1-1-2005

Special Bulletin #14: Strategies for Transitioning to the Age of Digital Media

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(2005) "Special Bulletin #14: Strategies for Transitioning to the Age of Digital Media," *VRA Bulletin*:Vol. 32: Iss. 1, Article 1.
Available at: https://online.vraweb.org/vrab/vol32/iss1/1

Special Bulletin #14: Strategies for Transitioning to the Age of Digital Media

Abstract
In this article, Christina Updike and Sarah Cheverton, both of James Madison University, provide support for visual resources professionals dealing with the transition from analog to digital material. This includes: the results of a survey of other institutions and what they had done, were doing, and were planning to do while moving to a digital media environment; 11 "Key Actions" that should be undertaken by VR professionals; helping faculty deal with the transition; and lessons learned during the transition initiative.

Keywords
digitization, computerization, transition, slides, digital

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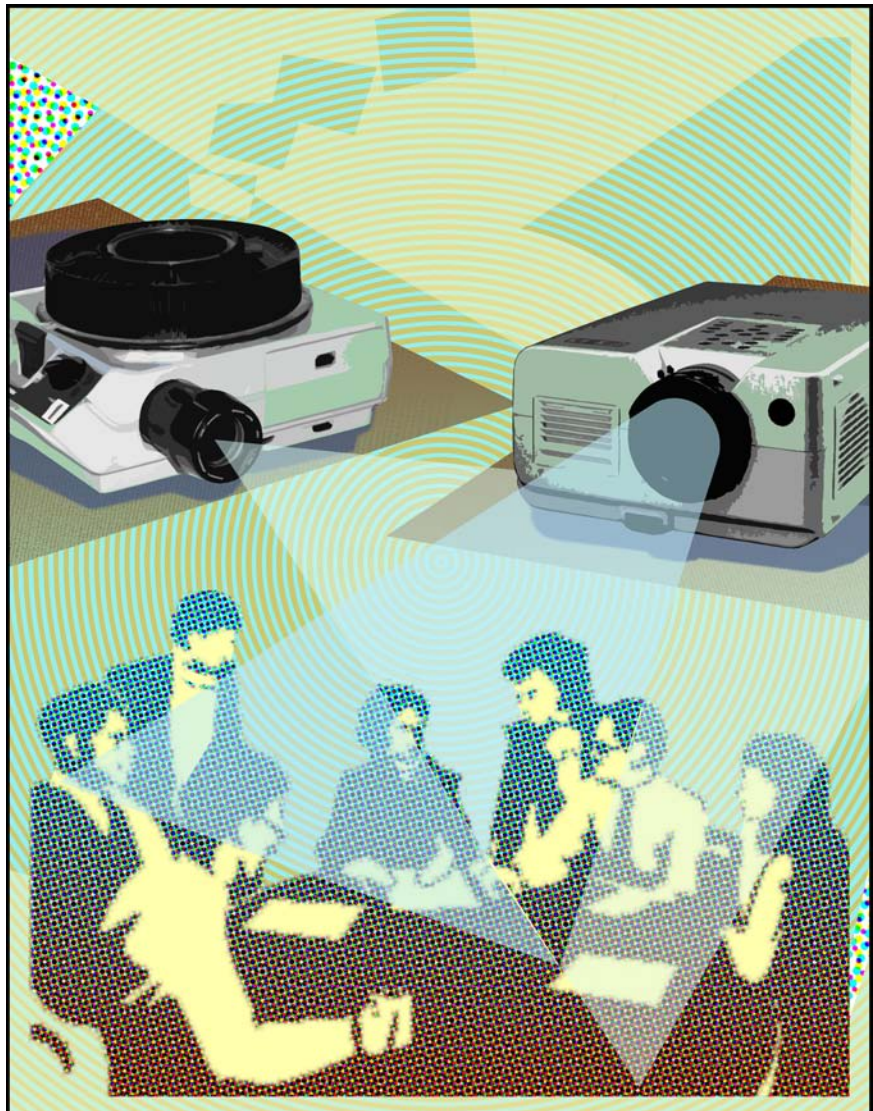
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VRA Special Bulletin

A Publication of the Visual Resources Association No. 14, 2005

STRATEGIES FOR TRANSITIONING
TO THE AGE OF DIGITAL MEDIA

Visual Resources Association Special Bulletin No. 14

Strategies for Transitioning to the Age of Digital Media

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2005

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The Visual Resources Association is a multi-disciplinary community of image management professionals working in primarily educational, cultural heritage, and commercial environments. The Association is committed to providing leadership in the visual resources field, developing and advocating standards, and offering educational tools and opportunities for the cultural community at large.

The Association offers a forum for issues of vital concern to the profession, including: preservation of and access to digital and analog images of visual culture; cataloging and classification standards and practices; integration of technology-based instruction and research; and intellectual property policy. Through collaboration, partnership, and outreach with the broader information management and educational communities, the Association actively supports the primacy of visual information in documenting and understanding humanity's shared cultural experience.

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Illustrations

Introduction

Visual Resources professionals face a variety of challenges as instructional materials transition from books and slides to digital images available through the Web. They must manage these changes and assist faculty in using new tools, while employing various strategies to make the transition as smooth and successful as possible. At the heart of a successful transition are collaborative relationships with key players from across the institution who understand that the transition to digital media requires dramatic change in the way people conduct their work and how organizational systems are managed.

In the Summer of 2003, there was virtually no organized assistance for these professionals. Consequently, Christina Updike, Visual Resources Curator at James Madison University (JMU) proposed to VRA that she and Sarah Cheverton, Manager of Faculty Development Services at JMU, develop and facilitate a workshop for VRA members. The proposal was accepted. Then, using survey data collected from institutions in Fall, 2003 and using their own experience with JMU's transition, Ms. Updike and Ms. Cheverton developed a three-hour participatory workshop conducted at the VRA Annual Conference in March, 2004. The primary purpose of the workshop was to help the participants gain a better understanding of what is involved in the transition process, how their own institution and other institutions are managing it, and how their institution could be managing it more effectively.

Ms. Updike and Ms. Cheverton have facilitated the workshop for three different VRA-related audiences. The purpose of this Special Bulletin is to share with a larger group of people the information, worksheets and reference materials distributed through these events. The electronic files for all materials are also available on the enclosed compact disc. These files may be customized to meet your institution's unique circumstances.

Transition to Digital Media at JMU

Getting Started

Ms. Updike and Ms. Cheverton have been involved in the transition from traditional media to digital media for several years at James Madison University. A variety of strategic actions, such as creating processes for slide digitization, facilitating faculty skill development and creating a customized digital image system, has been undertaken. Each of these actions has involved collaboration among many individuals and departments across the University.

Early in 1997 discussions were held at departmental and art history meetings regarding the School of Art and Art History's role in the new General Education program at JMU. The School would shift from teaching six-eight sections of Survey of Art History courses per semester to instructing a total of twenty-four course sections in the next academic year. In addition, the Department adopted a new Survey textbook, which required many new images for teaching and student study.

Limited financial and staffing resources made the task of supplying the necessary slides daunting. Therefore, as Visual Resources Curator, Ms. Updike needed to find an alternative way to provide high-quality images for instruction and student study. Because the School had access to two technology classrooms with CD-ROM drives and Internet access, it was determined that some type of digital technology would provide the best solution. The School Director and the Art History faculty supported the idea and the initiative began.

First, to solve the funding issue, the Curator, the Art History area coordinator and the Dean of General Education (who is an art historian) applied for an internal technology grant with the Center for Instructional Technology (CIT). The goal of the grant proposal was to create an online digital image database, now known as the Madison Digital Image Database or MDID. The MDID would be designed with web-based components for faculty to create slideshows for classroom instruction and a viewer for students to study the packaged

slideshows. Separate image viewer software would be designed for classroom projection. In December of 1997, the CIT awarded a $45,000 grant for development of this system.

