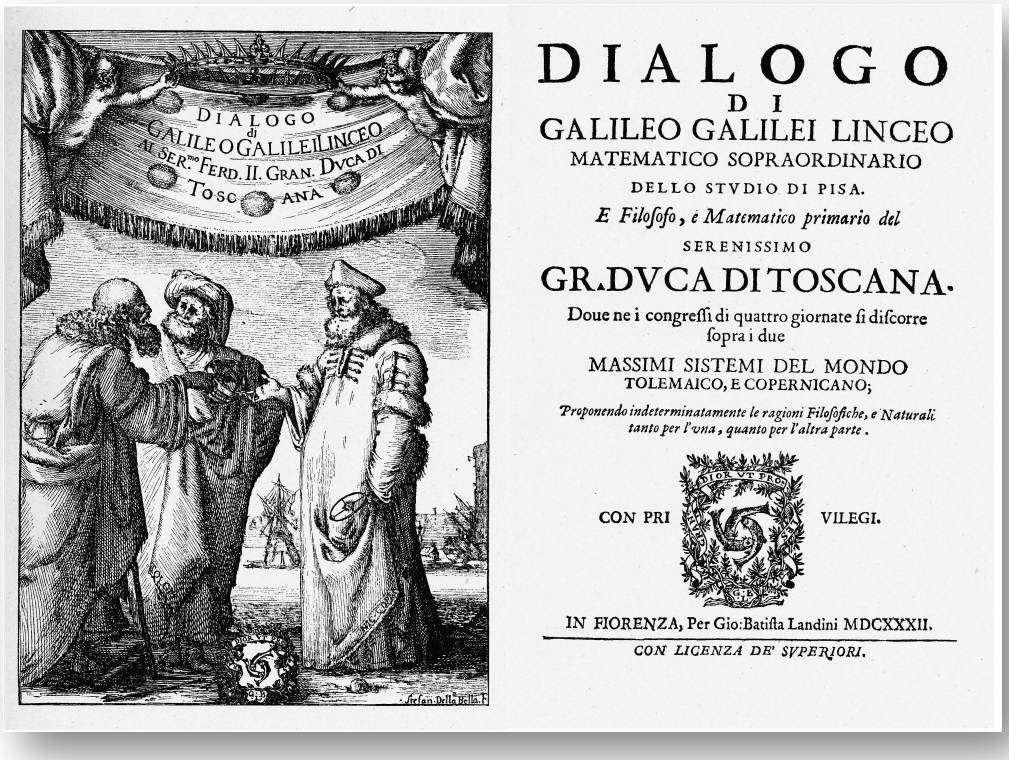
The Dartmouth Digital Library Program



A Report from the Digital Projects and Infrastructure Group (DPIG)

12 September 2011

DIGITAL PROJECTS AND INFRASTRUCTURE GROUP (DPIG) 2010-2011

Members

Pamela Bagley, Research and Education Librarian
Peter Carini, College Archivist
Barbara DeFelice, Director, Digital Resources
Anthony Helm, Head of Digital Media and Library Technologies
Wess Jolley, College Records Manager
Eliz Kirk, Associate Librarian for Information Resources
Paul Merchant, Senior Programmer, Digital Library Technologies Group
Barb Sagraves, Head, Preservation Services
David Seaman, Associate Librarian for Information Management (Chair)
Cecilia Tittemore, Head, Cataloging and Metadata Services

Liaisons

Helen Bailey, Preservation Specialist
Eric Bivona, Senior Programmer, Digital Library Technologies Group
Bill Ghezzi, Cataloging and Metadata Services Librarian
Laura Graveline, Visual Arts Librarian
Roberto Hoyle, Senior Programmer/Analyst, Digital Library Technologies Group
Mark Mounts, Business & Engineering Reference Librarian
Mina Rakhra, Cataloging and Metadata Services Librarian
Jennifer Taxman, Head, Access Services

Contents

Executive Summary

The Dartmouth Digital Library Program promotes innovative research and teaching through the strategic digitization of Library holdings and the open access publication of new digital scholarship. The Program responds to increasing demand for global access to our collections, and focuses the expertise of our Library staff to serve these needs. Dartmouth's world-class library is committed to exploiting fully the new opportunities for discovery that the digital era provides, and to being as engaged in the working lives of our users in the 21st century as we have been in past centuries. Planning has been underway across the Library for several years, including a 2010 Report[1] that set our current scope and priorities. Now we are using our deep subject expertise, collection-building skills, and technical knowledge to create workflows, policies, and infrastructures to shape, describe, and preserve our online collections and publications.

Scholarship is transitioning from print to electronic access in many fields, and we are thinking strategically about which of our Library holdings would serve Dartmouth best if they were available online. Our physical collections are still heavily used, but we want to realize new teaching and research potential through selective digitization of them. Dartmouth faculty and students are increasingly sophisticated users and creators of digital content, ambitious to teach, research, curate, and collaborate in new ways. To enable these activities, it is time for more of our library materials to be accessible online.

Digital content has been part of Dartmouth's service offerings since the *Dartmouth Dante Project* began in the 1980s.[2] In the early 1990s we were among the first American institutions to make available online the full text of literary, religious, and philosophical works; later, in 2001, the Library founded the Digital Publishing Program "to manage scholarly information produced by our own faculty and students and to communicate it to the rest of the world" (Dartmouth College, 2002).

More recently, we have embarked on a number of digital projects, to serve immediate needs and to inform our planning with the practical lessons learned from undertaking the work of digitization, preservation, delivery, and assessment. These projects include the digitization of rare books such as *Il Clarissimo Poeta Ovidio De Arte Amandí Libro Primo Chominza* (Rauner Incunabula 89), manuscripts such as the *Brut Chronicle* (Rauner Codex 003183), and the papers of Samson Occom and his contemporaries. The digitization of selected compositions of composer Jon

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[1] Digital Projects and Infrastructure Group. *The Dartmouth Digital Library: Program, Priorities, and Policies.* http://www.dartmouth.edu/~library/admin/docs/DDL-policy.pdf

[2] See http://dante.dartmouth.edu/

Appleton provided experience working with audio materials, while the digitization of historic films related to Dartmouth in the 1940s and 1950s furnished experience with film and video preservation, digitization, and delivery. The Library has also produced digital collections of photographic materials including the Stefansson arctic images (Rauner Stefansson Mss-225 & 229), while a project to digitize the Sanborn Fire Insurance Maps of New Hampshire Towns, 1880s-1920s, provided experience with large format materials. And the digital and print publication of William Scott's *The Artistry of the Homeric Simile* created a partnership with the University Press of New England (UPNE) as well as experience with the publication of "born digital" scholarship.

The practical experience gleaned from these early projects is of great value as we create the policies, processes, and priorities that make up this Program, and we are confident that we can move forwards with a set of services that will make a difference in the lives of our users. To achieve this, the Program articulated here is built on a foundation of selectivity, standards, and sustainability, and driven by the twin goals of access and assessed value:

> **Select:** The Program makes it easy for Library staff to propose projects through a web form, but has a rigorous evaluation process to select which proposals we take through to completion. We aim to invest our time and funding in areas that have a high return relative to the investment. "High return" does not equate to popularity on the web simply as an indicator of value: while we have published items that get heavy general use (*Who's Who and What's What in Dr. Seuss* gets thousands of accesses a month), a body of content that is immediately useful to a particular Dartmouth class or a single researcher is also often a high-yielding, high-priority project.
>
> The Program will work closely with the Collections Management and Planning Group (CMPG) to ensure that the selection process meets the Library's overarching goals for the growth of its collections. A subcommittee of CMPG will review and prioritize proposals through that lens.
>
> **Standardize:** Throughout this Program we are identifying and following international best practices and standards for the digitization, open access delivery, and preservation of our online materials, from XML encoding and high-quality master files, to best practices for managing long-term digital repositories.
>
> **Sustain**: We seek to ensure the sustainability of this Program by combining newly-endowed staff positions in digital production and program leadership with existing staff members in a range of Library departments. This

distributed staffing model draws expertise from across the Library, and embeds the Program in the day-to-day work of multiple departments.

Access: from a rights management policy to the attention we give to how best to deliver, describe, and publicize our content, we are driven by an urge to ensure the widest practical accessibility for our digitized collections and open access publications.

Assess: The Library has worked diligently in recent years to imbue a culture of assessment throughout the organization, and this Digital Library Program is no exception. As part of the planning of a project we will set assessment markers to measure its impact, and the Program as a whole will be assessed annually.

We believe that this new Program is of strategic importance for the Library, aligned with our mission to foster intellectual growth by supporting excellence and innovation in education and research[3] and our vision of "inspiring ideas for personal transformation and global impact." We look forward to the day, not far hence, when students analyze medieval manuscripts from Rauner on their iPads, or view a century of geo-tagged Dartmouth photographs on their smart phones; when users from all over the world tap into online dissertations and new kinds of digital Dartmouth scholarship; and when our alumni enjoy archival films showcasing Dartmouth College life from decades gone by.

[3] **Dartmouth College Library Mission Statement:** "The Dartmouth College Library fosters intellectual growth and advances the mission of Dartmouth College and affiliated communities by supporting excellence and innovation in education and research, managing and delivering information, and partnering to develop and disseminate new scholarship."

Introduction

This document outlines a Digital Library Program that allows us to provide local digitization and open access digital publication services in an orderly manner as an ongoing Library endeavor. This report incorporates and expands on 2010's *The Dartmouth Digital Library: Program, Priorities, and Policies*, which laid out the scope and purpose of the Program, and offered recommendations for moving us forwards.

A number of the recommendations outlined in the 2010 report have been achieved or are in active development, including the adoption of the Program's scope and purpose; ongoing infrastructure design; a developing expertise in the Digital Projects and Infrastructure Group (DPIG) for evaluating project proposals and designing workflows; fund-raising priorities given to the Digital Library Program; and a willingness on the part of multiple departments to take on new collaborative roles as part of a shared staffing model. Other 2010 recommendations are carried over here, after review to ensure their continued validity. See **Appendix I** for a full report.

Over the last two years DPIG has drafted several policies to support the Library's Digital Program, including a selection policy for digitization projects, a digital preservation policy, and a rights management policy [see **Draft Policies** section]. We believe these statements provide the essential intellectual infrastructure needed for the implementation of a successful digital library program.

In FY11/12, DPIG is designing "a robust and adaptable digital production process for local collections that includes selection and production policies and a prioritization process to maximize the impact on education and scholarship" [Dartmouth College Library FY11/FY12 strategic objective]. This document is the result of that work and an identification of essential next steps.

Scope

The *Dartmouth Digital Library Program*[4] comprises of the following services, as a complement to our purchasing of ebooks, electronic journals, and databases.

Digitized Library Collections

This category contains digitized surrogates of physical items already in the Dartmouth College Library collections. A good digital collection facilitates discovery, access, analysis, interoperability, and re-use; it combines objects, metadata, and user interfaces to create a satisfying user experience,[5] and it is "born-archival"[6]; that is, it is created to preservation standards that help ensure its permanence in the collection. All media types in which the Library collects are in scope for the digital program, including but not limited to: film, video, audio, manuscripts, books, maps, dissertations, theses, photographs, and realia. Digitization at Dartmouth is designed to be a highly strategic endeavor, however, as demand will always outstrip our digitization capacity. While the scope is wide, the work is bounded by the priorities, policies, and procedures outlined in this document.

Digital Publishing

Our open access digital publishing endeavors focus on scholarly publications that are "born digital" and created by Dartmouth faculty: that is, books, journals, or editions which have their original publication in a digital format, rather than items published in paper form (or other analog media) and converted through digitization.

As a practical qualification to this scope, however, the Library has a limited capacity to support new journals, given the ongoing commitments to produce and archive them. We are better able to support original scholarship that requires a finite span of intensive work in its creation followed by the lower-energy phase of archiving. Therefore, preference will be given to "encapsulated" publications such as monographs or edited items (letters, a video, a collection of visual objects accompanied by text).[7] Recent activity has

[4] See http://www.dartmouth.edu/~library/digital/
[5] This definition is based on the NISO *Framework of Guidance for Building Good Digital Collections* (NISO, 2007, p. 4).
[6] This concept is borrowed from Smith (2007), p.19, and from the Sixth International Conference on Preservation of Digital Objects (2009).
[7] Kirk (2008), p. 3.

included a critical edition and transcription of a rare manuscript, several journals, and a monograph in partnership with the University Press of New England (UPNE).[8]

Digital Exhibits

Dartmouth College Library has a growing ambition to deliver digital versions of selected Library exhibits, and this Program aims to incorporate and support these developing needs. Discussions are underway initially with Baker-Berry exhibit staff to determine how best to decide when to provide online versions of physical exhibits. Exhibits from all parts of the Library system are in scope, however, and we recognize that the exhibits program encompasses multiple libraries. The digital production capacity that the Dartmouth Digital Library Program brings us can also help with the creation of digital objects for online exhibits.

Priorities

Dartmouth College Library has adopted the following priorities in developing its digital program (listed in order of importance):

1. **Selective digitization** of library holdings. Priority will be given to projects that have a clear teaching or research impact, and which will make a difference to a known user community**.** Project selection should support the Library's overall collection development goals.
2. **Support for publication** of original scholarly works in digital form.
3. **Exhibits**.
4. **Transfer of existing electronic journals** into the Dartmouth publication space.
5. **Support for publication of newly created electronic journals** by Dartmouth editors.

These priorities are informed by our budget realities, our staffing resources, our existing and developing infrastructure, and our experience with ongoing digitization and e-journal projects.

[8] William C. Scott. *The Artistry of the Homeric Simile*. Electronic and print publication, 2009, Dartmouth College Library in partnership with the University Press of New England (UPNE): http://www.dartmouth.edu/~library/digital/publishing/index.html

Principles

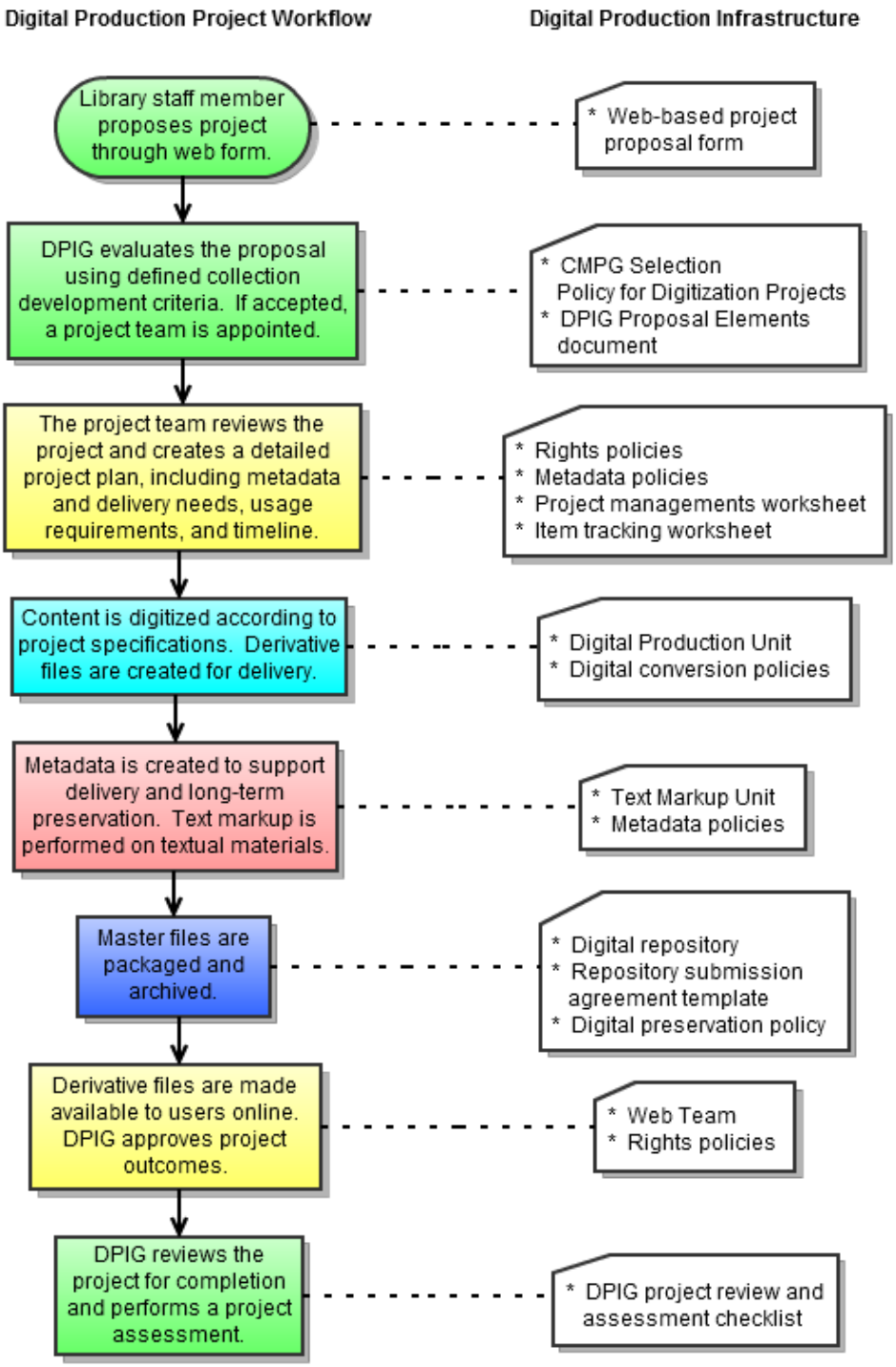
NISO's *Framework of Guidance for Building Good Digital Collections* (2007) promotes nine characteristics, which we are applying to our online collections, publications, and exhibits:

1. **Intentional:** created according to an explicit policy.
2. **Clear:** described in a manner to allow one to determine the authenticity, integrity, and interpretation (scope, format, restrictions on access, ownership) of the item.
3. **Curated:** actively managed during its lifecycle.
4. **Accessible:** avoiding unnecessary impediments to use, and accessible to persons with disabilities.
5. **Respectful:** conscious of the intellectual property rights of all parties.
6. **Useful:** supplies data that allows standardized measures of usefulness.
7. **Interoperable** with other systems, both local and international.
8. **Integrated** into the user's teaching and research workflows.
9. **Sustainable** over time.

