I. Executive Summary

In early spring of 2008 the University Librarian and the Library’s Executive Committee charged a short-term team to identify the needs, the stakeholders and their responsibilities, and one or more models for how digital content creation, description, management, access and preservation ought to be organized in the University of Illinois Library. The team was asked to further address in more detail several key points in its investigation that would help the Library to set in place a strong foundation for current and future digital library activities. This report incorporates these points as its overall framework, and makes recommendations in six areas (see Appendix A—Charge).

The overarching principles articulated by the Team that it believes ought to guide the decisions and the work of the Library through the next decade in this area include the following:

- Build highly usable and accessible digital collections to make resources available to as wide a range of University of Illinois researchers and students as possible;
- Integrate discoverability of our digital collections with other library collections and services, particularly with the Library’s licensed/purchased content;
- Coordinate activities centrally where possible and reasonable, enabling all units in the Library to take advantage of the available digitization services;
- Continue to emphasize the important role that selectors and departmental units play in the entire process of digitization and digital content stewardship;
- Provide collection-appropriate descriptive and technical metadata to enhance discoverability of digital collections and materials;
- Adopt and apply standards and best practices consistently across all areas engaged in the creation, management, and long-term access to digital content;

The recommendations of the team follow in these brief points. More detail and background information follow in the body of the report. To see a table of all recommendations that have associated costs, see Appendix B.

1. Digital Content Selection:
   a. Immediately, selectors and units with collection responsibilities, especially those holding unique or special collections, should be encouraged by Library Administration to develop and put on file written, forward-looking plans and recommendations (including clear rationales and justifications) prioritizing materials they feel ought to be digitized from their collections. This will facilitate planning and help the Library better comprehend the scope of future digitization needs.
   b. Over the course of the next 6 months, the Office of Collections and the Head of Digital Content Creation, working with the advice and input of selectors, the Collection Development Committee, and campus groups such as the Illinois Digitization Initiative, should coordinate selection of content to be digitized from Library collections. This will help ensure better continuity and consistency in prioritizing and expending digitization resources.

2. Digital Content Creation:
   a. Over the course of the next 6 months and under the leadership of the Head of DCC, the Library should develop and promulgate internally standards and best practices for digital capture (internal and outsourced). Best practices will mandate a high and consistent level of digitization quality, adequate to support broad use and re-use of digital content and avoiding the need to re-digitize content in the future.
b. On an ongoing basis, where it makes sense, the Library should look to consolidate digital capture under DCC; pursuant to this objective, effective 1 January 2009, the Library should move digital capture activities currently in Library IT Digital Services and Development (DSD) into DCC. Concentrated ongoing digitization insures the critical mass of work necessary to develop and maintain a critical center of expertise.

c. As part of budget planning for FY10, the University Librarian, with the advice of the Library Executive Committee, should identify stable funding for DCC to support ongoing digitization. As soon as possible (i.e., even before start of FY10) this should include hiring or re-allocating another permanent senior civil service staff member to DCC (this person would be responsible for preparing materials being digitized at the OCA scanning center in Oak Street and being outsourced to vendors; regularly updating the OCA tracking database; upgrade bib and holding record information as needed; search copyright renewal records; assist the unit head in preparation of files for the print-on-demand program, and other duties as described in the position description being submitted now to the Budget Subcommittee), establishing annual DCC budgets for a consistent level of outsourced (e.g., OCA) digitization, for supplies, equipment maintenance and replacement, and for undergraduate and/or graduate student assistants. The 33% GA currently assigned to IT-DSD could reasonably be reassigned to DCC effective 1 January 2009.

d. Longer term (i.e., in FY10, 11, or 12), the University Librarian, with the advice of the Library Executive Committee, should authorize through new hire or internal reallocation and retraining assignment of an individual to become a permanent static media digitization expert. This individual would be a counterpart (for different media) to the Media Preservation Coordinator (Emma Lincoln.) The Library needs a professional with understanding of how to scan still images, photography, artwork, etc. with color correction, to adjust lighting conditions, etc., so as to create the best digitization result feasible. If the position were filled now, the logical placement would be in the DCC. However, if the position cannot be filled for some time, the Team leaves open the question of organizational assignment of this individual (e.g., to DCC, Preservation, or elsewhere).

e. Starting immediately, DCC should commit time and effort on an ongoing basis to seeking external funding for digitization, collaborating with faculty both inside and outside the Library. This will leverage and enhance the Library's ongoing investment in digitization.

f. **Cost:** Make permanent DCC’s FY’09 budget at $200k allocated for this fiscal year; static media digitization position (fill at the civil service or academic professional level): $35,000 - $45,000, new appointment of an Academic Professional, or re-assignment of existing personnel with funds allocated for backfill as needed;

## 3. Coordination of Units Involved in Digital Content Life Cycle:

a. Immediately, the University Librarian, with the advice of the Library Executive Committee, should charge a functional group—the “Digital ISCC (Integrated System Coordinating Committee)”—to be responsible for coordinating the digital content and systems that exist to manage and deliver locally held and digitized digital content. This is necessary to coordinate aspects of digital life cycle beyond initial selection and capture (e.g., access, management, bibliographic control, preservation, etc.). The Digital ISCC should be set up as a functional working group of CAPT.

b. Appoint a Coordinator of the Digital ISCC who is also responsible for helping to oversee and define the processes and workflows necessary to accomplish the digitization and management of digital content from the Library and University’s assets. An individual invested in understanding and coordinating the end-to-end digital content life cycle is needed to keep digital content moving through the pipeline. A consensus was not reached on whether this should be a faculty or AP position, whether visiting hire, internal reallocation, or added duty, nor as to whether the role was full or part time. Peggy Steele is currently working with the unit heads directly involved to do a short-term assessment of the workflow coordination overall needs. **Cost:** New appointment of an Academic Professional, or re-assignment of existing personnel with funds allocation for backfill as needed; $46,000 – $55,000.
4. Structures for Technology Development: Digital Library Access, Management and Stewardship:

   a. Over the coming year, Library IT should develop and implement a more inclusive and distributed approach to technology services that enables task-focused groups of IT professionals, Library staff, and faculty to concentrate on accomplishing strategic institutional priorities. This matrix approach to developing effective digital management, access, and preservation services for the Library. This approach is being used increasingly as the Library adopts New Service Models, and seeks to work more flexibly across the confines of existing unit boundaries to accomplish strategic goals. Recommendations 4b, 4c, and 4f call for such functional teams to be constituted immediately.

   b. By January 1, 2009, the AUL for Library IT and the Head of the Grainger Library should develop a formal plan for integrating the spectrum of technology activities of the Grainger Digital Library Initiative fully into the mainstream of Library IT operations and development. The current Grainger DLI team (which currently manages the production systems of Easy Search, Journal and Article Locator, and Illinois Harvest) should have responsibility initially for managing the production systems for digital content access, including CONTENTdm, DLXS, CWIS and similar systems now managed by DSD. This team will form the basis for the Library’s digital content access and management group, including support for mass digitization. The Library should fill the Digital Library Research Programmer position (previous incumbent Matt Cordial) on a permanent basis, with a home base in this team and with strong links to IT-ISD. This position is being re-cast so that it supports mass digitization and digital access management systems. The Assistant Web Content and Digital Services Librarian, 50% in DSD, should be assigned to be a member of this team for the 50% time currently committed to DSD. Staff who are now part of the Grainger Digital Library Initiative will continue to report to their assigned supervisors. The alignment of services, priorities, and budgetary resources will occur with leadership from across the various functional groups in IT with vision and priorities set through the Office of IT. This will help build a better and more streamlined foundation for this group as part of a matrix Library IT organization mentioned above. As this team is set up, this will allow DSD to dissolve at the end of 2008 when the interim head steps down. (The DSD 33% GA should be assigned to DCC, as mentioned above.)

