriction of use when conditions are not met;
5. Work effectively with different types of content;
6. Support different business models (e.g. pay per view, subscription);
7. Continue to allow `reasonable use' of content (e.g. for educational or personal use)

The European Union's INDICARE project report *Content Providers Guide to Digital Rights Management* outlines nine points for publishers to consider when employing TPM (Bohn, 2006):

1. **Target**: do not penalize lawful customers in the effort to reduce piracy.
2. **Ease of use**: Do not require unusual software players, support cross-platform usage, and do not restrict commonly expected uses. TPM restrictions should be advertised to users so that users do not mistake restrictions for systems malfunctions or bad service.
3. **Interoperability**: Allow content to be used on a variety of devices.
4. **Long-term impact**: Content authorized for use on particular devices will see problems when that device must be replaced. Consumers dislike it when content disappears after a subscription period ends.
5. **Special needs**: Consumers with physical or cognitive disabilities should be accommodated.
6. **Public Interest**: Overly restricted TPM may prevent knowledge dissemination via libraries, universities and other public institutions.
7. **Creativity and Innovation**: Publishers should consider the value of allowing their works to be incorporated into new not-for-profit amateur works created by members of the public.
8. **Alternatives**: Passive TPM like watermarking, consumer levies, or premium fees for unlimited use may achieve many of the same goals as more restrictive TPM with fewer problems.
9. **Content as Service**: DRM should enable attractive service-oriented business models (e.g., versioning or subscription services).

In 2006 the Center for Democracy and Technology published TPM evaluation criteria in order to encourage improvement in product markets where TPM were already widely deployed.(Center for Democracy and Technology, 2006):[4]

1. **Transparency**: the user should be informed of the effects of TPM in an understandable way and in places and at times more useful for the users' interaction with the product.
2. **Effects on use**:
    a. Personal use: personal copying, time shifting, place shifting, limited sharing
    b. Choice and interoperability: use on a variety of platforms or devices
    c. Facilitate creativity: can users be more than passive recipients of the work?
    d. Permanence/risk of unexpected loss: could users unexpectedly loose access to works they have lawfully obtained?
3. **Collateral impact**:
    a. Support for privacy and anonymity of use
    b. Security: does TPM create a security risk for the users' devices?
    c. Functionality: Can TPM impair the functionality of users' devices?
4. **Purpose and consumer benefit**:
    a. Does use of the TPM allow for the creation of new products that meet previously unmet demands? Does it give consumers new choices? Or does it reduce choices for consumers or remove/replace existing unprotected products?

---

[4] The CDT also published two other reports relevant to cultural institutions interested in controlled online collections: *Privacy Principles for Digital Watermarking* in 2008 and *Privacy Principles for Authentication Systems* in 2003.

Synthesis of these reports suggests the following guidelines for cultural institution use of TPM:

<div style="border:1px solid black; padding:10px;">

Summary of the Literature: TPM Guidelines:

1. Enable traditional non-infringing uses.
2. Respect user privacy in authentication, usage tracking and other control measures. Maintain the minimum amount of data necessary and steward user data responsibly.
3. Support accessibility to accommodate users with physical or cognitive limitations.
4. Support as many uses as possible, especially those important to the day-to-day work of your users (e.g., print, save, email, annotate). If you must use a restriction, employ the least restrictive tool possible.
5. Inform users of all use restrictions, the rationale for the restrictions, and provide and advertise a means for obtaining exemptions from those restrictions.
6. Use TPM to make new types of content or content services available rather than restricting previously available content.
7. Support standards, interoperability and device independence and avoid products that do not support standards or that create security or privacy issues for users.
8. Critically consider the rationale for TPM use and in light of the use restrictions. Does the rationale merit the restriction? What negative effects on creativity and new knowledge production may stem from the restriction? What rights are protected by the TPM use or what legal or regulatory requirements are achieved?

</div>

3.2 Controlled Online Cultural Collections – What Do We Know?

Several studies were conducted in the 2000's about the rights management, and "digital rights management" (DRM) technologies in higher education, library and archival contexts. This section summarizes the findings most relevant to this survey.

Early studies worked to generate requirements for controlling content in cultural institutions. Iannella's (2002) study generated abstract rights requirements for learning objects and licensed library resources based on analysis of scenarios elicited from stakeholders in the Australian higher education community (Iannella, 2002). The requirements most relevant to this report include:

- Reporting: ability to report on use of content
- Licensing: ability to streamline the long process of developing agreements for use
- Fee payment: ability to support online payment of fees for use of content including once-only and per-use fees.
- Usage: ability to support the control of objects within a software system in order to comply with constraints and permissions.
- Rights holders: ability to specify rights holders
- Security: ability to apply secure mechanism for content control, content delivery and user verification.(Iannella, 2002)

Similarly, Intrallect Inc. (2004) detailed requirements for rights management systems based on input from UK university, publisher and rights collection/negotiation stakeholders(Intrallect Inc., 2004). Relevant requirements elicited included:

- Discovery: Users should be shown permitted uses of a resource in a way that is both understandable to the user and legally accurate. The report suggests use of a symbol system.
- Registration: provides authorization for a user to use material and to obtain acknowledgement of the stated conditions of use by the user. The report suggests click-through forms as a valid way to gain acknowledgement. Registration would gather necessary information about the user.
- Information for Management: All rights metadata should be available to internal staff for management purposes.
- Authentication: A means of identifying those who wish to access resources
- Authorization: A matching of an authenticated user's rights to the uses allowed by a resource.
- Tracking/Accounting: Accounting for use via logs including tracking for the prevention of excessively large downloads or other inappropriate use.

Interestingly, the report concludes that technological protections above and beyond authentication, authorization and tracking were not necessary to core requirements of the study participants, except that protection may be necessary "as a condition of supply" in a given supplier's proprietary system(Intrallect Inc., 2004).

The lack of interest expressed in other technological protection measures available at the time has several possible explanations. It may stem from the professional orientation of the participants. Or it may just stem from the level of discussion entered into during development of the cases. Perhaps participants did not get around to discussing particular tools. Or, it could be an artifact of what tools were commonly available at the time. For example, one of the cases discusses distribution of video clips and notes concern that the material could be "retained and accessed after the allowed term" or that someone might try to download the whole collection (Intrallect Inc., 2004). There is no discussion of use of streaming technologies to prevent local saving of the videos. Quicktime and other streaming video software applications were not released until the early 1990's and they may not have been widely adopted enough for consideration by the participants.

The National Initiative for a Networked Cultural Heritage (NINCH) 2002 report Guide to Good Practice in the Digital Representation and Management of Cultural Heritage Materials reported that its 36 interviews found that most institutions only published low quality digital surrogates in order to protect their cultural works while they waited for other technological tools "to become more effective, standardized, widely used, and affordable."(National Initiative for a Networked Cultural Heritage, 2002)

The 2004 University of Maryland's Center for Intellectual Property (CIP) with backing from Mellon conducted a more widespread survey of universities and their use of digital content control tools in a study titled "Digital Content Control Systems and Higher Education" (Bonner & Center for Intellectual Property in the Digital Environment, 2006; Center for Intellectual Property in the Digital Environment, 2005). The study sought to understand how 393 universities controlled access, distribution and reuse of copyrighted content. The survey was sent to each

campuses CIO, dean of distance studies, and library director(Kelley, Bonner, Lynch, & Park, 2006). The study focused primarily on copyrighted content used in online learning – primarily publisher licensed content.

When asked about what technologies they employed to control use, respondents reported primarily using course management software, digital library systems, streaming media servers, client-side digital viewers or players to control content. Watermarking, and server side digital viewers or players were less commonly employed (Kelley et al., 2006).

In reporting on what uses their systems restricted, 36.6% of respondents limited retention of materials, 19.4% limited number of times a resource could be accessed or the time period in which it could be accessed, and 16.5% limited reuse of materials. Respondents indicated that they implemented control systems primarily to "comply with license agreements" (81.3%), "comply with copyright law" (76.5%), "protect sensitive information" (64.3), and "to protect copyright owners rights" (49%)(Kelley et al., 2006).   Kelley et al. concluded that interest for protections beyond access control was "lukewarm" because most publishers did not call for more severe DRM. However some believed that use of more restrictive tools might increase the range of online content available as well as decrease institutional liability.

Dryden's study of Canadian archives' digital copyright practices was the first survey to focus exclusively on protection mechanisms in cultural institutions and cultural digital collections (Dryden, 2008). Dryden surveyed 106 archives and found that most (56%) of her respondents reported that they were concerned that visitors may "may copy or download archival material" from their Website. She found that most (70%) of respondents strongly disagreed or disagreed that it was permissible to republish without permission as long as you credited the home institution.   She found that 57% of her respondents strongly agreed or agreed with the statement "It is important to restrict the ability of visitors to our website to copy or download documents from our website without our permission." (Dryden, 2008).

Follow up interviews that explored reasons for the concern about downloading suggested that respondents were concerned about:
- Others' financially benefiting from the work, and the loss of potential revenue to the institution.
- Ensuring authenticity including accurate labeling, repository identification, and ensuring the work is presented "in context."
- Negative effect on the reputation or legal liability of the archive stemming from misuse
- Lack of discussion with users regarding permissions and downstream uses removes a mechanism of showing impact of the archive and its value to society. (Dryden, 2008).

Dryden also asked what "measures" archives took to "limit further uses." She found that most (79%) employed low resolution images as a means of limiting further uses. Watermarks were employed by 20% of her respondents. Only 3% of her respondents reported "us[ing] click-through agreements or otherwise require the user to navigate through a copyright information page before viewing a digital resource." Four of her respondents (less than 2%) disabled the right click copy feature in browsers, and 2 of those respondents only disabled it on larger image

sizes. Dryden notes that 8% of her respondents encouraged reuse by including print links or by including instructions on how to print or save (Dryden, 2008).

Dryden also analyzed 154 Canadian archives' Web posted copyright statements and acceptable use (terms of use) statements. She found that 64% of archival Websites she examined had some type of copyright statement, but only 47% of archives had acceptable use statements.   She asked (yes/no) if archives charge users a fee to use documents. 22% reported charging fees, 41% did not, and 37% waved or charged depending on whether the use was commercial or not (Dryden, 2008).   Her interviews however suggested that the fees were not an important source of revenue in most cases.

4. Methodology

4.1 Question Development

Because no prior set of directly relevant survey questions existed, most of the survey questions were drawn from readings of the related literatures and modified during preliminary interviews.

Questions related to access and use rights were drawn from a number of reports and articles discussing intellectual property issues (Besek & Iannella, 2002; Caplan et al., 2003; Danielson, Cohen, & Seegar, 2001; NISO Framework Advisory Group, 2004; Rights and Reproductions Information Network (RARIN), 2004; Seegar, 2001; Spinazze, Allen, & Bishoff, 2004; Zorich, 2003a; Zorich, 2003b). Numerous reports on rights issues in digital cultural heritage collections provided ideas and definitions related to the rights that use controls might seek to restrict (e.g., personal study vs. non-attribution). The 2004 Intrallect report provides quite a comprehensive list (Intrallect Inc., 2004).

Further works on collection access and use ethics related to sensitive collections were also helpful (Standards for ethical conduct for rare book, manuscript, and special collections librarians, with guidelines for institutional practice in support of the standards, 2d edition, 1992.1993; Behrnd-Klodt & Wosh, 2005; Benedict & Society of American Archivists, 2003; National Park Service, 2006) Relevant professional association ethics statements regarding collection access, privacy, restrictions and donor requirements were consulted.

Wording for questions on copyright policies, acceptable use policies, and use were drawn from reports and guides for developing cultural institutions intellectual property policies (New Jersey Digital Highway, 2007; Zorich, 2003a) from feedback with the study consultant, and from the author's related work on the access and use restrictions in contemporary licensed products (Eschenfelder & Walden, 2008; Eschenfelder, 2008)

Questions related to specific access or use control technologies were drawn both from pretesting and from a number of background sources (Besek & Iannella, 2002; Bonner & Center for Intellectual Property in the Digital Environment, 2006; Center for Intellectual Property in the Digital Environment, 2005; Geser, 2002; Godwin, 2006; Grout, Purdy, & Rymer, 2000; Kanter, 2002; Ross, 2002; TASI)

The study used demographic questions and IMLS prioritization questions from the two previous IMLS Digitization Surveys (Institute of Museum and Library Services, 2002; Institute of Museum and Library Services, 2006)

Descriptions of digital library object types and subject descriptors were drawn from the IMLS Digital Collections Registry Index.[5] The list of common types of digital collections was drawn from the IMLS 2006 Digitization Survey question on digitization priorities.

4.2 Survey Pretesting and Pilot Testing

The University of Wisconsin Survey Center was contracted to serve as a survey design consultant and survey fielding service. The Survey Center recommended use of paper mail survey with a $2 inducement in order to maximize the response rate (Fricker & Schonlau, 2002).

Survey development began preparation of a draft instrument from the sources described above and from interviews with informants. Question development, pretesting and revision continued from January 2007 to early spring 2008. This pretesting included continuous informal conversations and formal interviews with representative informants at conferences, via telephone calls and through face to face visits. The survey development process was iterative, and the instrument went through at least 19 revisions prior to formatting and layout for formal pilot testing purposes.

In March of 2008, the University of Wisconsin Survey Center developed a formal survey instrument and cover letter. Survey Center materials were again pretested with representative respondents including members of the study advisory board, the study consultant, and a select number of respondents from the survey sample list. The principal investigator faxed or emailed PDF copies of the draft survey to pilot testers, asked them to complete the survey, to mark any areas they felt were confusing or needed more work, and to write in any additional items they felt were missing. The pilot testing occurred iteratively throughout spring 2008 with the principal investigator sending out drafts, reviewing comments (sometimes phoning pilot testers for further explanation) and modifying the survey design. The survey went through an additional ten versions during spring of 2008.

The final survey version was printed and readied for mailing in early May of 2008. Three separate versions were prepared for archive, library and museum audiences; however the survey versions only differed in terms of demographic questions and the wording of cover letters. All other questions were the same across the three institution types.

4.3 Sample Development
The primary aim of the survey was to gather information about the policies developed by, technologies used by, and challenges faced by institutions actually engaged in the practice of

---

[5] IMLS Digital Collections and Content (http://imlsdcc.grainger.uiuc.edu/)

controlling access to or use of collections.[6] We defined this unknown set of institutions as "COC institutions." There was no easily identifiable "COC institution" target population; accordingly, a good deal of time and effort went into developing the survey sample. Work on conceptualizing the sample and developing lists of names and contact information stretched from Fall 2007 through Spring 2008.

The methods employed by previous digitization surveys to identify populations were not suitable given this study's need to focus on "COC institutions." Most previous studies have included all, or a random sample of, institutions belonging to a certain class (e.g., ARL libraries, libraries serving certain population sizes, all 50 state archives/historical societies) or included in certain published lists (e.g., included in IMLS Digital Collections Registry, members of National Conference for state Museums Association). Use of these sampling techniques would have included a large number of institutions with no COC. Further it would have restricted respondents to those in a certain class not necessarily corresponding to our desired sample of COC institution (e.g., who had received IMLS funds for digitization, or large institutions).

The COC Survey employed a targeted sampling technique that aimed to send the survey to organizations most likely to host COC, with a few caveats described below. In doing so, we assumed that "innovative" organizations were more likely to be experimenting with COC than non-innovative institutions. Innovative institutions were defined as those that either: (1) recently received a digitization grant, (2) recently presented at a conference about their digital collection, (3) were recommended by an expert from their field.

1. "Innovative institutions" had received a grant in the last four years. We included recipients of IMLS, NEH, NHPRC, and NSF DL grants. In order for the institution to be included, the grant title had to suggest that the project had something to do with digital collections.

2. "Innovative institutions" were institutions whose staff members had presented something about digital collections at a set of conferences in the last two or three years.   Conferences were suggested by the study consultant and initial interviews.

Preliminary interviews also led us to believe that institutions with large audio and video collections might be most likely to experiment with COC; therefore, we purposefully included conferences addressing audio and video issues.

We examined the programs of the following conferences for presentations on digital collections:

- ICHIM (05, 07),
- Museums and the Web (06,07)
- WebWise (06,07)
- Society of American Archivists Annual Meeting (05,06)
- Open Repositories (06,07)

---

[6] The goal of the survey was not to measure cultural institutions general attitudes toward controlled online collections, although this report does include some attitudinal data from the participating organizations.

- Museum Computer Network (06,07)
- Computers and Libraries (06,07)
- ARSC Association of Recorded Sound Collections (06, 07)
- Association of Moving Image Archivists (06, 07)
- Mid-Atlantic Regional Archives Conference (06, 07)
- Joint Conference on Digital Libraries (06, 07)

3. "Innovative institutions" also included institutions suggested by experts in each field. We asked experts from each field to review a draft sample list and suggest additions.

In addition to the "innovative institution" sample development strategy described above, the end sample included two further classes of institution who were underrepresented in the initial drafts of the sample created using the above methodology: state archives and public libraries.

Review of the original lists suggested that it did not include enough state archives/historical societies. We scanned numerous regional archives proceedings for archives to include, but we found few discussions of digital collections at those meetings. Anecdotal evidence also suggested we were missing archives that we knew had had COC. For example, one of our pretester archives, who we knew had COC from pretesting, did not appear on the original list. Based on this, we added all remaining state archives to our sample.

Similarly, almost no public libraries appeared in the sampling list; however we knew of at least one that had COC projects underway. Based on this we added the 12 largest public library systems, based on budget, to the sample list.

In order to maximize the response rate, the survey was sent to a specifically named person at each institution with instructions that the survey could be answered by multiple parties at one institution. We gathered contact information from institutional websites, from conference proceedings, and from cold-calling the institution's management offices. We sought to send the survey to individuals who had titles like *manager of digital collections or digital projects*, *IP manager*, *rights manager* or *head curator*. When no contact information was available, or when instructed to do so, we sent the survey to the director of the archive, library or museum.

There are several limitations that stem from the sampling methods employed. First, the sample purposefully excluded certain types of organizations including those whose primary purpose was to provide open access to public records or government publications. Some state archives that have extensive public records collection did however end up in the sample. We also excluded all dark archives as they only provide access to client institutions.

4.4 Fielding the Survey

The survey was fielded by the University of Wisconsin Survey Center. The fielding included three mailings: a full mailing with cover letter to all 343 institutions (including a cover letter, questionnaire, and business reply envelope), a postcard reminder, and two additional full

mailings to institutions who had not responded to the previous mailings as recommended by survey methodologists (Dillman, 2000).

The schedule for mailings was as follows:

Mail Wave	Date		Cases Included	
1st Mailing	Full mailing		May 22, 2008	(N=342)
2nd Mailing	Reminder postcard		May 29, 2008	(N=342)
3rd Mailing	Full mailing		June 18, 2008	(N=225)
4th Mailing	Full mailing		July 16, 2008	(N=156)

Additionally, the PI spent late July and August of 2008 contacting non-responders in order to try to get additional returns. Email and phone call follow ups did result in a small number of additional returns. All efforts to obtain additional completed questionnaires ended on September 19, 2008.

4. 5 Limitations

The data presented in this report are subject to numerous limitations. (1) The data represent a snapshot in time and, for this reason, have limited temporal validity. (2) The study design aimed to sample "innovative" institutions; therefore the study results are not representative of the general population of U.S. archives, libraries and museums. (3) The relative newness of controlled online collections (COC), and lack of common vocabulary for talking about them, likely led to confusion among the study participants and errors in reporting. For example, it is almost certain that some library respondents included licensed digital libraries of vendor material as part of their COC, despite the survey instruction's attempt to exclude those materials from consideration.

5. Findings

This chapter provides an overview of the data including some detailed comparisons of archive, library and museum responses.

5.1 Overall demographics

5.1.1 How many archives, libraries and museums answered the survey?

The survey was answered by 234 respondents. This is included 85 libraries (36.32%), 85 archives (36.32%), and 64 museums (27.35%). Not all respondents answered all survey questions.

Table 1: Institutions Responding to Survey (Total)

Institution Type (archive, library, museum)		
	Frequency	*Percent*
Archives	85	36.32
Libraries	85	36.32
Museums	64	27.35
Total	234	100%

Archives

Of the 85 archive respondents, 42 respondents were state government archives (49.41%), 24 were college/university archives (28.24%), 8 were historical society archives (9.41%),4 were museum or independent archives (4.71%) and 3 were federal government archives (3.53%).