These principles inform our thinking in the formation of the program definitions, policies, workflows, infrastructure, and recommendations contained in this document.

Workflow and Infrastructure

The Digitization Workflow outlined here spans many Library departments. In this regard, it is similar to the workflows that are applied to newly acquired materials, where items move through a number of departmental processes depending on their type and condition. This Digital Library Program, therefore, like so much of our daily work, is built on and will be sustained by a shared staffing model, even after full-time digitization program staff members are in place. Moving forwards, we continue to see key roles being undertaken by existing staff in a variety of departments, although this model is unlikely to succeed without the addition of a full-time Digital Production Manager, who will manage, document, and evaluate the digitization process for multiple simultaneous projects, and a Director of Digital Initiatives, who will coordinate and develop the Program and its policies as a whole, promote our services, liaise with stakeholders, and provide ongoing assessment (see *Resources*, below). The following sections outline in summary form the main steps we see as necessary in the Program, and begin with a graphical summary of the workflow. More detailed descriptions of these stages, with color-coded flow diagrams, can be found in **Appendix II: Detailed Workflows**.


Digital Production Project Workflow
Digital Production Infrastructure
Library staff member proposes project through web form.
* Web-based project proposal form
DPIG evaluates the proposal using defined collection development criteria. If accepted, a project team is appointed.
* CMPG Selection Policy for Digitization Projects
* DPIG Proposal Elements document
The project team reviews the project and creates a detailed project plan, including metadata and delivery needs, usage requirements, and timeline.
* Rights policies
* Metadata policies
* Project managements worksheet
* Item tracking worksheet
Content is digitized according to project specifications. Derivative files are created for delivery.
* Digital Production Unit
* Digital conversion policies
Metadata is created to support delivery and long-term preservation. Text markup is performed on textual materials.
* Text Markup Unit
* Metadata policies
Master files are packaged and archived.
* Digital repository
* Repository submission agreement template
* Digital preservation policy
Derivative files are made available to users online. DPIG approves project outcomes.
* Web Team
* Rights policies
DPIG reviews the project for completion and performs a project assessment.
* DPIG project review and assessment checklist

The workflow articulated here is a generalized one that can be applied to manuscripts, photographs, films, sound recordings, born-digital items, or files that are the result of previous digitization.[9] While the focus in designing these workflows has been chiefly on the digitizing of materials from our Library collections, the processes also explicitly support the creating of digital content for exhibits and born-digital publishing, and to their delivery and long-term archiving.

The stages discussed here are the result of planning sessions drawing on expertise from many departments, and tempered by what we have learned in our recent digitization and publishing projects.

These workflows require the development of a largely new technical infrastructure to support the Program. **Appendix III** offers recommendations on building out that technical infrastructure and lists the characteristics, or "behaviors," of its five major components:

1. Metadata Workspace System
2. Long-Term Object and Metadata Storage System
3. Item Tracking Worksheet
4. Project Management Worksheet
5. User Delivery System

In FY11's planning we have deliberately avoided recommending specific software packages or hardware configurations, but have concentrated on what we want the infrastructure to do for us. In FY12, members of DPIG will refine these technical infrastructure elements, and will work with DLTG to recommend the hardware and software that can instantiate these desired repository behaviors.

Proposal, Evaluation, and Selection

The first step in the process is to gather recommendations for desirable and impactful items and collections to digitize. To achieve this, any Library staff member or committee can propose a collection or item to be digitized by completing the *Project Proposal Form* that is available in the Library Staff Web [see **Appendix IV**].

The Collection Management and Planning Group (CMPG) will develop a database for

[9] An instance of the latter case could be one in which text pages were originally scanned to generate images of the pages, and now those images are being subjected to OCR and the resulting text is marked up so as to produce a searchable corpus of the original content.

proposals that it will then prioritize in terms of how the individual projects support the Library's overarching goals for the growth and management of its collections. The desired outcome of this process is to continue to develop the Library's collections in a manner that is intellectually coherent and responsive to the resource needs of the Dartmouth community and our extended collecting partners (especially BorrowDirect).

Good proposals describe collections and items that have a high impact relative to the effort and cost of digitizing them and support the Library's overall collection development goals. The proposer uses the guidelines for filling out the form [see **Appendix V**], and proposers and reviewers use the *Selection Policy for Digitization Projects* as a guide to developing and reviewing the proposal [see **Draft Policies** section]. The evaluation therefore considers the impact, timing, cost and complexity of the project. The proposal is shared with DPIG and bibliographers and the information is made available on Staff Web. A designated DPIG member reads the proposal and consults with the proposer if more information is needed.

DPIG then reviews the revised proposal to determine whether to move forward with the discovery and planning for the project, return to the proposer for more information, or decide that the project is out of scope. The result is made known to bibliographers and DPIG. If the project advances, a Project Manager is appointed.

This method of selection will inevitably result in some projects that digitize only a small portion of a given collection. For example, we already have two 19th century comic books online (*The Adventures of Mr. Obadiah Oldbuck* and *The Fortunes of Ferdinand Flipper*) from a larger collection of 89 caricatures and cartoons listed for Special Collections in the Library Catalog. From a collections standpoint this may be undesirable – if our comic books collections are a priority we would rather have all of them digitized – but the impact on a given class of scanning the two they were concentrating on was sufficiently high-yield and high-service to justify these "one-offs". As the Program matures and capacity increases, we would hope to be able to balance these service-driven requests for items with our ability to decide as librarians what collections as a whole should be digitized, and our ability to liaise with faculty and students on larger-scale selection priorities. DCAL, the Library's student advisory group, and the Council on Libraries are all potential partners in this discussion.

Discovery and Planning

When a project passes the initial selection and evaluation process, a Project Manager is identified, and a Project Team is formed to conduct a thorough review of the project and create an action plan based on input from all relevant areas of

expertise. The Team may often include (or consult with) members who are not part of DPIG, including other Library staff and faculty. This team may discover information at this stage that leads to the rejection of the proposal, or at least its postponement pending rights, resources, or other questions being successfully resolved. **Appendix VI** gives an example of the Project Management Worksheet we use to manage this process and record our decisions.

If DPIG decides that the project should move forwards after the discovery phase, the Project Team develops a success statement for the project, and plans the digitization workflow for that collection of objects. The Project Team typically includes individuals from Preservation, Cataloging and Metadata Services, and other stakeholders or subject experts as needed for a given project. The Project Team reports back to DPIG the results of the workflow planning for the collection, including delivery and curation of the digital objects, metadata needed, and a description of how users will access the product.

Digital Conversion

The Digital Production Unit provides an ongoing, professional production capacity within the Dartmouth College Library. All work undertaken by the Library will meet current digital library best practices for digital preservation, digitization metadata, and digital capture benchmarks.[10] This Unit is responsible for documenting the production workflows it manages, and will collaborate with other parts of the Library that have production expertise and equipment where they exist, especially the Jones Media Center for audio and video re-formatting.
Digitization may take place in the Library or it may be contracted out to a commercial vendor when budgets allow and the material in question can safely travel. In both cases the Digital Production Unit is responsible for making sure that the material is digitized to agreed-upon standards, technical metadata sufficiently describes the digitization processes, our file-naming conventions are applied, the correct derivative files are generated for the subsequent delivery stage, and the materials are packaged up and ingested into the long-term repository.

Appendix VII is a draft of the item management worksheet that will be filled in as an item travels through the various digitization stages. This information will be included in the future electronic project management tracking and workflow database, to be created as part of the Digital Production Infrastructure.

[10] A local document outlines these digitization standards (Dartmouth College Library, 2006).

Metadata and Markup

Descriptive metadata and text markup standards, design, and activities are determined by the nature of the desired user discovery experience. During *Discovery and Planning*, the Project Team describes how library users will query and interact with the digital item(s), and a metadata plan emerges from this description. Metadata and markup activities include defining the appropriate schema(s) to use, the "level" of objects to be described, controlled vocabulary development, and the extent of the description to be created.

Metadata is created and/or transformed to meet the definitions in the project plan. This work can take place before, during, or after digital conversion, whether that conversion is done in-house or is outsourced. Pre-existing descriptive metadata for the physical item(s) are transformed to describe the digitized item(s), and/or new descriptive metadata are created. When needed, XML text markup is created for textual materials.

Through quality assurance tests and sample metadata sets, the metadata specialist assesses the outcome to ensure that the project's success statement will be met, and that user discovery is supported. In some cases, the metadata specialist will plan for future enhancement of descriptive metadata or markup as new uses of a collection may emerge in the future.

Packaging and Archiving

At this stage, the master files, access files ("derivatives"), and associated technical, descriptive, and rights metadata are packaged up and ingested into the repository infrastructure. Today, this consists of secure SAN storage in the College's computing system, and an agreed-upon layout of files and directories manually managed by DLTG and the Digital Production Unit. The infrastructure we need moving forwards, whose behaviors are outlined in **Appendix III,** will be more automated and will include a formal data-packaging model (probably METS, used widely in other libraries); data integrity checks through frequent audits and validation tests; and redundant storage. Disaster recovery processes will be established and annually reviewed. If a digital object no longer contributes to the collecting policies of the Library it may be removed from the collection following established procedures for review and de-accessioning.

Delivery

User Interface and Platform

Whenever possible, all content will be accessible online from a central online digital library web space; items are also part of the Library collection and will be reflected in the Library catalog and in Special Collections finding aids/collections web pages. Whenever possible, all content will be made available for harvesting into external systems such as Summon, Oaister, etc., as an expression of our ambition to share our holdings widely. In occasional cases, we may digitize materials for local use that cannot legally be shared globally.

Content will be matched to the most appropriate online delivery platform extant in the Dartmouth Digital Library system, and delivered through that interface. In some cases, content will be delivered through multiple tools – a general digital collections interface and a more specialized image manipulation tool, for example.[11]

Delivery tools and desired uses for digital content will change over time. In anticipation of this, master files are created to ensure maximum flexibility for future use. The file formats chosen, metadata recorded, and storage practices used for master files are carefully selected from existing standards (TEI, TIFF, OAIS, PREMIS, etc.) that have been developed with long-term accessibility and curation in mind.

Access rights

The Library does not typically charge fees for access to its resources, and this will hold true for materials that are produced through the Digital Library Program. When legally possible, materials are made available to a global audience through policies, practices and licenses that enable open access to the materials, and re-use of the materials for scholarly purposes (while recognizing the copyrights of all parties involved).

To this end, the Library has developed *Rights Policies for the Publication of and Access to Digital Works*" [see **Draft Policies** section]. The key provisions are:

1. Respect for and adherence to U.S. copyright law;

2. Assertion of rights to use copyrighted information to the fullest extent provided by law;

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[11] The *Brut Chronicle* is a good example:
http://www.dartmouth.edu/~library/digital/collections/ocn312771386/

3. Author retention of copyright;

4. Assertion of Dartmouth College copyright or trademark (where appropriate) for work produced by the Library, work done to create the digital "home" or web site on which a resource resides, and the logos and marks of the College;

5. Licenses for use that enable limited permissible uses by other parties without case-by-case intervention by the Library.

Assessment

Assessment is integrated throughout the Digital Library Program and includes these components:

1. Assessment of the **value** of the project: A needs assessment is built into the project proposal review process, where the demand for the project, how the project supports the Library's overall collection development goals, and the kinds of use made of the project are integral parts of the evaluation of the project.

2. Assessment of **each major step** in the project: Before the project can move from one major step in the workflow to the next, the success of that step is evaluated by DPIG, after reports from the Project Team. The Digital Production Manager will take a leading role in this assessment process.

3. Assessment of the **success** of each project: Each project has a "success statement" which will be used to determine when the project has completed its goals.

4. Assessment of the **impact** of each project over time: Each project will develop its own impact assessment, in coordination with the key stakeholders, which may include the subject specialist, faculty members involved, intended users, and grant funders. This assessment will draw on expertise in the **Library's Assessment Committee** and **User Assessment Group**. If a project is deemed by a stakeholder to be no longer relevant or useful, it will be considered for withdrawal.

5. Assessment of **the Program** as a whole: DPIG will report on the progress of the Program as a whole through its annual report, which will include sections on the sustainability of the current plans, the number of projects, staff involved, and impact of the projects. The Director of Digital Initiatives will take a leading role in this process.

Resources

To make this new service sustainable will require significant financial and intellectual capital, and the collective desire to invest in this Program over other worthy service-oriented goals. We need policies to provide clarity and rigor in scope, selection, and priority setting, and we need funding and staffing commensurate to this activity's importance to the Library.

Staffing

A Program of this scope and priority needs both full-time and shared positions dedicated to it. Minimum suggested staffing includes the following:

- **Director of Digital Initiatives**, whose job is to make sure the Program moves forward effectively. The Director of Digital Initiatives will coordinate the many groups involved in the various portions of this Program, manage the budget of the Program, promote its work, assess its success, and seek outside resources and partnerships to extend its reach. This person will be the pubic face of the Program reaching out to users, and managing selected major projects.

  Digital Production Manager, whose job is to undertake the creation of digital content efficiently and in accordance with the policies of this Program. The Production Manager will make sure that the Digital Production Unit runs smoothly, coordinating both local production processes and using outside vendors when cost-effective. This position will also be responsible for the design and documentation of production workflows, evaluation of equipment, project tracking, and assessment of the production piece of the Program. Filling a key role in the middle of a workflow that ranges from proposal to preservation, this person will have to be able to coordinate with members of the Project Teams working on the pre- and post-production stages. Management of digital conversion should be attached to a department with existing digitizing and workflow expertise; Preservation Services is a good candidate.

In addition, existing staff members from a variety of departments have already committed time and expertise in a growing collaborative team, and the continuation of this is vital to the ongoing Program. **Appendix VIII** illustrates how this shared staffing model has worked in a recent project.

These statements are a commitment of strategic growth within the departments too, who are ambitious to align themselves with our shared digital future.

- Subject specialists/liaisons maintain a unique role in the digitizing process due to their rich relationships with their faculty and with the collections supporting the curriculum and research in their subject areas. Subject specialists/liaisons collaborate with faculty in their teaching and in growing the library's collections to support both the faculty's research and curricular needs. Due to their sustained development and maintenance of the library's collections they retain a rich understanding of its strengths and weaknesses over time as well as which elements of the collections may be significant candidates for digitization.
  http://researchguides.dartmouth.edu/subjectlibrarians/

- **CMPG** is responsible for setting the Library's overarching collection development goals and for monitoring how the collections grow and are managed. CMPG provides expertise in the selection, acquisition, bibliographic description, and preservation of collections in all formats, as well as the user services created to support the Dartmouth community's effective use of the collections. CMPG will appoint a subcommittee to review and prioritize proposals for digitization from a collection development point of view.

- **Cataloging and Metadata Services** is responsible for the design of intellectual access, descriptive metadata, and text mark-up for the Digital Library Program. It is also responsible for the creation, organization and management of all descriptive metadata and text mark-up for materials in the Program. This responsibility includes the design of user access models and the application of appropriate schemas, standards and vocabularies to ensure successful discovery by library users. It also includes the creation of detailed inventories of materials to be reformatted, and analysis of the availability of descriptive metadata. At the core of the department's contributions to the Program is the intellectual process of analyzing the content of materials and creating descriptions, applying mark-up to text, and applying vocabularies to enhance discovery and scholarship. Through careful management of metadata, the department's activities ensure that the metadata can be shared with external systems, repurposed for alternative discovery platforms, and preserved within the context of a digital preservation plan. Cataloging and Metadata Services staff members are uniquely qualified to organize and manage complex production throughput processes, and can assume responsibility for project set-up and throughput management for the Program at any time. The department assumes an initial level of work for the Program at approximately five FTE, in an anticipated "start-up" range from three to seven FTE depending on the needs of the

Program at any given time. It is deeply embedded in the management culture of the department to absorb new projects, adjust priorities and staff resources as needed, and move from project to project in a rapid, flexible, continuous manner.