   c. Change titles, held by Tim Cole, Chris Prom, and Bill Mischo, to reflect their involvement in and contributions to Library IT and digital library advancement.

   d. The IDEALS program within Library IT should assume responsibility for the planning and development of a Library-wide digital content repository solution, as well as the scholarly services that will support long-term digital asset preservation and serve as a backbone for digital content access and management systems. IDEALS will work closely with and will include in these efforts a diverse team of stakeholders, including staff from Preservation, IT-ISD, the Grainger Digital Library Technology Group, collections and public services librarians, and campus stakeholders such as CITES, LAS, I3 and iCHASS. The Scholarly Commons service programs will have a strong dependence on the success of these efforts. Initially, the Library can support this work with a 2-year visiting research programmer hire, with expectation that this position will need to be made permanent. This work is critical to protect our already substantial investment in locally held and digitized digital content. The Team recognizes that IT-IDEALS is the best-suited area to initiate this activity, and also recognizes that as this effort evolves, elements more suited to Preservation may be moved to that area, and the technology service development components may be amplified after the repository effort is addressed.

   e. The AUL for IT should use the RTG facilitation process as a catalyst for the Library to evolve toward functional teams that collaborate on technology development, production, and support. The goal of this work is to prepare a large cross-section of Library faculty and staff to better support emerging new service models.

   f. The Library should form an eScholarship Technology Services Group to provide online scholarly services and to involve the Library in the emerging eScholarship initiatives locally and with peer institutions. This group should draw its membership from CAM, University Archives, Preservation, Library IT, the Grainger Digital Library team, the emerging Scholarly Commons team, and other pertinent areas. This initiative will advertise the benefit of digital services and will
help bring new and more robust digital services directly to our users. This initiative should coordinate closely with the emerging Scholarly Commons group. There is not full agreement on the role and the title of this group, and any ambiguities need to be worked through before this type of group can get off to a productive start. It is clear from the Team’s conversations that there is a concrete need for this kind of work to be organized in a functional cross-cutting group. The RTG process should include planning and discussion of this group and its role in collaborative technology development.

g. **Cost:** Fill the Digital Library Research Programmer position: $50,000-$55,000; Re-allocate the remaining two years of IDEALS funding from the Provost to hire a Repository Developer (programmer) position; re-allocate percentages of current technical staff time to this effort to form both groups mentioned in “b” above; Examine and re-define, if necessary, current technical and preservation roles to form a cohesive digital preservation team; Long-term: establish at least one new technical professional position dedicated to repository development and ongoing support.

h. **Other costs** are $0 for now; by FY ’10, however, there will be better-defined needs for technical development to support ongoing programs that are not currently defined (data curation, scholarly communications service tools and support applications; e-science applications development; media support and management); long-term, these efforts may require the re-allocation of current resources mixed with new lines to support up to five new professional positions that are focused on technical development to support digital library services.

5. **Metadata Creation and Enhancement**:
   a. Before the start of FY10, the University Librarian and Executive Committee should authorize hiring a second metadata librarian (as originally planned) to better coordinate and advance metadata creation, remediation, and enhancement efforts. Without this additional support CAM, which must serve as the Library’s primary coordinating body for metadata standards and best practices, will not be able to keep pace with the growth in digitization and amount of locally held digital content.
   b. **Cost:** Second metadata librarian position: $46,000 – 55,000.

6. **Digital Preservation**:
   a. Immediately, the University Librarian and Executive Committee should authorize a search for a new Head of Preservation. An effective digital content preservation program cannot come into being with this critical position unfilled.
   b. The new Head of Preservation should be tasked to develop in collaboration with Library IT and other stakeholders a phased plan for putting in place a digital preservation plan appropriate to quality and significance of our digital holdings, present and anticipated. This plan will leverage the digital repository work mentioned in 4d and will describe a way to get from where we are now to where we should be, identifying resources and critical dependencies.
   c. **Cost:** $55,000 to $70,000

Respectfully submitted,
Digital Content Life Cycle Management Team
Team Members:

Michael Norman, Chair – Head of Content Access Management
Betsy Kruger – Head of Digital Content Creation
Chris Prom – Assistant University Archivist
Tim Cole – Interim Head of Digital Services & Development and Mathematics Librarian
Sarah Shreeves – Coordinator, IDEALS
JoAnn Jacoby - Coordinator, News Service Model Programs
Tom Teper – AUL for Collections
Beth Sandore – AUL for Information Technology Planning and Policy
II. Introduction and Background

A substantial infusion of funding over the past several years has enabled the Library to launch a substantive digitization effort. Although these efforts have been largely successful, they have been organized largely on a project-by-project basis. They have not yet resulted in permanent organizational changes, which limit their effective life in the mainstream of the Library’s operations. The charge to the DCLCM Team was to recommend the changes needed to integrate these practices into the mainstream of Library operations and services.

Working now and into the near future, the Library has committed to large-scale digitization using at least several avenues over the next five years, including the Open Content Alliance on-site book and microform project; the CIC-Google Digitization Project (1-2 million books); the development of a CIC Shared Digital Repository (the Hathi Trust) in which to store and make accessible Google and other digitized content across the CIC institutions; digital University of Illinois dissertations and the IDEALS repository of Illinois scholarship; a visual resources repository for art and architecture resources (with the College of Fine and Applied Arts (FAA)); as well as long-term stewardship commitments to digital reformatting of film, video, and sound recordings, long-term access to significant learning objects, digital archives and electronic records stewardship. The campus is depending on the Library to help establish effective digital asset stewardship models for datasets across the disciplines as part of numerous beginning eScience collaborations.

Most important, there needs to be a substantial re-thinking of access to and management of the Library’s digital collections. Users and librarians alike find it difficult to successfully navigate to the Library’s growing pool of digital content. Further effort is needed to enable successful navigation and discovery across the local as well as the licensed digital resources in the Library’s collections. Although some members of the Team felt that access and access mechanisms need not be the focus of attention for this report, others see access as an integral component in the management and long-term retention of digital content. Therefore, this point bears mention in the context of this report, although it was not explicitly requested as part of the Team’s charge.

For the purposes of this report, “digitizing” should be seen not just as the act of scanning an analog document into digital form, but as a series of activities that result in a digital surrogate being made available for a sustained length of time. The digitization activities included in the digital life cycle are as follows:

1. Identification and selection;
2. Item preparation;
3. Descriptive and technical metadata creation;
4. Digital conversion;
5. Quality control of digital copies and metadata;
6. Providing access to the material through online delivery of reliable and authentic copies;

The Team outlined how the Library now accomplishes the above activities, identified and analyzed the gaps and shortcomings in the current approaches presents the separate units that work on some of these activities now. The Team notes that there currently does not exist a workflow coordination role for digitization, nor does there exist a digital preservation program—both critical components of the digital content life cycle. It was determined that the current method for accomplishing most aspects of the digital content life cycle is frequently ad hoc (set in place to manage specific projects). The Library’s organizational structure does not fully support the interaction that must occur among units involved in these processes. We have learned much as we have worked through the digital life cycle process for several major projects (for a more detailed summary of work done over the past several years, see Appendix C: History of Digital Content Creation and Management Development at Illinois.)
In general, the Team believes the Library is collectively doing good work digitizing its collections. The challenge for the Library lies in the effective management of the content after its creation, and the provision of broad access to the content. There remains a shortage of technical expertise that is needed to support both the technology infrastructure (storage and servers) and the access systems and repositories that must exist to manage and deliver the digital content effectively. To address this, the Team identified a need for more effective and formal organization of the technical and content expertise around the digital content that is managed by the Library.

In keeping with the charge, the Team identified six areas critical to making a commitment to growing a sustainable digital library program at Illinois. In order to provide the essential context for digitization, the Library must better define digital collection needs, strategic goals, and the overall scope of digital library programs. It must also adhere to best practices and standards, and make a stronger effort to promote accessible and compelling content to Library users and staff. Finally, working with the Library Assessment Group, the Library must continuously evaluate digital collections and services to help plan for future needs.