Upon receiving the grant, the Curator invited Art History faculty to select the initial source content for the database. The sources included 2,000 35mm slides from the faculty's personal collections, public domain images, and the fine arts slide collection. All 2000 slides would be scanned and the resulting digital images would be uploaded to the MDID. Copyright issues, security and data standards were considered. The faculty also identified search criteria and established field names based on the VRA Core 2.0 for use in the database application. (MDID2, the latest version of the software system, allows for a flexible data structure with cross collection searching using Dublin Core. JMU updated its data structure to VRA Core 3.0.)

Simultaneously, the grant team began to work with the CIT MDID project staff. The members of the project staff included the CIT Director, the Senior Programmer, the Instructional Technologist, the Graphic Designer and the Database Designer. Students were recruited to assist in the slide scanning process. Many meetings were held to determine the characteristics of the system and a timeline for the various working groups to complete the project. Training, documentation, copyright and security were also coordinated with CIT staff members.

In Fall of 1998, faculty began teaching with the new system. For the first three years of use, faculty and student users were surveyed each semester to gather data regarding teaching, learning, and redesign feedback. Modifications were made to the system and, as indicated by additional survey data, were well received.

Mid-Way: More Collaboration Needed

Mid-way into the project, the team discovered that manually scanning and editing 2,000 slides was beyond the scope of the equipment and student staffing. Consequently, the task was outsourced to a professional vendor. In addition, the team decided to pursue a funding source outside of art history for the purchase of the Art Museum Image Consortium (AMICO), a new licensed image database. Because AMICO offered a very large and somewhat costly collection, the team approached the Libraries and Educational Technologies Division for the funding.

To start the process, the Art Liaison Librarian, the Curator's longtime friend and colleague, helped arrange a meeting with the Dean of Libraries, the chair of the Intellectual Properties Committee and the University lawyer. In this meeting, the Curator campaigned that digital image collection development by the University is the best acquisition method because copyright permission is attached. The Curator's request was approved in spring 2000, and she joined the library acquisition team to acquire the licensed databases for the University. Purchasing high-resolution images with data for inclusion in the MDID system was part of the AMICO license agreement. The library renewed the license for subsequent years until AMICO ceased operations on June 30, 2005. (A subset of the images is still available from several distributors.)

With the added digital resources, a demand for more wired classrooms arose. To meet this demand, it was important to obtain conceptual and financial support from the Media Resources Department. To obtain this support, teams of art historians, CIT staff and the Visual Resources Curator demonstrated the effectiveness of MDID to Deans, Vice Presidents, the Board of Visitors, the JMU President and Media Resources staff to emphasize the need for more and better-equipped technology classrooms. The Curator's strong working relationship with the Media Resources staff helped in establishing a confidence in the system; as a result, funding came from Media Resources for equipment upgrades and two additional technology classrooms in the Art building.

The project team also determined that inclusion of the MDID software on all technology classroom computer images would be the most efficient and effective way for instructors to use it. It would also help to build faculty confidence in the reliability of the new technology. To this end, the team coordinated with the Information Technology office which is responsible for creating and maintaining these images. The MDID software engineer communicated the need for caching images and coordinating the MDID software with computer back-ups and clean-up procedures on the technology classroom computers. This was a vital collaboration to ensure effective use of the teaching system.

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Finally, it became necessary to collaborate with the University lawyer and the academic deans. After seeing MDID presentations at numerous regional and national conferences, outside administrators and instructional technology personnel had contacted JMU for advice and expressed interest in obtaining the system. Those requests led to questions about who owned the intellectual property of the MDID and who else might be able to license it. Eventually, the University lawyer and academic deans wrote a written IP Disclosure Statement and License which has allowed institutions of all kinds to download, install and use the MDID software free of charge since October 2001.

Since that time, the world of image delivery and display has dramatically changed, especially since Kodak's decision in 2004 to halt production of analog slide projectors. The prevalence of digital media ---or at least the desire for it--- has grown rapidly across universities around the world, including JMU.

<u>Lessons Learned</u>

The JMU project leaders learned a number of lessons through the transition initiative.

- Education about technology and its integration into the teaching and learning process is critical for all project stakeholders. There is a technology learning curve for faculty and a content learning curve for technology developers. For example, after Art and Art History faculty articulated clearly how art historians use images in teaching, the MDID programmers were able to design an effective system.
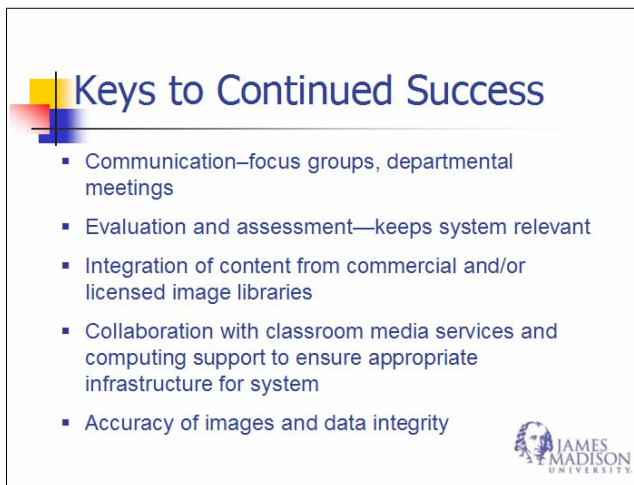
Lessons Learned
- There is a technology learning curve for faculty
- There is a content learning curve for technology developers
- Technical infrastructure for teaching and learning is critical
- Instructional design is an increasingly collaborative process, not only with faculty, which is inherent, but with technology organizations of the institution

JAMES MADISON UNIVERSITY

- Instructional design is an increasingly collaborative process, not only with faculty, but with technology organizations of the institution. With the MDID, involvement of tech classroom managers and media specialists came later. Including them at the onset of the project would have provided a smoother road for ongoing development. For example, including a media specialist in the early phase of the project may have prevented the frantic search for higher quality digital projectors during the first semester.

- Successful instructional design is achieved first and foremost by communication with all project participants. It is a dynamic process that requires regular evaluation of objectives and redesign of the instructional product. For example, on a regular basis, focus group meetings are held with faculty users to understand their

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curricular needs and to prioritize content integration. In addition, the Curator and others continue to keep University administrators informed of the system's success so that it is seen as worth the investment of time and resources.

- Evaluation and assessment help to keep the system relevant. With grant funding from the Andrew Mellon Foundation, the system was revised and further developed based on input from all system stakeholders. In Spring, 2004 MDID2 was beta tested on the JMU campus. After a successful test period, MDID2 was then released as open source software in late Summer, 2004.

Keys to Continued Success

- Communication–focus groups, departmental meetings
- Evaluation and assessment—keeps system relevant
- Integration of content from commercial and/or licensed image libraries
- Collaboration with classroom media services and computing support to ensure appropriate infrastructure for system
- Accuracy of images and data integrity

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- Database managers should develop a digital collection carefully and efficiently. JMU's MDID content is based on faculty suggestions and copyright considerations. Where possible, the integration of content from licensed databases, commercial companies, and non-profit image libraries such as Allan Kohl's Art Images for College Teaching (AICT) project is utilized. New content will come from other sources as MDID2 supports other collections besides art and art history.

- Continued collaboration must occur with classroom media services and computing support to ensure appropriate infrastructure for the system.

- Image quality and data integrity are crucial for effective instruction and for buy-in by those who use the system.