- **Preservation Services** has assigned .25 FTE of the Collection Conservator's time in reviewing and conserving items prior to and post digitization. Additional time of conservation technicians or students is available as needed. Preservation Services is also building expertise in digital preservation and curation; the Head of Preservation Services dedicates about .10 FTE and the Preservation Specialist .25 FTE to these areas. Furthermore, the Readex Conservation Technician is assigned to Digital Production for .5FTE and the Preservation Specialist could take on .25 FTE in this area if needed. There is a clear need to have a digital preservation librarian in the future.

- **The Digital Production Unit**, soon to be headed by the Manton Digital Production Manager, provides the orderly digitization of Library collections, whether the work is conducted in house on our local scanning equipment or sent out to a vendor. This unit typically sits in the middle of a project workflow, after selection and preservation of physical objects, and prior to delivery.

- **The Digital Library Technologies Group** will provide significant dedicated programming time, especially during the development phase. DLTG members have been invaluable during this year's workflow and infrastructure planning and we expect to see similar consultative roles continue into the future. DLTG staff will be primarily involved in implementing the electronic versions of the Project Management Worksheet (PMW) and the Item Tracking Worksheet (ITW) and will design the long-term storage infrastructure. Based on specifications that have been developed thus far, DLTG expects at least 1 FTE-year to get these systems to a level of general usability, with ongoing development at a reduced staff load following. Current staffing levels in DLTG will be a challenge to these ambitions.

- **Special Collections** has proven to be a significant participant in digital projects to date and, due to the nature of its holdings, Special Collections expects to continue to support the Library's digital program. The Department is working to reposition its staff to support digital projects and collection building. The newly filled Manuscript Processing Specialist position will spend a portion of her time assisting with collection preparation and delivery for digital projects. In addition, Special Collections expects to

have other members of the staff participating in, or leading projects, in the future.

- **Digital Resources Director**: 25% of this position is now dedicated to the digital publishing program.

- **Web Team:** the Web Team's role to date has been limited by current staffing levels, but the Team is ambitious to provide HTML support and design expertise for the public-facing websites that deliver and contextualize the Digital Library content.

- **General Library staff**: in addition to the departments named above, we will look out for opportunities to cross train staff elsewhere in the Library system, as needs and interests dictate. For example, staff who already possess scanning expertise in Access Services may be able to contribute to digital production processes if they have downtime.

Infrastructure

The Digital Library Program requires the implementation of a technology infrastructure to support the work of the staff through tools to support project and metadata management, safeguard the materials produced over the long term, and deliver a good user experience.

1. The Digital Library Program requires the implementation of a **long-term storage** repository in order to proceed further. Highest priority should be given to the articulation of specifications for this storage repository, and subsequently to its development and implementation, including retrospective ingest of existing digital files and accompanying metadata and application of digital preservation policies. If new staff positions are created and filled, these new staff members should be directed to contribute to this effort until it is accomplished.

2. The Digital Library Program requires the implementation of **project management, item management, and metadata management** support systems. Implementation of the workflows described in this report requires the implementation of these support systems to enable coordinated contributions from all project staff and the simultaneous progress on many projects. These support systems must be available and useable by everyone who contributes to the program, from any workstation on the network. High priority should be given to the articulation of specifications for these

systems, and subsequently to their development and implementation, in order for the workflows in this report to be implemented.

3. Program workflows require the creation of unique object identifiers, (i.e. semantic identifiers that become the basis for URLs) to ensure persistent identification and access throughout the process. The library should adopt a scheme for the creation of these identifiers and apply it retrospectively to pre-existing digital collections.

4. Documentation of policies and practices for preservation, metadata, long-term storage, rights policy, preferred user delivery systems for various data formats, and generalized workflows for common object types need to continue to be developed.

In Closing

The ambitions, workflows, and procedures outlined here are the work of many individuals across the Dartmouth College Library and represent, we believe, the firm foundation for a new area of strategic concentration for the Library. In addition, we have the opportunity to develop these policies, services, and content in partnership with other peer institutions with similar ambitions, perhaps within the BorrowDirect consortium as part of its evolving collaborative work around collections. We feel confident that we have the main issues and challenges mapped out and are ready to implement a Program whose potential -- seen in miniature through the projects we have undertaken during the planning stage – can be to offer exciting, even transformative, new services and ways of working with our collections for research, teaching, and life-long learning.

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Glossary

Archival Information Package (AIP) - An information package consisting of all production content information and its complete associated descriptive metadata (DMD) and preservation description information (PDI), which is deposited into long-term storage.

Archive - Place where objects are deposited with expectation that they may be accessed for use long into the future.

Archiving - Activities that enable long-term retention of digital materials. Together with curation, often referred to as stewardship.

Backup - Duplication of data either on-site or at a location removed from the original data. Assumes no managed activity to ensure data is accessible in the future.

"Cooked" Digitized Files - Files produced from the production steps immediately after digitization, including such processes as image cropping and straightening, OCR generation and correction, XML markup, and quality assurance. Depending on the type of digitization process used, "cooked" digitized files may include Master files (such as images that have only been cropped and straightened) and Derivative files (such as low-quality delivery images or XML markup). In certain cases files may be "cooked" all or in part by a vendor.

Curation - Activities that enable use and long-term accessibility. In digital preservation, curation and archiving together comprise stewardship.

Dark Archive - A digital repository that is not publicly accessible; often used for secure storage and backup, and for materials embargoed for one reason or another.

Derivative Content Files - Files that are created as part of the "cooking" processes of production. Derivative content files may or may not be kept in long-term storage as part of the archival information package (AIP), depending on the specifics of a project.

Descriptive Metadata (DMD) - Information describing the intellectual content of the object, such as MARC cataloguing records, finding aids or similar schemes.

Digital Archiving - This term is used very differently within sectors. The library and archiving communities often use it interchangeably with digital preservation. Computing professionals tend to use digital archiving to mean the process of backup and ongoing maintenance as opposed to strategies for long-term digital preservation.

Digital Preservation - The series of management policies and activities necessary to ensure the enduring usability, authenticity, discoverability, and accessibility of content over the very long-term.

Digital Repository - A place where digital assets are deposited and stored.

Lifecycle - A series of stages through which something, in this case digital information, passes during its lifetime. The lifecycle for digital information includes creation, use and reuse, migration or emulation, and storage.

Lifecycle Management - Records management practices have established lifecycle management for many years, for both paper and electronic records. The major implications for lifecycle management of digital resources… is the need actively to manage the resource at each stage of its lifecycle and to recognize the inter-dependencies between each stage and commence preservation activities as early as practicable. This represents a major difference with most traditional preservation, where management is largely passive until detailed conservation work is required, typically, many years after creation and rarely, if ever, involving the creator.

Long-term Storage - A conscious decision to retain object in perpetuity or until agreements or selection policies change. Also implies management of object to migrate data as necessary to keep it accessible and understandable.

Master Content Files - Files that are created as part of the initial digitization steps of content capture. Master files may have undergone minor "cooking" processes such as cropping and rotating, so long as there is no loss of original content information, such as through image compression. MASTER files may be produced in-house or by a vendor. Master files will always be deposited in long-term storage as part of the archival information package (AIP).

Open Access – material that is accessible at no charge to the world on the Internet. Open Access is supported by rights policies that encourage a wide variety of non-commercial uses. "Open Access is compatible with copyright, peer review, revenue (even profit), print, preservation, prestige, quality, career-advancement, indexing, and other features and supportive services associated with conventional scholarly literature."
http://www.earlham.edu/~peters/fos/overview.htm

Preservation - Activities that enable the use and long-term accessibility of information; often used interchangeably with stewardship.

Preservation Description Information (PDI) - Information that is necessary for the preservation of information content, including descriptive, administrative, structural, and technical metadata.

Preservation Strategy - The series of decisions taken over the course of the digital lifecycle to ensure long-term accessibility and usability, and to reduce outstanding risks to loss and degradation of the materials.

Production Information Package (PIP) - An information package consisting of all outputs of the pre-production stage, including the original project proposal, the project management worksheet (PMW) completed through pre-production, a project title and unique ID number, identification of the project team, an object inventory, and identification of existing descriptive metadata. This package must be complete prior to beginning the production stage of a project.

Project Management Worksheet (PMW) - Record of decisions and other information about a digital production project. This will be updated as part of the workflow during each stage of the project. Eventually this will be in the form of a database/web form, but an outline version currently exists in the appendix of the Dartmouth Digital Library Policies document.

"Raw" Digitized Files - Files produced during the initial digitization (scanning, image capture, etc.) and quality assurance processes. These are the first digital files produced from the original item(s), and may or may not be saved as the Master files, depending on the type of digitization process used. "Raw" files may be produced either in-house or by a vendor.

Submission Information Package (SIP) - An information package consisting of all outputs of the production stage, including the outputs of pre-production, the project management worksheet (PMW) completed through production, the master content files, derivative content files, descriptive metadata (DMD), and preservation description information (PDI). This package must be complete prior to beginning the post-production stage of a project.

Draft Policies

i. Selection Policy for Digitization Projects

ii. Digital Preservation Policy

iii. Rights Management Policy

Selection Policy for Digitization Projects

Scope

This policy provides a collection development framework for the Library's digitization projects. It is intended to offer guidance in understanding how our digitization work reflects and supports collection development at Dartmouth in broad terms and it sets out criteria to help determine if potential use warrants the human and fiscal resources necessary to undertake the digital project. The policy's aim is to create a consistent, structured approach to reformatting our collections. Whether digitization is done at the object level or at the collection level, the framework remains the same.

The primary goal of collection development at Dartmouth College Library is to create collections of enduring value in support of research, teaching, and learning at Dartmouth College. The Library's digitization program is designed to distribute its collections widely and to bring them to the attention of scholars and students within and beyond Dartmouth, enhanced with tools that will enable transformative uses of those materials. Secondly, and consonant with the Library's commitment to collaborative collection development, digitization furthers the collection goal of finding opportunities for creating aggregated collections through collaboration with the Library's primary and extended partners.

There will be opportunities from time to time to digitize an object as part of a grant or in fulfillment of a request from a scholar, and the Library may wish to provide those services and retain a copy.

This policy should be used in setting priorities, in developing grant proposals, and in providing the Dartmouth community and other interested parties a sense of how the Dartmouth College Library decides to undertake digitization projects. In addition, members of the Digital Projects Infrastructure Group and others in reviewing proposals for digitization projects will use the considerations listed here. To that end, this policy is referenced from the DPIG Selection Workflow document.

Out of Scope of this Policy

- Activities of the Library's Digital Publishing Program, the goals and scope of which are described elsewhere.
- Opportunistic "scan on demand" projects, such as those in fulfillment of a grant or request from a researcher.
- The licensing and/or purchasing of digital resources.

The following criteria should be applied at the proposal and project development level and should be applied in the order listed.

Checklist of Criteria for Proposal Reviewers (see the questions below for more detail)

A. Content Analysis: Quality of information within the materials to be reformatted

1. _____ Accessibility and Use
2. _____ Significance of subject(s) covered in the materials to be reformatted
3. _____Relation to Use of Other Holdings

B. Original Object Analysis.

1._____Intrinsic Value
2. _____ Physical Condition

C. Cost Benefit Analysis (for proposal reviewers, initial cost benefit analysis is completed when DPIG reviews the Production Plan).

1. _____Value of the end product.
2. _____Potential to attract funding.

Criteria for Consideration (not every component will apply to every project, but each category of criteria should be considered)

A. Content Analysis: Quality of information within the materials to be reformatted.

1. **Accessibility and Use.**

   a. There is a defined set of anticipated users for these materials.
   b. There are well-defined anticipated uses for these materials.
   c. Past use of these materials in their original formats suggests that they will be used in the future.
   d. There are clear connections to research and teaching at Dartmouth.
   e. There are strong connections to the history of the institution.
   f. There are connections with other projects, including those at other institutions, offering synthesized digital collections that link geographically dispersed original documents.
   g. Digitization will include value-added enhancements such as metadata, searching, text manipulation, and/or critical apparatus that will provide transformative uses of the materials.
   h. Digitization will increase overall use.

i. The materials to be digitized are heavily used by non-Dartmouth researchers who might benefit by their digitization.

2. Significance of Subject(s) Covered in the Materials to be Reformatted

a. The materials represent unique holdings or subjects of existing strength at Dartmouth.
b. The collection supports an area of long-term or emerging interest at Dartmouth.
c. Materials of great disciplinary significance are included among the items to be digitized.
d. The materials are poorly represented in other digital collections or projects.

3. Relation to Use of Other Holdings

a. The materials to be digitized are original source materials, as opposed to commonly held secondary literature.
b. The project represents a complete collection of materials to be digitized, which would stand as a coherent whole (see also 1f).
c. The materials provide important information, insight, or perspectives not documented by other collections currently maintained by the Library's primary partners (chiefly BorrowDirect), or otherwise available in resources such as the Center for Research Libraries, HathiTrust, or publicly available websites.
d. If the Library does not own the original artifacts, their digitization offers substantial enhancements to Dartmouth collections.

4. Rights to original materials

a. There are no donor-imposed, copyright, or other legal restrictions that will impede access to the digital collection.
b. The materials are not restricted to internal use.
c. If the materials are under copyright, rights and permissions for electronic distribution have been secured.

B. Original Object Analysis.

1. Intrinsic Value

a. When the original item has high intrinsic value as a particularly significant or revered document, the digital version enhances the usefulness of the original.

b. The digital surrogate can be used to carry the aura of the original into new arenas (i.e. to inspire scholarly work, or be used for publicity and development).

2. Physical Condition

a. Digitization will provide surrogate access to fragile original materials.
b. The process of digitization will not put the original materials at risk.
c. The original medium upon which the information is recorded is difficult to access or preserve.
    i. Will conservation measures be necessary?
    ii. Is the value, accessibility, or reliability of the content affected by its condition?

C. Cost Benefit Analysis.

1. Value of the end product.

a. Does the value of the materials resulting from the project warrant the resources that will be required to develop, manage, and curate the digital files over the time period for which we anticipate use?
b. Are there outstanding technical issues that will require ongoing extraordinary costs, and which might suggest that potential use could be limited to individuals with special technologies?

2. Other pertinent considerations.

a. Does this project provide opportunities for building innovative relationships among institutions?
b. Does this collection offer potential to attract funding? To generate revenue?

Digital Preservation Policy

Executive Summary

This document was created to describe the need and strategies for preserving Dartmouth College Library's digital resources. Rapid growth in both the number of digital resources and the proportion of the Library's budget used to obtain them necessitates that proactive steps be taken to preserve these materials. These digital preservation activities ensure that faculty, staff, students, and other users will have ongoing access to the Library's expanding digital collections.

This policy provides a broad set of guidelines for digital preservation, from which procedures can be developed with confidence that they will meet accepted standards, make effective use of resources, and support the mission and goals of the Library. Objectives of the policy are to:

- Describe the challenges associated with digital preservation.
- Explain why a digital preservation policy is necessary.
- Outline principles on which digital preservation actions will be based.
- Define the scope of digital preservation activities, including sources and types of digital content that will be preserved.
- Describe specific preservation strategies that will be performed to ensure the long-term preservation of digital materials. These strategies include life cycle management of resources owned by the College and the negotiation of third-party preservation agreements for licensed resources.
- Identify stakeholders responsible for components of the digital preservation strategies.
- Define a schedule for regular policy review.
- Define terms, identify standards, and list resources that will inform digital preservation activities.

Introduction

Library Mission and the Challenge of Digital Preservation

> *The Dartmouth College Library fosters intellectual growth and advances the mission of Dartmouth College and affiliated communities by supporting excellence and innovation in education and research, managing and delivering information, and partnering to develop and disseminate new scholarship.*

Preservation Services is responsible for preserving the entire Dartmouth College Library collection to make it accessible for current and future students, faculty, and scholars. Continued long-term access to the Library's increasing digital collections is an essential component of the work Preservation Services performs to fulfill the Library's mission.

Dartmouth College Library has created digital content since the 1980s. With the start of the Digital Publishing Program in 2001 and the development of a digital production unit in 2008, digital production is now a daily activity. The Library also purchases and licenses a very large and growing number of digital resources. Due to the fragile nature of digital objects along with continually evolving hardware, software, standards, and file formats, these materials are at a much higher preservation risk than traditional analog materials.

Digital preservation is defined as "the series of management policies and activities necessary to ensure the enduring usability, authenticity, discoverability and accessibility of content over the very long term."[12] Digital preservation differs from analog preservation in several ways. The primary difference is that digital preservation requires active management. While many analog materials, such as books, can survive for years when simply stored in a climate-controlled environment, digital materials that are left alone for long periods of time are much more likely to degrade beyond repair, and this degradation is generally not discovered until there is an attempt to use the item.