Using the above-mentioned guiding principles, the Digital Content Life Cycle Management Team makes recommendations for how the Library can integrate the digital life cycle into the mainstream of Library activities (i.e., make it sustainable and consistent). These recommendations call for changes in current practice, and they recommend resource re-allocation where needed. They also call for the creation of policies, guidelines, and best practices aimed at establishing and supporting consistent practice throughout the Library. These are now being fleshed out by the Large-Scale Digitization Working Group, and will need to be integrated into mainstream practice throughout the Library. Finally, each recommendation includes associated costs and re-alignments necessary to ensure the smooth transition to a set of practices that support the robust creation and long-term access to critical scholarly and cultural heritage information on behalf of the Urbana campus, and in partnership with other institutions.

III. Recommendations

Recommendation # 1 – Digital Content Selection

Selection of content for digitization should be coordinated by the AUL for Collections and the Head of Digital Content Creation, in consultation with selectors. It should also incorporate recommendations from the Illinois Digitization Initiative—a campus committee headed up by the University Librarian and Dean of Libraries, comprised of faculty representing the cross-section of disciplines on campus.

Specific recommendations:

Immediately, selectors and units with collection responsibilities, especially those holding unique or special collections, should be encouraged by Library Administration to develop and put on file written, forward-looking plans and recommendations (including clear rationales and justifications) prioritizing materials they feel ought to be digitized from their collections. This will facilitate planning and help the Library better comprehend the scope of future digitization needs.

Over the course of the next 6 months, the Office of Collections and the Head of Digital Content Creation, working with the advice and input of selectors, the Collection Development Committee, and campus groups such as the Illinois Digitization Initiative, should coordinate selection of content to be digitized from Library collections. This will help ensure better continuity and consistency in prioritizing and expending digitization resources.

Find Funding—The Library should charge a small group (reporting to the Budget Group) to identify and pursue stable and ongoing funding, including the internal re-allocation of Collections and other funds (local, state, national, international in scope) to help get digitization work done. Deadline: Ready for FY’10 budget process.
Recommendation #2—Digital Content Creation

Digital content creation services and equipment for digitization of the Library’s paper based and microform collections should be consolidated wherever possible into the work of the Digital Content Creation (DCC) unit.

Short term:

1) To this end, we recommend that the digitization services and equipment of DSD be merged into the Digital Content Creation unit. While digitization may be performed by other Library units, the Head of DCC should establish formal communication channels with these units to adopt and apply standards and best practices consistently across all areas engaged in digitization work.

2) The Preservation and Conservation units should be involved in the preparation of materials for scanning.

3) Further, the team recommends that the Head of DCC work in collaboration with the proposed Digital ISCC group to investigate the internal need and external market for the Illinois Digitization Institute Online Training Program, and if a market is identified, to resurrect and update this training program, including metadata and digital preservation, and to propose the staffing needs that would be required to make the institute viable and successful.

4) Make ongoing investments in digital content creation by hiring or re-allocating permanent staffing to DCC from the Library’s operations budget, and commit the funding to support ongoing content digitization from Collections and other sources.
   a. The Team recommends that a full-time civil service employee at the Senior Library Specialist level or above be identified for reassignment to the Digital Content Creation Unit. Cost: re-assignment of existing personnel;
   b. Cost: $35,000 or more

Overall Cost: Make permanent DCC’s FY’09 budget at $200k or more

Centralization of digitization activities, where possible, makes wise and effective use of the resources available to acquire and steward digital content for the future. It can also insure that best practices for digitization, OCR, derivative file creation, quality assurance, and file naming are followed for any content that is to be housed on Library servers, and that copyright considerations involved with digitization are strictly adhered to and documented. However, expertise with distinct formats, such as newspapers, video, and archives, as well as digital reformatting for preservation purposes (e.g., brittle books) justifies a non-centralized approach in some areas. The request to identify a full-time civil service employee to reassign to DCC is crucial as the unit’s work is growing and currently Betsy Kruger is the only permanent employee in the unit.

Long term: The Team recognizes that the capture, preservation, and delivery mechanisms for other digital formats (such as audio or video media capture, preservation, and delivery mechanisms are not as fully developed as our digital print and images collections).

1) Recommendation: Over the next 1-3 years, the Team recommends that the Library start re-allocating and re-training existing professionals and staff to become more proficient in working with digital format capture, management and delivery, (including media, computer files, datasets, websites, gaming and interactive environments, etc.) Faculty and staff currently involved in media digitization and delivery should work in consultation with a coordinating group (the Digital ISCC, recommended below) to outline content acquisition, access, and preservation needs for these formats.

2) Also, through a new hire or internal reallocation and retraining assignment of an individual, the Library has need of a permanent static media digitization expert with understanding of how to scan still images, photography, artwork, etc. with color correction, to adjust lighting conditions, etc., so as to create the best digitization result feasible. This individual would be a counterpart (for different media) to the Media Preservation Coordinator (Emma Lincoln). If the position were filled now, the logical placement would be in the DCC. However, if the position cannot be filled for some time, the Team
leaves open the question of organizational assignment of this individual (e.g., to DCC, Preservation, or elsewhere). Cost: $35,000 - $45,000

**Recommendation # 3 — Coordination of Units involved in Digital Life Cycle Content Management (Digital ISCC)**

In order to work effectively, the processes for selection, creation, ingest, access, and long-term management of digital content require formal and coordinated communication among the various groups/units that are responsible for discrete aspects of the process. The Team’s investigation identified a need for a full-time Coordinator position to manage the work flows and processes that must occur to ensure that content is digitized and managed effectively, avoiding current confusion and needless duplication of effort that can result from lack of communication. Further, the Library should form a functional group that is responsible for the work flows and decision-making involved in building the Illinois Digital Library. We have given this group the working title of “Digital ISCC” during the course of the Team’s discussions to reflect the need to coordinate the functional aspects of creating, organizing, managing and delivering digital collections. We have come to view the Digital ISCC’s role in much the same as ISCC’s role in the functional areas represented by the Voyager catalog. The Digital ISCC should be responsible for recommending the existing systems that are appropriate for ingest, storage, and management of digital content, prior to a digitization project OR an acquisition being made. This group is also responsible for recommending policy regarding the storage of acquired or locally digitized content (draft policy is attached in Appendix D). The Digital ISCC should be responsible for investigating digital content access and management systems on behalf of the Library, and making recommendations to CAPT and Library IT for selection and implementation of new systems and the configuration of existing systems.

**Short term:**

**Recommendation:**

1) Create a “Digital ISCC” group that is responsible for the coordination and decision-making involved in building the Illinois digital library of content and access systems. The Large Scale Digitization Working Group (LSDWG) has initiated a number of efforts in the area of standards and workflows which should transition well into this new group. Digital ISCC is a functional working group of the Content Access Policy & Technology Committee (CAPT), and as such its recommendations are made to CAPT. The Digital ISCC group is responsible for coordinating the processes of digital content creation, ingest, access through Library and other systems, and its long-term management and storage. The Digital ISCC makes day-to-day decisions about the use of existing resources in the digital content life cycle process, and makes recommendations and requests for re-allocations or new resources. The technology support for much of the Digital ISCC’s work is provided by Library IT, with a combination of services that will be supported mainly by a newly-formed digital library technology group from the Grainger Library.

Membership in the Digital ISCC group includes representatives from the following units: Digital Content Creation; Preservation; CAM; Archives; Library IT (including IDEALS, ISD, and other pertinent groups that may be formed); and public services.

2) Appoint a Digital Initiatives Coordinator (either an Academic Professional or faculty position) to establish appropriate processes and work flows across Library functions that are engaged in digitization, access, and preservation.