Professional Development

It is important for project leaders to stay involved in professional development activities. Attendance and participation in departmental meetings give leaders the opportunity to learn collaboration techniques and to have a respected voice in the department on decisions regarding visual resources. Taking professional status surveys, reading journal articles about best practices in the field and attending and participating in conferences is also helpful. Keeping current with listserv discussions and publications as well as participating in seminars and workshops on pertinent topics builds the knowledge and skills vital to meeting the demands and challenges of an ever-changing field.

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The Survey

In the Fall of 2003, Ms. Updike and Ms. Cheverton conducted a survey of other institutions to get a snapshot of what they had done, were doing and were planning to do while moving to a digital media environment. Problems and concerns were also identified.

Survey Structure

Because faculty and curators have different responsibilities related to their use of media, three versions of the survey were provided: one for curators; one for instructional faculty; and one for respondents who were both curators and instructional faculty. Questions for the instructional faculty and curators were slightly different. (See Appendix A for a copy of each survey.)

The survey was made available online and email notifications were sent to subscribers of the VRA and MDID (Madison Digital Image Database) listservs. Recipients of this email were asked to complete the survey and to forward the message to faculty and curators at their institutions.

Results

Survey results were tabulated and reviewed using Version 11.0 of the Statistical Package for the Social Sciences (SPSS). A tabular summary of quantitative results is available in Appendix B; graphical summaries are available in Appendix I (Workshop PowerPoint Slides).

Institutional Profiles
A total of 132 people completed the survey. Of that total, 98 were curators, 12 were curators-instructional faculty and 22 were instructional faculty. In terms of student enrollment, small, medium and large institutions were fairly represented: one-third reported a student enrollment of up to 5,000 (small); 20% reported enrollments between 5,000 and 15,000 (medium); 32% reported enrollments of more than 15,000 (large). A small number (6%) were institutions that do not enroll students. Faculty sizes corresponded to institutional sizes: 25% had up to 200 faculty; 25% had 200-600 faculty; 21% had 600-1500 faculty; 23% had more than 1500 faculty; 6% had no faculty.

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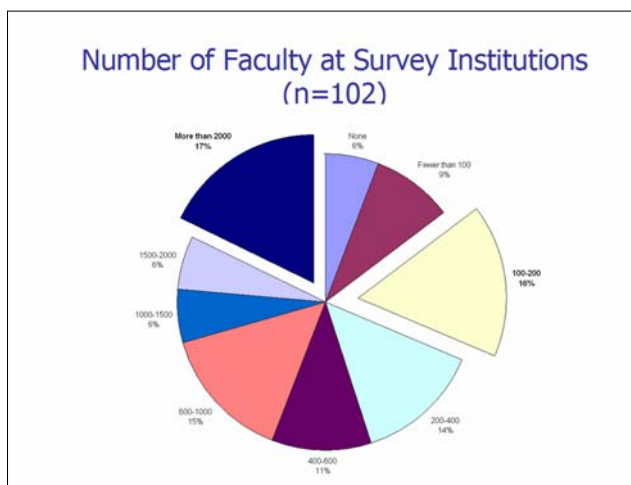
One hundred ten of the survey respondents were curators or curators-instructional faculty. Of that number, 40% had been employed in their current position for more than 10 years; 25% had been employed 2 years or less; 35% had been employed between 5 and 10 years.

Image Sources
Reliable sources for high-quality digital images is a critical component of a successful transition to digital media. Therefore, curators were asked to identify sources used by their institutions to acquire images and what licensed digital image resources were used. Faculty also were asked to identify how they acquire images for the classroom.

According to the curators, 90% of the institutions were using images scanned by the Art and Art History or similar department; 72% were using personally scanned images. Other sources included free resources (67%), commercial resources (48%) and subscriptions (37%). Sources for licensed images included Grove Dictionary of Art (43%), AMICO (33%), RLG Cultural Materials (12%) and Corbis (1%). Seventeen percent of the institutions used other sources for licensed images.
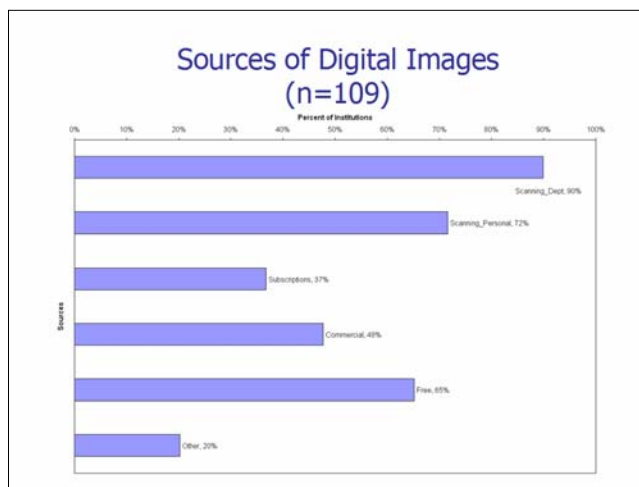
Faculty used free resources (71%), personal libraries (62%), visual library resources (50%), and online subscriptions (21%). Twenty-nine percent used other resources.

Preparation and Delivery of Digital Images
The Curators were asked to identify how digital images are managed in their institutions. Among other questions, respondents were asked to identify who in their institutions are responsible for scanning, image preparation, cataloging, database management, delivery system management, training, budget management, politics and license management.

Eighty percent of the responding institutions reported that the visual resources curator is responsible for scanning images and cataloging the images. Seventy-three percent reported that the curator is responsible for image preparation. And sixty-one percent reported that the curator is responsible for training.

A majority of institutions reported that IT (Information Technology) manages databases and delivery systems and library administration manages licenses. A large number of institutions reported that library administrators also contribute to the politics involved in

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managing digital images. Department heads and curators most often have budget responsibility.

Survey respondents also were asked to identify what image delivery tools were used at their institutions. Results show that while the use of internet-based delivery systems had grown, the most commonly used delivery tool in Fall of 2003 was Microsoft PowerPoint: 67% of the institutions still used PowerPoint to deliver images. This suggests that some images were not yet linked to an online managed database, some presenters were still reluctant to use internet-based systems, and/or internet-based systems were not yet available in all classrooms or lecture halls.

PowerPoint was not, however, used exclusive to other systems. Sixty-three percent of the participating institutions used secured websites; 59% used an online learning system (e.g., Blackboard); 46% used an image database system (e.g., Madison Digital Image Database or Luna's Insight); and 16% used an unsecured website.

Finally, because technology classrooms are a key component to transitioning to digital media, curators were asked the following questions: (1) How many classrooms at your institution are equipped to project digital images?; (2) How many equipped classrooms are in your department?; and (3) Do you expect that in the future more of your institution's classrooms will be equipped for projecting digital images? The majority of respondents (67%) reported zero to one technology classroom present at their institutions. However, almost everyone (98%) reported more tech classrooms were in the works or were being planned for.

Use of Digital Images
A large majority (88%) of faculty who participated in the survey were using digital images at the time they completed the survey. Sixty percent of those faculty reported that approximately 75% of all the images they were using were digital (versus slides, prints, etc.). Only 24% of the faculty reported that same level of digital image use two years prior to the time of the survey. The faculty's most frequent use of digital images was for instruction (75% of the faculty reported using digital images for instruction) followed by research (50% reported using images for research).

The curators in the study also reported that the most common institutional use of digital images is instruction (86% of the curators reported that their institutions use digital images for student instruction). Student instruction was followed by Faculty Research (59%), Marketing (42%) and Faculty Instruction (33%).