Additionally, the preservation needs of analog materials, such as books, journals, film, and tape, are well understood and have not greatly changed over time. Digital preservation, however, is a new and developing field with standards that are still being created. New tools and technologies will require that digital preservation activities be responsive and adaptable.

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[12] (JISC, Digital Preservation Coalition, Digital Archives Department of the University of London Computer Centre, Portico, 2009)

Finally, the expertise to treat analog materials generally exists within one department; for the majority of the Library's physical collections, that department is Preservation Services. The expertise and actions required to preserve digital content exists across multiple departments, including Preservation Services, Digital Library Technologies Group, College Computing, Cataloging and Metadata, and others. A robust digital preservation infrastructure will inherently operate within a collaborative and communicative workspace.

Mandate

A well-defined digital preservation policy is essential for the Library to carry out its mission of supporting excellence in research, delivering information, and disseminating new scholarship. Without a policy that defines its scope, strategies, challenges, and responsible parties, digital preservation will continue to be an ambition rather than a robust program. Reasons for developing a digital preservation policy include:

- Supports Recommendation 8 of the 2007 Dartmouth College Library Self Study, to "Develop a digitization infrastructure".[13]
- Supports the 2010 *Dartmouth Digital Library: Program, Priorities, and Policies* report, which charges Preservation Services with "formulating long-term curation guidelines for the content built by the Digital Program".[14]
- Supports the policies and procedures of Records Management[15] and College Archives for providing access to digital records over their lifetime.
- Supports ongoing Library goals to develop a long-term repository for digital collections.[16]
- Supports ambitions of the Dartmouth Digital Information (D2I) committee to "plan for secure, long-term, preservation-aware storage of faculty scholarly output".[17]
- Supports consortial agreements that carry a preservation responsibility across institutions.

This digital preservation policy is created in harmony with policies of the Digital Projects and Infrastructure Group (DPIG) and Collection Management and Planning

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13 (Dartmouth College Library, 2007)

14 (Digital Projects and Infrastructure Group, 2010)

15 (Dartmouth College Library, 2008)

16 (Dartmouth College Library, 2009)

17 (Dartmouth Digital Information, 2009)

Group (CMPG). The Head of Preservation Services is ultimately responsible for the implementation of digital preservation policies and procedures in the Library.

Principles

The following principles will guide digital preservation actions:

Access: Digital preservation activities are performed with the understanding that long-term access is the primary goal. Access to digital collections will be supported to the best of our ability given available technology and resources, however perpetual access to digital materials cannot be guaranteed.

Authenticity: Digital objects will be created with supporting metadata to establish authenticity and provenance. Digital objects will be managed to ensure that they are unaltered and the original data is preserved.

Collaboration: Dartmouth College Library will investigate and participate in collaborative agreements whenever they are a good use of Library resources.

College and Library missions: This policy and actions taken to implement the policy exist in support of stated Dartmouth College and Library missions. The digital preservation policy will be annually reviewed against College and Library missions and goals to ensure that it continues to support the core work of the institution.

Intellectual Property: Dartmouth College Library is committed to providing access to digital materials while respecting and upholding the intellectual property rights of authors and obtaining prior consent when the creator's identity is known. Rights management actions will be documented and rights information will be preserved with digital content.

Standards and Best Practices: Dartmouth College Library will observe current standards and best practices related to the creation, maintenance, storage, and delivery of digital objects and metadata, as determined by international, national, consortial, and local institutions and governing bodies.[18]
Sustainability: Digital preservation activities will be planned and implemented in ways that best manage current college resources and can be sustained into the future. Future access to digital resources cannot be assured without institutional commitment to necessary resources.

Training: Dartmouth College Library will commit to on-going training and development of staff in areas related to digital preservation, as well as outreach to inform faculty, students, and staff of the best practices for creating and maintaining digital objects.

[18] See **Appendix 1** for detailed information on standards followed.

Technology: Dartmouth College Library will fulfill digital preservation objectives by developing and maintaining necessary hardware, software, expertise, and protocols to ensure long term access.

Scope

Content Sources

The Library selects, creates, and collects different types of digital resources. Digital resources collected by the Library fall into these general categories:

1. Subscription-based resources:
   Digital files such as electronic journals and databases, to which the Library pays for access, but does not own outright.
2. Escrow files:
   Archival backup files of electronic resources, which may be purchased by the Library or submitted by the vendor in fulfillment of contractual obligations. While they contain the complete contents of the digital resource they typically do not have the same "look and feel" as the original content. They may or may not be retained long–term depending on collection development policy decisions.
3. Dartmouth College-owned digital resources:
   a. Analog objects owned by the Library that are selected for digital conversion either by Dartmouth College Library or a vendor.
   b. Born-digital objects and publications created by Dartmouth College Library.
   c. Electronic publications created by Dartmouth College faculty with the assistance of Library staff and hosted by the Library.
   d. Digital files that are produced in the course of creating a physical exhibit and digital versions of selected Library exhibits.
   e. Digital resources collected by Dartmouth College Library that are unlikely to exist elsewhere so should be preserved.
4. College records:
   Records created by departments within the College in the course of conducting business. They will have varying retention schedules and should be considered confidential except to their creators or college administration.

Dartmouth College Library is committed to the preservation of all of these digital resources throughout their life cycle and will develop the technical infrastructure to support the creation, maintenance, and access of digital materials for the long term.

It is also committed to supporting staff in developing the expertise to perform the activities.

Content Types

Each of the above content sources may present content in one or many of the following types, which may require different preservation strategies due to their varying attributes.

- Textual materials (ebooks, articles, etc.; ASCII, UTF-8, Unicode)
- Images (scanned books or photographs, digital photographs, digital art; TIFF, JPEG, GIF, JPEG2000)
- Audio/video materials (videos produced on campus, recorded sound oral histories, etc.; MPEG, AVI, MOV, AAC, WAV)
- Numerical data/datasets (research data; XML, XLS, proprietary database formats)

The library will likely acquire materials in additional formats in the future, and preservation strategies will be developed to accommodate new formats as needed.

Digital Preservation Strategies

Preservation Actions

The specific preservation actions used for Dartmouth College Library's digital resources will depend largely on the source and type of content, as well as existing technology, expertise, and ongoing support. Preservation actions based on current resources can be broken down as follows:

Subscription-based resources:

As these resources are not owned or directly controlled by the Library, Library staff cannot manage them. Instead, subscription-based digital resources are primarily managed by agreement with the publisher or vendor to use third-party preservation services (such as Portico and LOCKSS). The Library will negotiate such preservation agreements when developing subscription and license contracts with publishers and vendors.

The Library will also continue its participation in Portico, LOCKSS, and HathiTrust, in support of third-party archiving arrangements of resources not owned by the Library. The value of participation in these and other such services will be regularly assessed.

Resources created by or for, and owned by the College:

These resources will be comprehensively managed using the life cycle model outlined below. Expectation is that all Library-owned resource content and associated metadata will be developed according to current standards and best practices, and stored in a long-term repository within the Library infrastructure or in a consortium-based repository system (such as HathiTrust).

Life Cycle Management

Digital objects will be managed using the life cycle model[19], which is a framework describing the stages that digital resources go through during their existence. The preservation of digital objects requires planning and action at every stage of an object's lifecycle, including each of the following areas:

Creation – As digital content is created, whether the Library or an external vendor does this, preservation actions should include creating and/or capturing administrative, descriptive, structural and technical metadata about the objects, as well as imposing a well-defined storage system. Content will be created following current standards and best practices for capture and formatting.

Selection – Selection for digital preservation will be done in coordination with current use, existing Library collection development policies, and collaborative agreements, while addressing specific format needs and budgetary limitations. All preservation actions will be taken under the assumption that materials selected for the library collections are intended for permanent retention unless explicitly stated otherwise.

Ingest – Ingest of materials into the collections will strictly follow local guidelines for ingest procedures. These guidelines will include delivery of content to the responsible department/personnel, verification of file types, validation of file content, normalization of files as needed, creation or enhancement of metadata according to standards set forth in local metadata policies, and transfer of data and metadata to an approved long-term storage system.

Metadata Creation – All digital resources created by the Dartmouth College Library will adhere to the Library's pending Metadata policy. Essential preservation metadata includes:

[19] (Digital Curation Centre, 2010)

- Administrative
- Technical
- Structural
- Provenance
- Rights

Storage – Digital resources must be stored in a manner that is consistent with accepted best practices in the digital preservation community. This will include both technical infrastructure (hardware, software, network access, data backup, facilities, maintenance, etc.) and ongoing preservation management activities. Best practice in digital preservation requires duplicating digital objects in both local systems and geographically removed systems. Dartmouth College Library will pursue this by working with College Computing to host redundant local storage. Library staff will also explore other methods of storing data off site, such as in a private LOCKSS network, the HathiTrust, the Internet Archive, or another collaborative group.

Preservation Management – A series of actions that will need to be performed on digital resources prior to and during long-term storage, at varying levels depending on the source and type of resource. Detailed procedures and workflows for preservation actions will be created and maintained. Possible preservation actions include, but are not limited to:

- Content and metadata validation
- Preservation audits – Preserved content will undergo periodic audits to ensure that activities are meeting stated commitments, that risks are reduced, and to verify authenticity and accessibility of content.
- Ongoing file format review
- Migration – conversion of data to new file formats and/or migration to new storage media as needed.
- Definition and monitoring of backup procedures.
- Maintenance of technical components such as hardware and software used for storage and access.

Access and Use - Digital objects and collections will be reviewed and managed to ensure that files are accessible into the future. Digital objects will be discoverable: created in a way that they may be easily found by all stakeholders.

Transformation – Digital resources may require periodic modification. Possible reasons for modification include: to support new developments in scholarly research capability, to function optimally in new delivery systems, and to

prevent format, hardware, or software obsolescence. Types of modifications that may be performed include creating new content or metadata, adding content or metadata, migrating content to a new format, or creating a subset of content or metadata.

De-selection – Digital objects will be reviewed and disposed of as needed, based on collection development policies.

Stakeholders

Stakeholders in digital preservation include Library staff, users of Library collections (both at Dartmouth and elsewhere), faculty and other College staff who create digital content housed by the Library. Explicit responsibilities of stakeholders in carrying out preservation strategies include:

Acquisitions Services – Manages the purchasing and licensing of electronic resources.

Cataloging and Metadata Services – Manages the creation of metadata to ensure compliance with standards, best practices, and existing metadata policies.

Collections Management and Planning Group – Manages the collection development review and de-selection of digital resources as needed. Ensures ongoing harmony of digital collections with print collections and the Library's collection development policies.

College Archives – Selects and manages College records to be preserved.

Digital Library Technologies Group – In coordination with other Library departments and Computing Services, manages the technical infrastructure needed to create, ingest, store, transform, and provide access to digital resources. Creates, installs, and maintains software as needed and provides support for staff using these tools.

Digital Projects and Infrastructure Group – Manages the creation of digital content within the Library. Ensures that standards and best practices are followed for the creation of digital content, including the capture of preservation metadata.

Digital Resources Program – Manages the Digital Publishing Program and the licensing of subscription-based digital content. Ensures that sufficient third-party preservation agreements are met whenever possible.

Preservation Services – Oversees and manages the Library's digital preservation strategies, with particular emphasis on selection, ingest, storage, preservation management, transformation, and coordination with third-party preservation services. Ensures general compliance with standards and best practices. Coordinates activities across departments and with external vendors.

Records Management – Manages College records, including ingest of records into the records management system and subsequent transfer to College Archives or other storage as needed.

Web Steering Committee – Manages accessibility and user interface design to ensure usability and discoverability of digital resources.

Policy Review

This policy and the actions that flow from it will be evaluated regularly to ensure that implemented strategies continue to support the Library's mission and policies, use resources in a cost-effective manner, and adapt appropriately to address evolving technologies. This evaluation will be completed at least once every three years.

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Glossary

Access – Continued, ongoing usability of a digital resource, retaining all qualities of authenticity, accuracy and functionality deemed to be essential for the purposes the digital material was created and/or acquired for.[20]

Archive – Place where objects are deposited with expectation that they may be accessed for use long into the future.

Authenticity – Promise that the digital object is complete and unaltered once it has been created. Metadata is used to establish authenticity.

Backup – Duplication of data either on-site or at a location removed from the original data. Assumes no managed activity to ensure data is accessible in the future.

Born Digital – Digital materials which are not intended to have an analogue equivalent, either as the originating source or as a result of conversion to analogue form.[2]

Digital Preservation – The series of management policies and activities necessary to ensure the enduring usability, authenticity, discoverability, and accessibility of content over the very long term."[21]

Digital Repository – A place where digital assets are deposited and stored.

File Format – An attribute of a file which describes its encoding.[22] File formats are typically identified by a three or four letter extension at the end of a file name (i.e. .DOC, .MOV, .PDF, .XLS).

Life Cycle – A series of stages through which something, in this case digital information, passes during its lifetime. The lifecycle for digital information includes creation, use and reuse, migration or emulation, and storage.

Long-term Storage – A conscious decision to retain object in perpetuity or until agreements or selection policies change. Also implies management of object to migrate data as necessary to keep it accessible and understandable.

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[20] Digital Preservation Coalition, 2009

[21] (JISC, Digital Preservation Coalition, Digital Archives Department of the University of London Computer Centre, Portico, 2009)

[22] (AHDS, 2003)

Metadata – A term that refers to structured data about data. "Preservation metadata" is the term for a broader set of metadata that documents the lifecycle of digital content from creation through processing, storage, preservation, and use over time.[23]

Migration – A means of overcoming technological obsolescence by transferring digital resources from one hardware/software generation to the next. The purpose of migration is to preserve the intellectual content of digital objects and to retain the ability for clients to retrieve, display, and otherwise use them in the face of constantly changing technology. Migration differs from the refreshing of storage media in that it is not always possible to make an exact digital copy or replicate original features and appearance and still maintain the compatibility of the resource with the new generation of technology.

Normalization – In a preservation context, normalization refers to a preservation strategy that involves the imposition of standard formats and rules to create preservable file formats. Normalization has specific connotations within the database (e.g., normalized tables), the Web (e.g., normalized URLs), and other communities, but the essence of the term is to standardize for more effective processing and exchange of information.[5]

Appendix 1: Standards and Best Practices

Dartmouth College Library will observe national and international standards and best practices for the creation and management of digital objects, along with the associated metadata needed to maintain resources throughout their lifecycle. Open source formats will be preferred.

Relevant standards include:

- Open Archival Information System Reference Model (OAIS)[24]
- PREMIS Data Dictionary for Preservation Metadata[25]
- Trustworthy Repositories Audit & Certification (TRAC): Criteria and Checklist[26]
- Dartmouth College Library Guidelines:
  - Digital Policies and Procedures: File-Naming Conventions, Version 1.0 https://libwiki.dartmouth.edu/twiki/bin/view/Libopen/DLGprocedure01

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[23] (ICPSR, 2007)

[24] Consultative Committee for Space Data Systems, 2002

[25] Library of Congress, 2008

[26] OCLC; The Center for Research Libraries, 2007

- Proposed Rights Policies for the Publication of ad Access to Digital Works Through Dartmouth Digital Library Programs: Digitized Collections and Digital Publishing (provide URL when published)
- Records Management: Record Production and Maintenance FAQ. http://www.dartmouth.edu/~library/recmgmt/production.html

- Dartmouth College Computing Guidelines:
  - Effective Data Management, Richard Brittain, John Wallace, Jaime Combariza, Research Computing, Dartmouth College. http://www.dartmouth.edu/~rc/classes/data_management/s5.shtml

Rights Management Policy

Rights Policies for the Publication of and Access to Digital Works: Digitized Collections and Digital Publishing

Summary

This document describes intellectual property policies to govern the resources that Dartmouth College Library digitizes or publishes as part of its digital publishing program. The policies developed here are consonant with the Library's expressed goals for a more open, user-friendly information ecosystem that both acknowledges creative and scholarly effort and creates structure for use.

There are common elements to all categories of works described below. These are:

1. Respect for and adherence to U.S. copyright law
2. Assertion of rights to use copyrighted information to the fullest extent provided by law
3. Author retention of copyright
4. Assertion of Dartmouth College copyright or trademark (where appropriate) for work produced by the Library, typically metadata, work done to create the digital "home" or web site on which a resource resides, and the logos and marks of the College
5. Licenses for use that enable limited permissible uses by other parties without case-by-case intervention by the Library

Statement of Scope

This document outlines Dartmouth College Library's policies for the protection and uses of intellectual property published through the Library's digital publishing and digitization programs. As a service organization that supports Dartmouth College's mission in part through the provision of intellectual property, chiefly published scholarship and creative works, in support of teaching, learning, research, and clinical practice to the Dartmouth community and its affiliates, the Library has a commitment to uphold existing law, to advocate for the broadest access to information in service to scholarship, and to engage in activities that accomplish these goals. The Library's publishing and digitization programs are such activities. Intellectual property policies that govern these programs must therefore be consonant with the Library's values and mission.