**Cost:** internal re-allocation with likely need to backfill at least 50% of a professional position ($30,000).

**Long-term:** If the Coordinator position cannot be filled in the FY’09 year, then the Team recommends that the Library appoint on a % time basis an existing faculty member or academic professional to coordinate until the
funds to support a permanent position can be identified. The Digital ISCC Coordinator role needs a home base, and the Team suggests that the Technical Services Division is the logical best place for this. Through the formation of the Digital ISCC group, and the discussions in the RTG process (described in #4 below), there will be further opportunities for articulating an appropriate organizational arrangement for managing this process.

**Recommendation #4 Structures for Technology Development: Digital Library Access, Management, and Stewardship**

The digital content of Library collections and its related metadata must be discoverable, through systems that are useful to various audiences, manageable in efficient systems, and stored in a reliable manner for the long-term. The Library has created many digital collections with thousands of digital objects (detailed in Appendix F.), many of which are not easily accessible to either users or Library staff. Most are not included in our federated search engines, the UIUC Discover/SFX OpenURL resolver, the Online Research Resource (ORR) search engine or SFX Discover A-to-Z list, or online catalog. For a user to find most of our digital objects, they have to go to the IDEALS site, or the Illinois Harvest site, or the Archives site, or the History, Philosophy and Newspaper Library site and search each site separately to get results from his or her search.

Using the successes that IDEALS, Illinois Harvest, and CAM have achieved recently, the team recommends that the Library better employ current technologies and Library systems to push out our metadata into the research paths of users (including Google, OCLC Worldcat, and OAI harvesters), incorporate these digital collections into our federated search engines (Easy Search, Search Assistant, and Journal and Article Locator (JAL)), and cross populate (through automated conversion of records from MARC to XML and vice versa) to reside in multiple catalogs, web services and databases, including online catalog, IDEALS, Illinois Harvest and Archives site. Several possibilities include (see Appendix G for more detailed information):

- Federated Search (Easy Search, Advanced Easy Search, Search Assistant, and Journal and Article Locator);
- Next Generation Search Services – Aquabrowser, WorldCat Local, VUFind;
- SFX Discover service
- OAI Harvesting of metadata
- Google
- OCLC WorldCat
- Wikipedia
- CIC/Hathi Trust
- iShare and State of Illinois
- Courseware

Accomplishing this goal across all of these diverse systems is a challenge. The access and the management functions in the Illinois digital library software and database systems are currently intertwined. Further, these functions are distributed across multiple silo-like software products (CONTENTdm for image collections, Olive for newspapers, DLXS for full-text, the OPAC and Illinois Harvest for books). These needs will continue to grow as the Library works with additional formats and collections. Librarians and technologists, with input from users, need to work together to prioritize and continuously assess how the Library manages and makes accessible digital content, in an environment with numerous existing systems and limited resources. Units and groups, both within and beyond the Library, need to participate in shaping the access and management of digital content to meet the needs of a variety of user audiences. Examples of these growing interactions include work with I3, iCHASS, the nascent Scholarly Commons programs, the IDEALS and Scholarly Communications program, the CIC Google Book and Hathi Trust digital repository, and the campus Visual Resources Digital Collections program, which is currently in the planning stages.
Several years ago Library IT re-structured from the Library Systems Office plus IDEALS and DSD into the Office of Library IT, with several areas of focus. That metamorphosis is now poised to enter the next phase, with focus on organizing to support the functional activities of access, management, digital preservation, as well as technology research and development. This next phase comes none too soon—the Library’s programmatic needs have outstripped the Library IT organization structure. The current budget climate cannot support significant new growth in needed technology expertise in several areas—programming, usability, database, storage technologies, and digital preservation technologies.

Through the conversations both within the DCLCM Team and with faculty and IT professionals who are involved in this work, the Team believes that an approach with strong potential is to pool technology expertise of faculty and staff and form new working relationships that will enable programs with heavy technology-dependencies to operate effectively and to transition, where appropriate, from experimental into production services. Areas where it is clear we need to focus our planning include digital content access, management, digital preservation, and technology R&D.

The Team has done some brainstorming and has discussed the prospect of a matrix structure within IT that supports the formation of task-focused groups of faculty and IT professionals. Two of the ideas that have emerged from that discussion include the prospect of forming a Digital Library Technologies Group that focuses on the development and support of technologies that enable discovery and re-purposing of content. One obvious goal in forming this group is to leverage the technology development, experimentation, and production services of the Grainger Library digital library group into the mainstream of Library IT services. Another clear advantage the group identified in forming such a group would be to involve library faculty and IT professionals in shaping priorities for core digital library services. In the Team’s several conversations on this topic, there was mixed support for forming a Digital Library Technologies Group or eScholarship Technology Services Group. A number of fundamental questions need to be addressed in future conversations, including how to balance research and experimentation with production development resource needs; adopting processes for arriving at common understanding of project planning, milestone tracking, and execution; participatory process for setting priorities that involves stakeholder units and individuals.

Recommendation: The Team recommends that the Library explore (through the RTG process, for starters) ways to bring together in productive groups the technical professionals from the Main Library and the Grainger Library, as well as the units and individuals who are responsible for both developing and providing technology-dependent services and functions that are related to the digital content life cycle.

Short-term:

1) Library IT and the stakeholder units in the Digital Content Life Cycle and other technology services have been invited to participate in the upcoming RTG facilitation aimed at identifying the most workable ways to collaborate in the Library organization.

2) The current Digital Services and Development unit will have virtually no permanent staff. The Interim Head will be leaving for sabbatical. It is clear that the functions of that unit are critical to the Library, but there is currently not sufficient staff in the unit to fulfill those functions. The Team explored the options for fulfilling these responsibilities elsewhere in the Library system. It is clear that the Grainger Library supports a strong complement of staff expertise that is very capable of addressing digital library technology development devoted to access and management systems. The Grainger team supports Illinois Harvest and Easy Search, as well as the Journal Article Locator and other production services. Informal and fruitful collaborations exist now between the Grainger team and Library IT. Therefore, the Team recommends that by January 1, 2009, the AUL for Library IT and the Head of the Grainger Library should develop a formal plan for integrating the spectrum of technology activities of the Grainger Digital Library Initiative fully into the mainstream of Library IT operations and development. The current Grainger DLI team (which currently manages the production systems of
Easy Search, Journal and Article Locator, and Illinois Harvest) should have responsibility initially for managing the production systems for digital content access, including CONTENTdm, DLXS, CWIS and similar systems now managed by DSD. This team will form the basis for the Library’s digital content access and management group, including support for mass digitization.

The Library should fill the Digital Library Research Programmer position (previous incumbent Matt Cordial) on a permanent basis, with a home base in this team and with strong links to IT-ISD. This position is being re-cast so that it supports mass digitization and digital access management systems. The Assistant Web Content and Digital Services Librarian, 50% in DSD, should be assigned to be a member of this team for the 50% time currently committed to DSD. Staff who are now part of the Grainger Digital Library Initiative will continue to report to their assigned supervisors. The alignment of services, priorities, and budgetary resources will occur with leadership from across the various functional groups in IT with vision and priorities set through the Office of IT. This will help build a better and more streamlined foundation for this group as part of a matrix Library IT organization mentioned above.

As this team is set up, this will allow DSD to dissolve at the end of 2008 when the interim head steps down. (The DSD 33% GA should be assigned to DCC, as mentioned above.) EC should authorize filling the Digital Library Research Programmer position on a permanent basis, regardless of the long-term placement of that position. There is more than enough already-defined technical work to occupy this role. Further, Library IT has re-cast this position to address digital library access and mass digitization needs, and it is waiting for the deposit of this report in order to re-submit the revised position to EC.

3) Develop a mechanism (using titles or some sort of designation) to recognize the current IT and Digital Library involvement of the following individuals--Tim Cole, Chris Prom, and Bill Mischo. These titles should be related to Library IT activities that support strategic Library priorities.