Table 2: Total Respondents - Type of Archive

Archive Type	Frequency	Percent
Federal government archive	3	3.53
State government archive	42	49.41
Affiliated with a college or university	24	28.24
Affiliated with a museum	4	4.71
Affiliated with a historical society	8	9.41
Separate or independent archive	4	4.71
Total	85	100.0

Libraries

The 85 library respondents included 62 academic libraries (72.94%), 9 public libraries (10.59%), 2 libraries affiliated with an archive (2.35%), 1 state library agency (1.18%), 1 library affiliated with a museum (1.18%), and 10 "other" libraries (11.76%).

Table 3: Total Respondents - Type of Library

Library Type	Frequency	Percent
Public library	9	10.59
Academic library	62	72.94
State library agency	1	1.18
Affiliated with a museum	1	1.18
Affiliated with an archive	2	2.35
Other	10	11.76
Total	85	100.00

Museums

The 64 museum respondents included 22 art museums (34.38%), 11 natural history museums (17.19%), 5 history museums (7.81%), 4 science and technology museums (6.25%), 4 arboretum or botanical gardens (6.25%), 3 historic houses/sites (4.69%), 1 general museum, 1 nature center (both 1.56%), and 13 "other" museums (20.31%).

Table 4: Total Respondents – Type of Museum

Museum Type	Frequency	Percent

Arboretum or botanical garden	4	6.2
Art museum	22	34.3
General museum	1	1.5
Historic house/site	3	4.6
History museum	5	7.8
Natural history or anthropology museum	11	17.1
Nature center	1	1.5
Science or technology center	4	6.2
Other	13	20.3
Total	64	100.00

5.2 Demographics of COC institutions

This report focuses on "COC institutions" or the subset of institutions that report *either having COC or planning development of COC in the near future*. COC institutions included 62% of the responding archives (N=53), 71% of the responding libraries (N=60), and 64% of the responding museums (N=41). Non COC institutions are defined as those institutions that indicated that they did not have COC and they were not planning development of any COC.

Table 5: COC Institutions

Institution Type	*COC*		*Non COC*		*Total Frequency*
	Frequency	*Percent*	*Frequency*	*Percent*	
Archives	53	62	32	38	85
Libraries	60	71	25	29	85
Museums	41	64	23	36	64

5.2.1 Demographics of COC Archives

Of the 53 COC archive respondents, 22 respondents were state government archives (41.5%), 18 were college/university archives (34%), 6 were historical society archives (11.3%), four were museum archives (7.5%), 2 were independent archives (3.8%) and one was a federal government archives (1.9%). Readers should interpret results bearing in mind that most respondents were either state government archives or college/university archives.

Table 6: COC Archive Types

Archive Type	*Frequency*	*Percent*
Federal government archive	1	1.9
State government archive	22	41.5
Affiliated with a college or university	18	34.0
Affiliated with a museum	4	7.5
Affiliated with a historical society	6	11.3
Separate or independent archive	2	3.8
Total	53	100.0

It is important to point out that these COC archives differ from the archives population responding to the 2006 IMLS Digitization Surveys. For example, most COC institutions tend to be larger (more than 5 staff members – see Table 7) and fall into what IMLS digitization reports term "large" budget sizes ($750,000 and above – see Table 8). 2006 IMLS Digitization Survey respondents tended to have smaller staff sizes and smaller budgets.

Table 7: Archive Size Comparison with 2006 IMLS Digitization Survey

FTE Staff Size	2008 COC Survey Percent Archives	2006 Digitization Survey Percent Archives
Less than 5	15.1	60.7
6-10	17	15.4
11-25	13.2	12.8
26-75	20.8	9.4
76-150	7.5	0.9
151-250	11.3	-
251-500	3.8	-
501-1,000	1.9	-
1,001-1,500	1.9	-
More than 1,500	5.7	0.9
No report	1.9	-
Total	10010.00%	100.1%

Table 8: Archive Budget Comparison with 2006 IMLS Digitization Survey

Budget Size	2008 COC Survey Percent Archives	2006 Digitization Survey Percent Archives
Less than $250,000	11.3	53
$250,001-$500,000	7.5	20
$500,001-$750,000	1.9	3.5
$750,001-$1,000,000	9.4	7.0
$1,000,001-$5,000,000	32.1	11.3
$5,000,001-$10,000,000	5.7	3.5
10,000,001-$25,000,000	9.4	0.9
More than $25,000,001	11.3	0.9
No report	11.3	-
Total	9990.00%	10010.00%

5.2.2 Demographics of COC Libraries

Of the 60 COC libraries, the vast majority (49) were academic libraries (81.7%). The next largest group (6) described themselves as "other" types of libraries (10%). Few public (2), state libraries (1), museum (N=1) or archive libraries (1) fell in the COC group. Readers should interpret the results bearing in mind that most library respondents were academic libraries.

Table 9: Type of COC Library

Library Type	Frequency	Percent
Public library	2	3.3
Academic library	49	81.7
State library agency	1	1.7
Affiliated with a museum	1	1.7
Affiliated with an archive	1	1.7
Other	6	10.0
Total	60	100.0

Table 10 compares COC libraries (which are predominately academic libraries), with the sample of academic libraries reporting in the 2006 Digitization Survey. COC libraries tend to be larger (see Table 10) and have larger budgets (see Table 11).

Table 10: Library Size Comparison with 2006 IMLS Digitization Survey

FTE Staff Size	2008 COC Survey Libraries (%)	2006 Digitization Survey Libraries (%)
Less than 10	-	51.5
11-25	11.7	24.3
26-75	11.7	15.7
76-150	15	5.7
151-250	23.3	1.4
251-500	16.7	1.4
501-1000	5	-
More than 1,001	10	-
No report	6.7	-
Total	100.1%	10000.00%

Table 11: Library Budget Comparison with 2006 IMLS Digitization Survey

Budget Size	2008 COC Survey Libraries (%)	2006 Digitization Survey Libraries (%)
Less than $250,000	3.3	21.7
$250,001-$500,000	-	23.3
$500,001-$750,000	-	17.4
$750,001-$1,000,000	-	5.8
$1,000,001-$5,000,000	11.7	26.1
$5,000,001-$10,000,000	13.3	2.9
$10,000,001-$25,000,000	38.3	2.9
More than $25,000,001	20	-
No report	13.3	-
Total	9660.00%	9430.00%

5.2.3 Demographics of COC Museums

Of the 41 COC museums, 16 were art museums (39%), 7 were "other" museum types (17.1%), and 6 were natural history/anthropology museums (14.6%). Three history museums, 3 science/technology centers, 2 arboretums/botanical gardens, 2 historic house/sites, 1 nature center and 1 general museum also reported. Readers should interpret the results bearing in mind that most museum respondents were art museums.

Table 12: Type of COC Museums

Museum Type	Frequency	Percent
Arboretum or botanical garden	2	4.9
Art museum	16	39.0
General museum	1	2.4
Historic house/site	2	4.9
History museum	3	7.3
Natural history or anthropology museum	6	14.6
Nature center	1	2.4
Science or technology center	3	7.3
Other	7	17.1
Total	41	100.0

Similar to archives and libraries, COC Museums are larger than most of the museums reporting in the 2006 IMLS survey (see Table 13) and have larger budgets (see Table 14).

Table 13: Museum Size Comparison with 2006 IMLS Digitization Survey

FTE Staff Size	2008 COC Survey Museums (%)	2006 Digitization Survey Museums (%)
Less than 5	4.9	57.9
6-10	4.9	13.7
11-25	17.1	11.7
26-75	26.8	12.2
76-150	12.2	2.7
151-250	9.8	1.1
251-500	12.2	.7
501-1,000	9.8	-
1,001-1,500	-	-
More than 1,501	2.4	-
Total	240.00%	10000.00%

Table 14: Museum Budget Comparison with 2006 IMLS Digitization Survey

Annual Budget	2008 COC Survey Museums (%)	2006 Digitization Survey Museums (%)
Less than $250,000	2.4	48
$250,001-$500,000	2.4	14.6
$500,001-$750,000	4.9	6.5
$750,001-$1,000,000	2.4	7.4
$1,000,001-$5,000,000	24.4	17.8
$5,000,001-$10,000,000	19.5	3.2
$10,000,001-$25,000,000	9.8	2.0
Over $25,000,000	26.8	.5
No report	7.3	-
Total	99.9%	10000.00%

5.3 Demographics of COC

This section provides basic information on the controlled online collections described by the survey respondents. A controlled online collection (COC) was defined as a network accessible collection of digital materials where access to the collection is controlled or use of the digitized materials is controlled. COC do not include: collections of licensed or subscription based materials to which the institution provides access, digitized materials primarily for internal staff use, or completely unrestricted or open online collections.

5.3.1 Portion of Online Collections that are Controlled

Archive

The first question asked, "What portion of your online collections are controlled online collections?" Respondents were instructed to choose one best answer. COC archives responses show a bi-modal distribution with 32.1% responding that only a "small amount" of their online collections were controlled and 32.1% responding that "almost all or all" of their online collections were controlled.

Figure 1: Archives Portion of Online Collections that are COC

COC Archives: Portion of Online Collections that are COC
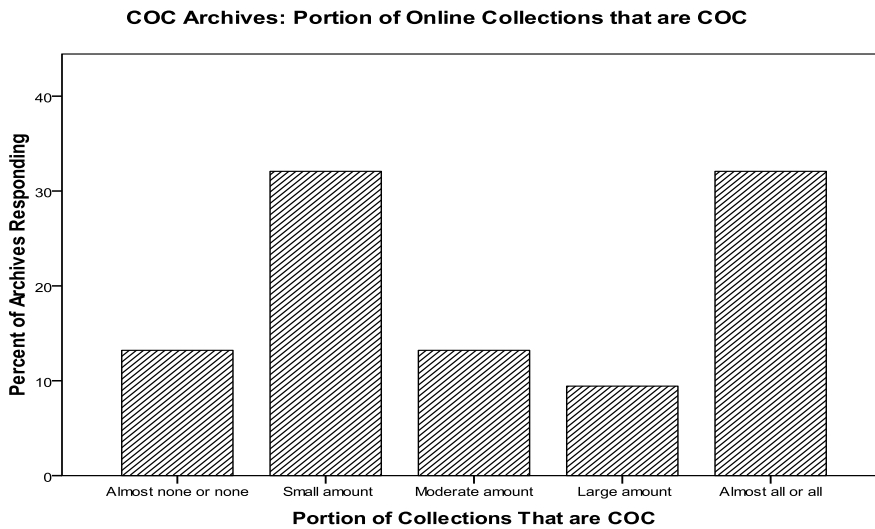
Table 15:Archive Portion of Online Collection that is COC

Portion of Collection that is Controlled	Archives Responding (N)	Archives Responding (%)
Almost none or none	7	13.2
Small amount	17	32.1
Moderate amount	7	13.2
Large amount	5	9.4
Almost all or all	17	32.1
Total	53	100%

Library

Libraries showed a more even distribution of responses with 16.7% responding that "almost none or none" of their online collections were controlled, 28.3% responding "small amount," 16.7% responding "moderate amount," 18.3% responding "large amount," and 18.3% responding "almost all or all."

Figure 2: Portion of Library Collections that are COC

Library: Portion of Collections that are COC
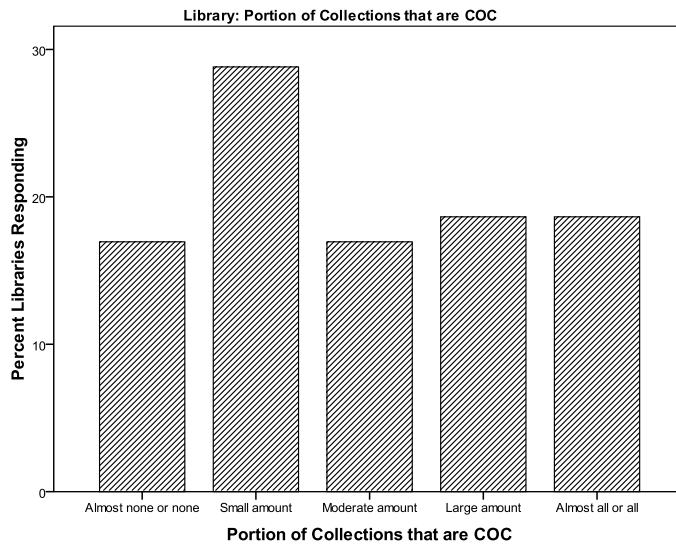
Table 16: Portion of Library Collections that are COC

Portion of Collection that is Controlled	Libraries Responding (N)	Libraries Responding (%)
Almost none or none	10	16.7
Small amount	17	28.3
Moderate amount	10	16.7
Large amount	11	18.3
Almost all or all	11	18.3
Missing	1	1.7
Total	60	100%

Museum

A greater percentage of museums controlled a greater portion of their collections. Table 17 shows that 41.5% of responding museums reported that "almost all or all" of their online collections were controlled. It shows that 12.2% reported a "large amount", 17.1% reported a "moderate amount", 14.6% reported a small amount of their online collections were COC. Only 12.2% reported that "almost none or none" of their online collection were COC.

Figure 3: Museums Portion of Online Collections that are COC

Museums: Portion of Online Collections that are COC
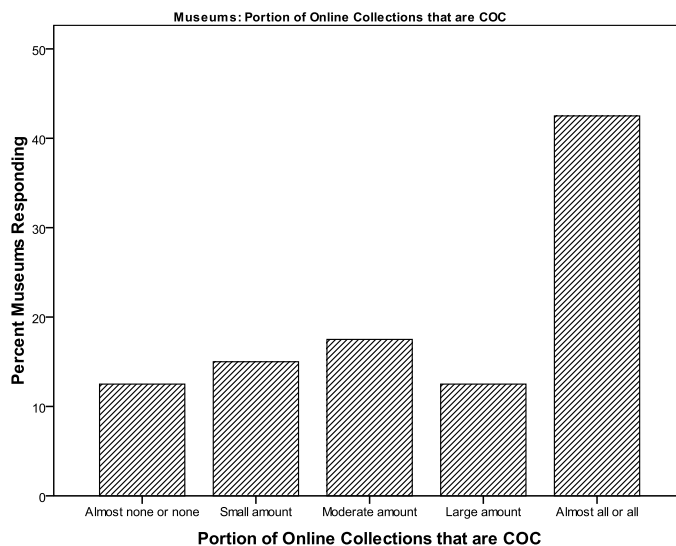
Table 17: Museums Portion of Online Collections that are COC

Portion of Collection that is Controlled	Museums Responding (N)	Museum Responding (%)
Almost none or none	5	12.2
Small amount	6	14.6
Moderate amount	7	17.1
Large amount	5	12.2
Almost all or all	17	41.5
No data	1	2.4
Total	41	100%

5.3.2 Object Types Contained in COC

The next question asked respondents "Which of the following object types are represented in your controlled online collection?" Assuming that any given respondent might have several different COC, respondents were instructed to choose multiple object types. The list of object types was drawn from the object type categories employed by the IMLS Digital Collections Registry Index hosted at University of Illinois Urbana-Champaign[7]. The survey inadvertently excluded the "physical object" object type but write in responses below suggest that future surveys should include this object type as (e.g., digital image of physical object).

Archives

The most popular object type chosen by archives was images (chosen by 88.7% of respondents) and then text object types (64.2% of respondents). Fewer responding archives had data, moving

---

[7]

images or sound (37.7% of respondents chose each of these). Only 11.3% of archives described holding interactive resources in COC.

Figure 4: Object Types Contained in Archive COC
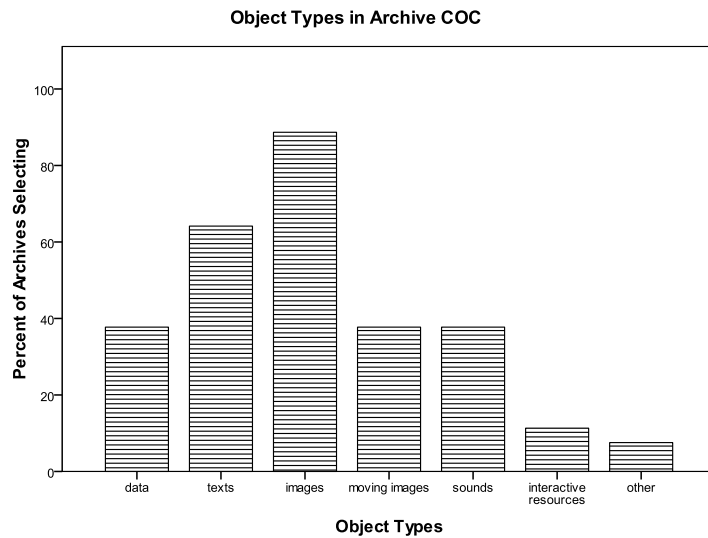
Table 18: Object Types Contained in Archive COC

Object Type	Archives Selecting (%)
Images	88.7
Texts	64.2
Data	37.7
Moving images	37.7
Sounds	37.7
Interactive resources	11.3
Other	7.5

"Other" controlled holdings described by respondents included: "web sites," and "published magazines."

Library

Similar to archives, 86.4% of library respondents indicated they held the image object type in their COC. Most libraries (64.4%) also indicated they held the text object type. A greater percentage of libraries however indicated holding sounds (49.2%), and moving images (42.4%) than archives. A lower percentage of libraries indicated that they held data (11.9%) or interactive resources (6.8%) in their COC than archives.

Figure 5: Object Type Contained in Library COC

Object Types in Library COC
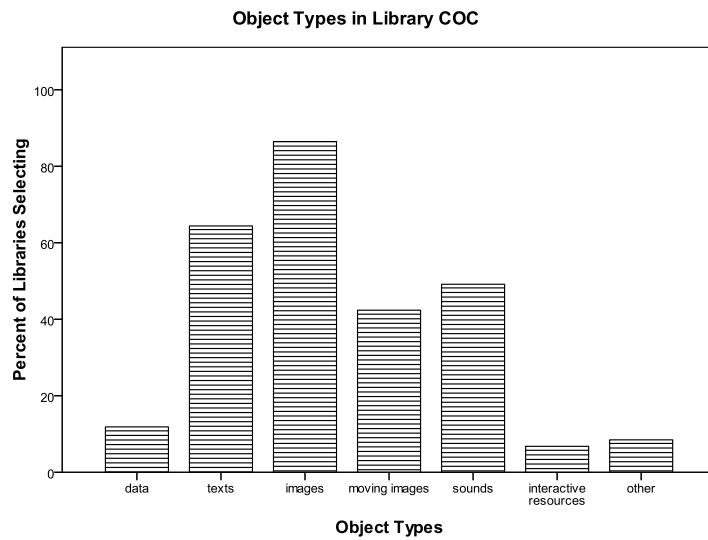
Table 19: Object Type Contained in Library COC

Object Type	Libraries Selecting %
Images	86.4
Texts	64.4
Sounds	49.2
Moving images	42.4
Data	11.9
Other	8.5
Interactive resources	6.8

Other object types written in by library respondents included: "QTVR" file types, "staffing material," "web pages," and "ETDs" (electronic thesis and dissertation).

Museum

Figure 6: Object Types Contained in Museum COC
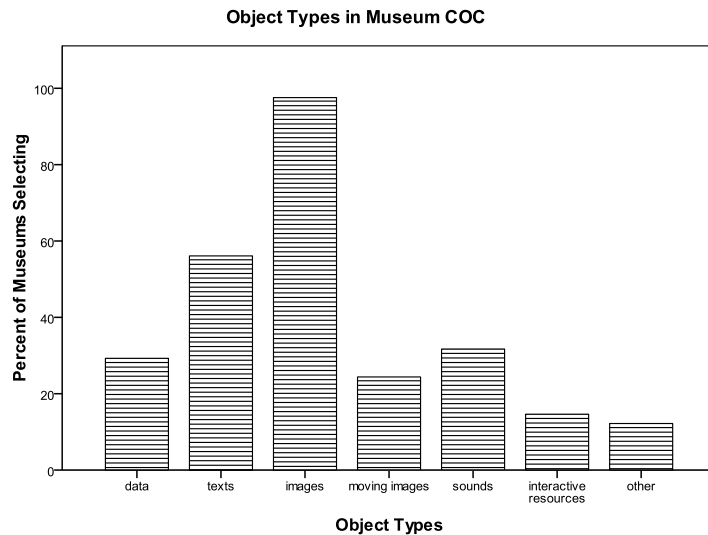
Asked the same question, Almost all (97.6%) museums described holding images in their COC. More than half (56.1%) claimed to hold texts, and more than a quarter claimed to hold sounds (31.7%), and data (29.3%). Slightly less than a quarter claimed to hold moving images (24.4%). Only 14.6% claimed to hold interactive resources.