These policies cover copyright, permissions, and terms of use for the intellectual property published by the Dartmouth College Library through the **Dartmouth**

Digital Library Programs, including Digitized Collections and Digital Publishing. The Library provides digital versions of its rich collections and archives to advance teaching, learning, scholarship, and in celebration of the "Dartmouth experience". The Library acts as a non-profit, open access publisher that makes its publications available to the public at large free of charge. The Dartmouth College Library does not make any claim of rights to works where others hold the copyright or the works are in the public domain. The Library affirms copyright, including fair use, and makes reasonable efforts to locate rights holders and negotiate mutually acceptable terms of publication.

These policies do not include print publications published by or on behalf of the Library or digital surrogates of works made exclusively for 17 US Code § 108 uses. Digital resources licensed from external sources (e.g., library databases) are excluded as well.

This document shall be posted on the Internet for review by any interested party.

A. Copyright Policies

For all of its publications, the Library is acknowledged as the publisher of and the Trustees of Dartmouth College hold the copyright to the "look and feel" of its publications. "Look and feel" is defined as all of the visual and audio elements, navigation, underlying file structure, programming, scripting, or other elements created by the Library to support the display of and access to the publication. Visual elements as understood in these policies do ***not*** *include the logos, marks, and brands of the Library and the College, as these are not available for use by other parties without special permission.*

All original metadata created by the Library for its publications shall be made available for further use under a Creative Commons Attribution-Non-Commercial license (see http://creativecommons.org/licenses/by-nc/3.0/ and http://creativecommons.org/licenses/by-nc/3.0/legalcode).

1. Original publications

a. ***Scholarly journals****.* The Library is acknowledged as the publisher and the Trustees of Dartmouth College hold the copyright to any journal of which it is the original publisher. The Library makes its intellectual property available for further use under Creative Commons Attribution-Non-Commercial licenses (see http://creativecommons.org/licenses/by-nc/3.0/ and http://creativecommons.org/licenses/by-nc/3.0/legalcode). Copyright to individual articles, editorials, and reviews rests with authors.

b. ***Journal transfers.*** The Library may from time to time and at its sole discretion choose to offer publishing services to a scholarly journal previously published by another entity. The Library recognizes that extant journals have preexisting intellectual property policies; however, as the Library strongly supports open access, this may be a deciding factor in a final decision to become the publisher of a transferred journal. Also, the Library should only offer publication when it can reasonably assume responsibility for associated tasks, including but not limited to the collection of subscription fees and royalties and permissions management.

c. ***Monographs****.* A monograph, for purposes of this policy, may be any stand-alone work of creative expression (including but not limited to visual works, audio works, textual works, or any combination of these) created by one or more persons. The Library is acknowledged as the publisher and the Trustees of Dartmouth College hold the copyright to the "look and feel" of an original monograph, as well as to any content created by the Library. Copyright to the monographic content rests with the author(s). The Library makes its intellectual property as expressed in original works available for further use under Creative Commons Attribution-Non-Commercial licenses (see http://creativecommons.org/licenses/by-nc/3.0/ and http://creativecommons.org/licenses/by-nc/3.0/legalcode).

2. Digital editions of previously published printed works now in the public domain

The Library is acknowledged as the publisher and the Trustees of Dartmouth College hold the copyright to the "look and feel" of digital editions it publishes of printed works in the public domain, where the look and feel is original to the digital edition, as well as to any content created by the Library that is included in the digital edition. Copyright to new original content, such as forwards to the edition, critical apparatus, editorial annotations, etc., rests with the authors of the content. The Library makes its intellectual property as expressed in digital editions of public domain works available for further use under Creative Commons Attribution-Non-Commercial licenses (see http://creativecommons.org/licenses/by-nc/3.0/ and http://creativecommons.org/licenses/by-nc/3.0/legalcode).

3. Digital editions of previously published printed works under copyright, including "orphan" works

The Library may from time to time find compelling reasons to seek to publish digital editions of works under copyright. The Library makes reasonable efforts to locate rights holders and negotiate mutually acceptable terms of publication.

a. *Works with a known, living rights holder.* The Library will make repeated (if necessary) attempts to contact the rights holder of a work it wishes to publish

digitally. A request for permission to publish shall be of an "opt-in" nature; that is, no publication will be made without the rights holder's consent. Should the rights holder require terms of use, including but not limited to royalties per use that the Library cannot reasonably accommodate or wish to accommodate, the Library will not publish the work. Nothing in the aforementioned should be construed to limit the Library's exercise of fair use and other limitations on or exceptions to copyright, including but not limited to provisions on resource sharing by libraries and exemption of certain performances and displays in non-profit education.

b. *Works with a deceased or unidentified rights holder.* The Library will make repeated (if necessary) attempts to identify and contact the rights holder of a work it wishes to publish digitally. If the rights holder cannot be identified after reasonable attempts to do so, the Library will create a digital edition of the work in good faith and make this accessible via the Internet with a visually discernable statement of rights and takedown policy. These are defined as follows:

- *Good faith* means that the Library has no reason to believe that the rights holder, if one exists, will or has previously objected to such publication. If the Library has in its possession correspondence that affirms that the rights holder, if deceased, previously denied the Library permission to publish or could reasonably be assumed to deny permission, or if the Library may reasonably be expected to know of such a statement, the Library will not publish the work while it remains in copyright. Nothing in the aforementioned should be construed to limit the Library's exercise of fair use and other limitations on or exceptions to copyright, including but not limited to provisions on resource sharing by libraries and exemption of certain performances and displays in non-profit education.

- *Statement of rights* means that the Library will post notice that the publication is believed to be under copyright and that possible current rights holders remain unidentified. This policy will make clear that the Library makes no claim to any rights and that it cannot give permission for further use.

- *Takedown policy* means a statement in which the Library invites putative rights holders to a work made as a good faith publication to assert their rights, should they object to the publication, and request that the publication be taken down and removed from the Internet. The takedown policy must include contact information and procedures for determining rights. The policy should also indicate the Library's ongoing rights to use portions of the work pursuant to its exercise of fair use and other limitations on or exceptions to copyright, including but not limited to provisions on resource sharing by libraries and exemption of certain performances and displays in

non-profit education. The policy also should assert the Library's right to a) retain the digital files and b) to publish the work after it enters the public domain, if it chooses to do so.

4. Digital publications of previously unpublished works now in the public domain

The Library is acknowledged as the publisher and the Trustees of Dartmouth College hold the copyright to the "look and feel" of digital editions it publishes of previously unpublished works now in the public domain, where the look and feel is original to the digital edition, as well as to any content created by the Library that is included in the digital edition. Copyright to new original content, such as forwards to the edition, critical apparatus, editorial annotations, etc., rests with the authors of the content. The Library makes its intellectual property as expressed in digital editions of public domain works available for further use under Creative Commons Attribution-Non-Commercial licenses (see http://creativecommons.org/licenses/by-nc/3.0/ and http://creativecommons.org/licenses/by-nc/3.0/legalcode).

For clarity of understanding, pursuant to 17 US Code § 303, all unpublished works that were not registered with the US Copyright Office in advance of January 1, 1978 by authors who died before January 1, 1933 are now considered to be in the public domain.

B. Requirements for authors to obtain permission to include copyrighted material in their publications

Due to copyright law, copyright to any ancillary materials (including but not limited to visual materials, audio files, and extracts of text) quoted or otherwise included in a new creative work remains with the copyright holders of these works. Authors are expected to obtain all permissions for such inclusions, unless the use qualifies as fair use, or the materials carry a Creative Commons license that indicates permitted use.

C. Preference for use of Creative Commons Licenses

The Library strongly urges, but does not require, that authors who publish their creative work express permitted uses under a Creative Commons Attribution-Non-Commercial license (see http://creativecommons.org/licenses/by-nc/3.0/ and http://creativecommons.org/licenses/by-nc/3.0/legalcode). Authors who choose to make their content available under other licensing options must manage all requests for permissions to use their work.

Because of the importance of intellectual property rights, and because the Library cannot reasonably assume responsibility to police the use of works made accessible via the Internet to the public at large, original authors must indicate how they wish to exercise their copyright in writing before the Library makes their work available online. Forms for this use should be created and made available to all authors. Authors of comments to blog posts or other mechanisms through which the public is invited to comment on any content are considered to make their work available under the overarching Creative Commons Attribution-Non-Commercial license for the work. Notice of such disposition of rights is to be posted on any comments form.

D. Terms of Use

Publications of the Library's Publishing Program and materials made available through the Library's Digitization Program will carry a Terms of Use statement, which indicates intellectual property status and, in the case of works published under Creative Commons license, the uses to which the work may be put without further permission.

1. The preferred expression of Terms of Use will be a Creative Commons Attribution Non-Commercial License. This requires attribution to the Dartmouth College Library and the author(s) and creator(s) of the works, and a link to the Creative Commons license attached to that particular work.

2. If no Creative Commons license is used, US copyright law is in force. No copyright statements should be construed to limit the user's exercise of fair use and other limitations on or exceptions to copyright, including but not limited to provisions on resource sharing by libraries and exemption of certain performances and displays in non-profit education.

3. Materials in the public domain will be indicated as such.

Supplement to the Proposed Rights Policies

1. Copyright agreement for authors.
2. Statement of rights.
3. Takedown language.
4. Author form indicating permissions granted.
5. CC Licenses- linked
6. Procedure for seeking rights holders

Implementation of the Proposed Rights Policies

Develop for the web site:

1. An FAQ, which will also help users navigate the policies.

2. Definitions of terms used in the policies.

3. Statement of the "Guidelines for using materials in the Dartmouth College Library Publishing and Digitization Programs."

Appendix I: Comments on *The Dartmouth Digital Library: Program, Priorities, and Policies* (April 2010) Recommendations

[This document can be found at http://www.dartmouth.edu/~library/admin/docs/DDL-policy.pdf]

The Library should make the Dartmouth Digital Library a priority in fund-raising, staffing, and requests for College innovation funding. This service cannot be successful with current investments alone.

> Ongoing: Manton Endowment gift was obtained in 2009 and income has been used to purchase equipment and pay staff salaries. The fund is beginning to provide more income to support staff salaries.

*The Library should adopt the **Priorities** and **Principles** outlined in this document.*

> Achieved: The Library has begun or completed selected digitization of library holdings including the *Comoediae sex cum argumentis*, letters of Samson Occom, and selections of historical films of Dartmouth College. The Library has partnered with the University Press of New England to publish a digital only version of Professor William C. Scott's, *The Artistry of the Homeric Simile,* and issue a digital version of his 1974 publication, *The Oral Nature of the Homeric Simile.* A sample of library exhibits are now available on-line; methods for long term storage of digital objects created for exhibits have been established. Finally, existing electronic journals have been moved into the Dartmouth publication space and the Library has supported publication of newly created electronic journals by Dartmouth editors, the most recent being *The Journal of e-Media Studies.*
>
> The principles of NISO's *Framework of Guidance for Building Good Digital Collections* (2007) have informed our thinking in the formation of the program definitions, policies, and recommendations.

A Director of Digital Initiatives position should be created to lead and develop this new Program, including responsibility for resource attraction.

> Not yet accomplished.

A Digital Production Manager position should be created to run the emerging Digital Production Unit. Oversight of digital production should be attached to a department with existing production expertise. Preservation Services is a good candidate.

Not yet accomplished.

An infrastructure to create, deliver, and curate long term digital library assets should be planned, implemented, and added to the Library budget. [Underway: see Library FY10 Goal 4C]

On-going. See Library Goals for FY12.

A Collections Working Group should be established in 2010 to integrate this Digital Program into the existing collection development programs and policies.

Incomplete. Some work has been done within the Collections Management and Planning Group.

A Rights Working Group should be established in 2010 to settle questions of ownership, rights statements, open access, memoranda of understanding with faculty partners, and policies on re-use of digitized content.

Incomplete. Some work has been done within the Collections Management and Planning Group, and by Eliz Kirk and Barbara DeFelice on behalf of DPIG.

Cost-sharing requirements and joint fund-raising opportunities should be discussed with a faculty partner or other collaborator, we will discuss early in the project.

Ongoing: Digitization costs for the Samson Occom letters and the *Comoediae sex cum argumentis* were identified and underwritten by a grant or the library user.

All Library Staff should be encouraged to gather suggestions for projects and faculty publications and submit them to DPIG.

Achieved: A web form has been successfully used by library staff to submit projects for review, and DPIG responds to requests in a timely fashion.

DPIG should serve as the locus for Digital Project Management processes, workflows, and decisions, consulting with LAG, selectors, and other entities as needed.

Achieved: DPIG members are developing expertise in evaluating project proposals and designing workflows.

Cataloging and Metadata Services should be charged with the metadata design and intellectual access for online collections and the management of the harvestable records that accompany them.

> Achieved: A Text Markup Unit has been formed within Cataloging and Metadata Services and a metadata policy is being written.

Preservation Services should be charged with building expertise in digital preservation and formulating long-term curation guidelines for the content built by the Digital Program.

> Achieved: A digital preservation policy has been written, and Preservation staff members are active in collaborating with members of DLTG to formulate long-term curation guidelines.

DLTG should continue to provide technical and programming support for the Digital Program, and should expand their consultative role as we explore new processes and infrastructure.

> Achieved: Members of DLTG collaborated with staff from Cataloging and Metadata Services and Preservation to identify behaviors of a digital production workflow, metadata repository, and long-term storage repository

Digital Resources should retain direct responsibility for Digital Publishing.

> Achieved. The Director of Digital Resources now has 25% of her job assigned to Digital Publishing.

Web Steering should be charged with overseeing the Web Team to provide the online delivery of digital collections and publications, including design decisions and the placement of links on the Library website.

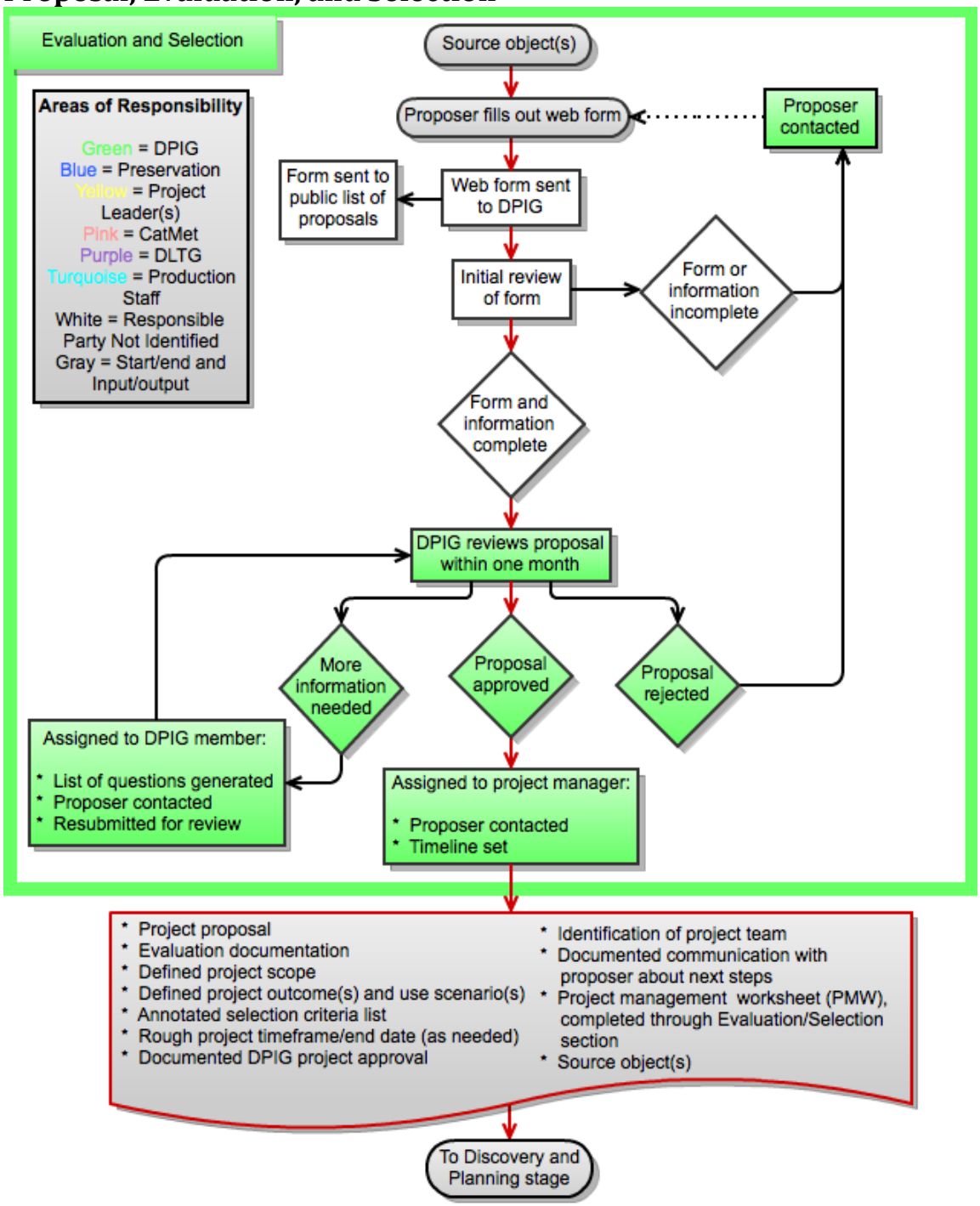
> Partially achieved. The Web Team has offered support when asked but have not yet been able to lead the online delivery of our collections.