4) It is critical that the Library take steps immediately to address the gap of long-term stewardship of the Library’s digital assets that support the research and learning of the Illinois community. The Library needs to solve the problem of content stewardship before it can move forward to build the scholarly services that are based on our ability to ensure long-term viability of scholarly content and collections, such as implementing services such as Open Conference System or Open Journal System. The IDEALS program within Library IT should assume responsibility for the planning and development of a Library-wide digital content repository solution, as well as the scholarly services that will support long-term digital asset preservation and serve as a backbone for digital content access and management systems. IDEALS will work closely with and will include in these efforts a diverse team of stakeholders, including staff from Preservation, IT-ISD, the Grainger Digital Library Technology Group, collections and public services librarians, and campus stakeholders such as CITES, LAS, I3 and iCHASS. The Scholarly Commons service programs will have a strong dependence on the success of these efforts. Initially, the Library can support this work with a 2-year visiting research programmer hire, with expectation that this position will need to be made permanent. This work is critical to protect our already substantial investment in locally held and digitized digital content. The Team recognizes that IT-IDEALS is the best-suited area to initiate this activity, and also recognizes that as this effort evolves, elements more suited to Preservation may be moved to that area, and the technology service development components may be amplified after the repository effort is addressed.

5) The Library should form an eScholarship Technology Services Group to provide online scholarly services and to involve the Library in the emerging eScholarship initiatives locally and with peer institutions. This group should draw its membership from CAM, University Archives, Preservation, Library IT, the Grainger Digital Library team, the emerging Scholarly Commons team, and other pertinent areas. This initiative will advertise the benefit of digital services and will help bring new and
more robust digital services directly to our users. This initiative should coordinate closely with the emerging Scholarly Commons group. There is not full agreement on the role and the title of this group, and any ambiguities need to be worked through before this type of group can get off to a productive start. It is clear from the Team’s conversations that there is a concrete need for this kind of work to be organized in a functional cross-cutting group. The RTG process should include planning and discussion of this group and its role in collaborative technology development.

Cost: Fill the Digital Library Research Programmer position: $50,000-$55,000; Re-allocate the remaining two years of IDEALS funding from the Provost to hire a Repository Developer (programmer) position; re-allocate percentages of current technical staff time to this effort to form both groups mentioned in “b” above; Examine and re-define, if necessary, current technical and preservation roles to form a cohesive digital preservation team; Long-term: establish at least one new technical professional position dedicated to repository development and ongoing support.

Other costs are $0 for now; by FY ’10, however, there will be better-defined needs for technical development to support ongoing programs that are not currently defined (data curation, scholarly communications service tools and support applications; e-science applications development; media support and management); long-term, these efforts may require the re-allocation of current resources mixed with new lines to support up to five new professional positions that are focused on technical development to support digital library services.

We anticipate that recommendations (both short and long term) will emerge from the RTG work for additional faculty and academic professional appointments working with the Office of IT (existing positions as well as newly-defined opportunities for reallocation) that will lead as well as manage development in these areas.

Recommendation #5—Metadata Creation and Enhancement

The Team recommends that the Content Access Management (CAM) unit coordinate metadata creation and enhancement into across the Library. CAM can provide a critical leadership role and be responsible for standards development and documentation, metadata production, and collaboration and training on digital tools (such as ContentDM, XLST stylesheets, Oxygen, OAI PMH and Z39.50 harvesting tools, MARCEdit, etc.). Finally, CAM will help develop methods for the Library to migrate, convert, and enhance metadata to provide successful search for users.

Recommendation:

1) CAM should coordinate metadata creation and enhancement. Some aspects of metadata creation can and should be performed by collections curators in Library units who are committed to standards-based practices for digitization and metadata creation. The Head of CAM needs to work closely (i.e. establish formal communication channels) with CAM and other units (DCC, IDEALS, Library IT, Preservation) to insure the creation and ongoing maintenance of adequate and appropriate metadata to support the collections under their stewardship.

2) The Team recommends that CAM gain proficiency in working with preservation metadata (such as PREMIS) to support preservation of the Library’s digital collections.

3) There are numerous digital collections that need metadata work to make them more accessible. Last year we requested the hiring of 2 metadata librarian positions. Budget restraints only allowed the hiring of one of the two metadata positions. When funds become available, the Team recommends hiring the second Metadata Librarian position to help create metadata for images, media, datasets, and other digital resources;

Cost: $46,000
Recommendation # 6 — Digital Preservation

Digital Preservation, or long-term stewardship of the Library’s digital assets, requires the effective combination of long-standing preservation principles and policies (embodied in the OAIS reference model) with technologies and standard practice. The Preservation unit, working in consultation with the members of the Digital ISCC group and Library IT, will be responsible for articulating and reinforcing a digital preservation program for Library-owned digital assets.

Short-term:

Recommendation:

1) The Team supports and recommends that the Library fill the vacant Head of Preservation position as soon as possible. The job description should clearly define the role the new hire will play in regards to building up the digital preservation program here at UIUC Library. It should be a top priority of this position.
2) **Cost**: $55,000 to $70,000
3) Work with IDEALS to share the successes they have witnessed over the past few years creating a viable digital library infrastructure, including digital preservation management of objects. The Library needs to map out a similar plan for preserving all of our digital objects for future use.
4) In conjunction with this overarching plan for digital preservation, the Team also recommends that the Library should pursue talks with CITES and CIC Shared Repository – Hathi Trust about getting preservation copies of our digital content into these trusted digital repositories. There is no need to duplicate effort (build our own digital preservation repositories) if CITES and/or Hathi Trust offers a trusted digital repository model that is OAIS compliant.
5) **Cost**: There will be cost associated with working with the organizations ($50,000 for Hathi Trust and unknown total for CITES)
6) Re-establish the Digital Preservation Management Team under the leadership of the new Head of Preservation.
7) **Long term**: Return to the process of building a digital preservation program based on Cornell’s Three Legs of Digital Preservation Management. Revisit the Five Stages:

   - Acknowledge – Understanding that digital preservation management is a local concern;
   - Act – Initiating digital preservation management projects;
   - Consolidate – Segueing from projects to programs;
   - Institutionalize – Incorporating the larger environment and rationalizing programs; and
   - Externalize – Embracing inter-institutional cooperation
Appendix A: Digital Content Life Cycle Management Team Charge

Key points the group was asked to address in its charge from the University Librarian and the Library’s Executive Committee include the following:

1. Articulate the principles and methods that are critical to effective digital content life cycle management, including selection, digitization, metadata creation, quality review, management and access, and long-term archiving.

2. Define the digitization needs and priorities for all types of content, Google, non-Google, OCA, Special Collections, large format, newspaper, media, and other formats. Recommend a viable model or combination of models for funding non-Google digitization—grants, non-recurring funding, and/or annually budgeted funds.

3. Define an effective organization and management structure to support the life cycle of digital content creation, access and management, and sustained availability. What are the leadership roles that are critical to the digital content life cycle, and how do they relate to the current functional areas of the Library? What are the staffing needs required to support and sustain the digital content life cycle?