Table 20: Object Types Contained in Museum COC

Object Type	*Museums Selecting %*
Images	97.6
Texts	56.1
Sounds	31.7
Data	29.3
Moving images	24.4
Interactive resources	14.6
Other	12.2

Other object types written in by museum respondents included: "maps," "GIS files," "images of instruments, tools decorative arts," "EAD Finding aids," and "music."

5.3.3 Digital Library Types Represented in COC

The survey then asked respondents "Which of the following common digital library collection types are included in your controlled online collections?" Respondents could select multiple digital library types. The list of digital library types was drawn from the lists of "Primary Digitization Priorities" of the 2006 Digitization Survey digitization priorities excluding some items that the researchers felt would not need to be controlled or material that was licensed (e.g., electronic reserves)

Archive

The collection types most commonly selected by COC archives included: historical photographs (78.4%), manuscripts (41.2%), correspondence, diaries, personal records (35.3%), maps (33.3%), cultural artifacts (29.4%), other sound (27.5%) and other (27.5%)

Figure 7: Collection Type of Archive COC

DL Collection Type of Archive COC
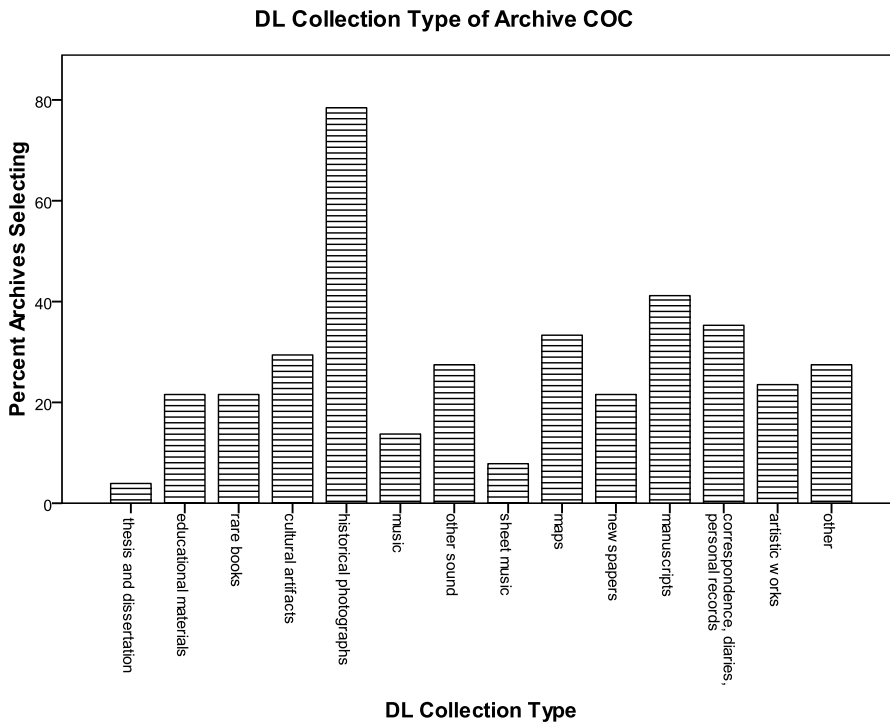
Table 21: Collection Type of Archive COC

DL Collection Type	Archives Selecting %
historical photographs	78.4
Manuscripts	41.2
correspondence, diaries, personal records	35.3
Maps	33.3
cultural artifacts	29.4
other sound	27.5
Other	27.5
artistic works	23.5
educational materials	21.6
rare books	21.6
Newspapers	21.6
Music	13.7
sheet music	7.8
thesis and dissertation	3.9

Other collection types written in by archives included: "oral histories," "government documents," "state government records," "public/vital records," "data," "surveys," "data sets," "codebook," "journals of ethnographic research," "film," "historical photos maps, newspapers" "historic trademarks," and "preprints/postprints/presentations"

Library

The collection types most often selected by COC libraries included: historical photographs (52.5%), artistic works (44.1%), thesis and dissertation (32.2%), manuscripts (32.2%), cultural artifacts (30.5%), correspondence, diaries, personal records (30.5%), educational materials (28.8%), rare books (28.8%) and other (28.8%).

Figure 8: DL Collection Types of Library COC
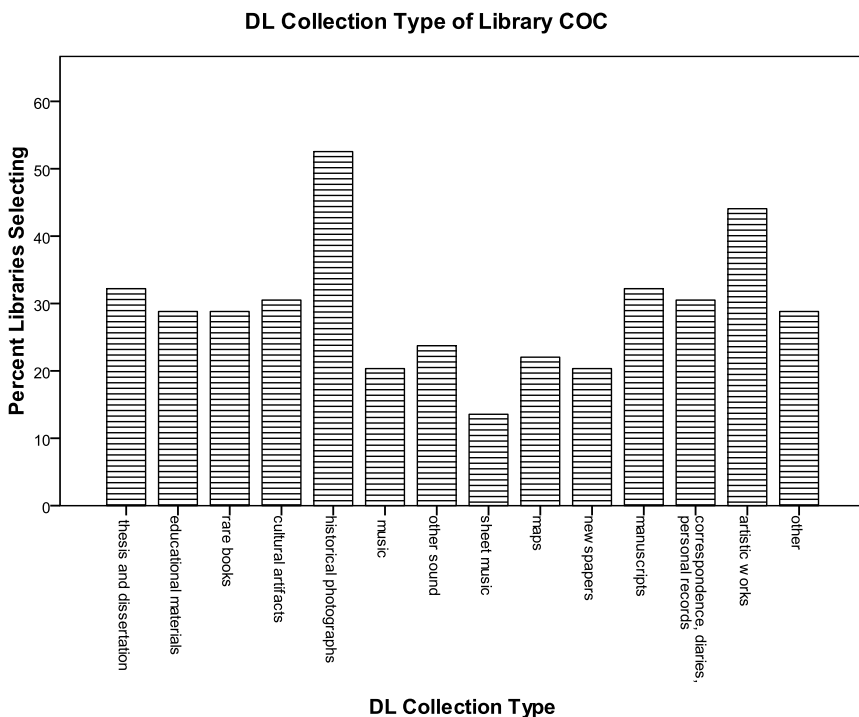
Table 22: DL Collection Types of Library COC

DL Collection Type	Libraries Responding %
Historical Photographs	52.5
Artistic Works	44.1
Thesis And Dissertation	32.2
Manuscripts	32.2
Cultural Artifacts	30.5
Correspondence, Diaries, Personal Records	30.5
Educational Materials	28.8
Rare Books	28.8

Other	28.8
Other Sound	23.7
Maps	22.0
Music	20.3
Newspapers	20.3
Sheet Music	13.6

"Other" collection types written in by libraries included: "library publications," "images within copyright," "wildlife audio and video recordings," "advertisements," "historic videos," "not-so-rare books," "moving images," "oral histories," "data sets," "papyri," "posters," "non historical images," and "lectures and presentations."

Museum

Collection types most often selected by COC museums included: historical photographs (65%), cultural artifacts (50%), artistic works (50%), educational materials (37.5%), maps (27.5%), and manuscripts (25%). Not surprisingly, no museums selected theses and dissertations.

Figure 9: Collection Types of Museum COC
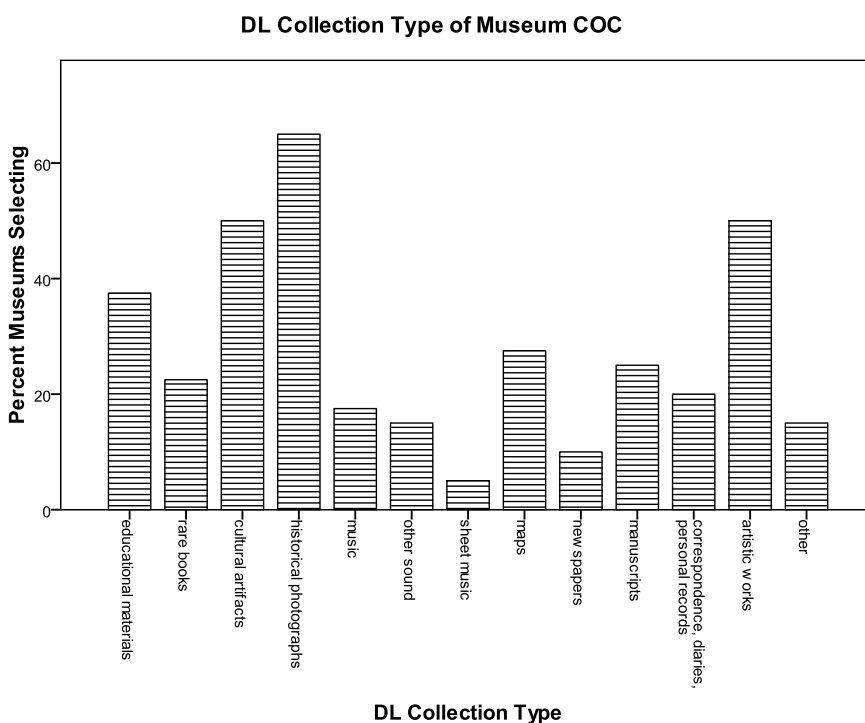
Table 23: Collection Types of Museum COC

DL Collection Type	Museums Responding %
Historical Photographs	65.0
Cultural Artifacts	50.0
Artistic Works	50.0
Educational Materials	37.5

Maps	27.5
Manuscripts	25.0
Rare Books	22.5
Correspondence, Diaries, Personal Records	20.0
Music	17.5
Other Sound	15.0
Other	15.0
Newspapers	10.0
Sheet Music	5.0
Thesis And Dissertation	-

"Other" collection types written in by museum respondents included: "contemporary photographs," "archaeological survey & site records," "GIS files," "personalized student work," and "museum's institutional history-- past exhibits etc., photos of object collections"

5.3.4 Subject Categories of COC

Respondents were also asked to select multiple answers to the question "Which of the following subject categories best describe the materials in your controlled online collection" The set of possible answers was developed by comparing the subject categories listed in the IMLS Digital Collections Registry (http://imlsdcc.grainger.uiuc.edu/), and the WAAND digital library (http://waand.rutgers.edu)

Archive

COC archives selected the following subject categories to describe their controlled content: Art, Photography, Architecture (52.8%), Societies and Culture (50.9%), Education/Educational Materials (41.5%), Other (39.6%), Economy/Business (34%), Natural History and Environment (26.4%).

Figure 10: Subject Categories of Archive COC

Subject Categories of Archival COC
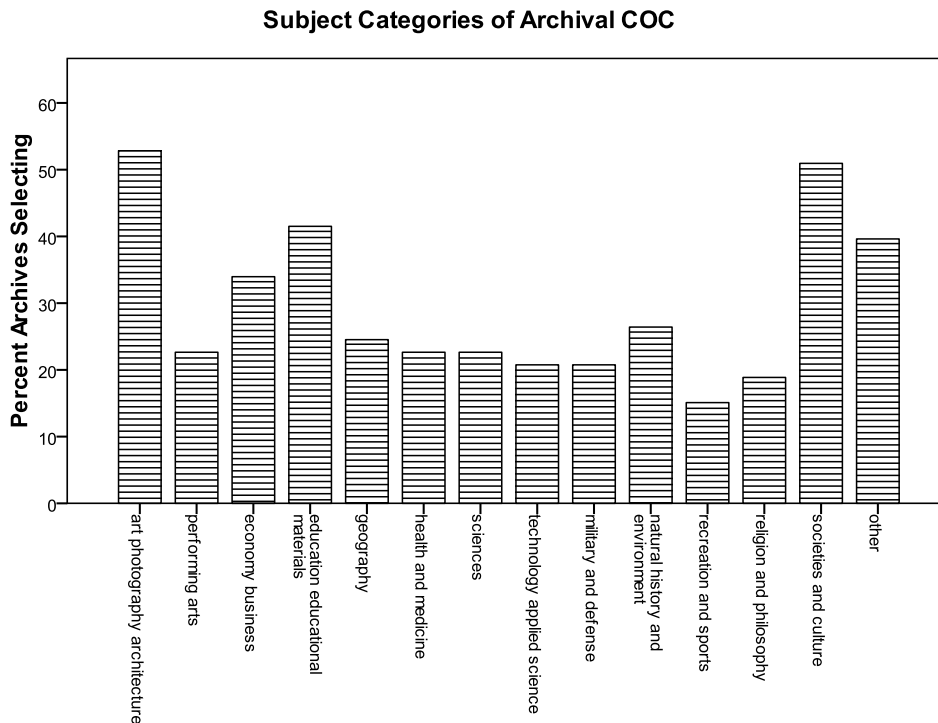
Table 24: Subject Categories of Archive COC

Subject Category	Archives Responding %
Art, Photography, Architecture	52.8
Societies and Culture	50.9
Education, Educational Materials	41.5
Other	39.6
Economy/Business	34.0
Natural History and Environment	26.4
Geography	24.5
Performing Arts	22.6
Health and Medicine	22.6
Sciences	22.6
Technology/Applied Science	20.8
Military and Defense	20.8
Religion and Philosophy	18.9
Recreation and Sports	15.1

"Other" subject categories written in by archives included: "Politics And History," "Government," State Government And Economy," "Government, Political, Legal" "Politics & Foreign Affairs," "Vital Records," "Government Records," "History," "State History And

Culture," "Folklore," "Folk Life," "Data," "Social Sciences," "News Broadcasts, "Public Opinion," And "Library/Information Science"

Library

Similar to archives, the subject categories most frequently chosen by library respondents included: Art, Photography and Architecture (67.8%), Societies and Culture (37.3%), Performing Arts (35.6%), Education/Educational Materials (30.5%), and Other (28.8%)

Figure 11: Subject Categories of Library COC

Subject Categories of Library COC
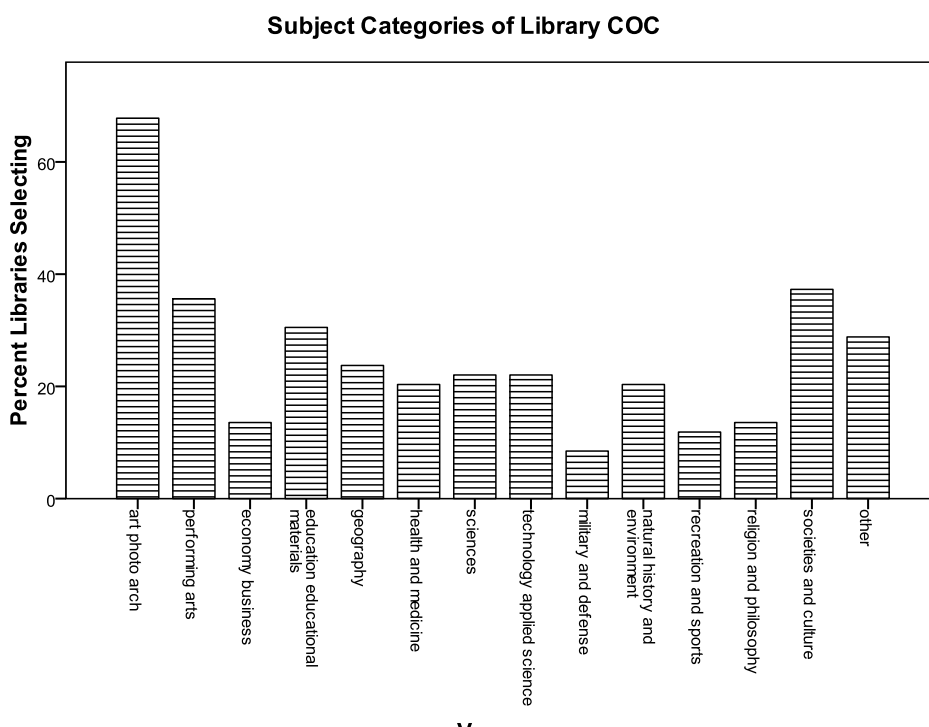
Table 25: Subject Categories of Library COC

Subject Category	Libraries Responding %
Art, Photography and Architecture	67.8
Societies and Culture	37.3
Performing Arts	35.6
Education/Educational Materials	30.5
Other	28.8
Geography	23.7
Sciences	22.0
Technology/Applied Science	22.0
Health and Medicine	20.3
Natural History and Environment	20.3
Economy/Business	13.6
Religion and Philosophy	13.6

Recreation and Sports	11.9
Military and Defense	8.5

"Other" comments written in included: "ETDs" (Electronic Thesis & Dissertation) "Social Science Data Sets," " News Stories," "Oral Histories," "Photographs," "News," "Reports," "Personal Papers," "State Publications," "Public Opinion," "Aerial Survey," "University History," and "Americana"

Museum

Similar to both archives and libraries, the subject categories most chosen by museum respondents included Art, Photography, Architecture (75%), Education, Educational Materials (30%), Societies and Culture (30%), and Other (25%).

Figure 12: Subject Categories of Museum COC

Subject Categories of Museum COC
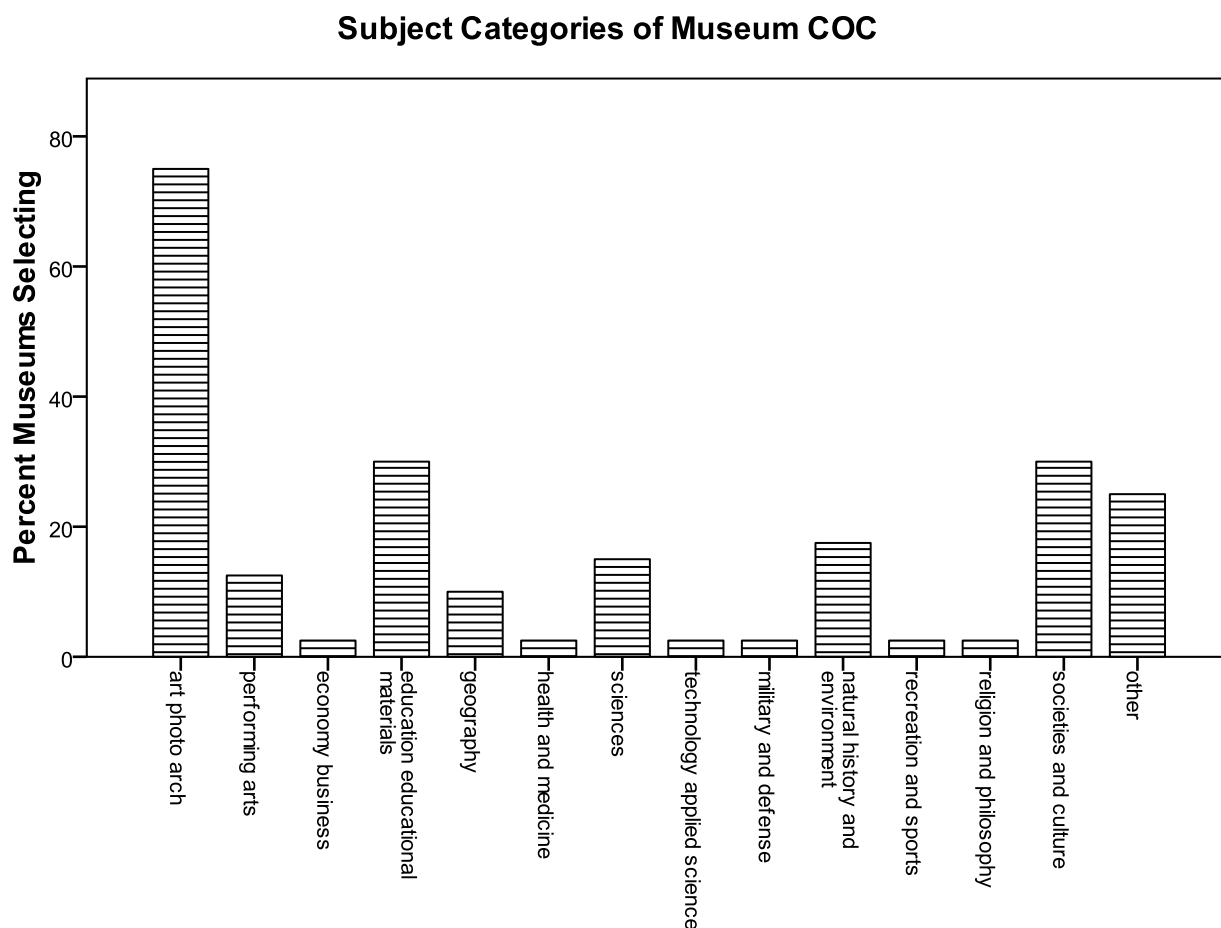
Table 26: Subject Categories of Museum COC

Subject Category	Museums Responding %
Art, Photography, Architecture	75.0

Education, Educational Materials	30.0
Societies and Culture	30.0
Other	25.0
Natural History and Environment	17.5
Sciences	15.0
Performing Arts	12.5
Geography	10.0
Economy/Business	2.5
Health and Medicine	2.5
Technology/Applied Science	2.5
Military and Defense	2.5
Recreation and Sports	2.5
Religion and Philosophy	2.5

Other categories written in included: "Design," "Historical Photos," "Entertainment," "American History," "Native Americans," "Archaeology/ Paleontological Collections," "Ethnography," "Moving Image Material Culture," and "Music/Sound Recordings."