Assessment markers should be built into our structures and processes to make sure the program is efficient and impactful, to cover policy, selection, production, staffing model, curation, and use [as per Library Goal FY12 4b].

> Ongoing: Workflow for digital conversion of the *Comoediae sex cum argumentis* was evaluated including identification of departmental impact and staff costs. The Samson Occom Project is tracking itself closely. New projects are establishing success criteria at the beginning.

Appendix II: Detailed Workflows

Proposal, Evaluation, and Selection



Action: Library staff members propose projects, and a Selection Committee (currently DPIG) evaluates these proposals for digital conversion, applying agreed-upon and publicized selection criteria.

Description: A Project Proposal Form is available in the Library Staff Web and can be completed by any library staff member. Once a proposal has been submitted the completed form is distributed to all DPIG members and a copy of the proposal is made available on StaffWeb for review.

DPIG members apply the *Selection Policy for Digitization Projects* and determine whether to move forward with the project, return to the proposer for more information, or decide that the project is out of scope.

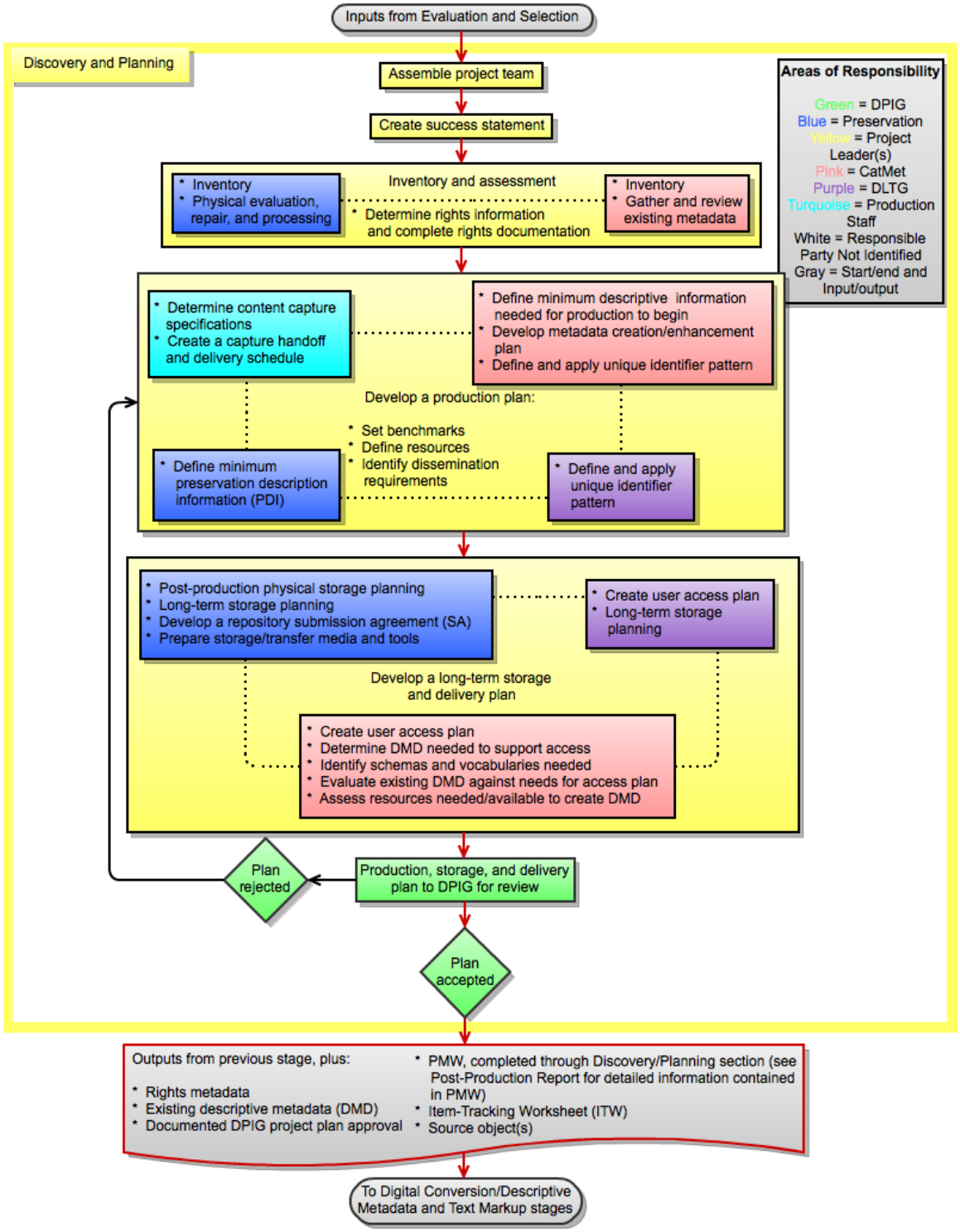
If the project moves forward, a Project Manager is appointed. See DPIG documentation on the *Evaluation and Selection* stage.

Outputs: (this stage is completed when these products are completed)

Project proposal (web form, will need to print/export content) – see *Dartmouth Digital Library Program: Processes* document[27] for information on content of project proposal.
Evaluation documentation -- additional questions and answers from evaluation process.
Defined scope of project.
Defined outcome and scenario(s) for use.
Annotated *Selection Criteria* list, with documentation of information gathered for each criterion.
If a special time frame or fulfillment date is part of the proposal, a defined end date and project timeline has been provided.
Documented DPIG approval of the project proposal, identification of the project team, and communication with proposer about next steps.
Physical objects are identified with anticipated methods of transfer and storage during project.

[27] https://libwiki.dartmouth.edu/twiki/pub/Libopen/DPIG/DDLpractice.docx

Discovery and Planning



Action: A project team appointed by DPIG conducts a thorough review of the project and – if the decision is still to move forwards -- creates a comprehensive action plan based on input from all relevant areas of expertise.

Description: The Project Manager assembles a project team. The role of the team is to:

- create a success statement for the project;
- complete a comprehensive inventory of the source items;
- assess the source items' physical condition, existing descriptive metadata, and rights information;
- develop a detailed plan for executing the project.

The metadata assessment includes an analysis of intended use of the materials, a decision about the delivery system to be used, an inventory of pre-existing descriptive metadata, and an assessment of the time and effort needed to create any additional metadata needed to support the intended use.

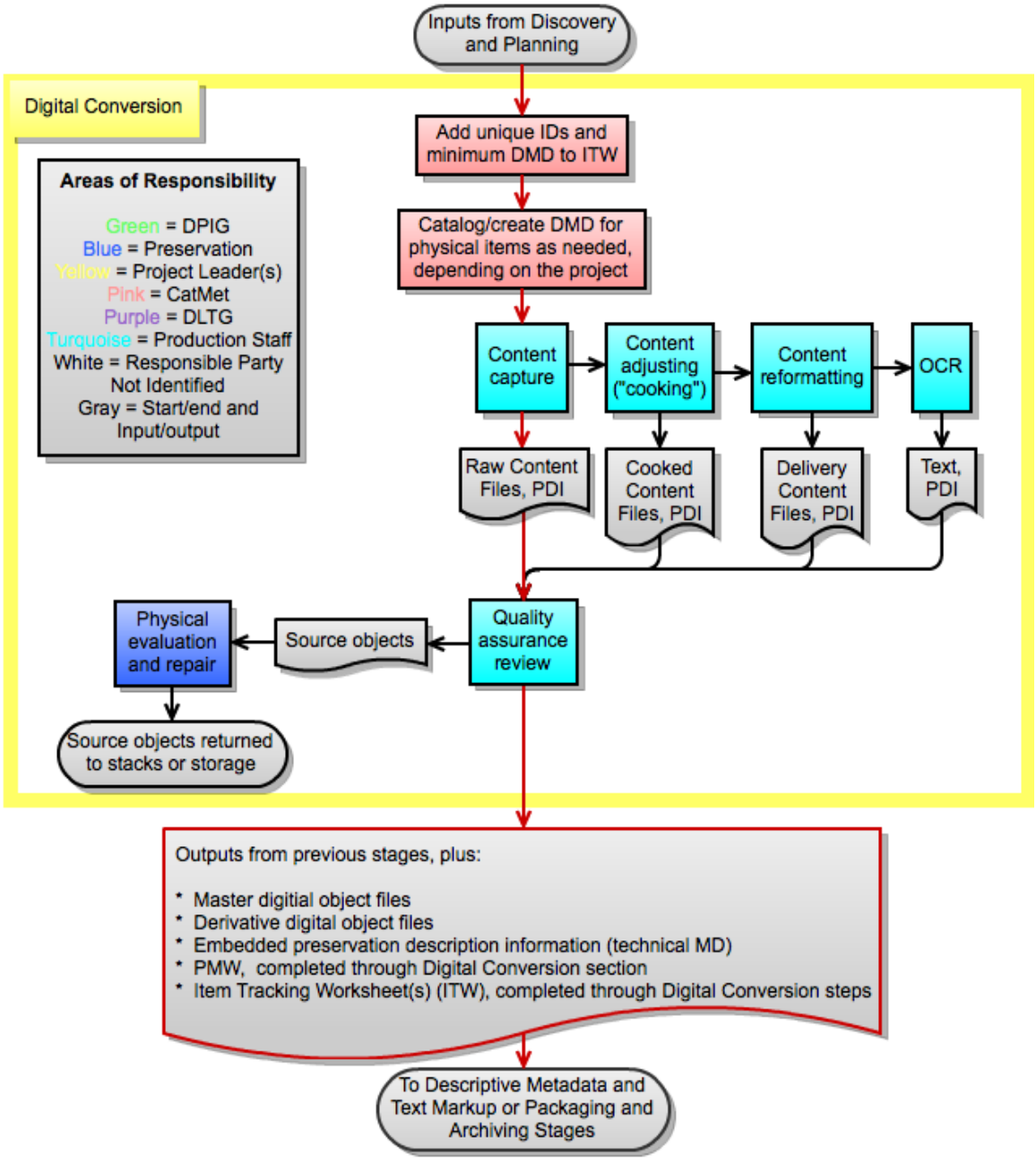
The team also completes content capture specifications and long-term storage planning, and forwards the completed project plan to DPIG for approval. See DPIG documentation on the *Discovery and Planning* stage.

Outputs: (this stage is completed when these products are completed)

- Outputs from previous stage PLUS:
- Project Management Worksheet (PMW). PMW will include:
    - Project title and unique identifier for the project.
    - Metadata assessment (Cataloging and Metadata Services):
        - Analysis of the discovery scenarios outlined in the proposal and of available descriptive metadata and/or markup needed to realize the scenarios.
        - Metadata inventory: gather, review and assess descriptive metadata. If available descriptive metadata and/or markup is not adequate, time and effort estimates for the creation of these metadata.
    - Preservation assessment of source objects, with evaluation documentation and a planned repair schedule.
    - Dissemination requirements, to include a list of expected file format(s) and delivery platform(s). If a CONTENTdm delivery is planned, a determination of whether Compound Objects will be created.
    - Digital conversion plan: this will include a schedule for delivery of items to digital conversion unit/vendor, estimated length of time

for the digital conversion processes, content capture specifications, and a detailed file naming convention.
    - Long-term storage planning, including an estimate of storage space needed for masters, derivatives, and metadata, and a written submission agreement for ingest of materials into the long-term storage repository.
    - Statement of resources needed to complete project, including staff time, vendor costs, supplies, equipment, and long-term storage and delivery cost estimate.
    - Decision on whether the physical materials will be retained, and if so whether any changes will be made to storage locations or terms of use.
    - Timeline for the project.
- Rights metadata, including all processes followed and information gathered about rights to use and/or distribute the digitized works, "orphaned" works, decisions to give permissions to use for works we hold rights to.
- Item Tracking Worksheet: a comprehensive, detailed inventory identifying all physical objects, locations, and eventual disposition.
- Source objects, with a plan for routing them to next stage (as needed).
- DPIG approval of the project plan.

Digital Conversion

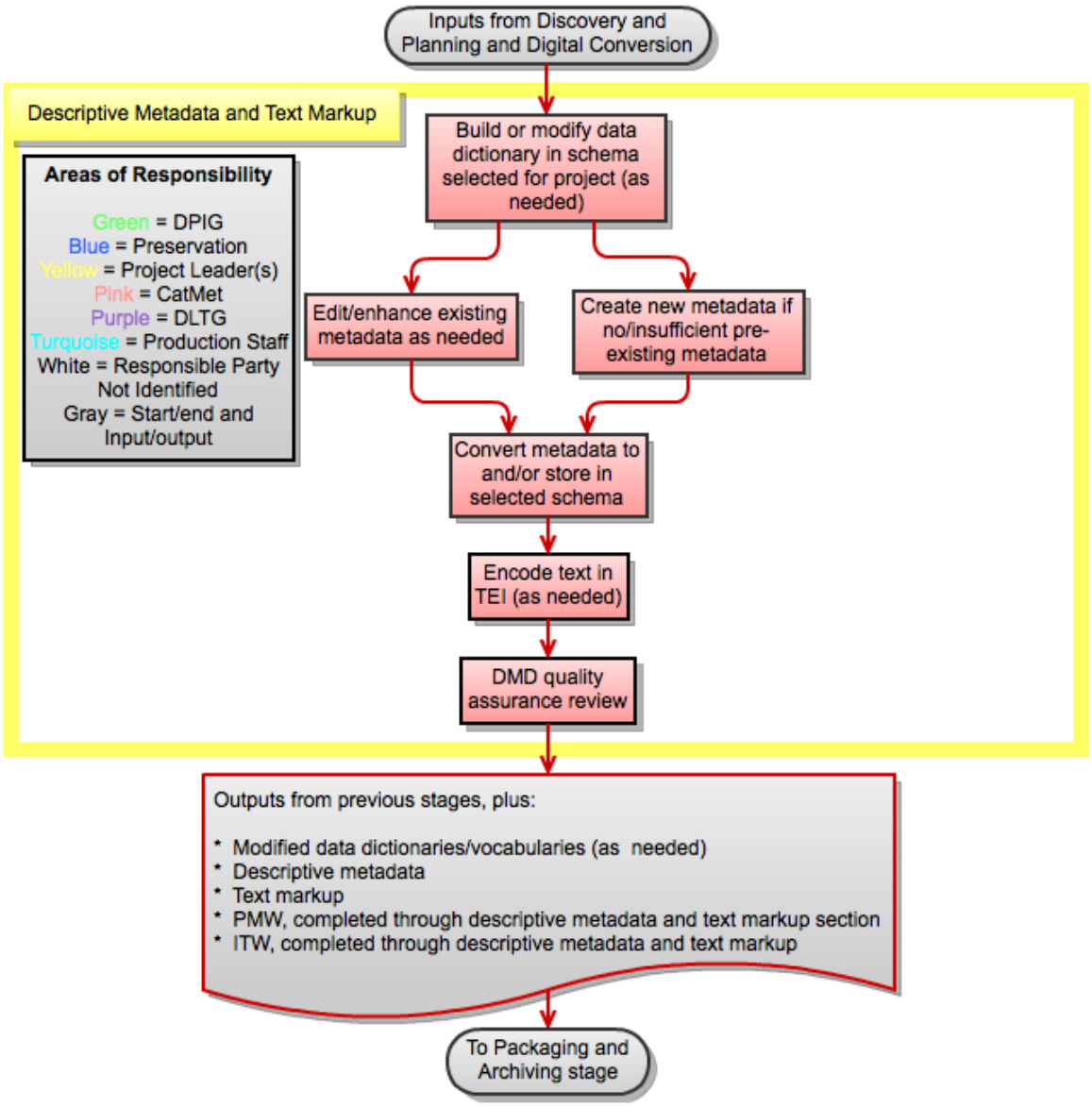


Action: The action plan is executed by performing digital conversion and capture of technical metadata.

Outputs: (this stage is completed when these products are completed)

- Outputs from previous stages, PLUS:
- PMW, updated to record overall project progress.
- Digital objects – master files, derivative files and technical metadata recorded in the object.
- Item Tracking Worksheet updated to include:
  - a list of all digital files created during conversion,
  - a unique identifier generated by the Worksheet and assigned to each file according to Dartmouth Digital Library Program guidelines.
  - technical or preservation metadata not imbedded within the image files.
  - statistics describing time expended and number of files created.

Metadata and Markup



Action: The action plan is executed by creating new and/or repurposing existing descriptive metadata, and by marking up text with XML encoding when necessary. **This stage can occur simultaneously with the digital conversion process or at any time thereafter.**

During this stage, pre-existing descriptive metadata is reformatted or enhanced for use and/or new descriptive metadata is created, and text markup is created for textual materials. This stage may either precede or follow the shipping of materials to a vendor to digitize.