4. Articulate central roles (where pertinent) that each of the areas below provides in support of the digital content life cycle. Describe the necessary interactions between and among these areas. Identify any functions that are missing.
   a. Digital Content Creation
   b. Content Access and Management (CAM)
   c. Digital Services and Development (DSD)
   d. Preservation
   e. IDEALS

5. Recommend any organizational changes to these units or to the relationships among them that would improve the digital content life cycle management process.
## Appendix B: Summary Table of Recommendations with Cost requests

<table>
<thead>
<tr>
<th>Category</th>
<th>Recommendation</th>
<th>Timeframe</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Content Creation</td>
<td>Make permanent DCC’s FY’09 budget at $200k allocated for this fiscal year</td>
<td>Fiscal Year 2009/2010</td>
<td>$200,000</td>
</tr>
<tr>
<td></td>
<td>As soon as possible (i.e., even before start of FY10) this should include hiring or re-allocating another permanent senior civil service staff member to DCC</td>
<td>Immediately</td>
<td>$35,000</td>
</tr>
<tr>
<td></td>
<td>Hire or re-assign individual to fill static media digitization position (fill at the civil service or academic professional level):</td>
<td>Within the next 1-2 years</td>
<td>$35,000 - $45,000</td>
</tr>
<tr>
<td>Coordination of Units Involved in Digital Content Life Cycle</td>
<td>Appoint a Coordinator of the Digital ISCC who is also responsible for helping to oversee and define the processes and workflows necessary to accomplish the digitization and management of digital content from the Library and University’s assets</td>
<td>Immediately</td>
<td>Backfill: $46,000 – $55,000</td>
</tr>
<tr>
<td>Structures for Technology Development: Digital Library Access, Management and Stewardship</td>
<td>Fill the Digital Library Research Programmer position</td>
<td>Immediately</td>
<td>$50,000 - $55,000</td>
</tr>
<tr>
<td></td>
<td>Re-allocate the remaining two years of IDEALS funding from the Provost to hire a Repository Developer (programmer) position</td>
<td>Immediately</td>
<td>Funds from the campus for IDEALS funding</td>
</tr>
<tr>
<td>Metadata Creation and Enhancement</td>
<td>Second metadata librarian position</td>
<td>Within the next 12 months</td>
<td>$46,000 – $55,000</td>
</tr>
<tr>
<td>Digital Preservation</td>
<td>Search for a new Head of Preservation</td>
<td>Immediately</td>
<td>$55,000 to $70,000</td>
</tr>
</tbody>
</table>
Appendix C: History of Digital Content Creation and Management Development at Illinois

Major accomplishments have been realized over the past two years. We have worked through the digital life cycle process for such projects as 1) large-scale digitization work with the Open Content Alliance large-scale digitization project; 2) enabling better outsourcing of digital collections to vendors like Northern Micrographics, National Archive Publishing Company (NAPC), and Olive; 3) making campus published scholarship discoverable through IDEALS; 4) retrospectively enhancing collections digitized in the past (including Motley Collection of Theatre and Costume Design, Amos Kennedy Collection of artists’ books, postcards, and posters, ALA Archives, French WWI Posters, etc.) creating metadata, migrating content to better mediums for preservation, formulating tracking mechanisms for archiving purposes, and pushing out content for public access (many had remained hidden for years); 5) creating and making accessible new digital collections (including Portraits of Actors 1720-1920, the University of Illinois Built Environment, and the Bronze Tablets); 6) through the use of Archon, incorporating thousands of digital images and EAD finding aids for users to discover through the Archive’s website, online catalog, and Google; 7) creating and implementing ingest mechanisms to SANS server for storage of digital access copies and creating a process to make preservation copies on DVDs and, with the help of Archon, tracking objects for preservation purposes; and 8) building Illinois Harvest to collect and gather our growing digital collections as well as incorporating other digital initiatives, such as UNICA, Preservation’s Brittle Book reformatting work, OAI-PMH harvesting of other digital collections dealing with the State of Illinois into a central area for discovery.

Much of this collaboration and coordination among these various groups had not previously existed. A good example of this collaboration can be seen in the groundbreaking collaboration that supported the Library’s partnership with the Open Content Alliance digitization project. This project required working through all areas of the digital life cycle with several Library units working together to set up and implement the following workflows including:

- Materials were selected and prepared for digitization, metadata created or vetted for harvesting (record updating required in some cases), items transported to OCA staff for digitization (at OCA Oak Street scanning stations), and digitized derivatives created by OCA ingested into Library systems that managed digital objects (both to support access and preservation).
- DCC worked with selectors and CDC to identify and confirm viability of materials to be digitized, then pulled, processed, and readied books to be sent to scanners at Oak Street,
- Library IT helped create programs to limit selection to eligible materials (pre-1923 and related to certain subject areas), create pick lists, packing lists, and tracking of materials sent to be digitized,
- CAM worked with DCC to ensure metadata of adequate quality existed for selected materials and mechanisms were in place to allow OCA the ability to harvest metadata from Voyager online catalog.
- Post-digitization by OCA, CAM worked with DSD and Oak Street staff to define workflows and procedures and create scripts that could be used to allow largely unattended harvesting and processing of OCA created digitized derivatives.
- DSD and CAM created the ingest infrastructure to process harvested files (including gif, pdf, flipbook, djvu, jp2, Dublin core metadata, marcxml, scandata, and original scans among others), enrich with additional information (e.g., added metadata, splash screens, additional derivatives such as METS Navigator representations for selected materials), and sort them into groups of files made available for end-user access and those needed for archiving and preservation.
- DSD also created a script to allow Oak Street to burn a checkpoint copy of files processed to DVD.
- DSD, CAM and Archives are working together to track digital files downloaded from OCA and created during processing in Archon, Voyager online catalog, and OCLC. Primary local access to books and related materials digitized by OCA is either through Illinois Harvest or IDEALS (for materials relating to the University scholarship).
- Working with IDEALS, DSD created semi-automated processes that direct and prepare OCA digitized materials to be ingested into DSpace system (with files useful for preservation maintained with other OCA archival materials).
The Illinois Harvest Portal Librarian and CAM worked together to make the Illinois Harvest a searchable repository of UIUC Library’s digitized books (along with other UIUC Library digital collections, digital collections about the State of Illinois, or UIUC scholarly works).

DSD and CAM worked with Library IT ISD to implement and use a local Handle server to create stable and accurate links to digital content.

And, finally, to promote discoverability and the capability of other institutions to harvest or point to this digital content, shareable metadata was created, OAI-PMH harvesting was enabled, and records pushed out to national and international systems including Illinois’ union catalog (iShare), OCLC WorldCat, and OAI harvesters.
Appendix D: Digital Archiving and Storage Policy for Purchased/Owned Content

DRAFT
This document provides both policy and operating guidelines for making decisions about what digital content is archived, and who/where responsibility rests for archiving it (local, consortial, e.g., CIC, or through LOCKSS or Portico).
The types of digital content and the responsibility of the UIUC Library for archiving that content are as follows:

1. Archived locally by UIUC Library:
   YES:
   • Grey literature created by UIUC scholars—reports, field notes, data sets, conference papers and presentations, etc.
   • Web sites, internal or external to UIUC, provided the following:
     1. The Library has a collection development statement that encompasses the specific Web content;
     2. AND
     3. The Library has set in place agreement(s) with the producer or publisher of the Web content that enables the Library to make content widely accessible, make copies of it, and migrate it to a different format for preservation purposes;
   MAYBE:
   • Private foundation, professional society reports or other publications that are not archived elsewhere, and that the publisher agrees for UIUC to archive.

2. Material NOT archived by UIUC Library:
   • U. S. Government agency publications;
   • Other government agency publications that are archived elsewhere;
   • Digital content archived by LOCKSS or CLOCKSS;
   • Digital content archived by Portico;
   • Digital content archived by the CIC Shared Digital Repository (Google, non-Google, and commercial content owned by a group of CIC institutions—e.g., Springer e-books).