5.4 Which organizations have policy statements?

The survey asked four questions about policies for controlled online collections. First, it asked if respondents had a *copyright status statement*. It defined a copyright status statement as "a statement defining the rights holder for a collection or object."

Next, it asked if respondents had an *acceptable use statement* that "defines permitted uses of a collection or object such as "personal research use," or "use with attribution."

Thirdly, it asked if respondents had an *intellectual property policy*, or "a statement of principles, values and intent about IP assets owned and used by [a cultural institution]."[8]

Finally, it asked if respondents had any *restrictions rationale* or a "rationale statement for the restrictions inherent in controlled online collections." Because each responding institution might host multiple collections with different policy statements, respondents could choose multiple answers for each policy question.

5.4.1 Archives: policy statements

Two archives did not respond to the policy questions (N=51).

Copyright statement

Most archives reported having a copyright status statement available in one or more places for their controlled collections. Only 13.3% of respondents reported no copyright statement. 32%

---

[8] Wording drawn from Developing Intellectual Property Policies: A How to Guide for Museums. Diane M. Zorich August 2003: Canadian Heritage Information Network and National Initiative for a Networked Cultural Heritage; New Jersey Digital Highway "Copyright Issues for Digital Collections" (http://www.njdigitalhighway.org/copyright_issues_libr.php)

of respondents reported collection level copyright statements, 18.7% reported a website level copyright statement, and 36% reported object level copyright information within collections.

Figure 13: COC Archive Copyright Statement Availability

Copyright Statement Availability

Table 27: COC Archive Copyright Policy Location

Copyright Status Statement Location	Archive Responses (N)	Archive Responses (%)
No statement	10	13.3
Collection level statement	24	32
Statement on website	14	18.7
Object level statement	27	36
No response	2	0.02
Total	77	100.02

Acceptable use statement

Asked if the archive provided an acceptable use statement,   only 15.5% said they did not. Of those that did provide an acceptable use statement, 31% provided it at the collection level, 25.4% provided it at the website level, and 28.2% provided it at the object level.

Figure 14: COC Archive Acceptable Use Statement Availability

Acceptable Use Statement Availability
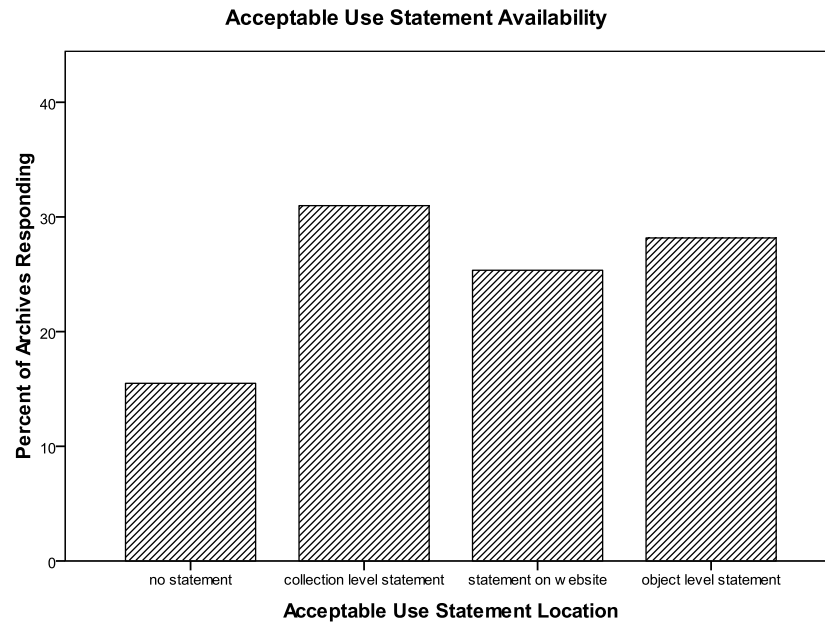
Table 28: COC Archive Acceptable Use Statement Availability

Acceptable Use Statement Location	Archive Responses (N)	Archive Responses (%)
No statement	11	15.5
Collection level statement	22	31
Statement on website	18	25.4
Object level statement	20	28.2
No response	2	0.02
Total	73	100.12

IP policy

Most archives (64%) reported having an intellectual property policy, or "a statement of principles, values and intent about IP assets owned and used by [a cultural institution]." One third posted their IP policy on their website, one third had a policy but it was not available to the public on the website, and one third had no policy.

Table 29: Archives IP Policy Availability

IP Policy	Archive Responses (N)	Archive Responses (%)
No policy	17	32.1
Yes, but not available to the public on the website	17	32.1
Yes, and it is available to the public on the website	17	32.1

No response	2	3.8
Total	53	100

Restrictions Rationale

The final question asked whether institutions had documented the rationale for any restrictions inherent in controlled online collections. Most (41.5%) of respondents chose "no rationale statement available." As shown in Table 30, 20.8% responded that a rationale statement existed, but it was not available to the public on the website. Of the respondents that had a rationale statement, 24.5% of respondents linked to the statement from within the controlled collection, and 11.3% provided the rationale statement elsewhere on their website, but it was not available in the collections.

Figure 15: Archives Rationale for Restrictions

Table 30: Archives Rationale for Restrictions

Documentation of Rationale for Restrictions in COC?	Archive Responses (N)	Archive Responses (%)
No rationale statement	22	41.5
Yes, but not available to the public on the web site	11	20.8
Linked to, or located within, collection	13	24.5
On website but not linked to from the collection	6	11.3
No response	1	1.9
Total	53	100

5.4.2 Libraries: policy statements

Copyright statement

Asked if their library provided a copyright status statement for its COC, only 5.3% of respondents reported no. Most COC libraries provided a copyright status statement: 32.6% of respondents reported collection level copyright statements, 12.6% reported a website level copyright statement, and 49.5% reported object level copyright information within collections.

Figure 16 : COC Library Copyright Statement Availability

Copyright Statement Availability
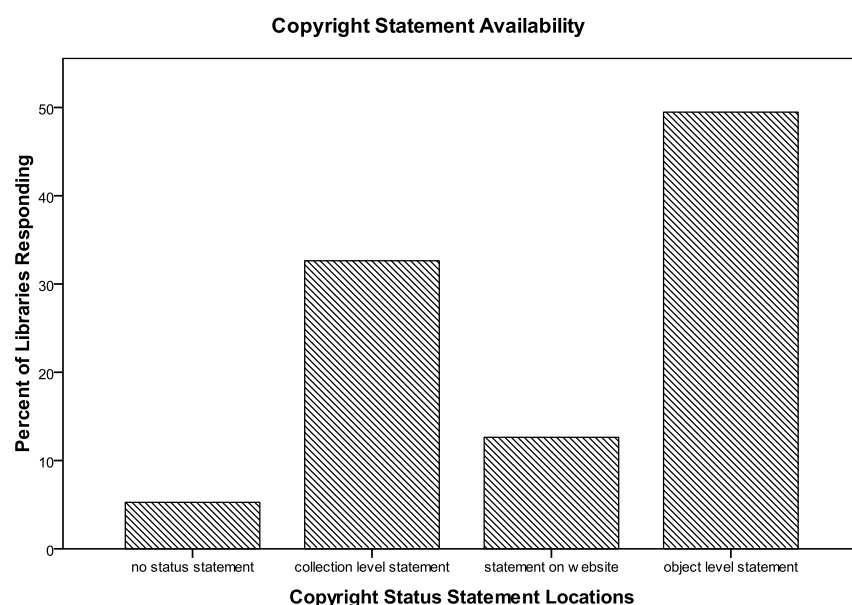
Table 31: COC Library Copyright Status Location

Copyright Status Statement Location	Library Responses (N)	Library Responses (%)
No statement	5	5.3
Collection level statement	31	32.6
Statement on website	12	12.6
Object level statement	47	49.5
Total	95	100

Acceptable use statement

Asked if the library provided an acceptable use statement for its COC, 16.3% of respondents answered no. Of those that provided an acceptable use statement, 35% provided it at the collection level, 15% provided it at the website level, and 33.8% provided it at the object level.

Figure 17: COC Library Acceptable Use Statement Availability
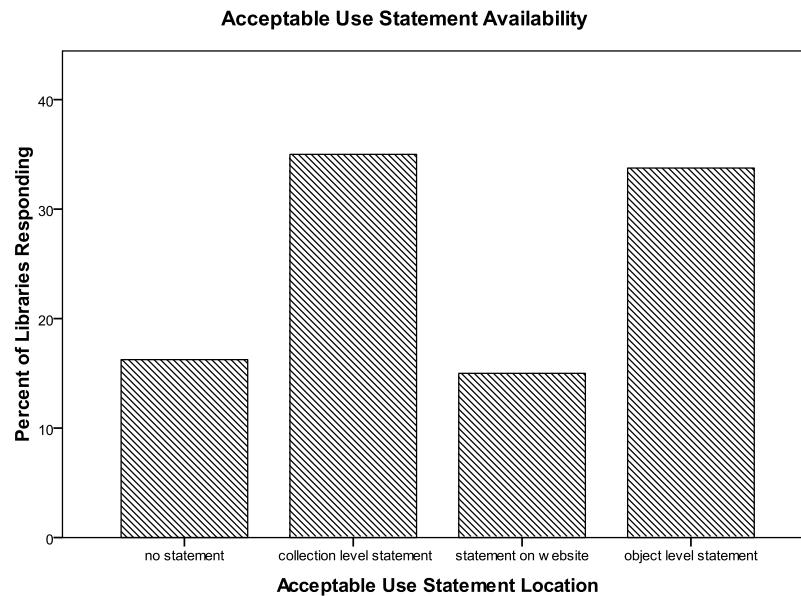
Table 32: COC Library Acceptable Use Statement Location

Acceptable Use Statement Location	Library Responses (N)	Library Responses (%)
No statement	13	16.3
Collection level statement	28	35
Statement on website	12	15
Object level statement	27	33.8
No response	2	0.02
Total	80	10012.00%

IP policy

Asked if the library provided an intellectual property policy, 38% responded no. Of those that had an IP policy, 30% made their IP policy available to the public on the website, and 23% did not publish it on the website.

Table 33: COC Library IP Policy Location

IP Policy	Library Responses (N)	Library Responses (%)
No intellectual property policy	23	38.3
Yes, but not available to the public on the website	14	23.3
Yes, and it is available to the public on the website	18	30.0
No response	5	8.3
Total	60	9990.00%

Rationale statement

The final question asked whether institutions had documented the rationale for any restrictions inherent in controlled online collections. Most (45%) of respondents chose "no rationale statement available." As shown in Table 34, 25% responded that a rationale statement existed, but it was not available to the public on the website. Of the respondents that had a rationale statement, 9% of respondents linked to the rationale statement from within the controlled collection, and 10% provided the rationale statement elsewhere on their website, but it was not available in the collections

Figure 18: COC Library Rationale for Restrictions
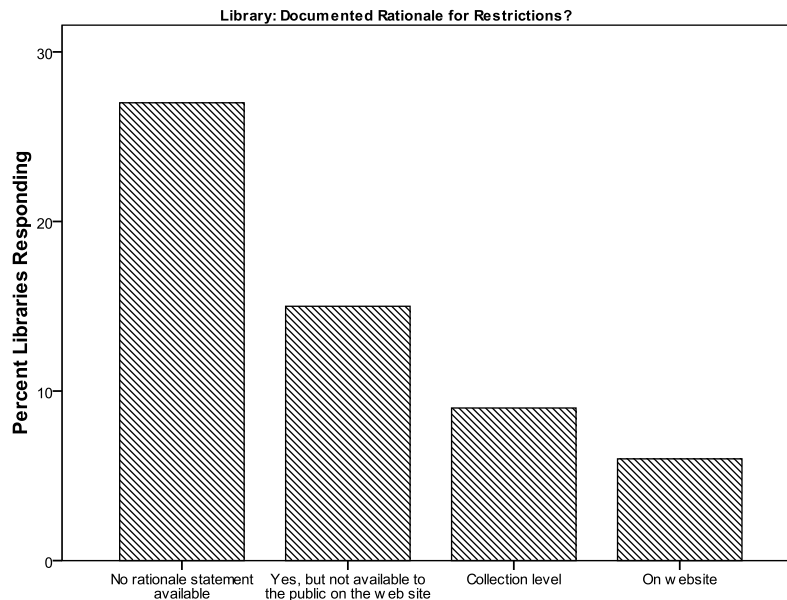
Table 34: COC Library Restriction Rationale

Documentation of Rationale for Restrictions in COC?	Library Responses (N)	Library Responses (%)
No rationale statement available	27	45
Yes, but not available to the public on the web site	15	25
Linked to, or located within, collection	9	15
On website but not linked to from the collection	6	10
No response	3	5
Total	60	100

5.4.3 Museums: policy statements

Copyright statement

Asked if museum provided copyright status statements, only 4.1% of respondents reported no. Of those that had a copyright statement, 26.5% of respondents reported collection level copyright statements, 26.5% reported a website level copyright statement, and 42.9% reported object level copyright information within collections.
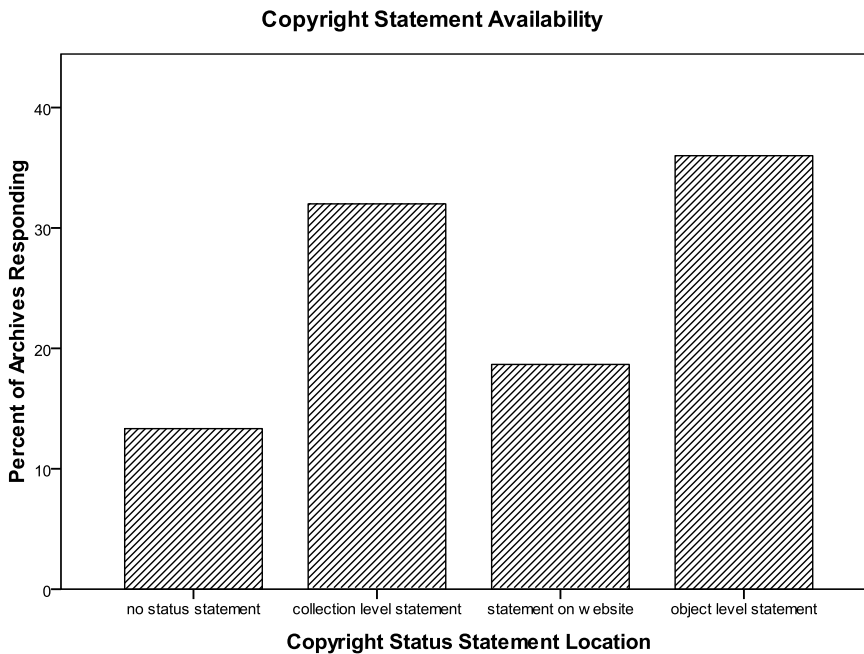
Figure 19: COC Museum Copyright Status Statement Location

Copyright Status Statement Availability
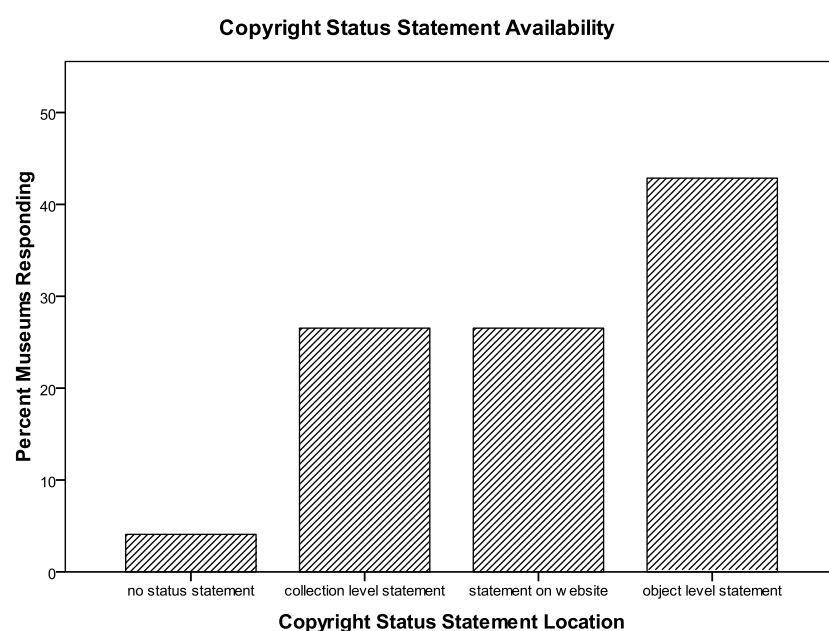
Table 35: COC Museum Copyright Status Statement Location

Copyright Status Statement Location	Museum Responses (N)	Museum Responses (%)
no statement	2	4.1
collection level statement	13	26.5
statement on website	13	26.5
object level statement	21	42.9
No response	1	0.02
Total	50	10002.00%

Acceptable use statement

Asked if the museum provided an acceptable use statement for its COC, 16.3% of respondents answered no. Of those that provided an acceptable use statement, 22.4% provided it at the collection level, 38.8% provided it at the website level, and 22.4% provided it at the object level.

Figure 20: Museums Acceptable Use Statement Location

Museum Acceptable Use Statement Location

Table 36: COC Museums Acceptable Use Policy

Acceptable Use Statement Location	Museum Responses (N)	Museum Responses (%)
No statement	8	16.3
Collection level statement	11	22.4
Statement on website	19	38.8
Object level statement	11	22.4
No response	2	0.03
Total	51	9993.00%

IP policy availability

Asked if they had an intellectual property policy, 46.3% responded no. Table 37 shows that 34.1% had a policy that was not available to the public. Only 14.6% posted the policy on their website.