Critical Actions Towards Transition
The survey included two questions related to actions: (1) What are the three most important actions taken at your institution to help make the incorporation of digital media a success?; and (2) What actions need to be taken in the future to make the incorporation of digital media a success at your institution (or continue its success)? Who needs to take these actions? Both questions were followed by three multi-line text boxes with a

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"starter" statement, e.g., "Actions that need to be taken and the people who need to take them include............."

The intent of the first question was to determine what actions had been taken to date at the participating institutions. The intent of the second question was to determine what future actions the respondents perceived as critical to a successful transition to digital media. However, the starter statement in each text box for the first question on the curator survey was vague ("The first critical action is.....") and may have led respondents to describe actions that needed to be taken in the future instead of what had already been achieved. Because the curators comprised the majority of respondents to these questions, the results for both questions were combined into one list and considered as actions that are deemed critical by institutions for a successful transition to digital media (i.e., they were no longer time-linked).

The actions deemed critical for a successful transition fell into three main categories: Infrastructure (Hardware, Systems, Content); Relationships (Collaboration, Support, Funding); and Personnel Development (Training, Personal Support). Summaries of responses for each category are listed below. In addition, the suggested individuals for taking these actions are listed.

Table 1
Critical Actions

Category	Specific Examples	Who Should Take Actions
Infrastructure (Hardware, Systems, Content)	• Hardware and software decisions and purchases • Purchase/find image management delivery system that is easy/useful • Purchase/download and implement a database with delivery system • Obtain more high-quality images by subscription and by license for fair use/build a large library of images • Dedicate specific classrooms for instructional use of digital media • Build tech classrooms • Campus-wide support and access to images/centralization of subscription services • "Tackle" copyright issues	• Upper Administration • Departmental Administration • Information Technology • Library Administration
Relationships (Collaboration, Technical Support, Funding)	• Build administrative and technical support/commitment • Obtain administration's decision to use technology and make long-term	• Curator/Project Manager • Departmental Administration

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Category	Specific Examples	Who Should Take Actions
	commitment/institutional commitment • Develop plan and establish implementation team • Show how using technology is worth the investment of time and resources • Find support staff for digital management system (hire, train and fund) • Develop process for acquiring digital images/obtain funding from administration and campus units, e.g., Library and Information Technology/cross-campus support for collection development • Funding • Secure ongoing financial support/end reliance on grant funding	• Library Administration and Staff • Instructional Technology Unit • Human Resources
Personnel Development (Training, Personal Support)	• Training for system administrators and end users • Help faculty make transition/get faculty buy-in/get faculty to use tools • Conduct assessments and collect feedback • Help VR Curators become flexible and comfortable with change/support for their changing and expanding role • Education and encouragement to end users • Help people overcome fear of change/provide good training	• Instructional Technology Unit • Curator • Faculty (participate in professional development)

Faculty Concerns

Faculty survey respondents were asked, "What are your greatest concerns about the use of digital media in your work?" Responses indicate that concerns were related to images, equipment and software, and institutional support. Categories and specific concerns in each are listed in Table 2. See Appendix C for a complete list of faculty concerns.

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Table 2
Faculty Concerns

Category of Concern	Specific Concerns
Images	• Quality • Availability • Durability of file formats • Copyright issues • Archival issues
Equipment and Software	• Reliability • Technical problems and support • Complexity • Limitations • Rapid changes • Cross-platform compatibility • Availability of equipped classrooms
Institutional Support	• Budget support • Training • Staffing

Faculty Attitudes
Faculty survey respondents were asked two questions related to attitudes towards digital media: (1) Thinking back two years ago, how would you describe your attitude then about the use of digital media?; and (2) How would you describe your current attitude about the use of digital media?

"Past attitudes" ranged from reluctant and skeptical to enthusiastic and excited. For example, one respondent stated that she/he "wanted no part of it" while another "couldn't wait for the equipment to be updated so that I could use digital images." Those who had been reluctant and skeptical expressed concerns about image quality and the usability of the technology. One stated that she/he simply tried to "ignore it because I didn't have time to deal with it." Those who had been positive stated they knew that digital images were "the wave of the future" and that they needed to "prepare for the eventual total switch and make the best use of it." One stated, "I knew that the increased accessibility of the material would lead to greater student engagement."

"Current attitudes" about digital media were, overall, much more positive and enthusiastic than "past attitudes." Descriptive words and phrases included "awesome," "even more enthusiastic," "extremely positive," "indispensable" and "the only way to go for instructional purposes." One respondent stated that she/he was "enthusiastically embracing it as the technology of the future." Another was "impressed by improvements in the quality of images" and was glad for the "convenience of scanning images vs. preparing slide replication." A third stated, "We've made more advances in the last 6 months than in the last 10 years." Only a few had maintained a less positive attitude and some of those respondents expressed optimism and excitement despite their continued

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concerns about image quality, accessibility of the technology and uncertainty of the future. As one respondent stated, "I describe my current attitude about digital media as excited, concerned, watchful. It is a bit unsettling to be in the midst of the shift and not know where it is going or how."

Strategic Actions

Based on JMU's experience with transition to digital media and the results of the 2003 survey, Ms. Updike and Ms. Cheverton developed a list of eleven key actions for transitioning to digital media. They described specific needs and issues addressed by each key action, and identified eight key players who should be involved with each of the key actions. Through a workshop activity facilitated in each workshop event, they also collected lists of specific concerns (Key Player Concerns) about the transition that key players may have.

Each of the eleven key actions is briefly described below. The key players and their roles within these actions are also described. A summary table of the eleven key actions and a sample of Key Player Concerns is included at the end of this section.

The 11 Key Actions

1. Build Collaborative Relationships
A collaborative relationship involves two or more people or groups working together towards a common goal. A transition to digital media requires the identification and participation of many organizational departments and individuals so that collaborative relationships can be developed. Answers to the following questions may help to identify key players for collaboration: What can I accomplish without the involvement of others? What tasks (e.g., secure funding, digitize images, deliver images to users) require the involvement of others? Who should I keep informed?

2. Share Vision
In order for the project manager to gain buy-in and support for the transition to digital media, the vision for what digital media is and how it can benefit the organization and its constituents must be communicated to the key players. It is important to describe and, if possible, demonstrate the options and discuss how these options may be better than the current option.

3. Secure Funding
Transitioning to digital media is expensive; funds must be secured for outsourced scanning and/or image preparation, salaries, hardware, software, licensing subscription databases and much more. Therefore, the topic of securing funding must be in the forefront of the project leader's mind from the very beginning. The project leader should formulate and constantly monitor budgets with attention to deadlines. She or he should identify potential sources of funding, e.g., the general institutional budget, special

budgets, in-kind contributions, grants, national organizations and the institution's library or other departments. Libraries are a particularly good resource for image database subscriptions, such as ARTstor. One-time and ongoing expenses must be considered.

4. Research and Plan

Productive research and thorough planning will contribute towards a successful transition to digital media and help in leading key players towards project buy-in. The project team must determine how faculty currently use images in their instruction and in what ways they would like to use images if different technologies existed. They must also determine how quickly and at what volume digital images need to be made available for use. The student perspective should also be considered. Pilot studies are immensely helpful in generating this type of data which is necessary to determine specifications for equipment, room layout, data management software and image quality. The project team should also research various funding options as well (see above).

5. Obtain Images and Prepare for Processing

The project team must consider a number of questions related to resources and workflow before images are obtained and processed. It is particularly important to answer these questions when more than one department is involved in the process; effective communication about the process will help to prevent unnecessary rework and other problems. Questions to consider include: How much and what kind of resources (financial, human, material) are available? Will images be obtained through subscription, in-house preparation, out-sourced preparation or any combination of the three? What are the standards for image capture, cataloging and metadata? When and how will processing and cataloging be accomplished? Who verifies that the catalog information and image metadata is accurate?

