UNIVERSITY OF MASSACHUSETTS DARTMOUTH

Digital Asset Management Team Report

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Executive Summary

The University of Massachusetts Dartmouth, like many universities, controls a growing body of valuable digital assets and is struggling with issues related to the management and retention of them. Currently, it lacks a comprehensive campus-wide digital management strategy. To address this deficit, Donna Massano, Vice Chancellor of IT, and Terry Burton, the Dean of the Library Services, formed a Digital Asset Management Team (DAMPT) comprised of representatives of the university's Library and Archives, Instructional Development, PhotoGraphics, and the Visual Resource Center units. The mission assigned to the team was to assess the university's digital assets, identify digital collections and repositories, determine approaches to digital capture and management, survey use and access to digital assets, and make recommendations that would begin to build a management solution for digital assets campus-wide.

Digital Asset Management Planning Team (DAMPT)

Before developing a plan however, DAMPT determined that a needs assessment of the campus's digital assets and initiatives was required in order to determine the scope of the digital collections and the methods they are maintained and managed. DAMPT set forth to identify digital assets holdings, to determine if and how these assets were being captured, distributed, and managed and finally to gauge the current state of UMassD digital initiatives and assets as they pertain to volume, use, distribution, management, and preservation. To achieve these objectives DAMPT employed a two tier approach. The first was to conduct a series of one-on-one interviews with deans, faculty members, digital creators and digital managers. The second was to develop and implement a campus wide online survey. Once these activities were completed DAMPT compiled and analyzed the findings, and concluded with recommendations that will ensure the creation of a digital asset management plan for the university.

DAMPT implemented and completed the following tasks.

1. Conducted individual interviews with Deans of UMass Dartmouth's colleges (August-October 2010)
2. Identified stakeholders who either maintain or plan to maintain digital collections and developed an email and mailing list for the survey (October 2010)
3. Constructed a survey of current digital assets and/or repositories, current digital management practices and approaches, retrieval and storage issues including hardware and software specific to digital assets, stakeholders' current needs associated with digital asset management including restriction and confidentiality. (November 2010)
4. Promoted and distributed the DAMPT survey campus-wide including via UMass Dartmouth Announce; the UMass Dartmouth calendar along with emails and letters to all the stakeholders on the list. (November 2010)
5. Opened the survey (December 2010) and closed it (January 2011)

6. Compiled and analyzed the results of the digital assets/repository survey (February-March 2011)
7. Conducted follow-up interviews with participants of the survey (March-April 2011)
8. Wrote and submitted a report to Dean of Library Services, the Associate Vice Chancellor for Information Technology and the Dean of the College of Visual and Performing Arts. (May-July 2011)

This report outlines the importance of digital asset management; identifies the state of the campus in regards to the capture, distribution and management of digital assets and/or collections, provides current professional approaches in the management of digital assets and offers recommendations that will move the university forward to a comprehensive digital asset management strategy.

Digital Asset Management Planning Team Report

What are digital assets?

At the outset of its mission, the DAMPT needed to define the terms "digital assets" and "digital asset management." Depending on the discipline or purpose, digital assets are referred by one or more of several terms including reusable learning objects, electronic records, digital assets, datasets, and media assets. These terms often lead to confusion, especially when tries to address the needs or strategies employed by various departments and units. For the purpose of this report, the term digital assets is a general one that encompasses text, image, audio, and multimedia digital files, and datasets that are used for the purposes of instruction, research, and study.

Equally ambiguous is the phrase "digital asset management" (DAM) which can defined in several ways depending on the creator's/manager's point of view. Alan McCord, for example, writes: "*There is a maze of interwoven terms and acronyms, often confusing, sometime conflicting expressions that refers to "digital asset management*". (10) The University of California's Library Services uses digital asset management and digital curation interchangeably as illustrated in its vision statement. (6) In the past two decades, digital asset management (DAM) has implied a series of tasks and decisions surrounding the annotation, cataloguing, storage, retrieval, and distribution of digital assets. More recently, however, the phrase digital asset management has become more synonymous with software applications and enterprise solutions. Digital specialists and librarians in an attempt to clarify these conflicting definitions have begun to adopt the phrase "digital curation," an umbrella term that represents digital preservation, digital asset management, and electronic management. Oya Y. Rieger describes digital curation as a series of technical, intellectual, and managerial activities in support of creating, acquiring, appraising, repurposing, accessing, and preserving digitized and born-digital information assets. (14)

Why is Digital Curation Important?