Table 37: COC Museums IP Policy Availability

IP Policy	Museum Responses	Museum Responses (%)

	(N)	
No intellectual property policy	19	46.3
Yes, but not available to the public on the website	14	34.1
Yes, and it is available to the public on the website	6	14
No response	2	4.9
Total	41	100

Rationale statement

The final question asked whether museums had documented the rationale for any restrictions inherent in controlled online collections. Most (48.8%) of respondents chose "no rationale statement available." Table 38 shows that 29.3% responded that a rationale statement existed, but it was not available to the public on the website. Of the respondents that had a rationale statement, 7.3% of respondents linked to the statement from within the controlled collection, and 9.8% provided the rationale statement elsewhere on their website, but it was not available in the collections
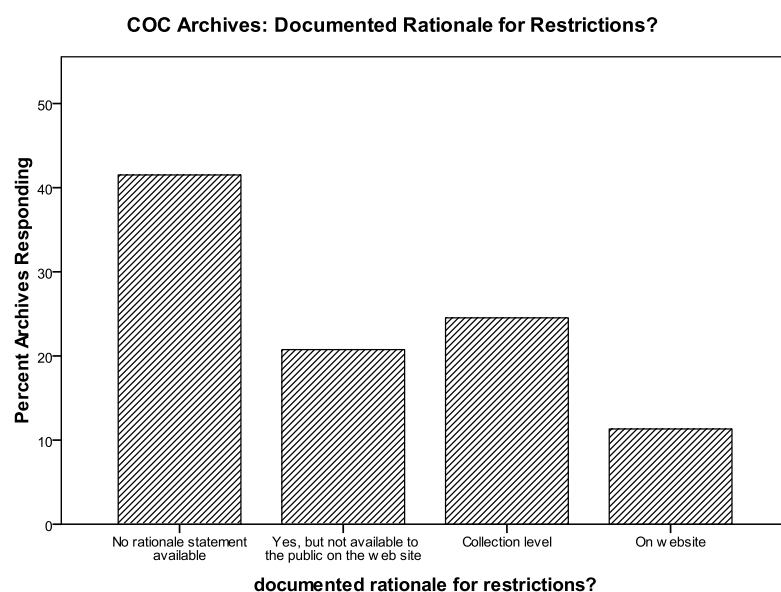
Table 38: Museum Rationale for Restrictions

Documentation of Rationale for Restrictions in COC?	*Museum Responses (N)*	*Museum Responses (%)*
No rationale statement available	20	48.8
Yes, but not available to the public on the web site	12	29.3
Linked to, or located within, collection	3	7.3
On website but not linked to from the collection	4	9.8
No response	2	4.9
Total	41	100

Figure 21: Museum Rationale for Restrictions

Museums: Documented rationale for restrictions location

Y-axis: Percent Museums Responding (0, 10, 20, 30, 40, 50)
X-axis: Documented rationale for restritions location
Categories: No rationale statement available (~49); Yes, but not available to the public on the web site (~29); Collection level (~7); On website (~10)
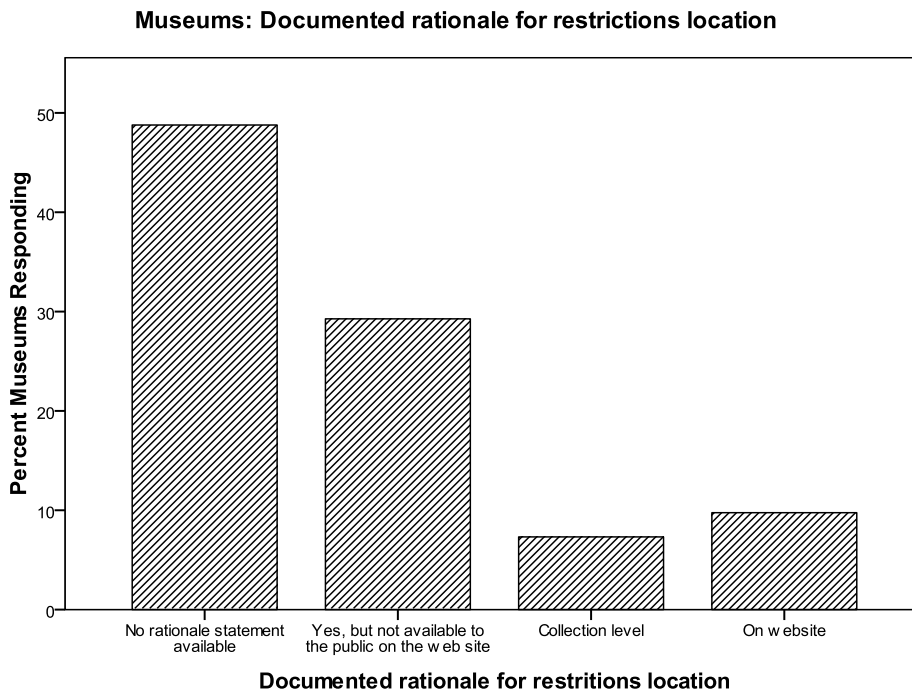
5.5 Why do cultural Institutions create COC (or not)?

The survey asked four sets of questions to explore why institutions seek to control access to or use of some online collections. Response to the questions was highly variable. Many respondents answered only parts of each question set.

The first question explored the reasons why institutions might seek to control access to or use of an online collection. It presented a series of "encouragers" or list of possible motivations and asked "To what extent do the following motives encourage the creation of online collections in your institution?" The list of encouragers was developed from a review of the literature, preliminary interviews, and pretesting of draft versions of the survey. Respondents were instructed to mark one response for each encourager in a four point Likert scale ranging from this encourager motivated the institution to develop COC "not at all" to this encourager motivated the institution to develop COC "a lot."

We report the percent of respondents that skipped question parts because some readers may wish to interpret the skip. For example, one might interpret a question skip as an indication that the motivator was not compelling enough to persuade the respondent to answer the question; and, that the answer should be counted as a "not at all" vote.

The second question explored reasons why institutions might avoid controlling access to or use of an online collection. It presented a series of "*discouragers*" or negative motivators and asked "How much do each of the following items discourage your institution from creating controlled

online collections?" The list of discouragers was developed from a review of the literature, preliminary interviews, and pretesting of draft versions of the survey. Respondents were instructed to mark one response for each discourager in a four point Likert scale ranging from this discourager discouraged my institution from creating COC "not at all" to this discourager discouraged my institution from creating COC "a lot." It is important to note that the discourager "resources" was not included. It was commonly written in as an alternative response and should be included in any future use of this question set.

The third question asked "Which users can access and use your controlled online collection?" Respondents could choose multiple responses from a set that listed a range of user sets from "general public" through "institutional members" to "paying customers and subscribers."

The final question asked "How concerned are you about controlling the following types of unauthorized uses in your controlled online collection?" Respondents were asked to indicate their level of concern related to each of seven possible uses. The survey instructed them to mark one response per use using a 4 point Likert scale ranging from "not at all" concerned to "a lot" concerned. The seven uses included: individual research and study, non-commercial educational use, non-commercial modification or derivative use, non-commercial publication, non-attribution, commercial publication and other.

5.5.1 Archive: What are the encouragers for creating COC?

Among COC archives, the most commonly selected motive for creating COC was "proper object description and repository identification." Just over 70% (71.7%) of archive respondents selected either "a lot" or "some" for this motivator. The second most selected motivator was "avoid misuse/misrepresentation" (66% a lot + some), and "avoid legal risk" (50.9% a lot + some).

Table 39: Archives Motivations for Controlling

	To what extent do the following motives encourage the creation of COC in your institution?					
Possible motives for creating COC	*A lot (%)*	*Some (%)*	*A lot + some (%)*	*Only a little (%)*	*Not at all (%)*	*Missing data (%)*
Proper object description and repository identification	47.2	24.5	**71.7**	15.1	7.5	5.7
Avoid misuse/misrepresentation	37.7	28.3	**66**	13.2	17.0	3.8
Avoid legal risk	24.5	26.4	**50.9**	11.3	28.3	9.4
Donor or owner requirement	22.6	22.6	**45.2**	20.8	30.2	3.8
Generate Income	20.8	20.8	**41.6**	11.3	43.4	3.8
Protect privacy	18.9	20.8	**39.7**	20.8	35.8	3.8
Control access to sensitive materials (racial, ethnic, religious, health)	17.0	20.8	**37.8**	15.1	43.4	3.8
Recover costs of IP management	15.1	15.1	**30.2**	13.2	50.9	5.7
Reduce download times for users	11.3	18.9	**30.2**	15.1	50.9	3.8

	A lot (%)	Some (%)	A lot + some (%)	Only a little (%)	Not at all (%)	Missing Data (%)
Control server/network loads or storage space	15.1	11.3	**26.4**	11.3	58.5	3.8
Limit exposure to materials authors intend to publish, patent, commercially exploit	7.5	18.9	**26.4**	9.4	56.6	7.5
Cannot obtain rights	11.3	13.2	**24.5**	11.3	56.6	7.5
Maintain exclusivity	5.7	18.9	**24.6**	20.8	49.1	5.7
Burden of rights search	13.2	9.4	**22.6**	9.4	60.4	7.5
Protect public safety or national security information	9.4	9.4	**18.8**	7.5	66.0	7.5
Avoid conflicts with financial supporters or governing bodies	5.7	13.2	**18.9**	18.9	56.6	5.7
Control information about endangered or valuable objects, animals, cultural events/items	5.7	11.3	**17**	24.5	50.9	7.5
Control access to potentially offensive materials (sexual, anatomical, drug-related)	5.7	7.5	**13.2**	13.2	67.9	5.7

"Other" motivators for creating COC reported by archives included: "Assure [institution] use only for said materials," "Restricted access to first two years of journal published by department to protect subscription income," "We are a member institution. Members pay for access," and "We don't make digital components available if we don't have the rights to do so."

5.5.2 Archive: What are the discouragers for creating COC?

Among archives, the most commonly chosen discourager for creating COC was "the belief that open collections have a greater impact." Table 40 shows that 58.5% of respondents felt that this discouraged creation of COC either "a lot" or "some." Two other prominent discouragers (with 41.5% seeing as discouraging "a lot" or "some") were "institutional mission, policies, or statutory requirements" and "institutional level technology choices."

Table 40: Archives Discouragers for Controlling

Possible Discouragers for Creating COC	*How much do each of the following items discourage your institution from creating COC?*					
	A lot (%)	*Some (%)*	*A lot + some (%)*	*Only a little (%)*	*Not at all (%)*	*Missing Data (%)*
Belief that open collections have greater impact	39.6	18.9	**58.5**	7.5	28.3	5.7
Institutional mission, policies, or statutory requirements	26.4	15.1	**41.5**	11.3	39.6	7.5
Institutional level technology choices	7.5	34.0	**41.5**	17.0	32.1	9.4
Concerns with legal complexity	5.7	22.6	**28.3**	34.0	28.3	9.4
Concerns about negative perception by partners, funders or peers	9.4	17.0	**26.4**	26.4	37.7	9.4

Concerns about end user dissatisfaction	*7.5*	*18.9*	***26.4***	*26.4*	*37.7*	*9.4*
Concerns with technological management complexity	*-*	*22.6*	***22.6***	*13.2*	*50.9*	*13.2*
Do not have content appropriate for a COC	*-*	*22.6*	***22.6***	*13.2*	*50.9*	*13.2*
Few best practices or examples from which to model	*-*	*22.6*	***22.6***	*22.6*	*43.4*	*11.3*
Concerns about unknown consequences	*1.9*	*15.1*	***17***	*24.5*	*45.3*	*13.2*

"Other" discouragers written in by archives included two main themes:

- Resources: "funds," "lack of finances & staff" "Lack of Funding," "Lack of resources, prefer to devote resources to high-use open collections"
- Not appropriate given content: "Not appropriate for our collections" "Our focus is on state and local public records"

5.5.3 Archive: Which sets of users can access COC?

In responding to the question about what users groups could access COC, respondents could choose multiple answers because different collections might have different authorized audiences. Archives reported 32 instances where access to a COC was given to the general public. The most common access restriction was to "institutional members" (N=20), followed by "subset of institutional members" (N=15) and "affiliates of institutions" (N=14). Fewer archives restricted access to smaller groups such as "individually registered users" (N=8), or "paying customers/subscribers" (N=6).

Table 41: Archive Users who can Access COC

Which users can access and use COC?	*Archives Selecting (N=53)*
General public	32
All institutional members	20
Subset of institutional members	15
Affiliates of institution	14
Individually registered users	8
Paying customers subscribers	6
Other	6
Total	101

"Other" answers written in by archives included: "We have public use & restricted data," "subset of staff," "determined at collection level," "no current controlled online collections," "general public on site," and "Note choice above varies with specific items being rendered on-line."

5.5.4 Archive: What types of uses cause concern?

When asked what types of unauthorized uses created concern, levels of concern varied greatly based on the unauthorized use. For "individual research and study" most archives reported their level of concern as "not at all" (49.1%) or "only a little" (32%). Levels of concern for non-commercial educational use were also low with 39.6% reporting "not at all" concerned or "only a little" concerned. Concerns about modification or derivative uses were greater with 28.3% reporting "only a little" concern or "some" concern. Many archives (43.4%) reported "some" concern with non-commercial publication. Non-attribution created a lot of concern with most archives reported "some" (32.1%) or "a lot" (34%) of concern. Not surprisingly, most archives (56.6%) reported "a lot" of concern with commercial publication.

Table 42: Archives Uses That Cause Concern

Uses That Might Cause Concern	*Level of Concern Expressed for Each Use*					
	Missing data (%)	*Not at all (%)*	*Only a little (%)*	*Some (%)*	*A lot (%)*	*Total (%)*
Individual Research and Study	7.5	**49.1**	**32**	5.7	5.7	100
Non-Commercial Educational Use	7.5	**39.6**	**39.6**	7.5	5.7	100
Non-Commercial Modification or Derivative Use	7.5	15.1	**28.3**	**28.3**	20.8	100
Non-Commercial Publication	5.7	17.0	17.0	**43.4**	17.0	100
Non-Attribution	9.4	7.5	17.0	**32.1**	**34.0**	100
Commercial Publication	5.7	7.5	9.4	20.8	**56.6**	100

"Other" concerns reported included "authenticity" and ensuring that "only authorized users can access collections."

5.5.5 Library: What are the encouragers for creating COC?

Among library respondents, the most selected motivator, providing either a lot or some encouragement to create COC was "avoid misuse/misrepresentation." Table 43 shows that 80% of respondents indicated the motivator provided "a lot" or "some" encouragement to create COC. The next most selected motivator was "donor or owner requirement" with 73.3% of respondents stating the motivator provided "a lot" or "some" encouragements to create COC. "Avoiding legal risk" was selected by 68.4% of respondents as providing "a lot" or "some" motivation, and "cannot obtain rights" was chosen by 53.3% or respondents as providing "a lot" or "some" motivation. "Proper object description and repository identification" was marked by 51.7% of respondents as providing "a lot" or "some" motivation.

Table 43: Library Encouragers to Create COC

	To what extent do the following motives encourage creation of COC in your institution?					
Possible motives for creating COC	*A lot (%)*	*Some (%)*	*A lot + some (%)*	*Only a little (%)*	*Not at all (%)*	*Missing data (%)*

Avoid misuse/misrepresentation	*51.7*	*28.3*	***80***	*8.3*	*10.0*	*1.7*
Donor or owner requirement	*40.0*	*33.3*	***73.3***	*3.3*	*18.3*	*5*
Avoid legal risk	*41.7*	*26.7*	***68.4***	*15.0*	*13.3*	*3.3*
Cannot obtain rights	*28.3*	*25.0*	***53.3***	*13.3*	*21.7*	*11.7*
Proper object description and repository identification	*35.0*	*16.7*	***51.7***	*11.7*	*31.7*	*5*
Burden of rights search	*16.7*	*21.7*	***38.4***	*25.0*	*30.0*	*6.7*
Maintain exclusivity	*18.3*	*18.3*	***36.6***	*16.7*	*41.7*	*5*
Limit exposure to materials authors intend to publish, patent, commercially exploit	*18.3*	*13.3*	***31.6***	*20.0*	*46.7*	*1.7*
Protect privacy	*5.0*	*15.0*	***20***	*23.3*	*51.7*	*5*
Generate Income	*6.7*	*11.7*	***18.4***	*20.0*	*56.7*	*5*
Reduce download times for users	*5.0*	*10.0*	***15***	*10.0*	*71.7*	*3.3*
Avoid conflicts with financial supporters or governing bodies	*5.0*	*10.0*	***15***	*11.7*	*70.0*	*3.3*
Recover costs of IP management	*3.3*	*10.0*	***13.3***	*20.0*	*60.0*	*6.7*
Control server/network loads or storage space	*1.7*	*10.0*	***11.7***	*15.0*	*66.7*	*6.7*
Control access to sensitive materials (racial, ethnic, religious, health)	*6.7*	*3.3*	***10***	*13.3*	*73.3*	*3.3*
Control information about endangered or valuable objects, animals, cultural events/items	*3.3*	*5.0*	***8.3***	*6.7*	*81.7*	*3.3*
Control access to potentially offensive materials (sexual, anatomical, drug-related)	*1.7*	*1.7*	***3.4***	*3.3*	*90.0*	*3.3*
Protect public safety or national security information	*-*	*3.3*	***3.3***	*3.3*	*90.0*	*3.3*

Other motivators written in include: "Such as specialized community that it was more likely to be peer to peer - meant to go only to theatre dept." and "Vended products - contractual obligations."

5.5.5 Library: What are the discouragers for creating COC?

The most commonly chosen discourager among libraries was "Belief that open collections have greater access," as 76.6% of responses marked this as creating "a lot" or "some" discouragement for creation of COC.   Table 44 shows that "Concerns with legal complexity" was marked as discouraging creation of COC "a lot" or "some" in 58.3% of responses. Similarly, "Institutional mission, policies, or statutory requirements" was marked as a discourager by 46.7% of responses. "Concerns about end user dissatisfaction" was also marked as discouraging COC by 46.7% of responses.

Table 44: Library Discouragers from Creating COC

	How much do each of the following items discourage your institution from creating

Possible Discouragers	controlled online collections?					
	A lot (%)	Some (%)	A lot + some (%)	Only a little (%)	Not at all (%)	Missing data (%)
Belief that open collections have greater access	58.3	18.3	**76.6**	1.7	15.0	6.7
Concerns with legal complexity	10.0	48.3	**58.3**	18.3	16.7	6.7
Institutional mission, policies, or statutory requirements	20.0	26.7	**46.7**	16.7	31.7	5
Concerns about end user dissatisfaction	20.0	26.7	**46.7**	20.0	26.7	6.7
Concerns with technological management complexity	5.0	35.0	**40**	28.3	26.7	5
Concerns about negative perception by partners, funders or peers	20.0	13.3	**33.3**	26.7	31.7	8.3
Institutional level technology choices	1.7	28.3	**30**	28.3	35.0	6.7
Do not have content appropriate for a COC	10.0	15.0	**25**	18.3	50.0	6.7
Few best practices or examples from which to model	5.0	20.0	**25**	20.0	40.0	15
Concerns about unknown consequences	1.7	15.0	**16.7**	30.0	46.7	6.7

Other discouragers written in by library respondents included: "We would be managing controlled access to resources in a federated environment so the policies of participants will be a big concern," "Partners: you want to have a closed system that is shared @a few institutions - but most people don't do P2P - rely on commercial provider like ArtSTOR," "Bandwidth issues listing to oral history across a network," "Highly positive experience with uncontrolled online collections," and "Philosophically committed to open access/Creative Commons."

5.5.6 Library: Which sets of users can access COC?

When asked which sets of users could access COC, the most frequently chosen response was "All institutional member" (39 responses). The next most frequently chosen audience was "general public" (25 responses) and "subset of institutional members (22 responses). Nineteen responses indicated limiting access to affiliates of an institution, while 10 responses indicated requiring individual registration for access. Six responses indicated that only paid customers/subscribers could access a collection.

Table 45: Library Users that Can Access COC

Which users can access and use COC?	Libraries Selecting (N=60)
General public	25
All institutional members	39

Subset of institutional members	22
Affiliates of institution	19
Individually registered users	10
Paying customers subscribers	6
Other	11
Total	132

Other responses written in included: "Restricted to some users who must be on site library/campus walk-in – researchers," "Valid public library card," "General public within the county," "Scholars," "Either the intranet for the department., any user," "Everyone - totally open access, free to all," "visitors to campus," "We have our resource shared with ONE consortial partner," "Based on IP address - computer physically located on campus or using campus wireless," and "individuals registered for course that uses collection."

5.5.7 Library: What types of uses cause concern?

The next question asked what types of unauthorized uses raised concern. In terms of the use "individual research and study," 58% of responses indicated they were "not at all" concerned and 21.7% indicated "only a little concern. 15% of responses however indicated "some" or "a lot" of concern over individual research and study. Asking about "non-commercial educational use" 46.7% of responses were "not at all" and 25% were "only a little." "Some" concern was indicated 16.7% of the time and "A lot" was chosen for 6.7% of the responses.

Concern rose for "non-commercial modification or derivative use" with only 11.7% of responses indicating "not at all" and 28.3% indicating "only a little." "Some" concern was chosen 31.7%, and "A lot" was chosen 21.7%.

"Non-commercial" publication generated "A lot" of concern in 38.3% of responses and "some" concern in 33.3%. For "Non attribution" 58.3 % of responses indicated "A lot" of concern and 28.3% indicated "some" concern.

Not surprisingly, 81.7% of respondents found commercial publication to create "A lot" of concern and 28.3% found it created "some" concern.

Table 46: Library Types of Uses that Cause Concern

Uses That Might Cause Concern	Level of Concern Expressed for Each Use					
	No data (%)	Not at all (%)	Only a little (%)	Some (%)	A lot (%)	Totals (%)
Individual Research and Study	5	**58.3**	21.7	10.0	5.0	100
Non-Commercial Educational Use	5	46.7	**25.0**	16.7	6.7	100.1
Non-Commercial Modification or Derivative Use	6.7	11.7	**28.3**	**31.7**	21.7	100.1
Non-Commercial Publication	5	5.0	18.3	**33.3**	**38.3**	99.9

Non-Attribution	5	-	8.3	**28.3**	**58.3**	94.9
Commercial Publication	3.3	-	6.7	8.3	**81.7**	96.7

Interestingly, the levels of concern expressed about commercial publication, non-attribution, and non-commercial publication are higher for libraries than they are for archives.

"Other" uses of concern that respondents wrote in included: "any unauthorized use under copyright law," "decontextualization - taking out of context," "misrepresentation/misuse," "we're concerned about all unauthorized uses," "We are concerned about any uses that fall outside our contracted agreements w/vendors."