6. Use Institutional Computing Infrastructure

An effective digital image management system requires a substantial and flexible computer network. Therefore, the institution's computing department is a critical key player with whom the project team should collaborate closely. Together, the project team and the computing department must determine if the institution's computer infrastructure will support a digital image management system. They should examine the type of network platforms, availability of computing storage space, availability of server administrators and technicians, computing security policies, etc.

7. Provide Image Delivery Tools (Software/System)

To select or create the appropriate image delivery system, the project team should identify teaching and learning goals, users and their needs, the number of course sections that will potentially use the system and the characteristics of the institution's computing infrastructure. In addition, the team should determine the breadth and sophistication of functionality needed. For example, will students be expected to have online access to the images for study? Should the system support faculty's ability to search, retrieve and group images? What features of classroom presentation software will meet user needs?

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8. Obtain Equipment

The institution's decisions regarding image acquisition and processing, sophistication and breadth of functionality, etc. will determine what type of equipment is needed to support a digital image management and delivery system. Obviously, the computer infrastructure will require a variety of hardware including servers, high-speed computers and high-resolution projection equipment in the classrooms. The institution may also need slide scanners, digital cameras, copy stands and a scanning/digitizing work station in the visual resources department or other location. It is critical that the key players agree what department is responsible for managing, maintaining and funding the equipment. Establishing workflow policies will facilitate this step in the project.

9. Recruit Expertise

The project team will need the involvement of technical and subject matter experts through every stage of the transition process. Some experts serve as consultants while others are skilled technicians. Consulting experts assist in the early stages of the process where decisions regarding equipment, systems and content must be made. Later stages of the process require experts in scanning, image editing and management, database management, equipment setup and maintenance, instructional design and organizational development. The project leader will find it easier to recruit expertise from around the institution if strong collaborative relationships have been fostered throughout the transition process.

10. Establish Policy and Procedure

Established policies and procedures are important in protecting the institution from litigation, the systems from destruction and tampering and the project itself from confusion, duplication of effort and inconsistent results. Policies and procedures related to security (e.g., different levels of permission) will help to enforce compliance with copyright law and control the number of people who have access to images and systems. The institution's legal officers or representatives should be involved in this aspect of the transition project.

11. Provide Faculty/Staff/Student Training

Consistent instruction for the various end user groups (faculty, staff and students) will also contribute to an effective and efficient digital image system. Faculty must understand how to create presentations and be made aware of copyright issues. Staff must understand their role in managing the system and learn the necessary skills to carry out that role. Students must learn how to access the system and make the best use of its study aids. The project team must recruit instructors who are subject matter experts and effective communicators and teachers.

Key Players

The successful transition to digital media requires the involvement of individuals who collectively serve various functions in key positions across the institution. In addition to the visual resources coordinator, the project should involve individuals from the

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department administration, the institution's library, information technology, computing security, the department or departments responsible for classroom technology and instructional technology, the department responsible for legal direction, and possibly others. The structure of the institution will obviously determine who is considered a key player.

The following departments, groups and individuals were considered key players in JMU's transition to digital media. With the visual resources coordinator at the helm, these groups and individuals worked as a team to determine what and how things needed to be accomplished. While some of these specific groups and positions may not exist at your institution, it is important to involve whoever performs the associated functions.

Department Administration
The most important task of the department administration is to visibly support the transition project. Administrators show support by sharing the vision with upper administration, department faculty and other key positions within the organization. They also show support by providing or helping the project leader to secure funding. This usually involves an understanding of and some maneuvering through the political landscape of the institution. At JMU, the Director of the School of Art and Art History and the Art History Area coordinator served these functions.

Visual Resources/Museum Curator
The visual resources or museum curator often shoulders the most responsibility for leading the transition effort. She or he must, along with the department administration, share the vision of transition with as many key people as possible. In addition, she or he must coordinate a variety of transitional activities and build the team of key players who will work together to make the transition a reality.

The visual resources or museum curator will likely be responsible for some technical aspects of the transition as well. Specifically, she or he will prepare or manage the preparation of images, research and verify metadata and enter catalog information. She or he may also be responsible for training faculty and staff how to perform these tasks and/or how to use image management systems.

The Visual Resources Curator in the School of Art and Art History has taken the primary leadership role in the transition effort at JMU.

Media Resources
A media resources department facilitates the setup and maintenance of digital media equipment (e.g., projectors). Because this department is involved in the purchase of classroom technology, they should be involved in the early stages of the transition effort. At JMU, the Director of Media Resources, the Media Tech Supervisor and the Technology Classroom Support Technician have been very involved in the transition effort since the first semester of instruction with digital media. In retrospect, the Visual Resources Curator learned that the Media Resources Department should have been

involved from the very beginning of the effort so that adequate projectors had been purchased and installed well before the pilot semester.

Library Administration
The institution's library is usually the logical entity to hold subscriptions to digital image databases. Ideally, the library financially supports these databases as well. The Dean of Libraries and Educational Technologies, the Acquisitions Librarian, the Digital Services Librarian and the Systems Librarian have all been key players in the transition effort at JMU.

Information Technology/Security Engineering
A reliable and ubiquitous digital image storage and delivery system must live within a robust computing network; the network infrastructure must be capable of delivering and storing very large-sized images. In most institutions, the storage and delivery system must also be secured and accessible by only a defined group of users.

This goal is achievable with the involvement and support of the institution's network security engineer and the information technology department in general. At JMU, the Security Engineer in Network Engineering and the Lab Administrator in Computing Support have provided significant support in the transition effort.

Instructional Technology Center
The instructional technology department of an institution may serve a variety of functions in the transition effort. First, because associated staff are often versed in the language of instruction, media manipulation and computing, they can be an effective liaison between the visual resources curator and the network and security engineering departments and the media resources department. Second, they may be involved in the design and development of image delivery tools. Third, they may help the visual resources or museum curator in training faculty and others in the use of the digital media system.

At JMU, the Director of the Center for Instructional Technology, the Faculty Development Manager, the Instructional Technologist, the Software Engineer and the Systems Engineer have all been significantly involved in the design and development of an image delivery system, in training faculty how to use it, and in serving as liaison between the visual resources curator and network engineering and support and the media resources department.

Legal Officers
To prevent legal complications due to unintended copyright violations, the transition team should always include or seek the advice of legal officers. Policies and procedures should be developed and documented in accordance with this advice.

At JMU, the transition team seeks the advice of the Policy and Legal Affairs Advisor (university lawyer), the chairperson of the Intellectual Property Committee and the Director of Technology Transfer.

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Instructional Faculty

Instructional faculty are often overlooked as key players in the transition effort. Faculty can inform the design of image delivery systems by describing ways in which they use digital images. They can provide useful feedback in pilot projects (as can students). And, of course, they are involved in selecting images that will be available in the image database.

A JMU, the most involved faculty have been from the School of Art and Art History. However, as the storage and delivery system becomes more adaptable to a wider scope of academic areas, additional faculty will be involved in the evaluation and delivery processes.

Key Action Table

The 11 Key Actions and Key Players associated with those actions are listed in Table 3. As indicated in the table, it is recommended that some key players be involved in almost all key actions while others are less involved. However, it is critical that *all* key players be involved in building collaborative relationships with other key players so that the process of problem-solving involves a variety of perspectives. See Appendix D for a Key Actions Worksheet where key players from your institution can be identified by name.