"*An authentic record does not preserve itself, and even with the best-intentioned creators often lack the resources or expertise to act as permanent custodians*"--Christopher Prom. (15) The Digital Curation Center website states that "digital curation" is the key to the sustainability, reproducibility, and re-use of reliable and trusted digital resources. (5) However, some claim that institutions of higher education have been slow to adopt systematic curatorial procedures. Even though some universities have instituted digital initiatives which have resulted in the formation of best practices and standards for digital asset management, many of these digital projects were generated in isolation and were specific to the needs of their immediate constituents. Typically, these become isolated data silos with limited interoperability with others. As characterized by a recent report at Michigan State University, "*Without an active, well-considered long-term plan for managing and preserving these resources, they will eventually become inaccessible due to technological*

obsolescence and digital media fragility, and could cost researchers time and frustration searching for data or trying to locate files for sharing." (7) This perception has been reinforced by funding agencies that have begun to recognize the relevance of digital curation and now require grant recipients to submit a digital management plan. In 2010, the National Science Foundation issued a policy requiring a data plan as illustrated in its current guidelines, "data management plans are intended to document how research data will be described, accessed, archived, shared, re-used, and re-distributed over the length of the funded project and beyond." (11) Within the health fields, the National Institute of Health has issued similar guidelines for research. As pressures build from funding agencies, researchers, and faculty members, a programmatic approach to data sharing and digital curation is needed more than ever and should be a top priority.

Interviews with Deans

To prepare the survey, DAMPT conducted one-on-one interviews with the college Deans over the course of August, September, and October 2010. The intention of the interviews was to identify digital repositories and collections that are supported by the colleges; to determine individuals or departments responsible for the generation and/or maintenance of digital assets; to develop a preliminary list of stakeholders to include in the upcoming survey, and to reveal future endeavors or concerns. The interviews allowed the team the opportunity to discuss the global issues concerning the creation, distribution, and management of university's digital assets and present the concept of digital curation.

The Charlton College of Business (CCB) subscribes and participates in third-party digital asset presentation systems: E-Portfolio (student work repository) and Sedona (faculty publication database system). Both systems are restricted to the college community. In addition, the Charlton College of Business supports three web portals: Business Innovation Research Center (BIRC), E-Commerce and Network, and Massachusetts Small Business Development Center Network (MSBDC). BIRC provides access to a collection of electronic publications (PDFs) via a web portal. E-Commerce appears to be primarily an information web site. The MSBDC web site provides a series of link to business video, PDF, and PowerPoint's. The CCB does not formally support digital collections or repositories. Instead digital assets are generated and managed by faculty.

SMAST sponsors numerous projects that generate large amounts of digital assets including datasets, images, and multimedia digital files for the purpose of research and instruction. Digital assets are shared globally by means of the SMAST website. In some cases, digital assets are distributed through third-party agencies including Environmental Services Data and Information Management (ESDIM) and the Historical Data Rescue Project maintained by Northeast Fisheries Science Center at NOAA. Of particular note is the Historic Data Rescue Project's digital conversion project

which takes original and hand-written records of early coastal survey and records from the US Fish Commission and transforms them to digital format. For the most part, digital projects are managed by individual faculty members and are distributed through department or faculty websites. SMAST does not have a centralized department/manager for its vast collection of digital resources. The Dean expressed concern regarding future interoperability and accurate descriptive metadata associated with the digital assets. The Dean did express an interest in the establishment of a visualization and simulation lab for research and teaching.