5.5.8 Museum: What are the encouragers for creating COC?

The most commonly selected motivator for museums to create COC was "proper object description and repository identification." As shown in Table 47, 70.7% of respondents indicated that it either provided "a lot" or "some" motivation. 65.8% of respondents felt that "avoiding misuse and misrepresentation" was a motivator. "Avoiding legal risk" was indicated as a motivator in 43.9% of responses. But museums disagreed about many motivators; for example while 43.9% of respondents felt that avoiding legal risk was a motivator, 34.1% felt it was "not at all" a motivator.

Table 47: Museum Encouragers for Creating COC

Possible motives for creating COC	*To what extent do the following motives encourage the creation of COC at your institution?*					
	A lot (%)	Some (%)	A lot + some (%)	Only a little (%)	Not at all (%)	No data (%)
Proper object description and repository identification	51.2	19.5	**70.7**	22.0	4.9	2.4
Avoid misuse/misrepresentation	46.3	19.5	**65.8**	19.5	9.8	4.9
Avoid legal risk	26.8	17.1	**43.9**	17.1	34.1	4.9
Donor or owner requirement	26.8	12.2	**39**	22.0	34.1	4.9
Control information about endangered or valuable objects, animals, cultural events/items	19.5	17.1	**36.6**	4.9	53.7	4.9
Protect privacy	7.3	26.8	**34.1**	7.3	51.2	7.3
Burden of rights search	14.6	17.1	**31.7**	14.6	41.5	12.2
Control access to sensitive materials (racial, ethnic, religious, health)	17.1	12.2	**29.3**	14.6	51.2	4.9
Limit exposure to materials authors intend to publish, patent, commercially exploit	9.8	19.5	**29.3**	19.5	36.6	14.6
Generate Income	2.4	24.4	**26.8**	26.8	41.5	4.9
Control server/network loads or storage space	4.9	17.1	**22**	19.5	51.2	7.3
Cannot obtain rights	7.3	14.6	**21.9**	14.6	48.8	14.6
Maintain exclusivity	2.4	19.5	**21.9**	22.0	46.3	9.8

Recover costs of IP management	7.3	9.8	**17.1**	19.5	56.1	7.3
Reduce download times for users	7.3	9.8	**17.1**	19.5	51.2	12.2
Control access to potentially offensive materials (sexual, anatomical, drug-related)	4.9	9.8	**14.7**	7.3	73.2	4.9
Avoid conflicts with financial supporters or governing bodies	2.4	12.2	**14.6**	17.1	61.0	7.3
Protect public safety or national security information	2.4	-	**2.4**	4.9	85.4	7.3

Other motivations written in by museum respondents included: "making students' work products available to students," and "respecting artists' IP/copy rights."

5.5.9 Museum: What are the discouragers for creating COC?

The most commonly chosen discourager for creating COC among museum respondents was the "belief that open collections have greater impact." Table 48 shows that 53.7% of museum responses indicated that either discouraged creation of COC "a lot" or "some." "Concerns with legal complexity" was marked as a discourager in 43.9% of responses.

Table 48: Museum Discouragers from Creating COC

	How much do each of the following items discourage your institution from creating controlled online collections?					
Possible Discouragers for Creating COC	**A lot (%)**	**Some (%)**	**A lot + some (%)**	**Only a little (%)**	**Not at all (%)**	**No data (%)**
Belief that open collections have greater impact	22.0	31.7	**53.7**	12.2	29.3	4.9
Concerns with legal complexity	9.8	34.1	**43.9**	17.1	31.7	7.3
Institutional level technology choices	9.8	19.5	**29.3**	31.7	31.7	7.3
Concerns with technological management complexity	9.8	19.5	**29.3**	36.6	26.8	7.3
Few best practices or examples from which to model	2.4	22.0	**24.4**	24.4	36.6	14.6
Institutional mission, policies, or statutory requirements	9.8	9.8	**19.6**	12.2	63.4	4.9
Concerns about unknown consequences	4.9	14.6	**19.5**	43.9	29.3	7.3
Concerns about end user dissatisfaction	7.3	9.8	**17.1**	24.4	51.2	7.3
Concerns about negative perception by partners, funders or peers	4.9	9.8	**14.7**	29.3	48.8	7.3
Do not have content appropriate for a COC	4.9	4.9	**9.8**	26.8	56.1	7.3

Other discouragers written in by museum respondents included: "Resources and funding," "Lack of technical expertise," "We're not discouraged from creating [last word underlined] controlled collections, but budgetary/personnel constraints discourage making them as robust as possible." "Poor Data (30% wrong)," and "Lack of staff consensus."

5.5.10 Museum: Which sets of users can access COC?

When asked which sets of users could access COC, the most frequently chosen response was "General public" (25 responses). Fifteen responses indicated museums limited access to some COC to "affiliates" of an institution. The next most frequently chosen audience was "institutional members" or "subset of institutional members" (13 responses each). In 10 responses museums indicated requiring "individual registration" for access. Three responses indicated that only "paying customers/subscribers" could access a collection.

Table 49: Museum Users That Can Access COC

Which users can access and use COC?	*Museums Selecting (N=41)*
General public	25
Affiliates of institution	15
All institutional members	13
Subset of institutional members	13
Individually registered users	10
Other	5
Paying customers subscribers	3
Total	84

Other responses written in include: "On-campus use only," "The students, teachers and families who generated the content, as well as institutional staff," "CT password protection," "Hide donor metadata or other info associated w/object," "Museum," "tribal members & staff have more access," and "Staff."

5.5.11 Museum: What types of uses cause concern?

The next question asked what types of unauthorized uses raised concern. In terms of "individual research and study," 51.2% of responses indicated they were "not at all" concerned and 24.4% indicated "only a little" concern. Over 20% of responses however indicated "some or "a lot" of concern over individual research and study. Asking about "non-commercial educational use" 46.3% of responses were "not at all" and 36.6% were "only a little." "Some" and "A lot" concern was indicated 7.3% of responses.

Concern rose for "non-commercial modification or derivative use," but not as sharply as it did with libraries. As shown in Table 50, 19.5% of responses still indicated "not at all" and 17.1% indicating "only a little." "Some" concern was chosen 36.6%, and "A lot" was chosen 24.4%. "Non-commercial" publication generated "A lot" of concern in 39% of responses and "some" concern in 29.3% of responses.

For "Non attribution" 58.5 % of responses indicated "A lot" of concern and 22% indicated "some" concern.

Similar to archives and museums, 85.4% of respondents found commercial publication to create "A lot" of concern but only 7.3% found it created "some" concern. 4.9% of responses indicated respondents were "Not at all" concerned about commercial publication.

Table 50: Museum Uses That Cause Concern

Uses That Might Cause Concern	Level of Concern for Each Use					
	Missing data (%)	Not at all (%)	Only a little (%)	Some (%)	A lot (%)	Total (%)
Individual Research and Study	2.4	**51.2**	24.4	19.5	2.4	99.9
Non-Commercial Educational Use	2.4	**46.3**	**36.6**	7.3	7.3	99.9
Non-Commercial Modification or Derivative Use	2.4	19.5	17.1	**36.6**	24.4	100
Non-Commercial Publication	2.4	4.9	24.4	**29.3**	**39.0**	100
Non-Attribution	7.3	7.3	4.9	22.0	**58.5**	100
Commercial Publication	2.4	4.9	-	7.3	**85.4**	92.7

Other uses that cause concern written in by museum respondents included: "vandalism, trespassing" "vandalism, desecration, trespassing" and "Commercial non-publication use"

5.6 Technologies employed to control access and use

The survey had two question sets that elicited information on the types of technological systems employed to control access to or use of online collections. The first focused on *systems*, or branded bundled (often commercial) software packages involving numerous interrelated digital library/archive functionalities, that might be employed for control. The second *tools* question asked about individual technical tools employed for control that might not be part of a branded software package.

The *systems* question asked "Does your institution employ the protection measure features in the following systems to control access to or use of your controlled online collections?" Because a given institution might have different COC that employ different systems, respondents could choose multiple responses. The list of responses was developed during initial interviews and pretesting. Respondents were instructed to mark a check box next to each system type to indicate that they employed that system for their COC.

The *tools* question asked "Indicate whether your institution employs any of the following technological tools within your controlled online collections." Each tool had a check box next to it. Respondents were instructed to mark the check box to indicate that they employed the tool in any of their COC. Tools were listed in six roughly interrelated sets.

The response rate for the technology questions was lower than other questions. Some respondents skipped entire questions sets, not marking a single checkbox. For this reason, the response rate for each question set is reported.

For each question set we report three sets of data: the number of times each response was chosen, the percentage of archives selecting that choice based on an N of those institutions that did not

"skip" the technology question set, and percentage based on the overall COC N for each institution type.

In reporting the results, we avoid referring to the individual percentages because it is impossible to know if the lack of a check across an entire set of questions indicates a "no" response or whether it indicates the lack of response. One possible explanation for the lower response rate is that some respondents lacked the technical knowledge to answer these question sets.

5.6.1 Archives Technology Use

Only 41 of the 53 COC archives responded to the question about *systems* used to control access or use of COC. Table 51 reports two sets of data. First it reports the number of times each system was selected. It then reports the percent of archives selecting that system, first based on a base N of 41 (the number of archives providing data for this question set).

The most commonly selected system was "digital library software." The next most commonly selected option was "other." The next most commonly employed system, as shown in Table 51, was "institutional repository software," and the 4th most used system was "digital asset management software."

Table 51: Archive COC Systems Employed to Control Access and Use

Does your institution employ the protection measure features in the following systems to control access to or use of your controlled online collections?	*Archives selecting (N=41)*	*Archives selecting (%)*
Digital library software	18	43.9
Other, text fill in	16	39
Institutional repository software	11	26.8
Digital asset management software	9	21.9
Streaming media server	5	12.2
Courseware	3	7.3
3rd party licensed platform	3	7.3
Publishing system	2	4.8

"Other" systems written in included three major types:

- *Homegrown or custom systems* were mentioned by numerous respondents and should be included in future response lists: "Homegrown collections information system;" "Custom digital archival software;" "Currently self-developed authentication system;" "Our own software;" "Custom-built e-commerce system;" "Home-grown system" "Locally applied software for database management"
- *Systems based on institutional credentials*: "Firewall;" "Local servers in house;" "Internal network login required to see controlled material;" "IP access restrictions, " and "State identity management system"
- Other systems described included: "We will use resolution limits for photo collections," "Federated search engine through 3rd party platform," "Yahoo store," and "For purchase"

The *tools* questions were answered by 48 archives. The first data in Table 52 reports the number of time each tool was selected. The second column reports percentage results based on a total of 48 archives.

As shown in Table 52, the most commonly selected tool was "low quality resolution, sampling." The second most common tool was "thumbnails, limited length clips" and "visible watermarks." It is important to point out that the data for resolution and thumbnails/clips represents institutions that use these tools with the purpose of controlling use. The survey item for both tools included the text "– intended to control content." It is likely that a number of additional institutions employ these tools, but for usability and bandwidth management purposes rather than for use control purposes.

A sizable percentage of archives reported asking users to" register for account or ask permission." "IP range authentication" and "network ID based authentication" were the next most often chosen tools.

Table 52: Tools employed to control access and use by COC Archives

Tools Employed	*Archives selecting (N=48)*	*Archives selecting (%)*
a. Low quality resolution, sampling – intended to control content	25	52.1
b. Thumbnails, limited length clips – intended to control content	19	40
c. Watermarks visible	19	40
d. Patron registers for account or asks permission	16	33
e. IP range authentication	14	29
f. Network ID based authentication	14	29
g. Click through end user agreements or licenses	12	25
h. Only access via approved terminals or internal LAN	12	25
i. Signed end-user license agreements	11	23
j. Streaming	5	10.4
k. Disable Copy And Save Features Of Browser Or OS	5	10.4
l. Cross Institutional Authentication	4	8.3
m. Cookies, Digital Certificates	4	8.3
n. Software Decoder Or Viewer	4	8.3
o. Disable Use Features In Interface Design	3	6.3
p. Randomly Generated Or Temporary URL	3	6.3
q. Other	3	6.3
r. Do Not Display Machine Readable OCR Text	2	4.2
s. Concurrent User Limits	2	4.2
t. Monitoring, Throttling Or Metering Systems	2	4.2
u. Pop-Up Copyright Warning Or Caption	1	2.1
v. Watermarks Invisible, Bitstream	1	2.1
w. Available On 3rd Party Platform That Controls Access And	1	2.1

Use		
x. Hardware Decoder or Hardware Device	-	-

"Other" options written in included: "Stored on portable media in secured location, offline," "Access to high-res. files controlled by e-commerce system, " and "Access control on database used by staff to access & edit collection records. Only staff logins allow access to images where there is a clear [copyright] holder from outside the institution."

5.6.2 Libraries Technology Use

56 out of 60 total COC libraries responded to the *systems* question. Table 53 reports the number of times each system was selected. It then reports the percent of archives selecting that system, first based on a base N of 56 (the number of librares providing data for this question set).

The most commonly chosen system type among COC libraries was "institutional repository software." The second most common system was "streaming media server," and then "digital library software" and then "courseware." Interestingly, a sizeable percent of library respondents reported using third party licensed platforms for their COC. Use of "digital asset management software" was also reported by a sizable percent. Fewer libraries used Digital Asset Management Software.

Table 53: COC Library Systems Employed to Control Access and Use

Does your institution employ the protection measure features in the following systems to control access to or use of your controlled online collections?	*Libraries selecting (N=56)*	*Libraries selecting (%)*
Institutional Repository Software	26	46.4
Streaming Media Server	24	42.9
Digital Library Software	23	41
Courseware	19	34
3rd Party Licensed Platform	15	26.8
Digital Asset Management Software	14	25
Other	12	21.4
Publishing System	5	8.9

"Other" write in responses by COC libraries included:
- Authentication: "Force user to authenticate using Web ISO" "Access Controls are based on the campus ID system & authorization" "We hope to use Shibboleth to restrict access to managed resources"
- IP authentication: "IP Filter" "Locally created IP authentication system" "We 'stream' documents from a server outside of a web server, and control access to limit to IP addresses of member institutions
- Firewalls: "controlled by being available only on the dept's Intranet" "firewalls"
- Other responses included: "we use internally developed software to limit access to controlled collections" "In house database" "Not sure" and "ETD-ds"

The *tools* question set received answers from 57 out of 60 responding COC libraries. Table 54 reports the number of times each tool was selected, and the percent of archives selecting that tool, first based on an N of 57.

The most commonly selected tool was "IP range authentication" followed by "low quality resolution, sampling" and then by "Network ID based authentication. Systems where "Patron registers for account or asks permission" was marked by a sizeable percentage of respondents, as was "streaming."

Again, it is important to point out that the data for "low quality resolution, sampling" and "thumbnails/clips" represents institutions that use these tools with the purpose of controlling use. The survey item for both tools included the text "– intended to control content." It is likely that a number of additional institutions employ these tools, but for usability and bandwidth management purposes rather than for use control purposes.

Table 54: Tools employed to control access and use by COC Libraries

Tools Employed	*Libraries selecting (N=57)*	*Libraries selecting (%)*
a. IP range authentication	37	64.9
b. Low quality resolution, sampling – intended to control content	31	54.3
c. Network ID based authentication	25	43.8
d. Patron registers for account or asks permission	21	36.8
e. Streaming	20	35
f. Thumbnails, limited length clips – intended to control content	16	28
g. Only access via approved terminals or internal LAN	15	26.3
h. Click through end user agreements or licenses	13	22.8
i. Watermarks visible	13	22.8
j. Available on 3rd party platform that controls access and use	13	22.8*
k. Signed end-user license agreements	12	21
l. Cross institutional authentication	11	19.2
m. Cookies, digital certificates	7	12.2
n. Pop-up copyright warning or caption	6	10.5
o. Concurrent user limits	6	10.5
p. Disable use features in interface design	5	8.7
q. Randomly generated or temporary URL	5	8.7
r. Other - free text entry	5	8.7
s. Monitoring, throttling or metering systems	4	7
t. Software decoder or viewer	4	7
u. Do not display machine readable OCR text	3	5.2
v. Disable copy and save features of browser or OS	3	5.2
w. Watermarks invisible, bitstream	1	1.7
x. Hardware decoder or viewer	-	-

*This high percentage is suspicious. It might reflect a misinterpretation of the directions to exclude buying access to a work through a licensed vendor platform.
"Other" tools written in by COC libraries included: "Zoomify", "None is currently used but in future we expect to use C.5 (Shibboleth) and C.8 (streaming viewers)" "XACML for for permissions at object level" "Vendor based preferences for browser support and viewing" and "Luna insight client only method of access currently"

5.6.3 Museum Technology Use

Only 29 out of the 41 COC museums provided a response to the *systems* question. Of the 41 COC museums participating in the survey, 22% marked either "Other" or "Digital Asset Management System." 15% marked "Digital Library Software" or "3rd party licensed platform."

Table 55: COC Museum Systems Employed to Control Access and Use

Does your institution employ the protection measure features in the following systems to control access to or use of your controlled online collections?	Museums selecting (N=41)	Museums selecting (%)
Other, Text Fill In	9	22
Digital Asset Management Software	9	22
Digital Library Software	6	15
3rd Party Licensed Platform	6	15
Streaming Media Server	5	12
Publishing System	3	7
Institutional Repository Software	3	7
Courseware	2	5

Other responses written in by museums included:

- Collections management systems: "Access is controlled by our collections management system and its embedded image viewing software. (www.opencollection.org);" "Collections mgmt system"
- "will be controlled via ip-address-based access rules for campus users (including those\ proxied in as well)." "Institution web access"
- "password protection"
- "System not developed yet" "Not implemented yet" "Protection is through website" "Security provided by campus it on main server"

36 of the possible 41 museums provided data for the *tools* question. The most commonly selected tool amongst COC museums was "low quality resolution, sampling" with 61% of possible museums. "Thumbnails and limited length clips" was chosen by 41% and "Patron registers for account or asks permission" was chosen by 29%. 24% chose "Network ID based authentication and 22% chose IP range authentication.

It is important to point out that the museum data for resolution and thumbnails/clips also represents institutions that use these tools with the purpose of controlling use. The survey item for both tools included the text "– intended to control content." It is likely that a number of

additional institutions employ these tools, but for usability and bandwidth management purposes rather than for use control purposes.

Table 56: Tools employed to control access and use by COC Museums

Tools Employed	Museums selecting (N=41)	Museums selecting (%)
a. Low quality resolution, sampling– intended to control content	25	61
b. Thumbnails, limited length clips– intended to control content	17	41
c. Patron registers for account or asks permission	12	29
d. Network ID based authentication	10	24
e. IP range authentication	9	22
f. Pop-up copyright warning or caption	7	17
g. Click through end user agreements or licenses	7	17
h. Watermarks visible	5	12
i. Streaming	4	9
j. Watermarks invisible, bitstream	4	9
k. Cookies, digital certificates	4	9
l. Monitoring, throttling or metering systems	4	9
m. Other	4	9
n. Disable use features in interface design	3	7
o. Disable copy and save features of browser or OS	3	7
p. Only access via approved terminals or internal LAN	3	7
q. Signed end-user license agreements	2	5
r. Concurrent user limits	2	5
s. Available on 3rd party platform that controls access and use	2	5
t. Software decoder or viewer	2	5
u. Cross institutional authentication	1	2
v. Randomly generated or temporary URL	1	2
w. Hardware decoder or viewer	-	-
x. Do not display machine readable text (OCR)	-	-

"Other" tools written in by museums included: "OSS" "We use FlashPix to deliver hi-re's details w/o exposing full, print- size images," "At collection +/or object level, metadata controls access to uses of digital content," and "Image viewer that enables low-res thumbnails and high-res portions of the image."

5.6.4 Comparison: archives, libraries & museums technology use

Table 57and Figure 22 compare systems use among archives libraries and museums. Percents are rounded from prior tables. The Table and Figure show that a greater percent of the surveyed libraries make use of technological systems to control access and use than surveyed archives or museums. The higher reported use of 3rd party licensed platforms among libraries may stem from respondents erroneously including use of collections of subscriptions based materials which the library does not own, but to which it funds access (e.g., JSTOR). Respondents were

instructed not to include these collections; however write in responses described above suggest that at least some respondents did include them when formulating their responses.

The underreporting by archives and museums may also stem from the survey not including system types that archives or museum respondents would have preferred to choose.