Table 3
Key Action Table

Key Actions	Specific Needs/Issues	Suggested Key Players
Build Collaborative Relationships	- Identification of key players - Key players' possible concerns - Collaborative relationships may address concerns - Individual and small group meetings with key players - Communication/keeping people informed	All
Share Vision	- Clearly stated need to use digital media - Level of institution's familiarity with quality of digital images and delivery options	- Department Administration - Faculty

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Key Actions	Specific Needs/Issues	Suggested Key Players
Secure Funding	• In-kind contributions • Funds for outsourced scanning and image prep • Salaries for new positions • Funds for equipment (hardware and software) • Grants (e.g., Equipment Trust Fund)	• Visual Resource Department • Instructional Technology Department • Library
Research and Plan	• Faculty needs • Pilot project • Faculty/student survey • Most appropriate digital databases and technology for institution	• Faculty • Department Administration • Institution Administration
Obtain Images and Process for Image Preparation	• High resolution and good quality • Commercial licenses • Catalog/Metadata	• Visual Resource Curator • Library Administration
Use Institutional Computing Infrastructure	• Campus computer network • High-speed network lines • Caching/Storage space	• Information Technology • Security Engineering
Provide Image Delivery Tools (Software/System)	• Database system (preferred) • Web Sites • Classroom presentation tools	• Instructional Technologists
Obtain Equipment	• "Smart Classrooms" (Computer-Projector systems) • High-speed computers • Scanners (internal or out-sourced) • Digital cameras • Copy stands	• Classroom Technologists/Media Resources
Recruit Expertise	• Scanning • Image management • Equipment setup and maintenance • Database management • Instructional design	• Visual Resources Curator • Media Resources or Classroom Technologists • Instructional Technologists • Information Technology

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Key Actions	Specific Needs/Issues	Suggested Key Players
	• Change management	(IT) • Department Administration
Establish Policy and Procedure	• Copyright issues • Image management • System security	• Legal Officers • Visual Resources Curator • Security Engineers
Provide Faculty/Staff/Student Development (Training)	• Expertise • Schedule • Space • Training documentation • Ongoing support	• Visual Resources Curator • Instructional Technologist

Key Player Concerns

Depending on their role in the institution and in the transition process, key players will have specific concerns about the transition to digital media. For example, the Information Technology staff will need to know what kind of platform a particular delivery system would need in order to operate. Library Administrators may need to know if the image collections will be integrated with the existing Library collections and how much cataloging work will be required.

It is recommended that key players identify and stay aware of their own and others' concerns to minimize any negative consequences of changes that occur and to meet as many needs of the various players as possible. The project leader (often the Visual Resources Curator) is primarily responsible for leading this communication process.

Each of the three groups who have participated in the Transitions workshop were asked to create a list of questions that each key player or group of key players may have in regard to the use of digital media. They were also asked to propose answers to these questions so that the group could leave with a guide for fielding similar questions they may face at their own institutions. A sample of their work is listed in Table 4. The complete list of questions and answers from these groups is available in Appendix E. See Appendix F for a blank Key Player Concerns worksheet that can be used in any institution.

Table 4
Sample of Key Player Concerns and Possible Solutions

Key Player	Questions/Concerns	Possible Solutions
Department Administration	1. How much will it cost?	1. Likely to be more expensive than slides to develop; some costs for maintaining digital collection can be shared.
	2. Do I have to use it?	2. Eventually, you will learn to <u>LOVE</u> it.
	3. Training issues?	3. Learning curve for faculty (for MDID) is low (15-30 minutes per person) - Then PRACTICE.
	4. Are you going to throw away the slides?	4. We envision a lengthy transition period (relative to size of slide collection / faculty).
Visual Resources/Museum Curator	1. How do I get faculty on board?	1. Students request it; one willing face to lead.
	2. Where will I get images?	2. Licensing, in-house scan, outsource, faculty personal collections.
	3. How will images be used?	3. Instruction, review/study, publications.
	4. Who will train users?	4. VR Curator; University training.
Media Resources	1. How many classrooms, students, faculty are needed/supported?	1. 3-300 seat auditoriums, 12 "smart classrooms" @ 30 each; 200 faculty, 2500 students – undergrad.
	2. What equipment is required for the types of teaching within the classroom?	2a. LCD projectors, Internet access, computers, quality screens, slide projectors, etc. 2b. Document camera.
	3. Where is the funding coming from?	3. Technology grant, administrative funding.
	4. How much will it cost?	4. Shared expense between library, computing, dept, media center + University (campus wide community).
Library Administration	1. Who will use images/image database	1. Art history, art, architecture, drama, religion, history, American Studies, museum, languages.
	2. How many users might there be?	2. Potentially 1000 +.
	3. How much $$$?	3. Depends on the package.

Key Player	Questions/Concerns	Possible Solutions
Information Technology/Security Engineering	1. What kind of image delivery are you expecting in the classroom?	1. High quality images via the Internet, and user interface.
	2. Do you expect to have images delivered to users outside of the university community?	2. Yes, with authorized password protection.
	3. Does everyone have the same level of permission? (Password protection)	3. No. Hierarchy of responsibility. Administrator and Curator: read/write access; user: read only. Password w/ user id.
Instructional Technology Center	1. What type(s) of software?	1. Commercial package or in-house developed. *(Authors' note: a number of open source software packages are also available.)*
	2. How many users?	2. Thousands.
	3. Audience?	3a. Campus community? General Public? 3b. At large faculty only? Students?
	4. How will images be used?	4. Teaching, research, study sets or web pages.
Legal Officers	1. Who owns the copyright to this stuff?	1a. It depends. 1b. Educational Use Only, Fair Use Clause.
	2. What's involved in getting permission?	2. Have to know answer to 1st question.
	3. How to protect ourselves from legal action?	3a. Restrict access to images without permission. 3b. Precedent and Practice.
	4. What have our efforts been to secure copyright or permissions?	4. Vendor purchases, deed or gift, location photography by "friends."
Instructional Faculty	1. What happens if equipment breaks?	1. Specify who is responsible for what.
	2. What if I need an image before class?	2. Teach faculty, can't add on fly. *(Authors' note: some software packages allow "on-the-fly" additions.)*
	3. How do I learn to do this?	3. Organize workshop, push them to the right people.
	4. Will the quality be good?	4. As good as the source.

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Helping Faculty Cope with Transition

In the Fall 2003 survey, faculty were asked to complete the sentence, "My greatest concerns about digital media are……" In response, faculty expressed a variety of concerns about equipment, system reliability and access, labor and time requirements, funding and the quality of the images themselves. Comments like the following were common:

"I am far too old to keep up with the technology."

"If a projector bulb fails or the server is down, that particular class session is pretty much over."

"I'm concerned about mastering the new technology, about obtaining enough images to teach with, about quality of reproduction."

Successfully transitioning an organization to digital media is as much or more about helping faculty cope with the transition as it is about helping them to master new instructional technology skills. It involves helping people to deal with change—the process of transitioning from the old to the new, from the familiar to the unfamiliar.

The following story illustrates how difficult this type of transition can be. Several years ago, a faculty member at James Madison University was a regular visitor at the Center for Instructional Technology. Adam was a nice person and very enthusiastic about his work; he wanted to learn the many new technologies he was required to use in his instruction. However, within a few weeks, he started talking about the pressure to learn all of this technology on top of having to know his "real work." In one conversation, Adam became very emotional and expressed his embarrassment over not being able to handle the transition.

What makes transition so difficult can be illustrated in the simple act of crossing one's arms in a different way, e.g., placing the left arm on top instead of the right arm. It is difficult because it requires the individual to operate in completely new and uncomfortable ways and to change well-established and, perhaps, lifelong habits associated with the task. Imagine how difficult it is to make transitions in complex tasks related to teaching and research.