The College of Visual and Performing Arts (CVPA) supports the Visual Resource Center (VRC), a digital image and multimedia repository that provides content for the purpose of instruction and study. The VRC uses LUNA to manage and distribute digital image and multimedia content (150,000 images and multimedia files). The Textile Design Media Center has an array of general design software, including Pointcarré, a proprietary industry software for advanced textile design, and WeaveMaker for basic weaving projects. A full-time technician oversees four media labs for the Design Department in support of student work and classroom instruction.

The College of Nursing (CN) has a media lab that manages analog and digital materials pertaining to the instruction of nursing. These materials include VHSs, DVDs, books, and magazines. Other digital assets within the CN are generated and maintained by individual faculty members.

The College Arts and Sciences (CAS) sponsors several digital projects including the Biology Seminar Blog; TEMATH (Tools for Exploring Mathematics), a mathematics exploration application developed by Adam O. Hausknecht and Robert E. Kowalczk which is available online via the TEMATH website; the Medical Laboratory Science program that holds a vast amount of the analog and digital files; language labs that plan to transition audio and video analog materials to digital in the next few years; and the Center of Indic Studies that maintains an archive of photographic, video, and textual digital files related to special events and activities.

The College of Engineering (CE) does not formally support digital collections or initiatives. Instead these types of collections are maintained by faculty members. Dean Peck indicated that it is difficult to initiate digital projects because of time restraints on the faculty and the lack of expertise in planning and implementing such a project. Dean Peck suggested the need to establish a mechanism to assist colleges with such digital endeavors. The CE supports a number of centers and computer labs including the Advanced Technology and Manufacturing Center, Highway Sustainability Research Center, Center for Rehabilitation Engineering, and the Nation Textile Center and Sustainability Initiative. These centers are primarily labs. Recently, the National Science Foundation awarded the College $200,000 to acquire a cutting-edge supercomputer to advance research across the campus.

The School of Law generates and posts numerous podcasts to the School's website and outside professional law repositories including Westlaw and Computer Assist Legal Instruction. In addition, the School of Law maintains a law library.

SEPPCE does not support a digital collection for instruction. However, it does generate datasets and digital assets through research projects and distributes them through the college's website. SEPPCE supports three centers, two of which (the Center for Civic Engagement and the Center for Policy Analysis) have informational websites. On the other hand, the Kaput Center for Research and Innovation offers an array of image and multimedia digital content including video tutorials, technical publications, blog, wiki, and SimCalc MathWorlds® Software applications. In addition, Dean Ismael Ramirez-Soto made several suggestions regarding the use and access to digital content. He suggested a centralized web portal for digital resources including eBooks. He proposed a web portal that would list the university's software applications and would allow for immediate download. He recommends a pool of technical staff that could be hired by the colleges for special web base and digital projects.

In summation, digital creation, dissemination, distribution and management are isolated; they are controlled by individuals or departments and remain localized within colleges. The college deans endorsed a coordinated effort in regards to the management and distribution of digital assets campus wide. All emphasize the need for university support and guidance in the arena of digital asset management. Some suggested the need for an entity to assist colleges or take the lead in the formation of digital projects and in some cases.

University Digital Repositories

Several university units hold and manage vast amount of digital assets including the Library, the Archive, PhotoGraphics, Instructional Development and the Visual Resource Center.

Claire T. Carney Library - The library creates and collects digital images and objects for use within its website and other public facing systems such as Voyager, blogs, Facebook and Twitter. Staff within the Library Systems & Digital Services (LSDS) departments is responsible for the creation and maintenance of these collections. LSDS is responsible for assisting other library divisions such as the University Archive and Special Collections divisions develop means, methods and systems for creation, management and maintenance of their digital collections.

Paul Rudolph & His Architecture: http://prudolph.lib.umassd.edu/ -The Paul Rudolph & His Architecture site is a comprehensive reference resource on the man and his architecture with an emphasis on SMTI / UMass Dartmouth. The UMass Dartmouth campus is viewed as an architectural treasure that is now historically significant. Much has been written on Rudolph and the campus over the years. This web site provides unique central resource for the variety of available materials that will have long term research value on campus and beyond. The site has two major components: (1) A comprehensive bibliography of the works, writings and life of the architect; (2) Supporting images, documents and media.