Table 57: Comparison of Systems Use among Archives, Libraries and Museums

Does your institution employ the protection measure features in the following systems to control access to or use of your controlled online collections?	*Archives selecting (%)*	*Libraries selecting (%)*	*Museums selecting (%)*
Digital Library Software	44	41	15
Institutional Repository Software	27	46	7
Digital Asset Management Software	22	25	22
Streaming Media Server	12	43	12
Courseware	7	34	5
3rd Party Licensed Platform	7	27	15
Publishing System	5	9	7
Other	39	21	22

Figure 22: Comparison of Systems Use among Archives, Libraries and Museums
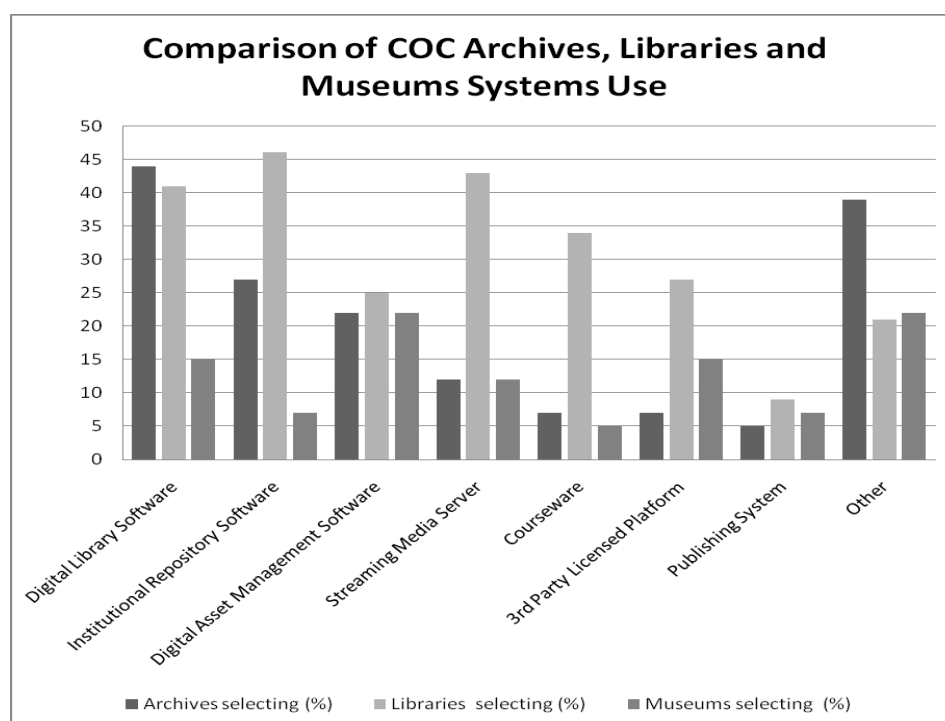

Table 58 and Figure 23 compare tool use among the reporting archives, museums and libraries.

The data show that archives led in the use of watermarks, signed end user license agreements, and click through license agreements.

More libraries used streaming, network ID based authentication, IP range authentication, cross institutional authentication, and randomly generated URLs. The heavy use of IP and network ID range authentication make sense given the prevalence of college and university libraries in the sample. The cross institutional authentication likely stems from both library consortia arrangements that span IP ranges and/or from university experiments with systems like Shibboleth.

Data show that a greater percentage of museums reported using low quality resolutions/sampling and thumbnails/clips to control access and or use.

Table 58: Comparison of Tool Use among Archives, Libraries and Museums

Tools Employed	*Archives selecting (%)*	*Libraries selecting (%)*	*Museums selecting (%)*
a. Low quality resolution, sampling	52	54	61
b. Thumbnails, limited length clips	40	28	41
c. Watermarks visible	40	23	12
d. Patron registers for account or asks permission	33	37	29
e. Network ID based authentication	29	44	24
f. IP range authentication	29	65	22
g. Click through end user agreements or licenses	25	23	17
h. Only access via approved terminals or internal LAN	25	26	7
i. Signed end-user license agreements	23	21	5
j. Streaming	10	35	9
k. Disable copy and save features of browser or OS	10	9	7
l. Cookies, digital certificates	8	12	9
m. Software decoder or viewer	8	7	5
n. Cross institutional authentication	8	19	2
o. Disable use features in interface design	6	9	7
p. Randomly generated or temporary URL	6	9	2
q. Monitoring, throttling or metering systems	4	7	9
r. Concurrent user limits	4	11	5
s. Pop-up copyright warning or caption	2	11	17
t. Watermarks invisible, bitstream	2	2	9
u. Available on 3rd party platform that controls access and use	2	23*	5
v. Hardware decoder or viewer	-	-	-

* This high number is suspicious. It might reflect a misinterpretation of the directions to exclude buying access to a work through a licensed vendor platform.

Figure 23: Comparison of Tool Use among Archives, Libraries and Museums
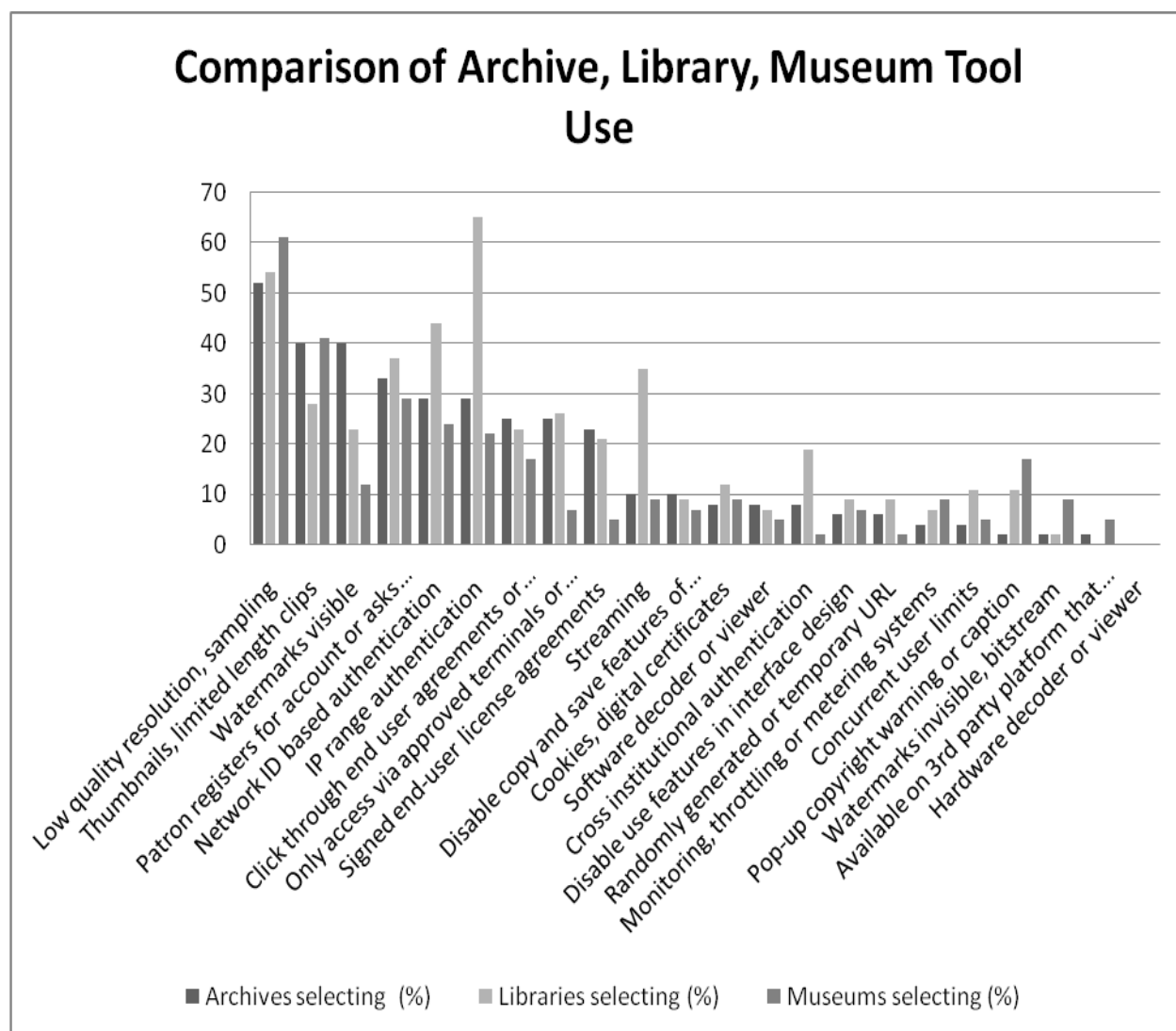
5.7 What should IMLS do?

The final section of the survey asked respondents to rate the "top 5 ways IMLS should support the implementation of controlled online collections." Respondents were instructed to choose five out of 9 possible options developed during pretesting. One of the options was an "other" open ended text box.

The top option chosen across the three institution types was "Develop policy/legal best practices and training." It was chosen by approximately 66% of archives, 77.59% of libraries and 85% of museums.

"Technology implementation best practices and training" was second for both libraries (63.79%) and museums (77.5%), but not archives.   Archives voted instead to "Track what cultural institutions in the US are doing with controlled collections" (64.15%).

The "IMLS should not promote COC" was chosen by a smaller but significant percentage of archives (13.21%) and libraries (15.52%). It was not selected by any museums.

5.7.1 Archives

The top IMLS activity chosen by archival respondents was: "Develop policy/legal best practices and training" (66.04%). "Track what cultural institutions in the US are doing with controlled collections" came in second (64.15%).

Figure 24: IMLS Support COC Archives

Archives: How Should IMLS Support COC?
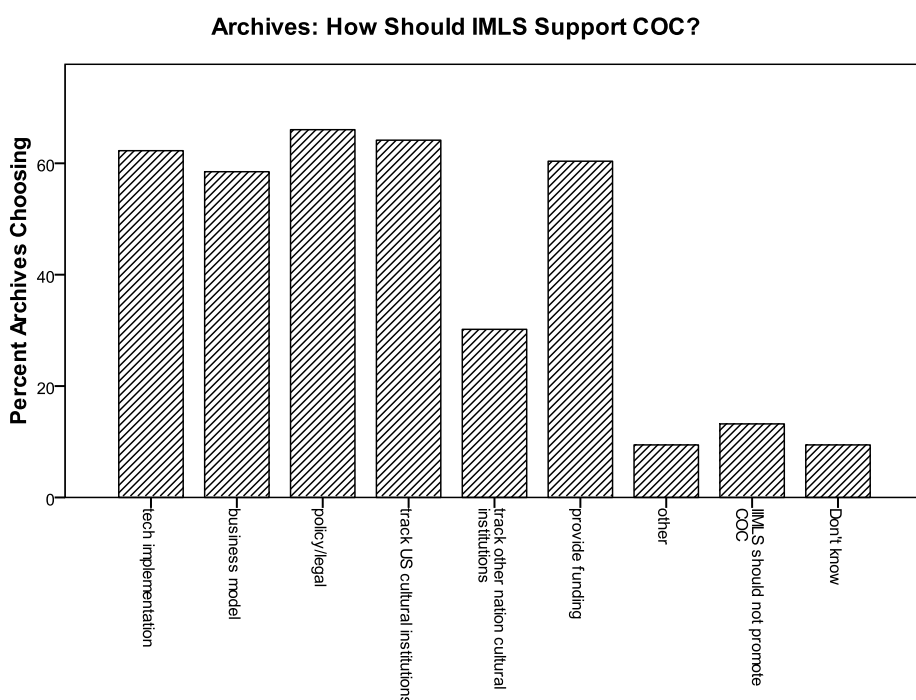
"Other" responses included the following:
- Several participants wrote in comments discouraging use of funding to develop COC. One archivist suggested "limit funding to only total access projects without restriction." Another asked "Does IMLS really want to get into the use of controlled online collections?" Similarly, "IMLS should not encourage or support two-tier access" Another archives respondent noted, "There are concerns about the level of support for such projects. Careful consideration should be made for reasons for placing such collections on line." Another respondent noted that instead, IMLS should "Be active in advocate change in absurd copyright limits barring digitization. Especially Section 108 & Orphan Works."
- "Provide forums/training for discussion"

- "Cease discouraging Public Archives from applying for assistance"
- "Require grants projects to have a sustainable business model"

5.7.2 Libraries

The top option chosen by libraries was "Develop policy/legal best practices and training"(77.59%). "Technology implementation best practices and training" came in second (63.79%).

Figure 25: IMLS Support COC Libraries

Libraries: How Should IMLS Support COC?
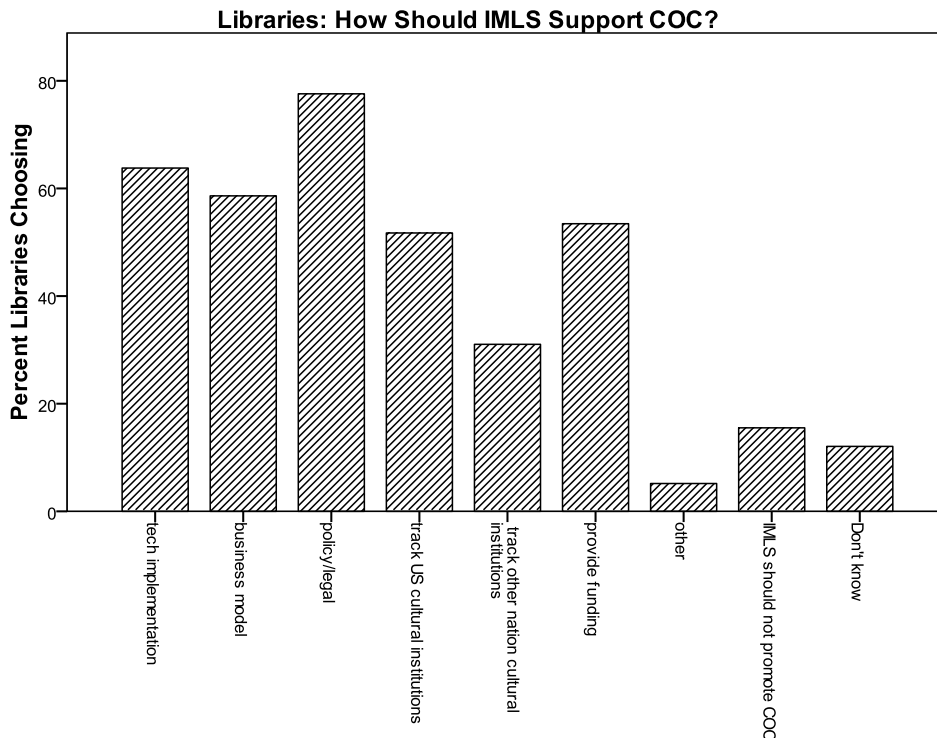
"Other" options written in by library respondents included:
- We need sponsored development for best practices for rights holder identification management and research
- Stimulate collaboration
- Prefer promoting open collections more

5.7.3 Museums

Similar to archives and libraries, "policy and legal best practices" was the first choice (85%), followed by "technology implementation best practices and training" tied with "provide funding" (both 77.5%)
The "IMLS should not promote COC" was not chosen by any museums and therefore does not appear in the Table below.

Figure 26: IMLS Support COC Museums

Museums: How Should IMLS Support COC?
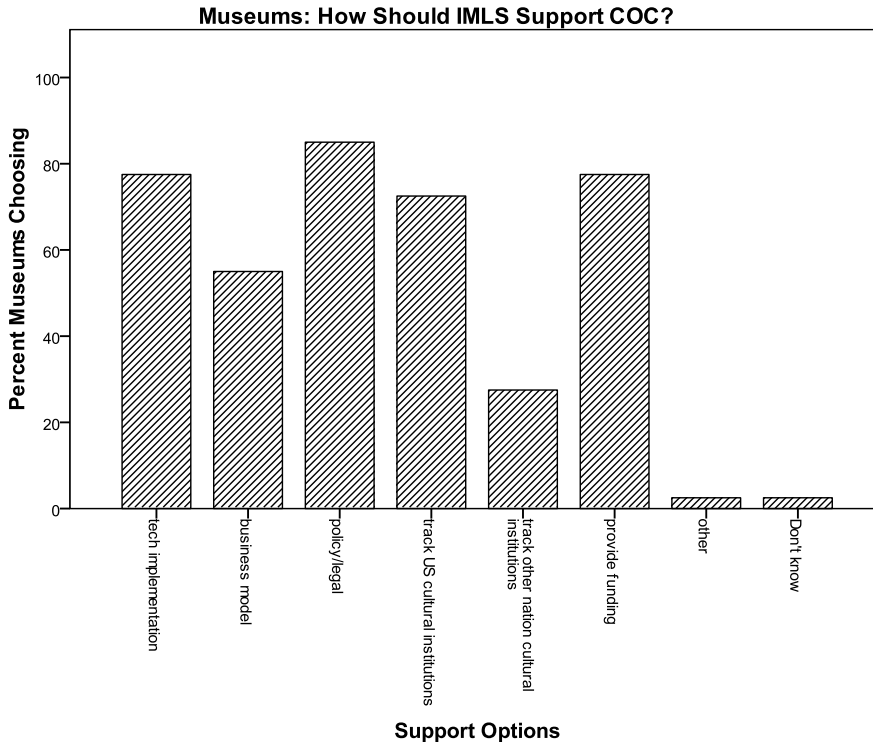
"Other" comments included:
- "Make available stories of successful projects"
- "Provide best practices support open access"
- "Proceed with extreme clarity. This probably means hiring new staff"
- "Work on use controls"

5.8 Questions for Non COC institutions

This section reports on the responses of archives, museums and libraries who did not have COC or plan to have COC. We refer to these as "Non COC" institutions.

Non COC institutions were invited to respond to the *discourager* question, the "What should IMLS do?" question, and the demographics questions.

The subset of Non COC institutions who also *had no online collections* were invited to complete the demographics section only.

It is important to note that several institutions that had no online collections filled out the entire survey because they were actively considering creating COC. Future surveys should not assume that current lack of an online collection equates to no plans to introduce COC.

5.8.1 Archives

A total of 32 Non COC archives responded to the survey. Of those, 20 reported having online collections but no plans for COC, and 12 reported no current online collections.

Non COC archives included 20 of the 42 state archives responding to the survey, 6 of the 24 college/university archives responding 2 of the 8 historical societies, 2 of the 3 federal government archives, and 2 of the 4 independent archives responding to the survey.

Table 59: Non COC Archives Types

Archive Type	Non COC Archives (N)
State government archive	20
Affiliated with a college or university	6
Affiliated with a historical society	2
Federal government archive	2
Separate or independent archive	2
Total	32

The size of non COC archives varied, but none had more than the 76-150 FTE size category.

Table 60: Non COC Archives Size FTE

Current Size FTE Archive	Non COC Archives (N)
Less than 5	8
6-10	6
11-25	6
26-75	10
76-150	2
Total	32

The annual budgets of non COC archives also varied, but most were less than $5,000,000.

Table 61: Non COC Archives Annual Budget

Current Size Archive Annual Budget	Non COC Archives (N)
Less than $250,000	6
250,001-$500,000	8
$500,001-$750,000	2
$750,001-1,000,000	1
$1,000,001-$5,000,000	12
$5,000,001-$10,000,000	2
$10,000,001-25,000,000	1
Over $25,000,000	0
Total	32

Non COC archives were invited to provide *discouragers* data. As seen in Table 62, there were no big differences between COC and non COC archives in terms of discouragers. The same issues were ranked highly by both types of archives. Non COC archives listed "concerns about end user dissatisfaction" slightly higher than COC institutions.

Table 62: Non COC and COC Archives Compared - Discouragers

Discouragers	*Archives Non COC ranking*	*Archives COC ranking*
Belief that Open Collections Have Greater Impact	1st	1st
Mission, policy, statutory requirements	2nd	2nd
Institutional level technology choices	3rd	2nd
Concerns about end user dissatisfaction	3rd	4th
Concerns with legal management complexity	3rd	3rd
Negative Perception by Partners, Funders, Peers	4th	4th
Concerns with technological management complexity	4th	5th
Few best practices or examples from which to follow	5th	5th
Do not have appropriate content	6th	5th
Concerns about unknown consequences	6th	6th

There was also not a striking difference between the IMLS options ranked by COC and non COC archives – both ranked "policy/legal" best practices and training as first. As shown in Table 63, the top three choices are quite similar. But while non COC archives rank "no promotion of access and use controls" as 4th, COC archives rank it as 7th. Non COC archives also ranked funding higher.