Transition as a Process

Transition is a process. According to Scott & Jaffe (1989), transition involves moving through four stages: Denial, Resistance, Exploration and Commitment. Each stage is characterized by its location on two dimensions: focus on past versus future and focus on internal versus external (see Figure 1). For example, denial involves a focus on the external and on the past; exploration involves a focus on the internal (or self) and the

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future. Thus, denial keeps an individual from moving ahead while exploration leads the individual towards acceptance. Each stage is briefly described:

Denial
In the Denial stage, individuals simply refuse to recognize or accept whatever information they are told related to the transition. For example, in the transition to digital media, some individuals may simply deny that the 35mm slide is moving closer to extinction, especially as an instructional aide.

During denial, present individuals with information. Let them know that the change will happen. Explain what to expect and suggest actions they can take to adjust to the change. Give them time to let things sink in, and then schedule a planning session to talk things over.

Figure 1
The Four Stages of Transition
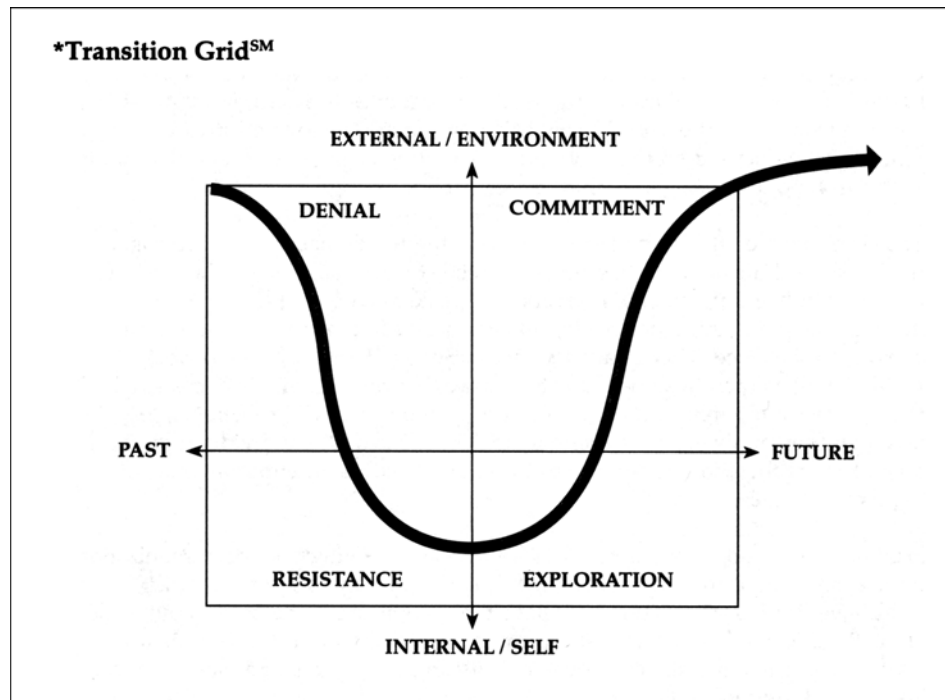
From Crisp: Managing Change at Work, Leading people through organizational transitions 2nd edition by SCOTT/JAFFE. © 1995. Reprinted with permission of Course Technology, a division of Thomson Learning: www.thomsonrights.com. Fax 800 730-2215.

Resistance
During the Resistance stage, individuals spend more time thinking about the past instead of preparing for the future. They may look for someone to blame or become physically ill or doubt their ability to make it through the transition. They focus on "the good old days." They may even move back to the Denial stage.

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According to Scott & Jaffe, people do not resist change as much as they resist loss. In times of transition, people may lose or fear losing things such as security, job competence, personal and professional relationships, a sense of direction for the future and an understanding of their territory (psychological and physical space).

During resistance, listen, acknowledge feelings, respond empathetically and encourage support. Avoid trying to talk people out of their feelings or tell them to change or pull together. If you accept their response, they will continue to tell you how they are feeling. This will help you respond to some of their concerns.

Exploration
Eventually, most individuals move in a positive direction and start to explore the possibilities that the transition has to offer. They are focused on the future instead of the past and are often more energetic and creative than in any other stage.

An excellent illustration of the exploration stage came in a faculty member's response to the survey item, "My greatest concerns about digital media are……." After stating his/her concerns, the faculty member wrote, "Still, it's clearly the wave of the future, so I'm at least inching into the waters."

During exploration, focus on priorities and provide any needed training. Follow up on projects underway. Set short-term goals. Conduct brain visioning and planning sessions.

Commitment
Hopefully, individuals within the organization will finally commit to and support whatever changes have taken place. They have learned how to successfully perform within the new environment. They are focused on the future and are less concerned about themselves.

During commitment, set long-term goals. Concentrate on team building. Create a mission statement. Validate and reward those responding to the change. Look ahead.

Personality and the Transition Process

Individuals move through the four transition stages at different rates and, therefore, at different times. Popular descriptors for how they do so include innovators, early adopters and diehards. Scott & Jaffe (1995) add the terms late adopters, early majority and late majority.

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Mateika & Dunsing (1995) suggest a different and perhaps more interesting set of descriptors: Zealots, Bohicans and the Bewildered Majority. *Zealots* are typically innovators and early adopters; they are likely to move through the stages quickly.

Bohicans are late adopters and diehards who may never move through the stages or move through them very slowly. And the *Bewildered Majority*, somewhere in the middle, includes members of the early and late majority and most of the population; this group moves through the stages at an average rate.
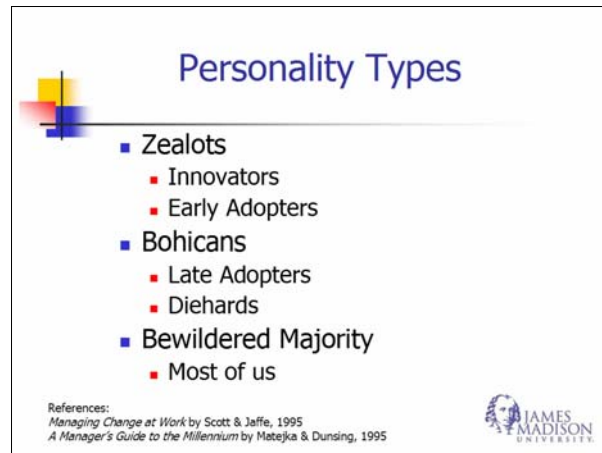
Each of these groups requires a certain level of attention (encouragement, training, etc.) as they experience the transition. However, project leaders will likely garner the most positive results if they focus a majority of their energy on the Bewildered Majority. Not only does this group have the most members, it is much more likely to accept the transition than the Bohicans (the diehards) and will need more encouragement and overall attention than the Zealots (the early adopters).

A well-known customer service model illustrates this point. A customer base includes "A" customers, "B" customers and "C" customers. The A customers (Zealots) are the loyal ones. The C customers (Bohicans) have probably never visited the organization and have no interest in doing so. The B customers (Bewildered Majority) are "on the fence," i.e., interested, but not necessarily committed. The model suggests that the B customers are the most lucrative ones to target. Energy spent on C customers will likely bring few positive results.

Resources

In addition to this Special Bulletin, a number of resources are available to assist project leaders and teams as they transition to digital media. See Appendix G for a list of these resources. An Action Plan worksheet is available in Appendix H.

Conclusion

Some experts predicted that Kodak's 2004 decision to halt the production of slide projectors drew a permanent line between non-digital and digital media. As predicted, the use of non-digital media is quickly fading and the digital image is the most common type of media used for Art and Art History instruction and research.