Stick Style Architecture: http://www.lib.umassd.edu/digicoll/stickarch/stick_architecture.html -A guide to Stick Style architecture that is prevalent throughout the local southeastern Massachusetts region. The site has two major components: (1) a bibliography of the works on Stick Style architecture, prominent architects, and buildings in the style; (2) supporting images and documents.

Library Archives and Special Collections - Archives and Special Collections maintains text files of detailed inventories for about 200 of its historic university record, manuscript, audiovisual and photographic collections. There is a backlog of additional collections received within the past 5 years that have not yet been inventoried, and there are plans to integrate digital collections with online guides. A portion of the photographic collections have been digitized, but are currently not managed in any coherent manner. Much of the scanning is currently done on demand. Audio and video materials are converted as time and funding allows, since access is severely limited without the appropriate legacy equipment for playback. We have just begun to transition from storing digital files on cd's to storing them on a server, but they are not managed and retrieved in any consistent manner. Plans for implementing a content management system are ongoing, which would involve use of the ExLibris ALMA and Digitool systems for a variety of media, integrating metadata with the library search and discovery systems. The Archives is responsible for the digitization of thousands of pages of newspaper content which at this time is managed by the vendor who also performed the conversion (ColorMax). The Library needs to decide between continuing to host this content through the vendor or preparing for hosting the content in house. The Archives needs assistance in coordinating the conversion and access of its many projects as it plans to digitize as much of the collection as is feasible, given privacy and copyright issues. Other major needs are a dedicated system for preservation of digital assets and a seamless system of access and retrieval that is part of the main library's system.

The Library's PhotoGraphics Department – PhotoGraphics has an ever growing collection of digital images, video, and graphics. They are in the preliminary stages of implementing Canto Cumulus to catalog & distribute their

digital image collection (currently 100,000+ images). In the future, Cumulus will also be used to catalog their graphics files and possibly their digital video.

Instructional Development - Instructional Development supports the development of re-usable learning objects for faculty use across the colleges that helps to build student skills through self-mastery and self-assessment learning opportunities.

Visual Resource Center - developed and supports one of campus's largest digital of image and multimedia repository. In 2009, the VRC launched online digital database system, LUNA, which is utilized campus wide by faculty and students for instruction and study purposes. Currently, the College of Visual and Performing Arts and the College of Nursing employ the LUNA system to manage and distribute more than 150,000 instructional and educational digital resources, including audio, video, images, and text base media.

UMassDartmouth Digital Asset Management Survey

After interviewing the Deans, DAMPT developed a survey using Survey Monkey, an online application provided by team members from Instructional Development. DAMPT examined the UMass Dartmouth website for potential stakeholders and was able to identify seventy-seven (Refer to Appendix "A" - List of Potential Stakeholders). The survey was publicized through UMass Dartmouth Announce and UMass Dartmouth Notification, and distributed via private email and hand written invitations. The survey received twenty-two responses representing academic departments, administrative services units, research centers/institutes, and technology services units across the university.

The survey comprised of a series of questions related to the kinds of materials being digitized, the types of digital formats created, the purpose of the digital assets, management approaches applied, employment of best practices and standards for digital assets including written policies and procedures, the capture of metadata, the type of hardware and software used, rights and privacy issues, capacity and expansion plans for the future, and backup procedures.

UMass Dartmouth Digital Assets Holdings - As illustrated by the survey, the campus is in the middle of a transition from non-digital resources to digital ones. Of the survey participants, 72% plan to convert analog materials (photographs, film and video, slides, audio tapes and documents) to digital in the next five years. As presented in the UMass Dartmouth survey digital creation is vast and includes a multitude of the MIME types some of which are specific to software applications and may be difficult to render in the future. With that said however, the majority of digital assets generated on campus are textual files including spreadsheet, page layout files, presentation files, audio, multimedia and images files as well as reusable learning objects. The survey indicates that the bulk, 36%, of digital

assets were generate for classroom instruction, 30% for research of which 7% are specific to grant projects, 18% for publication and website, and 6% for administration.