Table 63: Non COC and COC Archives Compared - IMLS Support Options

IMLS Options	*Archives Non COC ranking*	*Archives COC ranking*
Develop policy/legal best practices and training	1st	1st
Track what cultural institutions in the US are doing with controlled collections	1st	2nd
Provide funding	2nd	4th
Develop technology implementation best practices and training	3rd	3rd
Develop business model best practices and training	3rd	5th
IMLS should not promote access and use control implementations	4th	7th
Track what cultural institutions in other countries are doing with controlled collections	5th	6th
Other, free text entry	6th	8th
Don't know	7th	8th

5.8.2 Libraries

There were 25 non COC libraries. Of those, 17 had online collections, but no plans to create COC; and an additional 8 reported not having any online collections. Of the 62 academic libraries responding to the survey, 13 were non COC. The vast majority public libraries that responded (7 out of 9) fell in the non COC category. 4 of the 10 "other" libraries responding to the survey were non COC libraries and 1 of the 2 archives libraries responding to the survey fell in the category.

Table 64: Non COC Library Types

Library Type	Non COC Library (N)
Public library	7
Academic library	13
Affiliated with an archive	1
Other	4
Total	25

The population served, staff size and budget distribution of Non COC libraries was bimodal. This bimodality likely reflects the survey samples explicit inclusion of several large public library systems.

As seen in Table 65, the 9 of 25 Non COC libraries were small with a population served size of 10,001-50,000; however 7 non COC libraries reported a population served sizes of over 1,000,000.

Table 65: Non COC Library Population Served

Population Served	Non COC Library (N)
Less than 10,000	2
10,0001-50,000	9
50,001-100,000	2
100,001-500,000	1
500,001-1,000,000	1
Over 1,000,000	7
Missing	3
Total	25

The staff size of Non COC libraries was similarly bimodal with a large number having between 26-75 staff members and a large number having between 1,001-1,500 staff members.

Table 66: Non COC Library FTE Staff

Current Size FTE Staff	Non COC Library (N)

Less Than 5	2
6-10	1
11-25	2
26-75	6
76-150	3
151-250	2
251-500	1
501-1,000	2
1,001-1,500	6
Total	25

Budget sizes were tended toward large with 8 of 25 respondents having budgets of more than $25,000,000.

Table 67: Non COC Library Budget Size

Current Annual Budget Size	Non COC Library (N)
Less than $250,000	1
$250,001-$500,000	1
$500,001-$750,000	0
$750,001-$1,000,000	0
$1,000,001-$5,000,000	5
$5,000,001-$10,000,000	4
$10,000,001-$25,000,000	4
More than $25,000,000	8
Missing	2
Total	25

As illustrated in Table 68, there were not radical differences between the discouragers listed by COC and non COC libraries. Both had the same top discourager: "Belief that Open Collections Have Greater Impact." It may appear that non COC libraries ranked "institutional level technology choices" and "few best practices" and "unknown consequences" slightly higher, but that mostly stems from the large number of ties at 2nd, 3rd and 4th.

Table 68: Non COC and COC Libraries Compared - Discouragers

Discouragers	Non COC ranking	COC ranking
Belief that open collections have greater impact	1st	1st
Mission, policy, statutory requirements	2nd	3rd
Concerns about end user dissatisfaction	2nd	3rd
Concerns with technological management complexity	3rd	4th
Concerns with legal management complexity	3rd	2nd
Institutional level technology choices	4th	6th
Negative perception by partners, funders,	4th	5th

peers		
Few best practices or examples from which to follow	5th	8th
Do not have appropriate content	6th	7th
Concerns about unknown consequences	7th	9th

In terms of IMLS support, both COC and non COC institutions ranked "policy/legal" best practices and training first and "technology implementation" best practices/training as first or second. COC institutions ranked "tracking what US cultural institutions are doing" much higher than COC institutions (2nd vs 5th). Otherwise, as shown in Table 69, the rankings were similar -- keeping in mind the large number of ties for 5th among non COC library choices.

Table 69: Non COC and COC Libraries Compared - IMLS Support Options

IMLS Options	Non COC ranking	COC ranking
Develop technology implementation best practices and training	1st	2nd
Develop policy/legal best practices and training	1st	1st
Track what cultural institutions in the US are doing with controlled collections	2nd	5th
Develop business model best practices and training	3rd	3rd
Track what cultural institutions in other countries are doing with controlled collections	4th	6th
Provide funding	5th	4th
Other	5th	9th
IMLS should not promote access and use control implementations	5th	7th
Don't know	5th	8th

5.8.3 Museums

There were 23 total non COC museums responding to the survey. This included 12 museums with online collections but no plans for COC and an additional 11 museums with no online collections.

Non COC museums included 6 of the 22 art museums, 6 of 13 "other" museums, 5 of 11 natural history museums, 2 of 4 arboretum/botanical gardens, 2 of 5 history museum, 1 of 3 historic houses/sites, and 1 of 4 science and technology museums responding to the survey.

Table 70: Non COC Museum Types

Type of Museum	Non COC Museums (N)
Art museum	6

Other	6
Natural history or anthropology museum	5
Arboretum or botanical garden	2
History museum	2
Historic house/site	1
Science or technology center	1
Total	23

Table 71: Non COC Museum FTE Staff Size

FTE Staff Size	Non- COC Museums (N)
Less than 5	1
6-10	4
11-25	1
26-75	6
76-150	3
151-250	2
251-500	4
501-1,000	0
1,001-1,500	1
More than 1,501	0
Missing	1
Total	23

Table 72: Non COC Museum Annual Budget

Annual Budget	Non-COC Museums (N)
Less than $250,000	0
$250,001-$500,000	2
$500,001-$750,000	2
$750,001-$1,000,000	0
$1,000,001-$5,000,000	5
$5,000,001-$10,000,000	4
$10,000,001-$25,000,000	3
Over $25,000,000	5
Missing	2
Total	23

COC museums and non COC museums listed the same top discourger: "Belief that Open Collections have Greater Impact." Both also rated "Institutional level technology choices" third.

Non COC museums listed "Mission, policy statutory requirements" higher (2nd instead of 6th). Non COC museums ranked "Mission, policy, statutory requirements" and "End user dissatisfaction" higher than COC museums. COC museums ranked "Concerns with legal complexity" and "Few best practices or examples" higher than non COC museums.

Table 73: Non COC and COC Museums Compared - Discouragers

Discouragers	Non COC ranking	COC ranking
Belief that Open Collections Have Greater Impact	1st	1st
Mission, policy, statutory requirements	2nd	5th
Institutional level technology choices	3rd	3rd
Concerns about end user dissatisfaction	4th	7th
Negative Perception by Partners, Funders, Peers	5th	8th
Concerns with technological management complexity	5th	3rd
Concerns with legal complexity	5th	2nd
Do not have appropriate content	6th	9th
Concerns about unknown consequences	6th	6th
Few best practices or examples from which to follow	7th	4th

Both COC and non COC museums ranked "policy/legal" best practices and training first for IMLS priorities. Both also ranked "technology implementation" highly.

The rankings of both institution types were quite similar; however, Non COC museums ranked "track cultural institution in other countries" higher. Further, while no COC museums marked the option "IMLS should not promote access and use control implementation," 3 non COC museums did mark that option.

Table 74: Non COC and COC Museums Compared - IMLS Support Options

IMLS Options	Non COC ranking	COC ranking
Develop technology implementation best practices and training	1st	2nd
Develop policy/legal best practices and training	1st	1st
Develop business model best practices and training	2nd	4th
Track what cultural institutions in the US are doing with controlled collections	2nd	3rd
Track what cultural institutions in other countries are doing with controlled collections	3rd	5th
Provide funding	3rd	2nd
Other	4th	6th
IMLS should not promote access and use control implementations	4th	-
Don't know	5th	6th

References

Alder, P.S. (2005) *Statement of Prudence S. Adler Association of Research Libraries on Behalf of the Library Copyright Alliance in the Hearing on "Fair use: Its effects on consumers and industry":* Subcommittee on Commerce, Trade, and Consumer Protection, U.S. House of Representatives.

Agnew, G. (2008). *Digital rights management: A librarian's guide to technology and practise*. Oxford UK: Chandos.

Agnew, G., & Martin, M. (2003). Digital rights management: Why libraries should be major players. *Bowker annual: Library and book trade almanac* (pp. 267-278). Medford NJ: Information Today.

Ayer, C., & Muir, A. The right to preserve: The rights issues of digital preservation. *D-Lib Magazine, 10*(3).

Bailey, C. W. (2006). Strong copyright + DRM + weak net neutrality = digital dystopia. *Information Technology and Libraries, September*, 116-127.

Behrnd-Klodt, M. L., & Wosh, P. J. (Eds.). (2005). *Privacy and confidentiality perspectives: Archivists and archival records*. Chicago: Society of American Archivists.

Benedict, K. M., & Society of American Archivists. (2003). *Ethics and the archival profession : Introduction and case studies*. Chicago: Society of American Archivists.

Besek, J. M., & Iannella, R. (2002). *Copyright issues relevant to the creation of a digital archive: A preliminary assessment; digital rights management in the higher education sector* Council on Library and Information Resources and the National Digital Information Infrastructure and Preservation Program, Library of Congress; Commonwealth of Australia.

Bide, M. (2002). Digital rights management: Preventing or enabling access? *Serials, 17*(2), 141-147.

Bohn, P. (2006). *Content providers' guide to digital rights management*. Forschungszentrum Karlsruhe, Institute for Technology Assessment and Systems Analysis: INDICARE Project.

Bonner, K., & Center for Intellectual Property in the Digital Environment. (2006). *Center for intellectual property handbook* New York: Neal-Schuman.

Bower, T. W. *Make my day, use my image.*, January 2009, from http://www.panix.com/~squigle/rarin/usemyimage.html

Brown, M. F. (2003). *Who owns native culture?*. Cambridge, MA: Harvard University Press.

Burk, D. L. (2003). Anti-circumvention misuse. *UCLA Law Review 50*(5), *1095-1140.*

Burk, D. L., & Gillespie, T. (2006). Autonomy and morality in DRM and anti-circumvention law. *Triple C: Cognition, Communication, Co-Operation, 4*(2), 239-245.

Caplan, P., Barnett, B., Bishoff, L., Borgman, C., Hamma, K., & Lynch, C. (2003). *Report On The Workshop On Opportunities For Research On The Creation, Management, Preservation And Use Of Digital Content*. Washington DC: Institute of Museum and Library Services.

Center for Democracy and Technology. (2006). *Evaluating DRM: Building a marketplace for the convergent world*

Center for Intellectual Property in the Digital Environment. (2005). *Colleges, Code, and Copyright : The Impact Of Digital Networks And Technological Controls On Copyright And The Dissemination Of Knowledge In Higher Education*. Chicago: Center for Intellectual Property in the Digital Environment, Association of College and Research Libraries.

Cohen, J. (1996). The right to read anonymously. *Connecticut Law Review, 28*(4), 981-1040.

Cohen, J. (2003). The challenge of digital rights management technologies. *The Role Of Scientific And Technical Data And Information In The Public Domain: Proceedings Of A Symposium* (pp. 109-116). Washington DC: National Academy Press.

Coyle, K. (July, 2004). Rights management and digital library requirements. *Ariadne, 40.*

Danielson, V., Cohen, E., & Seegar, A. (2001). *Folk heritage collections in crisis*. Washington DC: Council on Library and Information Resources.

Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method*. New York: John Wiley & Sons.

Dryden, J. (2008). *Copyright in the real world: Making archival material available on the internet.* Unpublished PhD dissertation, University of Toronto, Toronto. Retrieved from: https://tspace.library.utoronto.ca/bitstream/1807/11198/1/Dryden_Jean_E_200806_PhD_+thesis.pdf

EBLIDA. (2003). *EBLIDA position statement on digital rights management systems*. The Hague: European Bureau of Library, Information and Documentation Associations.

EBLIDA. (2004). *Response to the European Commission Consultation on the Final Report of the High Level Group on Digital Rights Management*. The Hague: European Bureau of Library, Information and Documentation Associations.

Eschenfelder, K. R. (2008). Every library's nightmare: Digital rights management, use restrictions, and licensed scholarly digital resources. *College and Research Libraries, 69*(3), 205-226.

Eschenfelder, K. R., & Walden, B. (2008). A tale of two DRM: The co-construction of access and use rights for licensed digital resources. *Proceedings of the Annual Meeting of the American Society of Information Science and Technology, , 45*(1)

Foroughi, A., Albin, M., & Gillard, S. Digital rights management: A delicate balance between protection and accessibility.*Journal of Information Science 28*(5), 389-395.

Fox, S.E. (2000) Letter on behalf of the Society of American Archivists: Copyright Office Rulemaking on Exemptions from Prohibition on Circumvention of Technological Measures that Control Access to Copyrighted Works. Retrieved from: http://www.copyright.gov/1201/comments/reply/050societyaa.pdf

Fricker, R. D., & Schonlau, M. (2002). Advantages and disadvantages of internet research surveys: Evidence from the field. *Field Methods, 14*(4), 347-365.

Geser, G. (2002). Introduction and overview. *DigiCULT:Digital Asset Management Systems for the Cultural and Scientific Heritage Sector, 2*, 27-32. Retrieved from: *http://www.digicult.info/downloads/html/1039519224/1039519224.html*

Gillespie, T. Designed to 'effectively frustrate': Copyright, technology and the agency of users. *New Media and Society, 8*(4), 651-669.

Gillespie, T. (2007). *Wired shut: Copyright and the shape of digital culture*. Cambridge, MA: MIT Press.

Godwin, M. (2004). *What every citizen should know about DRM, a.k.a. "digital rights management"*. Washington DC: Public Knowledge. Retrieved from: http://www.publicknowledge.org/pdf/citizens_guide_to_drm.pdf

Godwin, M. (2006). *Digital rights management: A guide for librarians*. Washington DC: American Library Association Office of Information Technology Policy. Retrieved from: http://www.ala.org/ala/aboutala/offices/wo/woissues/copyrightb/digitalrights/DRMfinal.pdf

Groenenboom, M., & Helberger, N. (2006). *Consumer's guide to digital rights management: Any side effects?*. Institute for Information Law: University of Amsterdam: INDICARE Project. Retrieved from http://www.indicare.org/tiki-download_file.php?fileId=195

Grout, C., Purdy, P. & Rymer, J. (2000). *Creating digital resources for the visual arts: standards and good practice: Section 6.3 Controlling Access*. Retrieved rom: http://vads.ahds.ac.uk/guides/creating_guide/contents.html

Hamma, K. (2005). Public domain art in an age of easier mechanical reproducibility. *First Monday, 11*(11).

Holtorf, C. (2005). *From Stonehenge to Las Vegas: Archeology as popular culture*. Walnut Creek: Altamira Press.

Iannella, R. (2002). *Digital rights management in the higher education sector*. Canberra: Department of Education, Science and Training. Retrieved from: http://www.dest.gov.au/archive/highered/eippubs/eip02_2/eip02_2.pdf

Institute of Museum and Library Services. (2002). *Status Of Technology And Digitization In The Nation's Museums And Libraries 2002 Report*. Washington DC: Institute of Museum and Library Services.

Institute of Museum and Library Services. (2006). *Status of technology and digitization in the nation's museums and libraries*. Washington DC: Institute of Museum and Library Services.

Intrallect Inc. (2004). *Digital rights management*. Linlithgow, UK: Intrallect Ltd.

Jaszi, P. (2002). Testimony Of Peter Jaszi In The Copyright Office Section 1201(A)(1) Rulemaking On Possible Exemptions To The Prohibitions Against Technological Protection Measures That Control Access To Copyrighted Works. Retrieved from: http://www.copyright.gov/1201/hearings/peter_jaszi.pdf

Kanter, N. (2002). DAMS vs CMS. *DigiCULT:Digital Asset Management Systems for the Cultural and Scientific Heritage Sector, 2*, 7-9. Retrieved from: *http://www.digicult.info/downloads/html/1039519224/1039519224.html*

Kelley, K. B., Bonner, K. M., Lynch, C. A., & Park, J. (2006). Digital rights management (DRM) and higher education: Opportunities and challenges. In K. Bonner (Ed.), *The center for intellectual property handbook* (pp. 107-121). New York: Neal-Schuman.

Lessig, L. (1999). *Code and other laws of cyberspace*. New York: Basic Books.

Lessig, L. (2006). *Code 2.0* New York: Basic Books.

Library Copyright Alliance. (2004). *Library-related principles for the international development agenda of the world intellectual property organization*. Retrieved from: http://www.librarycopyrightalliance.org/wipo.htm

Lockwood, S. (2000) Letter on behalf of the Digital Futures Coalition: Copyright Office Rulemaking on Exemptions from Prohibition on Circumvention of Technological Measures that Control Access to Copyrighted Works. Retrieved from: http://www.copyright.gov/1201/comments/reply/062dfc.pdf

Max Planck Institute for the History of Science. (Jan 11 2009). *Scholarly publishing and the issues of cultural heritage, fair use, reproduction fees and copyrights*. Berlin: Max Plank

Institute. Retrieved from http://www.mpiwg-berlin.mpg.de/PDF/MPIWGBestPracticesRecommendations.pdf

Mazzone, J. (2006). Copyfraud. *New York University Law Review, 81*(3), 1026-1100.

National Initiative for a Networked Cultural Heritage. (2002). *NINCH guide to good practice in digitization and management of cultural heritage materials*. Washington DC: NINCH.

National Park Service. (2006). *NPS museum handbook: Part I "ethical issues", part III "legal issues"* Washington DC: National Park Service. Retrieved from: http://www.nps.gov/history/museum/publications/handbook.html

New Jersey Digital Highway. (2007). *New Jersey Digital Highway: Copyright Issues* Retrieved from http://www.njdigitalhighway.org/copyright_issues_libr.php

NISO Framework Advisory Group. (2004). *A framework of guidance for building good digital collections*. Bethesda, MD: National Information Standards Organization.

Pantalony, R. E., & Green, D. (2005). Sustaining digitization programs in the post-new economy: A re-examination of E-commerce and electronic distribution. *Visual Resources Association Bulletin, 32*(2), 44-48.

Rights and Reproductions Information Network (RARIN). (2004). *AAM member museums rights and reproductions survey 2004*. Washington DC: American Association of Museums.

Ross, S. (2002). Position paper on DAMS for the heritage sector. *DigiCULT:Digital Asset Management Systems for the Cultural and Scientific Heritage Sector, 2*, 7-9. Retrieved from: *http://www.digicult.info/downloads/html/1039519224/1039519224.html*

Ross, S., Donnelly, M., & Dobreva, M. (2004). "Rights management and payment technologies.*" DigiCULT:Emerging Technologies for the Cultural and Scientific Heritage Sector Technology Watch 2, 2* Retrieved from http://www.digicult.info/downloads/html/1082026370/1082026370.html

Russell, I. (Ed.). (2006). *Images, representation and heritage* New York: Springer.

Seegar, A. (2001). Intellectual property and audiovisual archives and collections - folk heritage collections in crisis. In V. Danielson, E. Cohen & A. Seegar (Eds.), *Folk heritage collections in crisis* (pp. 32-50). Washington DC: Council on Library and Information Resources.

Slowinski, F. H. (2003). *What consumers want in digital rights management (DRM): Making content as widely available as possible in ways that satisfy consumer preferences*. New York: Association of American Publishers and American Library Association.

Spinazze, A., Allen, N., & Bishoff, L. (2004). *Digital resources for cultural heritage: A strategic assessment on current status and future needs*. Washington DC: Institute of Museum and Library Services.

Standards for ethical conduct for rare book, manuscript, and special collections librarians, with guidelines for institutional practice in support of the standards, 2d edition, 1992.(1993). *College & Research Libraries News,* (4), 207-215.

Tanner, S., & Deegan, M. (2003). Exploring charging models for digital library cultural heritage. *Ariadne, 34*

Technical Advisory Service for Images (TASI) (Jan, 2009) *Still images, moving images, and sound advice: User issues and digital rights management.* Bristol UK: JISC Digital Media. Retrieved http://www.tasi.ac.uk/advice/using/userissues.html

Wall, G. (2003). Business model issues in the development of digital cultural content. *First Monday, 8*(5). Retrieved from: http://131.193.153.231/www/issues/issue8_5/wall/index.html

Zorich, D. M. (2003a). *Developing intellectual property policies: A how-to guide for museums*. Gatineau Quebec: Canadian Heritage Information Network and the National Initiative for a

Networked Cultural Heritage. Retrieved from:
*http://*www.chin.gc.ca/English/Intellectual_Property/Developing_Policies/index.html

Zorich, D. M. (2003b). *A survey of digital cultural heritage initiatives and their sustainability concerns*. Washington DC: Council on Library and Information Resources. Retrieved from: http://www.clir.org/pubs/abstract/pub118abst.html