3. Storage guidelines (to be fleshed out):
   Content must have a custodian (collection owner);
   Purpose of archiving must be determined (by some group) for content being archived;
   Library must develop a service level agreement for storing content at file system level, and determining what type of storage and redundancy is appropriate for the given content (Library IT, content custodians);
   Library needs to coordinate content storage mapped to current content access systems (CONTENTdm, Illinois Harvest, DLXS, IDEALS, etc.)
1-Apr-08
Appendix E: Short and Long-term Access Goals Related to Digital Library Access and Management Systems

The services that will be supported initially include services developed over Library and other content:
- Open Archives Initiative metadata harvesting and federated search services
- Repositories: DLXS, Content DM, IDEALS
- Collaborators on Gateway Web and OpenCMS development
- Summary of Engineering Research, BibApp, ePortfolio, and other faculty research discovery applications
- Research/experimentation supported: OAI-PMH metadata harvesting; OAI-ORE (Object re-use and exchange; DLF Aquifer Digital Library; Repositories for content preservation/management

Several things need to occur organizationally in order for this work to get off to a productive start within an otherwise traditional and non-hierarchical Library organization. The core technology professionals in Library IT and the Grainger Library will need to re-align their service missions, taking care not to exclude current production activities (e.g., data feeds for Acquisitions and Voyager patrons, Web services and Web Content Management System development and support; storage and virtual server environment) from either the planning or the organization phases of these discussions. The Library IT group and additional stakeholders from DCC, CAM, Preservation, and other pertinent areas of the Library will start work with the RTG in Fall 2008 to develop a firm foundation for providing effective ongoing and new services, and contributing to the national developments in digital library technologies and services.

Short term goals of the group (1 year):
- Enable Archon to be rolled out with strong production operations outside of Archives. The same is true for RBML and ILHC.
- Establish liaison and mentoring role with libraries have at least one and usually several people devoted solely to tech issues related to special collections. They are usually also involved in metadata creation, digitization, application, or service development; they have digital services as the main part of their portfolio and have a focus on developing service for special collections.
- Evolve a presence in the Scholarly Commons to interact with/support faculty work with digital content
- Better integrate the production and support activities of the Grainger and Library IT groups with more formal agreements and shared staffing of infrastructure services;
- Strengthen Archives/IDEALS linkages
- Strengthen collaboration and dependency between Grainger group, Library IT, and service-focused programs in the following areas:
  - Database development common tools and group projects
  - Programming common languages and tools development
  - Storage and management infrastructure needs to coordinate with repository preservation layer
  - Common digital library architecture goals
  - Provide additional opportunities for IT ISD staff to more closely connect with development work and contribute to Library-wide initiative, such as digital preservation issues, application development and maintenance.

Longer-term goals (1-3 years):
- Establish institutional shared research agenda that maximizes the investments of Grainger’s endowment, Library unrestricted resources, and external funding for experimenting with digital libraries technologies.
- Identify and assign responsibilities across the two groups for production responsibilities to support current and new production systems;
- Establish internal vetting process for reviewing current and proposed systems and identifying both pilot and production support resources before implementation can take place;
- Cross-training among the IT groups
Appendix F: Illinois’ Digital Library Initiatives

IDEALS—the Illinois Digital Environment for Access to Learning and Scholarship continued to grow during the FY08 with over 30 new communities established. Almost 3,000 items were added during this time, with significant UIUC collections including the Allerton Park Institute Proceedings and University of Illinois Extension publications. Since January 2007, over 90,000 downloads have been completed from IDEALS website. IDEALS provides a venue for experimenting with new forms of scholarly communication – with pilot projects including the Center for Global Studies Occasional Paper series and the Newmark Structural Laboratory Report series and as a means of supporting undergraduate research programs such as the Ethnography of the University Initiative.

Illinois Digital Library— with the establishment of our Open Content Alliance (OCA) digitization program in FY07, the launch of the Illinois Digital Newspaper Collection, and the creation of the Illinois Harvest Web portal, our work in this area has had incomparable impact on access to Illinois collections, and services as the foundation for Illinois faculty and students seeking to make use of digital content for teaching and research. Over 3,000 items are now available through Illinois Harvest, including digital representations of 36 items from the Rare Book and Manuscript Library unique in the world (Project Unica). An item such as Anarchy and Anarchists (1889), which had circulated only five times since 2002, has been downloaded from the OCA site 150 times during the past year. The volumes of the Proceedings of the American Library Association (1889-1922), which circulated only 13 times since 2002, were downloaded 1,501 times during the year. In addition to enhancing access to our collections, or selected specifically to support faculty teaching and research, has allowed us to build digital library collections truly representative of teaching and research focused on the Illinois experience, and to establish strategic partnerships with organizations such as the Field Museum.

University of Illinois Digital Projects— consists of a broad range of digital projects, including the digitization of library collections and archives, research in information retrieval technologies for digital collections, and digital library research projects. They also develop instructional resources and facilitating tools for digitization projects, and experiment with the application of digital content in teaching and learning. These initiatives include such collections as ALA Archives Digital Collections, Digital Cultural Heritage Community, Early 19th Century Russian Readership & Culture, From Alchemy to Chemistry: Five Hundred Years of Rare and Interesting Books, Gabriel GarcíaMárquez Bibliography, German Emblem Books, Global Cultural Memory Project, Historical Maps Online, Illinois Air Photo Imagebase, Illinois Fire Service Institute Digital Archives, James B. Reston Papers, Kolb-Proust Archive for Research, Lorado Taft Sculpture Photographs and Finding Aid, Motley Collection of Theatre and Costume Design, University of Illinois Encoded Archival Description (EAD) Projects, Teaching with Digital Content and many others.

Large Scale Digitization Project— In the fall of 2006 the University of Illinois Library at Urbana-Champaign entered into an agreement with the Open Content Alliance (OCA), a program of the Internet Archive to operate a pilot scanning center at the Library's Oak Street Library Facility. So far, approximately 10,000 volumes from the Library's collections have been digitized at the scanning center. The digitized content will be accessible via the Library's online catalog, at the Internet Archive web site, and fully searchable over the Internet. These will include works in the public domain to do with Illinois history, culture, and natural resources, as well as in-copyright collections for which the Library has obtained permission to digitize, such as Chicago Field Museum Fieldiana Botany and Zoology series. In addition to volumes digitized as part of our collaboration with the OCA, the Library will digitize additional special collections, including University of Illinois Board of Trustees Proceedings, the Illinois Legislative Synopsis and Digest, and the University's collection of Bronze Tablets honoring the top 3% of UIUC undergraduates.
Illinois Harvest—is a unique service that provides access to publicly available online materials about or related to Illinois. The service is being developed by the University of Illinois with generous funding support from the State of Illinois. The portal will feature materials held by libraries across Illinois and beyond. These materials include among other things: research works by Illinois scholars, photos of and texts about Abraham Lincoln, copies of Illinois constitutions, World War I and II documents, historical Illinois maps and aerial photographs, documents about Illinois during the Civil War, the Bloomington-Normal Black History Project documents, and historic architectural drawings and renderings about the "built environment" of the University of Illinois.

University of Illinois Digital Archives—contains descriptions of all processed materials held by the University of Illinois Archives, including non-current University records, faculty and alumni papers, and materials from the Sousa Archives and Center for American Music, the Advertising Council Archives, the American Society of Quality, and others institutions whose archives we hold on contract for their research value. The American Library Association Archives are described in a separate database. Using Archon is a web-based tool for archivists and manuscript curators. It automatically publishes archival descriptive information and digital archival objects to a user-friendly website. With Archon, there is no need to encode a finding aid, input a catalog record, or program a stylesheet. Archon's powerful scripts will automatically make everything in the system searchable and browseable.

Project Unica—is an initiative of The Rare Book & Manuscript Library of the University of Illinois at Urbana-Champaign to produce high quality digital facsimiles of printed books that exist in only one copy. The concept of a "unicum" is difficult for the average library user to understand, since printed books, by their very nature, exist in more than one copy—that's the genius of Gutenberg's invention, after all. But fate and circumstance has sometime led to the destruction of every copy, save one, of a printed book. And the University of Illinois has quite a number of absolutely unique printed books. The aim of Project Unica is to digitize these supremely rare items and to provide a simple and efficient way of getting this valuable and unique information to scholars when and where they need it. The records of the books and the digital facsimiles are also available from institution's online catalog, Illinois Harvest, and OCLC. Presently, there are 50 books included in the initiative.