Method for Digital Capture (device, hardware, software) - The primary methods for digital capture are flatbed scanners, digital cameras including Flip cameras, video cameras, and screen capture applications such as Camtasia as well as computer generated content for research. Resources are digitized by faculty members and digital campus labs including Instructional Development, PhotoGraphics, the VRC, and labs within the separate colleges. In the case of the UMass Dartmouth Library/Archive, they employ a number of third party venders to digitize and maintain collections including the Boston Library Consortium for books and ArcaSearch for Diario de Noticias newspaper projects.

Distribution and Access – Distribution and dissemination varies from provisional methods such as CDs to third-party enterprise systems. Out of the twenty-two survey responders, 43% distribute digital content by means of CDs, DVDs, thumb drives and email; 24% share digital content through social networking sites such as Facebook, Flickr, You Tube, along with web blogs and web wikis; 17% provide access to UMass Dartmouth and personal websites; 20% employ university systems including UMass Dartmouth wikis, blogs, myCourses, OPAC and database systems (newspapers, images and multimedia content) and 11% use distribution systems that are affiliated with off-campus governmental and educational institutions. For the most part distribution and management remains isolated to individuals or departments within the colleges and University units. The results is the end-user must employ multiple application systems to retrieve digital content, leaving discovery of the universities digital resources difficult and cumbersome and in some cases impossible to locate.

Management - The methods to manage the University's digital assets is disconcerting. Of the survey responders 40% rely on file directory, file name conventions, and spreadsheets as methods to track and manage digital assets while 30% utilize some type of a digital asset management application. In most cases the latter responders managed large digital collections with tens of thousands of digital assets. These applications range from proprietary to open source discovery and digital management systems and includes, the Library's ExLibris ALMA and Digitool systems and Archives' Arc Search newspapers, Visual Resource Center LUNA system, a multi collection catalog and distribution system for digital image, multimedia, presentation and documentation for the purpose of instruction and study, Instructional Development is developing a learning object repository using an open source product called KORA that will catalog and house instructional content that can be used and shared by faculty; PhotoGraphics utilizes Canto Cumulus system to catalog and manage its digital images, video, and graphics; Admissions utilized Slide Room for CVPA portfolio submissions that

includes image and multimedia digital content, and headed up by CITS ImageNow is an imaging system that link images to records in ERP systems - specifically HCM, PS Finance, and PS Student Administration. Many of these applications are designed for a particular clientele and provide specific functionality that meets their needs. At this time, there is no single system on campus or available commercially that will address the needs of all the departments or their constituents.

Policies and Procedures- The survey indicates that only a modest number, less than 20%, of individuals and/or departments, have formal procedures to capture and maintain digital assets. Only 15% of the respondents have written policies and/or procedures. Only 1% captures administrative or technical metadata. Of those surveyed 30% suggested that they collected descriptive metadata.

Digital Metadata Standards -Very few individuals and departments capture any type of metadata. Fundamental to discoverability and longevity of a digital asset is metadata, which describes the "who, what, when, where, and how "of a particular resource. According to Anne J. Gilliland, "metadata not only identifies and describes an information object, it also documents how that object behaves, its function and use, its relationship to other information objects, and how it should be managed." Those units who do provide descriptive metadata use Photoshop Bridge, spreadsheets, or catalog systems.

Intellectual Property, Privacy and Fair Use - Survey results suggests that 87% of the digital assets are restricted by some type of copyright and privacy laws. With that said, many of these resources are vital to the campus community for use in instruction, research, and study.

Storage/Security Procedures - According to the survey expected growth in data storage is projected to triple in the next five years. The survey suggests that 20% of responders used the university Data Center to store and preserve their digital assets; the remaining 76% use standalone computers, CD/DVD's, portable hard drives, or localized servers. Of the latter 3% use the UMDAR cloud. Only 36% of participants employ daily backup, 16% backup weekly, monthly or annually, and 40% do not backup at all.