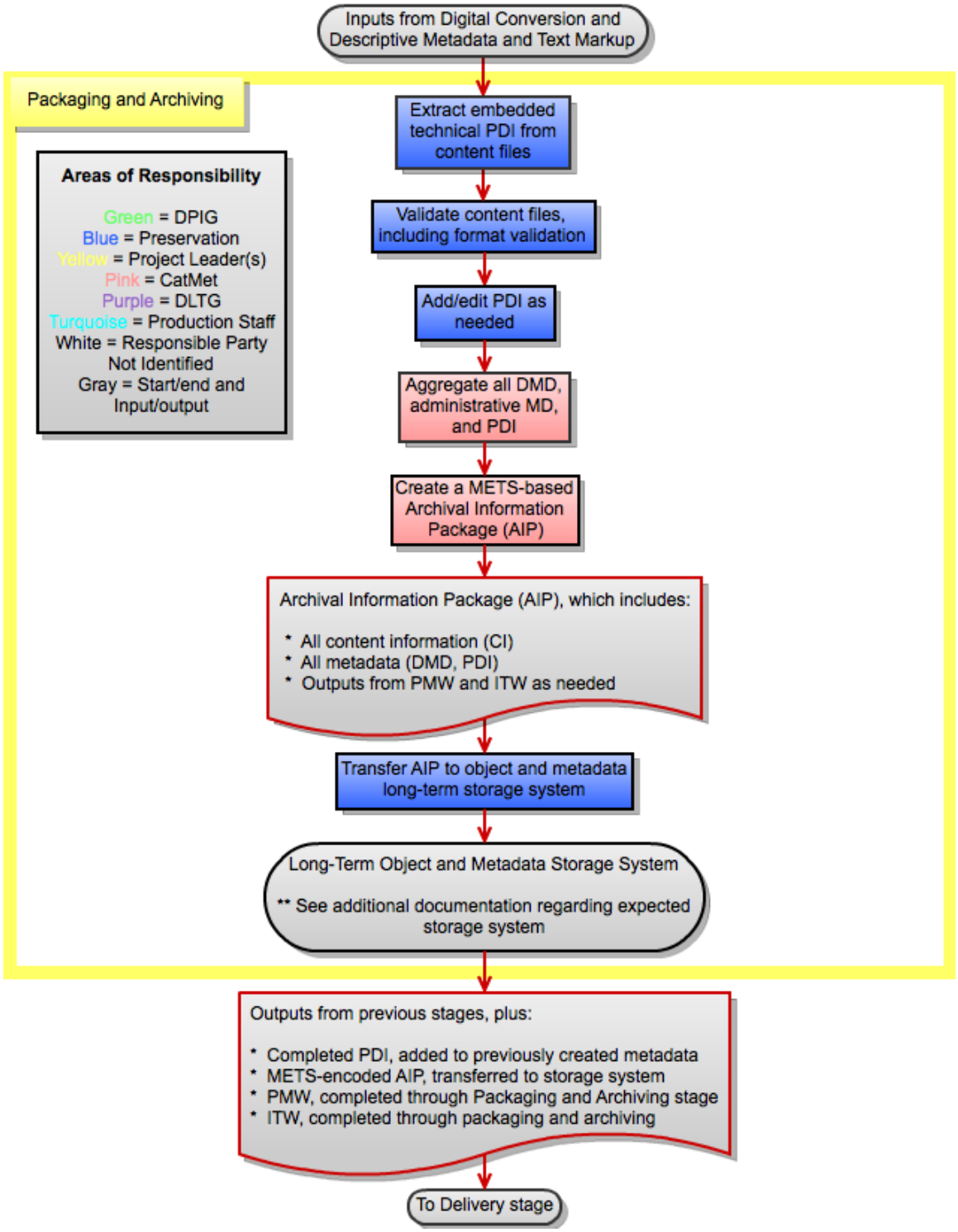
Action outline:

- Preparation:
  - Refine inventory and metadata analysis from *Discovery and Planning* stage as needed.
  - Build or modify data dictionary in schema selected by Cataloging and Metadata Services
- Existing metadata:
  - Evaluate data content
  - If acceptable, convert to/store in schema selected by Cataloging and Metadata Services
  - If not acceptable, edit existing metadata or create new minimum descriptive information
  - Convert to/Store in schema selected by Cataloging and Metadata Services
- No existing metadata:
  - Create minimum descriptive information
  - Convert to/Store in schema selected by Cataloging and Metadata Services
- Text markup

Outputs: (this stage is completed when these products are completed)

- Outputs from previous stages, PLUS:
- Applicable data dictionaries/vocabularies, selection of schemas
- Descriptive metadata (either derived from existing or created up to this point).
- Text markup.
- Project Management Worksheet, updated to record overall project progress.
- Item Tracking Worksheet updated with statistics describing time expended and number of files created.

Packaging and Archiving

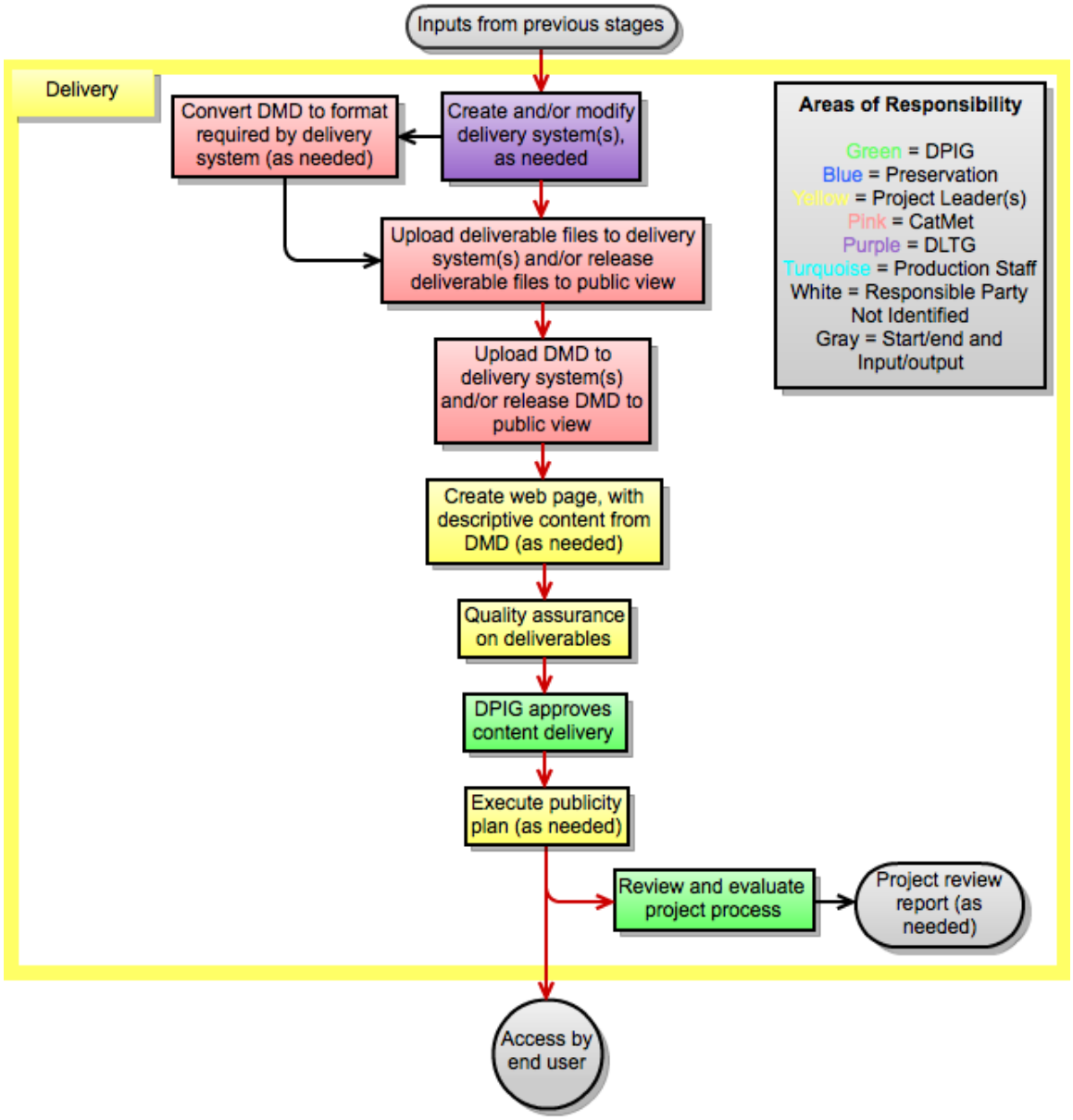


Action: Technical metadata is extracted, preservation metadata is completed, and both are merged with descriptive metadata. Structured associations are created between all object and metadata files, and they are uploaded to long-term storage infrastructure where preservation and data management measures are applied.

Outputs: (this stage is completed when these products are completed)

- Outputs from previous stages, PLUS:
- Completed preservation description information (PDI).
- All metadata created in previous steps (including DMD and PDI), and all unique object identifiers, encoded according to local standards, and either incorporated into, *or* pointed to from a digital object packaging model.
- All content and metadata, completed and transferred to long-term storage system.

Delivery


Inputs from previous stages
Delivery
Convert DMD to format required by delivery system (as needed)
Create and/or modify delivery system(s), as needed
Areas of Responsibility
Green = DPIG
Blue = Preservation
Yellow = Project Leader(s)
Pink = CatMet
Purple = DLTG
Turquoise = Production Staff
White = Responsible Party Not Identified
Gray = Start/end and Input/output
Upload deliverable files to delivery system(s) and/or release deliverable files to public view
Upload DMD to delivery system(s) and/or release DMD to public view
Create web page, with descriptive content from DMD (as needed)
Quality assurance on deliverables
DPIG approves content delivery
Execute publicity plan (as needed)
Review and evaluate project process
Project review report (as needed)
Access by end user

Action: The action plan is executed by creating the user experience defined in the action plan.

Outputs: (this stage is completed when these products are completed)

- Customized delivery system(s) or interfaces, designed and/or modified as needed.
- Files of delivery objects and descriptive metadata, formatted to the requirements of the delivery system (e.g. CONTENTdm) as needed.
- Object files in delivery system(s) (or released to public view if a single repository is in use).
- Descriptive metadata in delivery system(s) (or released to public view if a single repository is in use).
- Web page describing the object or collection (generated from descriptive metadata.
- Publicity materials as described in the PMW.
- DPIG approval of delivery.
- Project review report.

Appendix III: Technical Infrastructure

Recommendations for Infrastructure Development

1. Identify and/or develop tools that will implement the behaviors defined below, and create a unified tools workspace for library staff. Further develop "behaviors" into actionable specifications for evaluation against available tools. See a preliminary list of possible existing tools to consider at https://libwiki.dartmouth.edu/twiki/bin/view/Libopen/PossibleDigitalProductionTools
2. Create a filing/storage system for rights metadata that can provide rights metadata in conformance with existing metadata standards (such as the PREMIS data dictionary) and/or be linked to/from a standardized record structure.
3. Create and implement prototypes of the Project Management Worksheet and the Item Tracking Worksheet. Collect feedback from project teams working with the prototypes and modify the worksheets. Creating prototypes includes making decisions about where the data will be stored, how it will be accessed, etc.
4. Develop guidelines for the creation of unique object identifiers, (i.e. semantic identifiers that become the basis for URLs) to ensure persistent identification and access, and adjust the existing DPIG file naming policy if/as needed.
5. Create documents to define:
    a. Policy and strategies for ongoing updating and maintenance of metadata in the long-term storage system.
    b. The application of compound object technology in CONTENTdm.
    c. Define behaviors for the User Delivery System.
    d. Descriptive metadata policies
    e. Digital Preservation policies
    f. Generic workflows for known object types (e.g. book out of copyright, photo collection) that are frequently encountered in the Digital Library Program, to simplify and expedite project planning.

The Major Components of the Infrastructure and Their Behaviors

Metadata Workspace System

1. Incorporates behaviors currently associated with *XML Collections*, including:
    a. Validates metadata against schemas for standards used by the Digital Library Program
    b. Imposes version control on metadata files

   c. Imposes appropriate levels of restrictions on access and modification of metadata to allow enforcement of local policies and practices
   d. Supports local descriptive metadata policies and practices
   e. Enforces desirable file directory structures and collection identity
2. Stores in-progress descriptive metadata work, including schemas (for content standards, markup, vocabularies) and descriptive metadata models for each project.
3. Aggregates administrative metadata (rights, preservation, technical) and descriptive metadata for a given project into a single METS document for upload to Long-term Storage and to delivery systems, and generates the METS structural metadata.
4. Creates/stores the linking data to link the unique identifier for each digital object and the matching metadata.
5. Exports metadata in appropriate formats for transfer to Long-term Storage and delivery systems.

Long-Term Object and Metadata Storage System

The expectation is that this system will be a set of interoperable components which, when aggregated, demonstrate the following behaviors:

Long-Term Object Storage:

1. Stores archival and deliverable versions of digital objects.
2. Complies with relevant standards used by the Digital Library Program.
3. Provides a single, unified storage repository for all products of the Digital Library Program.
4. Enforces all necessary system security protocols.
5. Imposes appropriate levels of restrictions on access to data to ensure long-term preservation.
6. Supports preservation management actions on the data it stores (such as automatic format validation on ingest of files).
7. Supports user discovery interface, and/or exports to library discovery system(s).
8. Has the ability to hide content/images/metadata from users without removing data from the system. Should be able to do this both by collection/set and individual items.
9. Supports a variety of access/authorization methods (login, IP, etc.).

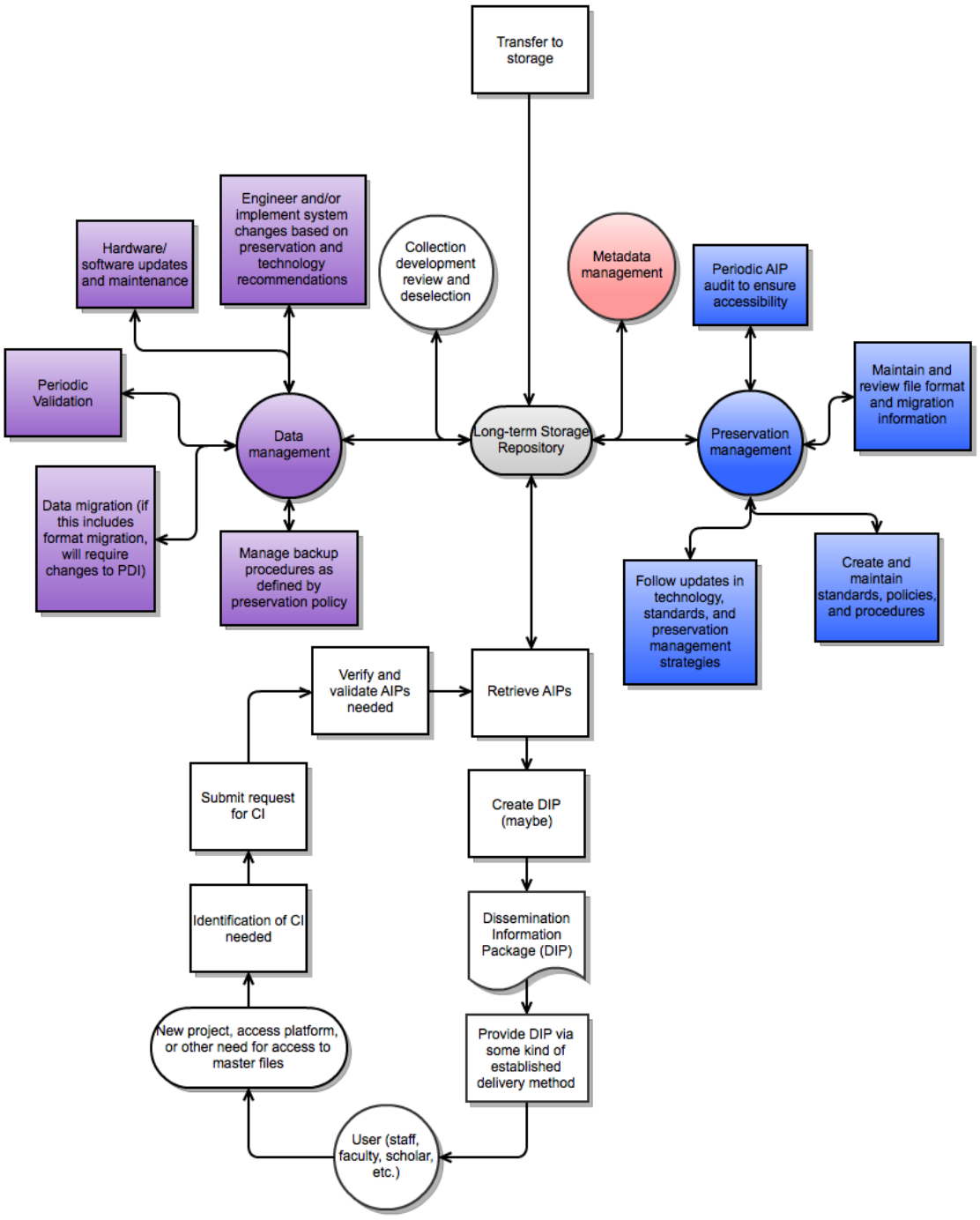
Long-Term Metadata Storage:

1. Stores metadata and digital objects in appropriate organizational frameworks, and in compliance with library metadata policies.
2. Can index, search, and query data.
3. Supports metadata export formats used by the Digital Library Program.
4. Complies with relevant standards used by the Digital Library Program. Serves as the "database of record" – final versions of metadata are stored here and exported to other systems from here.
5. Allows metadata to be accessed by library staff.
6. Allows for levels of access that will both restrict access for long-term data preservation and allow editing of data when needed.