The Illinois Digital Newspaper Collection (IDNC)—is a project of the History, Philosophy and Newspaper Library at the University of Illinois at Urbana-Champaign Library. The IDNC is a repository of digital facsimiles of historic Illinois newspapers. Using digital imaging technology, we have converted microfilmed newsprint into preservation quality image files. Equipped with Olive Software's Active Paper Archive platform, the IDNC delivers access versions of the image files through the customizable user-friendly interface. The interface allows users with internet connections to browse the newspapers by date or search by keyword across articles, advertisements and photo captions. Users can print, download, or e-mail individual articles. And it's free! We plan to add additional years of Illinois newspapers to the repository as funding become available. The Collection includes the Daily Illini and the Urbana Daily Courier with more titles to come.

Content Access Management (CAM)—worked with OCLC regarding holdings reclamation projects, updating serial records holdings, bibliographic notification service, and uploading bibliographic records for over 80,000 original cataloging contract work with BackStage. We also worked with OCLC to upload Dublin Core and MARC XML records for 5 digital collections, including Portraits of Actors, 1720-1920, Motley Collection of Theatre and Costume Design, Teaching with Digital Content, and ALA Archives Collection. We also worked with OCLC to convert these XML records into MARC and populate WorldCat. We also began creating metadata records for the materials going through our large scale digitization work with Open Content Alliance, Google and Kirtas. We have done retrospective metadata work on multiple collections within the Library’s Digital Projects. We have also added over 3,000 MARC records to OCLC and provided OAI-PMH harvesting capabilities through the Library’s Illinois Harvest site. The Library will continue to work to provide shareable metadata to allow other libraries the ability to pull these records into their online catalogs.
Library Streaming Media Service—The Undergraduate Library (UGL) recently purchased 260 full-length films as digital files. The films, both documentaries and a select list of feature films, are from Films Media Group (formerly Films for the Humanities & Sciences) and cover a wide range of subject areas. Links to the streaming videos are attached to the catalog records for the physical formats (VHS or DVD) for each title.

Proposed—Visual Resources Digital Library—will provide access to visual resource collections campus-wide, centered in the Library, using the current FAA slide library and the curriculum/research needs of art historians as the initial point of departure. The Library and FAA will collaborate during FY’09 to make digital images accessible for several large-enrollment gen. ed. courses and mid-sized upper level courses taught by FAA faculty in Art History. This pilot could serve as the first phase of a proof-of-concept for a centralized digital visual resources program. The focus would be on making approximately 5,000 digital images and descriptive indexing available through a searchable Web database system supported by the Library (CONTENTdm). Images would be drawn from the FAA Slide collection, faculty personal collections, and sets of images licensed by the Library for campus distribution. Rights and permissions would need to be secured for campus access. The Library would appoint a librarian currently on the Library faculty, with related expertise to coordinate this effort on a part-time (up to 20%) basis. The effort would include digitization and indexing of images that were in analog form or needed indexing metadata. Images would be available by Spring 2009 for use in teaching and research. Image selection would be performed by Art History faculty and the Slide Curator in the School of Art & Design. Digitization, indexing, and systems integration would be organized by Library faculty and staff. Art History faculty would seek PITA grants to re-tool their courses to incorporate digital images into the classroom presentation.

Easy Search— is a search and discovery tool that allows you to simultaneously search more than one database. The basic Easy Search (Multi-subject Resources) includes general databases and resources that serve as a starting point to help you discover where you can find information about your topic. It is by no means intended to be comprehensive since information about your topic is likely to be found in multiple databases. Easy Search groups databases together by subjects and disciplines.
Appendix G: Possible avenues of incorporating the metadata into our search mechanisms include:

- Federated Search (Easy Search, Advanced Easy Search, Search Assistant, and Journal and Article Locator)
- Next Generation Search Services – Aquabrowser, WorldCat Local, VUFind. Aquabrowser would allow the harvesting of metadata from multiple catalogs and databases to provide search capabilities within one overarching search engine.
- SFX – We can pull serials we are digitizing (and residing in several places, including IDEALS and Illinois Harvest) into the SFX Knowledge Base and findable by OpenURL
- OAI Harvesting of metadata – We are already making the metadata of many of our collections harvestable my OAI harvesters through IDEALS and Illinois Harvest. We need to continue to do this. Also, continue to harvest metadata from other collections that relate to collection initiatives (Illinois Harvest) but better incorporate this harvesting in our federated search engines.
- Google – Again, we have had good success with making some of our collections findable through searches in Google. With the books we are digitizing through OCA, we are creating a splash page for each book. These splash pages are in html format so that Google can easily crawl and grab the records of our digitized books. This is the same for digital content within IDEALS. The more we can create html splash pages for all our digital collections, the more of our digital content that can be crawled by Google and, hopefully, searchable by researchers all over the world.
- OCLC WorldCat – CAM has worked with OCLC to get metadata records into WorldCat for books we are digitizing through OCA. Soon, we will have an automated process that will load these records into OCLC without human intervention. Also, we have submitted metadata records (using Dublin Core schema) for OCLC to convert to MARC and load into WorldCat. These collections include American Library Association Archives, French World War I Posters, James Reston Papers, Teaching with Digital Content, Motley Collection of Theatre and Costume Design, and Portraits of Actors, 1720-1920. This will allow searchers to find these digital objects in WorldCat, WorldCat Local, and WorldCat.org. We will be working to get more of these collections into OCLC.
- Wikipedia – Another source that some libraries (such as University of Washington) are inputting collection descriptions for their digital collections is Wikipedia. Since Google crawls Wikipedia, and since they rank these results high within search results, getting our collection descriptions and entries for pertinent individual objects (with links to our repositories) will expose our content to larger audiences. Another possibility is uploading digital images (and information about the collection) into Flickr and point back to our digital repositories. Library of Congress is one library that is using Flickr in this way to point back to their digital collections.
- CIC SDR web services – Over the next year, as the CIC Shared Digital Repository becomes ready for ingest of digitized monographs, and, eventually, other digital objects, UIUC Library should start loading its content into this repository. It has the potential to become an uber repository of all the books digitized through the CIC Google Digitization Project and a trusted repository of millions of digital objects that can be searched within one database. As we start to build services on top of the SDR, enhancing search capabilities, potentially across the full-text of millions of books, for UIUC researchers, CIC researchers, and researchers world-wide.
- iShare and State of Illinois – The Library needs to continue to help build up a state-wide digital repository of everything Illinois. Illinois Harvest has been a good start but we need to keep working to incorporate other collections and institutions within the State. We also need to work to ensure that Illinois Harvest continues to exist after this initial burst of funding and continues to have support to keep the work and public face of the initiative going into the future. The Library needs to find permanent funding for the Illinois Harvest Portal Librarian to continue to help with this work. Additional programming help needs to occur. And, a clear focus needs to build over the next year to become a more defined segment of the Library’s digital program. We should also continue to load metadata records into the CARLI iShare union catalog and help build additional avenues to finding digital content rather than just our traditional print collections.
Courseware – The Library needs to make it easier to incorporate our digital collections and content into the campus courseware and syllabi. The Library needs to make it easier for faculty and students to take digital content and repurpose it for their research needs. One such project will be building the Visual Resources Repository (expanding on the current Slide Library created for Architecture and Art Department) to encompass various collections of digital images for all departments on campus. Visual media are a significant component in the educational and research interactions of scholars in numerous disciplines, ranging from the fine arts to medicine. We need to make it easy to incorporate library digital content into Web-based software systems supported by the University and easily integrate into diverse presentation and teaching systems. Our users want to be able to find to use the content provided by the Library. Through conversations with the teaching faculty of the university, the team recommends that the various units involved with the selection, creation, technology and development, and access and delivery of digital content think through the best ways to help these individuals.