Survey Comments - We asked participants of the survey what is needed to support their efforts in management and distribution of digital assets. Many expressed the need for IT support for hardware storage and speed of content delivery. Some requested technical expertise in the management of digital assets. One responder expressed the immediate need for 10 year campus wide digital asset management plan, especially because of pressures from funding agencies to provide public access to research.

Stakeholder Interviews

The DAMPT conducted five one-on-one interviews that focus on digital assets and management methodology. During the interviews several recurring themes came to forefront. In general, almost all the interviewees expressed the need for direction and guidance in the management of digital assets and are looking to the university to develop a coordinated mechanism that would aid and support their digital projects. Some indicated the need for staff expertise and financial support to implement digital curation. Many express concerns about storage space. Some seek financial assistance with purchasing and licensing of digital assets. In addition, they anticipate a greater need of support in the following areas: video conference, visualization /virtual labs, web research and sharing. In conclusion many interviewees are willing to participate in university solutions to manage their digital assets.

Digital Asset Management Models

Like so many institutions grappling with massive amount of data, UMass Dartmouth is on the edge of new era. Only recently have universities formed or expanded departments to address these mounting issues. Below are some models that have been adopted by other universities to address digital curation and may serve as models for a UMass Dartmouth solution.

Brown University - Center for Digital Initiatives (CDI), http://dl.lib.brown.edu/**,** was formed in 2009 through the merger of the Library's Center for Digital Initiatives (CDI) with two units formerly administered by Brown's central computing group (CIS): the Scholarly Technology Group (STG) and the Women Writers Project (WWP). CDI supports digital scholarly projects and systems in collaborations with partners across campus and other institutions. CDI assists with all aspects of digital projects including planning, design, transcription and digitization of source material, interface and information design, training, documentation, and long-term support and archiving. CDI staff consults and advises on digital grant applications, new project ideas, questions about digital tools and approaches, and advice on digital issues and methods in teaching. CDI provides long-term support for digital scholarly projects and publications, including digital repository services and expertise in data standards and maintenance to ensure permanence, interoperability and scalability.

University of Minnesota (UM), http://www.lib.umn.edu/datamanagement/funding**,** established a data management website that includes links to best practices, standards and guidelines for digital curation. In addition to the website a new unit was established, the Digital Conservancy Program (DCP) administered by the University Libraries. The DCP provides stewardship, reliable long-term open access, and broad dissemination of the digital scholarly and administrative works of University of Minnesota's faculty, departments, centers and offices. Materials in the Conservancy are freely available online to the university community and to the public.

Yale Office of Digital Assets and Infrastructure (ODAI), http://odai.research.yale.edu/. provides access to Yale's digital collections. ODAI manages audio and video recordings and supports faculty and researchers with digital deposits, retrieval and preservation of their publications and research. "ODAI guides collaboration among the schools, libraries, museums and other campus units that are developing strategies and systems for digital capture and digital asset management. The ODAI Director reports directly to the provost and has parallel relationship" with the Office of Digital Dissemination. ODAI works in collaboration with Information Technology Services and the Office of Digital Dissemination to develop, deploy, and manage the new digital asset management infrastructure. In 2009, ODAI provided the framework for a collaborative digital program entitled "Cross Collection Discovery" (CCD).

Dartmouth College, http://www.dartmouth.edu/~library/mediactr/**,** supports the instruction and research needs of Dartmouth's faculty, students, staff and alumni by providing facilities, collections and expertise for researching, viewing and producing a wide range of digital and electronic media by means of its Jones Media Center (JMC) overseen by the university Library. The JMC facility provides equipment to repair, duplicate, transfer, and preserve multimedia and image materials for classroom and extracurricular projects for students and faculty. Services include loaning digital cameras, camcorders and audio recorders. Walk-in multimedia stations are available for editing, scanning and manipulating audio, video, and images for the creation of classroom and scholarly presentations. JMC staff are members of IT and Library units. Together they provide expertise, training and instruction in digital production. In addition JMC enable users to scan, print or email their microform collection, comprised of more than 400,000 items.