The viability of the long-term object and metadata storage system is dependent on these **actions being performed**:

1. Perform periodic preservation audits to ensure content authenticity, accessibility, etc.
2. Maintain and review file format and migration information for all content.
3. Create and maintain standards, policies, and procedures for use and maintenance of the system.
4. Maintain awareness of relevant updates in technology, standards, and preservation management strategies. Test and make recommendations for changes as needed.
5. Manage backup procedures as defined by preservation policies.
6. Migrate data as needed based on preservation audit results (if this includes format migration, will require changes to preservation metadata).
7. Validate content periodically.
8. Update and maintain technical components (hardware, software, etc.).
9. Engineer and/or implement system changes based on preservation and technology recommendations.
10. Update/manage metadata as needed.
11. Review content for alignment with collection development goals and possible de-selection as appropriate.

Management Actions to Be Performed on the Long-Term Object and Metadata Storage System



This diagram is based on the CCSDS Reference Model for an Open Archival Information System (OAIS).

Behaviors of Item Tracking Worksheet

1. Is accessible by all staff associated with Digital Library Program activities, from their personal computers.
2. Allows creation and editing of inventory lists for analog objects, and actions performed on each analog object including final disposition.
3. Allows creation and editing of inventory lists for digital objects, and actions performed on each digital object.
4. Generates and/or stores unique object identifiers according to Digital Library Program guidelines (to be developed; see recommendations), and can associate a unique object identifier with each digital object.
5. Along with the digital object unique identifier, stores, as needed, the minimum amount of descriptive metadata necessary to identify the object. Does not store the full descriptive metadata or anticipate the descriptive metadata model. Does not store descriptive tags or controlled vocabularies.
6. Supports project tracking and management by displaying work status of each object.
7. Stores statistical data for execution phases (conversion, metadata/markup, delivery) to express time and effort and items created.
8. Exports data (unique identifier, any technical or preservation metadata not wrapped in the digital object, lists of actions performed on objects) to the Metadata workspace system for ingest into selected schemas.

Behaviors of Project Management Worksheet

1. Stores documentation of project planning and decisions made about scope, goals, resources, and deliverables for the project.
2. Ensures and documents that all project steps are assigned and completed.
3. Ensures and documents a general understanding of responsibilities and accountabilities within project team (who will do what).
4. Ensures and documents the development of realistic time frames for project fulfillment.

Behaviors of User Delivery System

1. Still to be developed.

Appendix IV: Web Form: Proposals for the Digitizing of Library Collections

Dartmouth College Library is soliciting nominations for collections from its holdings that would benefit from digitization, in order to provide wider access, richer pedagogy, and increased research opportunities. See the "Proposal Elements" and "Selection Policy for Digitization Projects" for criteria used to evaluate proposals.

Title:

Proposed by:
Email address:

Project Summary: Provide a short overview of the collection, and the benefits of digitizing it.

Online references: Please provide URLs for any finding aid, website, or part of the collection that is already available online.

Scope: What subject area, languages, and time span does the collection cover?

Size: Estimate the quantities of different types or formats of material.

Use: Is there a current or planned academic course, library exhibit, or research project that wants to use this material in digital form?

Goals: What goals will be met by digitization?

Access: How is current access provided? To whom?

Partners: Are there library, archive, museum, student, or faculty partners who would contribute to this collection if digitized, perhaps by adding commentary, building it into a course presentation, undertaking research into it, or adding complementary material to it?

Alternatives: Is there a product or collection that would meet the identified needs?

Rights: Provide any information you have regarding the intellectual rights status of the material proposed for this project. Are there restrictions to making the digital collection publicly available?

Preservation: Are there any preservation concerns or benefits that should be taken into account in planning to digitize this material?

Any other comments: What else should we know about the importance, impact, or use of this collection?

Submit Clear

Updated 05/02/2011

Results of Proposal Web Form – a document sent to DPIG

Title: *Terence, Comoediae sex cum argumentis*
Proposed by: Jay Satterfield

Project Summary: Disbind, scan, and rebind Codex Ms 001999. A complete scan of this manuscript has been requested by a researcher in Australia with grant funding to cover most or all of the cost. The manuscript gets moderate use in classes, and it is in need of a new binding. This project would provide access to a researcher, create broad digital access, and make the original more stable and accessible.

Online references: Here is the catalog record:
http://libcat.dartmouth.edu/record=b1944245~S1

Here is the listing in Script to Pixels:
http://www.dartmouth.edu/~library/rauner/westmss/001999.html

Scope: The manuscript was created in 1462 in Ferrara. It is in Latin.

Size: There are 112 leaves (or 224 pages) on vellum.
Access: The manuscript is available in the Rauner Library reading room to any researcher.

Use: Nothing local, but a researcher at an Australian university will be using it in a research project focused on marginal comments in Terence manuscripts.

Partners: The researcher can commit funding from her grant.

Rights: There are no rights issues

Preservation: It is in a 19th-century binding. The front and back boards are detached. The binding structure is too tight to be functional--it does not allow access to the gutters and puts stress on the vellum when opened.

Other comments: The researcher has funds would need an invoice by November 15th, but understands the actual scanning work would take longer.

I prepared an estimate for her with the help of Deborah Howe [redacted]. If at all possible, I need to get back to the researcher this week.

Appendix V: Proposal Guidelines

Proposers will provide this information via the proposal form, and reviewers will use it as a checklist of information needed in a proposal. See also the *Selection Policy for Digitization Projects*. The first five questions should be addressed in a proposal (they are therefore included as part of the online Proposals Form), and #6, 7, and 8 are additional questions for the evaluation committee:

Proposal Questions

1. *USE* -- Will digitization enhance access and increase use by an identifiable user or user community (faculty, student, staff, alumni, or donor)? Did a user or group of users initiate this project or publication? Does this collection or publication have a relation to the other Dartmouth materials already in digital format and will it contribute to a critical mass of digital materials within a subject area?

2. *GOALS* -- What goals will be met by digitization? Preservation (perhaps by reduce the handling of fragile originals)? Enhanced access? New types of teaching or scholarship? Library priorities?

3. *ALTERNATIVES* -- Does a commercial product or online collection (perhaps from another library) exist that would meet the identified needs?

4. *VALUE* -- Does the collection or publication have enough intrinsic value to ensure interest, and to whom? Internal Dartmouth audience? External scholarly users?

5. *RIGHTS* -- Are rights and permissions for electronic distribution securable? Are there any donor or statutory restrictions that apply to the use of the materials?

6. *FUNCTION* – can we make digital files of sufficient quality to support the intended use? Is there intellectual access to the collection already or will this have to be built?

7. *RESOURCES* -- Are production and delivery costs known and supportable, and can the institution sustain the project into the future? Does the project lend itself to a partnership with a commercial provider, library consortia, or cultural heritage institution, or to an external funding application?

8. *PRACTICALITY* -- Is the local organizational and technical infrastructure adequate for storing, delivering, and preserving this material? Do we have suitable software to deliver the materials? Do we have sufficient expertise to carry through the project?

Appendix VI: Project Management Worksheet

Selection and Evaluation

Project Title:	
Date of Initial DPIG Review:	
Project Proposal Form	View Proposal

Project Scope:	*Define range of items and rough estimate of number*
Anticipated Outcome and Use:	
Selection Criteria Documentation:	*Summary of selection criteria review*
Plan for source materials:	
Additional DPIG Evaluation Notes:	

Project Manager:	

Project Team:

Project Start Date:

Project End Date (Expected):

Timeline Notes:

Selection and Evaluation documentation complete:

Discovery and Planning

Date discovery and planning started:

Project Team:

Success Statement:

Project URI:

Inventory: *Notes, link to other documentation. Include current location(s).*

Rights Clearance:

Rights information (include documentation):

(list of attached rights documents here)

Attach Document

Project rights statement/policy:

Metadata Assessment:

Existing metadata: *Notes, link to other documentation. Evaluate for re-use*

Minimum metadata required (DMD and PDI):

New metadata needed?

Detailed metadata production plan: *Include outline of format and level of detail*

Preservation Assessment:

Initial Assessment

Plan for detailed evaluation and repair:

Production Workflow Plan

Delivery Requirements (specify formats needed for each of these):

Web Page needed:

Ebook versions:

ContentDM collection:

Page Turner Tool:

XMLCollections:

Journal Publishing System:

Other commercial system:

if yes, describe:

Custom programming needed:

if yes, describe:

Production Schedule: (When can material be delivered to production? Is delivery a one-time event or a series of deliveries over time?)

Internal work?

External work?

External vendor (if appropriate):

Estimated length of time at vendor:

Handoff/transfer between departments:

Batch size:

Timeline:

Content capture specifications

Capture method:

Resolution:

Color mode:

Level of "Cooking" Needed:

File formats:

File Naming Convention:

Source:

Example:

Long-Term Storage:

Storage plan for physical items, post-production

Storage plan for master files:

include details of location, media, transfer and cataloging plan

Submission

Link to documentation

Agreement:

Storage plan for derivative files:

include details of location, media, transfer and cataloging plan

Custom programming needed?

include detailed plan if yes.

Delivery Design:

Project Web Page required?

Print on Demand Files needed?

EBook design needed?

Party responsible for design

Party responsible for Publicity and Usability

Resource Notes:

Is this project dependent on external funding?

Fund Source:

Is this project dependent on staff time and in-house resources?

Estimate of staff time and in-house resources needed:

Have staff time and

in-house resources been approved/secured?

Long-term storage and delivery cost estimate:

Total project cost estimate:

Additional notes from DPIG review of action plan:

Discovery and Planning documentation (PIP) complete?

Additional Workflow Planning Elements

Do items need pre-digitization Preservation review?

Do items need post-digitization Preservation review?

Where will Preservation Review(s) be performed?

Production/Digitization

Date production started:

Date project ended:

Project Completed as Specified?

If no, please explain:

- ☐ Project Metadata Created
- ☐ Digital Products Created
- ☐ Project web page built
- ☐ Print on demand files designed
- ☐ EBooks designed
- ☐ Production documentation (SIP) complete

Post Production

- ☐ Appropriate promotional materials/articles prepared
- ☐ Collection of use statistics set up
- ☐ Usability testing undertaken
- ☐ Post-Production documentation complete

DPIG Project Review Notes:

Appendix VII: Digital Project Item Management Worksheet

The following is a draft of the template that will be filled in as an item travels through the various digitization stages. This information in this item management worksheet will be included in the future electronic project management tracking and workflow database, to be created and used as part of the Digital Production Infrastructure.

Item description

Unique Identifier: [ ]

Process checklist

- ☐ Original Item Metadata
- ☐ Pre-capture preservation review [Attach Evaluation]
- ☐ Initial capture
- ☐ Initial capture QA
- ☐ Content Adjustment
- ☐ Derivatives Produced
- ☐ OCR performed
- ☐ Rough Transcription/OCR correction (Text only transcription completed)
- ☐ Rough XML markup
- ☐ Final TEI/XML markup
- ☐ Post-capture preservation review [Attach Evaluation]
- ☐ Final QA review
- ☐ Derivatives loaded in delivery system.
- ☐ Source material processed (housed, returned to storage, etc.)

Content Delivery

- ☐ Web Page
- ☐ ContentDM
- ☐ Page Turner Tool

- ☐ XML Collections (TEI text searching/browsing)
- ☐ Journal Publishing System
- ☐ Other commercial system
- ☐ Custom programming completed

Long-Term Storage Preparation:

- ☐ Validation complete
- ☐ PDI complete
- ☐ AIP created
- ☐ Master and Metadata delivered to repository

Pre-capture preservation review by	
Preservation review notes	
Initial Capture by	
Initial Capture QA performed by	
Content Adjustment by	
Derivatives produced by	
OCR performed by	
Text transcription by	
XML/TEI Markup performed by	
Post-capture preservation review by	

Post-capture preservation review notes	
Final QA review and approval by	
Physical Item Metadata	
Capture Metadata	
Adjustment Metadata	

Appendix VIII: Example of Shared Staffing Model

Terence, *Comoediae sex cum argumentis* Digital Project

Pre-Proposal

November/December 2009:

1) Correspondence between Rauner and Australian professor.
Rauner/Satterfield: 1 hour.

January 2010:

2) Further reference question about the Mss. Interest in the MSS marginalia expressed. Photocopies (images?) of selected pages made and sent (postal mail?) by Joshua Shaw.
Rauner/Shaw: 1 hour.

October 2010:

3) Request came back to have entire Mss. scanned in high resolution. Jay Satterfield evaluated binding and decided it was in need of rebinding. Deborah Howe agreed. Contacted David Seaman to see if it can be scanned.
Rauner/Satterfield: 2 hours corresponding with patron to determine need.
Rauner/Satterfield: 4 hours investigation of Mss.
Production/Seaman: 15 minutes.
Preservation/Howe: 30 minutes.

November/December 2010:

4) Further correspondence between patron and Rauner – we learn that requester can pay for the work but needs to pay an invoice prior to 1 January 2011.
Rauner/Satterfield: 1 hour.

5) Jay and David discuss feasibility of digitizing it and the timing. Drawing on past experience with the *Brut Chronicle*, and especially the ability to disbind it, the item looked straightforward from a Digital Production perspective. Confident that we can scan to a quality suitable for intended use. Jay discusses disbinding feasibility and timing with Preservation Services.

Rauner/Satterfield: 30 minutes.
Production/Seaman: 30 minutes.
Preservation/Howe: 30 minutes.

6) Jay submits a proposal through the web form designed for this – goes to all members of DPIG.
Rauner/Satterfield: 1 hour.

7) Given the time-sensitivity of the decision, this matter is taken up at the next DPIG meeting. Project approved as described. Main stakeholders – Preservation, Digital Production, Special Collections – all on board. No additional cataloging planned.

- Cost estimates for the various stages discussed – digitization, disbinding, shipping of DVD copies to Australia.
- Patron to billed at standard, existing Rauner rate of $10 per image plus $585 estimated from Preservation for disbanding.
- Timetable established – dis-bind in December; scan in January; deliver in February.
  DPIG/30 minutes x 8 participants.

8) Dis-binding with before/after photos completed December 16.
Preservation/Howe: 7 hours.

9) Scan planning completed December 22.
Production/McCoy: 2 hours.

Production

January 2011

10) Raw scanning completed: 4-7 January.
Production/McCoy: 20 hours.
Rauner/Staff: 2 hours for delivery to production and pickup.

11) Image processing and QA: 10-14 January.
Production/McCoy: 20 hours.

12) Image derivatives (thumbnails and JPEG display images) generated and checked for online delivery. 600 DPI 24-bit TIFF derivatives generated to send to patron – high-resolution versions to aid in reading of marginalia.
Production/McCoy: 2 hours.

February 2011

Delivery

13) TEI wrapper built for book; HTML derived from that via existing style sheet.
Delivery/Seaman: 4 hours.

14) PDF built from JPEG files.
Delivery/McCoy: 30 minutes.

15) Website on Digital Collections built, and images loaded.
Delivery/Seaman: 1 hour.
Delivery/McCoy: 3 hours.

16) Documentation prepared to send with the images, including technical details and rights statement.
Delivery/McCoy: 1 hour.

17) Labels designed for DVD cases including rights and contact information.
Delivery/McCoy: 2 hours.

18) Five DVDs burned for patron, and checked. Documentation included on disks.
Delivery/McCoy: 2 hours.

19) DVDs delivered via express shipping. Patron confirms receipt.
Delivery/Rauner staff: 1 hour.
Delivery/Guay: 15 minutes.

20) Re-bind MSS.
Preservation: Howe: 20 hours.

21) Online version linked into library catalog; made public through Digital Collections website.
Delivery/Cataloging and Metadata Services Staff: 30 minutes.
Delivery/Seaman: 30 minutes.

Total Time – all: 105 hours.

Total Time – Rauner:	12 ½	hours
Total Time – Preservation:	28	hours
Total Time – DPIG:	4	hours
Total Time – Production:	44 ¾	hours
Total Time – Delivery:	15 ¾	hours