Michigan State University, http://www.lib.msu.edu/branches/dmc/aboutus.jsp, charged a team to conduct a survey of the campus's digital asset holdings. One of the outcomes of the endeavor was the creation of a librarian position in the Digital Information Services unit of the MSU Libraries. (11) The Digital Information Division serves as the administrative home for the Digital and Multimedia Center, a digitization and metadata creation program. The center's structure consists of an Imaging Supervisor who trains and supervises student work in a variety of duties relating to imaging and unit operations using detailed procedures and provides detailed information and assistance to library users in an automated environment; a librarian who generates metadata for past and future digital projects covering a variety of media types; a Copyright Permission Coordinator who consults with MSU faculty, staff, students and other affiliates concerning copyright permissions including searches for rights holders and brokering copyright permission agreements; a Unit Engineer whose duties include design and support of all DMC/VVL media systems and audio and video restoration and production; and a supervisor who oversees the supervision of DMC support staff and student assistants; line management of operations, collections and services. A growing program area for the Division is collaboration with faculty through the creation and curation of digital content and services to enhance learning, teaching, and research.

In April 2009, **UMass Amherst Libraries**, http://www.library.umass.edu/about-the-libraries/digital-initiatives/ , established a Digital Strategies Group to provide assistance in the development of the infrastructure needed to support digital assets. Digital Strategies Group (DSG) oversees the coordination of digital activities, including creation and management of metadata and digital content, compliance with established priorities, and guidance for digital projects. In June 2009, the Digital Strategies Group formed three additional working groups: the Metadata Working Group; the Digital Creation and Preservation Working Group and the Data Working Group. The Metadata Working Group (MWG) consists of library staff with expertise in metadata, cataloging, archives and special collections, and scholarly communication. The MWG provides direction for and coordination of metadata creation and management at the University of Massachusetts Amherst Libraries. The Digital Creation and Preservation Working Group (DCPWG) oversees the plan and implementation of the Libraries' digital preservation program. Formed in March 2010, the Data Working Group (DWG) duties were to articulate the Libraries' role in the management and curation of research data campus wide and develop a number of services to help researchers analyze and implement existing data management practices. They provide consultation on the preparation of Data Management Plans for university faculty and researchers. These groups comprise of library staff with expertise in digital projects and members from the IT staff.

Academic Research Library Report Series: New Roles for New Times, 2011 - The Academic Research Library has initiated a series of reports entitled *New Roles for New Times*. Each report will identify and delineate emerging library services and thus new roles within the library profession. The first report, released in March 2011, is *The New Roles for New Times: Digital Curation for Preservation*. It suggests that academic libraries need to reposition their services and provide curatorial guidance and expertise for digital content wherever it may be created and maintained. The report advocates that librarians can no longer expect researchers or scholars to come to them for advice and assistance; instead librarians must instead find new ways to reach them wherever they may be and provide services. As outlined below, the report makes several recommendations to libraries.

> ***"Stop waiting and start proactive engagement locally****: This should be done through relationship-building with the Office of Sponsored Programs, the Provost, the Vice President for Research, the deans and department chairs, through other grant connections, data centers, and individual professors and researchers in your institution. Faculty partnerships are a significant driver in digital curation initiatives as are policy partnerships with campus offices.*

Stake a claim in the production cycle*: Consider new services in creating multimedia and other digital assets by hosting e-publishing services (e-journals, e-books, e-conference proceedings, etc.) and by hosting and curating digital archives, datasets, digital art objects and websites, etc. The important step is to bring these services in-house and seize the moments of opportunity as they arise.*

Start retraining and repurposing staff*: The library needs to think of digital curation as a core function of the library and to invest financial and other resources into it accordingly. Seek in-depth, long-term training programs for your interested staff. Bring experts to your library. Maintain the daily conversation that your library is and will be engaging in digital curation services.*

Be a doer, not a broker, wherever possible*: There is no need to hand over our future to external groups; research libraries have adequately demonstrated that it is possible to collaborate in managing digital content and maintaining staff and technology infrastructures in an economically viable way.*

Consider digital curation collaborations*: Reach out to partners and together, pick a project or a meaningful aspect of technology infrastructure, and begin building a long-term relationship.*

Actualize collaborative engagement: *Work collaboratively and steadily with other selected institutions over time to build a sustainable cyberinfrastructure. Early experiences and trends indicate that multi institutional collaborative approaches provide a successful organizational context that is necessary to meet this large and ever-shifting challenge. Research libraries have much to gain if they behave as active players in the development and management of research cyberinfrastructure across the arts, humanities, social sciences, sciences, and engineering fields. If they embrace their emergent roles as anthropologists of research environments, co-producers and broadcasters of digital content and builders of systems for research collaboration, communication, and scholarly object management, then research libraries and their employees will successfully transform themselves into highly regarded service entities and partners in the global digital research community of the early twenty-first century."*

The models presented in this DAMPT report offer many alternatives and approaches to the management of digital assets. Yale, Brown, Dartmouth, and Michigan State University have established full time program units administered by the university library, IT departments, or a combination that is dedicated to the mission and services associated with digital curation. These units provide a multitude of services including consultation and technical support with planning, implementation and collaboration of digital projects campus wide, provide training and guidance to faculty and students

in digital capture, dissemination and preservation. On the other hand, the University of Michigan and University of Massachusetts Amherst have approached the solution through a series of workgroups to assist with the formation of a digital asset management plan. Each solution has its benefits and disadvantages and is often depended on financial and staff support from the university.

Recommendations

The DAMPT proposes the following course of actions.

1. The university should continue to expand the campus movement on Digital Asset Management started by the Dean of Library Services (Terrance Burton), the Chief Information Officer (CIO) and Associate Vice Chancellor for Information Technology (Donna Massano) and the DAMPT committee.

2. The DAMPT report be issued and released to university community after review by Dean & CIO/VC.

3. The university implements a strategic, institutional approach to digital asset management by including digital asset management as a component in the University strategic planning process.

4. The university administration build on the DAMPT committee's findings and work with the Faculty Senate to require that all faculty, departments, divisions and organizations prepare an annual digital asset report detailing substantive collections of digital assets, including those developed in house as well as those acquired or subscribed to through an outside vendor. This includes all assets created, collected, and acquired with the use of university funds or on university time.

5. Establish an implementation team with a program chair/coordinator, to create a template for the annual digital asset management report form. Through the library's website an online template along with instructions to complete the report will be disseminated to the university community. The implementation team will utilize the survey and analyze the reports to develop a comprehensive campus wide digital asset management plan that includes guidelines for metadata scheme construction, provide resources and training for working with schemas and the systems and expansion of the web site to include further resources and consultation.

6. Establish an advisory committee to create guidelines determining what types of digital assets require curation. This might include criteria such as type of material (e.g., flash-based learning objects vs. excel spreadsheets) and the size of the collection. Review policies, procedures and strategies proposed by the implementation

committee to ensure outcomes reflect the needs of the various campus stakeholders, digital asset owners and most important the campus community

7. Once the above recommendations are completed, the university may consider the establishment of permanent team(s) or unit (s) whose primary responsibility would be to support the university community with various aspects of the digital asset management in the areas discussed above. Through a proactive approach this entity(s) would provide guidance and support with the creation or management of digital assets in the following areas: serve as a key partner by assisting faculty and researchers with the management of their digital assets; guide university members through digital/data management compliance processes as mandated by funding institutions and universal scholarly and academic initiatives; provide assistance with the preparation of data and digital asset management plan; assist and support faculty with the development and creation of quality metadata needed to ensure discoverability and future interoperability; bring awareness of the universities existing digital programs and distribution systems; encourage campus wide adoption and assist with collaboration between interested parties and work with all appropriate units to ensure a comprehensive digital curation program including robust and secure cyberinfrastructure data storage and long term preservation.

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