While many people affected by this transition to digital media are skeptical and resistant at first, most eventually become champions of this new image resource and method of

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delivery. The institutions that develop these champions succeed because they understand that the transition to digital media requires dramatic change in the way people conduct their work and how organizational systems are managed. Specifically, they understand that the management of a complex development and delivery system can no longer reside within one department but, instead, requires the participation and collaborative effort of many individuals and divisions across the institution. They understand that financial, technical and training support for everyone who needs it is critical and will result in the best possible experience for the user. They understand that users of the system need time to adjust to and learn new technologies and incorporate them into their instruction and research. They understand the importance of reliable, efficient resources (i.e., mostly independent of internal scanning processes) for high-quality images that meet copyright standards and are easily accessible.

Most importantly, project leaders need to demonstrate a commitment to the transition and be willing and able to share the vision of a digital media environment. They should be willing and able to develop collaborative relationships with a variety of individuals and departments across the organization and help others to work collaboratively. Overall, they must know where they are headed and move forward.

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Appendix A

Digital Media Surveys

Digital Media Survey for Visual Resource Professionals
This survey includes 21 questions. Please answer each question and click the SUBMIT button at the bottom of the page.

Part 1: Institutional Profile

1. What is your Institution's total student enrollment?

        None
        Up to 5,000
        5,000-10,000
        10,000-15,000
        15,000-20,000
        More than 20,000

2. What is your Institution's total number of faculty?

        None
        Less than 100
        100-200
        200-400
        400-600
        600-1000
        1000-1500
        1500-2000
        More than 2000

3. What is your Institution's total number of Art & Art History faculty?

        None
        Less than 5
        5-10
        11-15
        16-25
        More than 25

4. What courseware is used on your campus? Check all that apply.

        No courseware system is used at our Institution
        Blackboard
        WebCT
        FirstClass
        LearningSpace 4
        Centra Symposium
        Polycom
        CUseeMe Pro
        ATutor
        Other

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5. How many classrooms at your Institution are equipped to project digital images?

    None

    1

    2-5

    6-10

    11-20

    More than 20

6. How many equipped classrooms are in your department?

    None

    1

    2

    3

    4

7. Do you expect that in the future more of your institution's classrooms will be equipped for projecting digital images?

    Yes

    No

Part 2: Preparation, Delivery and Use of Digital Images

8. How are digitized images used in your institution? Please check all that apply.

    Student instruction (to teach students)

    Faculty instruction (to train faculty)

    Faculty and/or Student research

    Marketing and Information

    Other

9. What sources does your Institution use to acquire digital images? (Check all that apply.)

    Scanning slides from departmental collection

    Scanning slides of faculty personal collection

    Digital Image Subscriptions (licensed database)

    Purchase of commercial digital scans (licensed in perpetuity)

    Free image sources (textbook supplemental CDs, web sites, AICT)

    Other

10. What digital image resources are licensed on your campus? Check all that apply.

> AMICO
> Grove Dictionary of Art
> RLG Cultural Materials Collection
> Corbis
> Other

11. Through what delivery system or method does your Institution make images available for student instruction? Check all that apply.

> PowerPoint
> Unsecured web site
> Secured web site
> Online learning system (e.g., Blackboard or WebCT)
> Digital image database (e.g., Madison DID, Insight)
> Other

12. What Institutional departments are involved in the administration of delivering digital images *offline*?

> Visual Resources Unit
> Departmental Administrative Unit
> Information Technology/Network Infrastructure Unit
> Classroom Technology Unit
> Instructional Technology Unit
> Other

13. What Institutional departments are involved in the administration of delivering digital images *online*?

> Visual Resources Unit
> Departmental Administrative Unit
> Information Technology/Network Infrastructure Unit
> Classroom Technology Unit
> Instructional Technology Unit
> Not Applicable
> Other

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14. What organizational unit performs the following tasks related to digital image delivery at your Institution? Check all that apply. If the tasks are not performed at your Institution, please select "Not Performed."

	Departmental Administration Unit	Visual Resources Unit	Instructional Faculty	Museum Curator	Information Technology Unit	Instructional Technology Unit	Library Administration Unit	Not Performed
Scanning images								
Image preparation and upload								
Image Cataloging								
Maintenance of image database server								
Maintenance of delivery system (e.g., Madison DID, Insight, Blackboard)								
User training								
Budget support								
Politicking/ Communication								
Management of Licensed Databases								

Part 3: Actions Related to the Transition to Digital Media

15. When it comes to incorporating digital media into the institution's visual resource library, who, in your opinion, is the **primary** "mover and shaker"? You must select **only 1** option.

        Instructional Faculty

        Department Head

        Other Department Head

        Visual Resources Curator

        Institution's Instructional Technology Center

        Information Technology Department/Computing Support

        Other

16. What are the 3 most important actions taken at your institution to help make the incorporation of digital media a success?

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17. What actions need to be taken in the future to make the incorporation of
digital media a success at your institution (or continue its success)? Who needs
to take these actions?

Part 4: A Little About You

18. What is your job title?

19. How many years have you worked in this position at your current Institution?

       Less than 1 year
       1-2 years
       3-5 years
       5-10 years
       More than 10 years

20. Who do you report to in your organizational structure?

21. Are you also an instructional faculty member?

       Yes
       No

Thank you for completing this Survey!
Please click the Submit button to submit your answers.

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Digital Media Survey for Instructional Faculty
This survey includes 11 questions. Please answer each question and click the SUBMIT button at the bottom of the page.

Part 1: Use of Digital Images

1. Do you use digital images in your work as a faculty member?

> Yes
> No (If "No," please click **here**)

---

2. Think back about *2 years ago*. Of the images you used in your work then, approximately what percentage were *digital* images (versus slides, prints, etc.)?

> Up to 25%
> 26%-50%
> 51%-75%
> More than 75%

3. Of the images you *currently* use in your work, approximately what percentage are digital (versus slides, prints, etc.)?

> Up to 25%
> 26%-50%
> 51%-75%
> More than 75%

4. What do you currently use digital images for? Please check all that apply.

> Instruction in the classroom
> Student homework assignments
> Tests
> Research
> Other

5. How do you obtain digital images? Please check all that apply.

> Institution's visual resource library
> Institution's online subscription to digital media
> Personal library of resources
> Free sources (Web sites, etc.)
> Other

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Part 2: Your Thoughts on Digital Media

6. What are your greatest concerns about the use of digital media in your work?

7. Thinking back 2 years ago, how would you describe your attitude then about the use of digital media?

8. How would you describe your current attitude about the use of digital media?

9. When it comes to incorporating digital media into the institution's visual resource library, who, in your opinion, is the **primary** "mover and shaker"? You must select **only 1** option.

       Instructional Faculty

       Department Head

       Other Department Head

       Visual Resources Curator

       Institution's Instructional Technology Center

       Information Technology Department/Computing Support

       Other

10. What are the 3 most important actions taken at your institution to help make the incorporation of digital media a success?

11. What actions need to be taken in the future to make the incorporation of
digital media a success at your institution (or continue its success)? Who needs
to take these actions?

Thank you for completing this Survey!
Please click the Submit button to enter your results.

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Digital Media Survey for
Visual Resource Professionals/Instructional Faculty
**This survey includes 28 questions. Please answer each question and click
the SUBMIT button at the bottom of the page.**

Part 1: Institutional Profile

1. What is your Institution's total student enrollment?

> None
> Up to 5,000
> 5,000-10,000
> 10,000-15,000
> 15,000-20,000
> More than 20,000

2. What is your Institution's total number of faculty?

> None
> Less than 100
> 100-200
> 200-400
> 400-600
> 600-1000
> 1000-1500
> 1500-2000
> More than 2000

3. What is your Institution's total number of Art & Art History faculty?

> None
> Less than 5
> 5-10
> 11-15
> 16-25
> More than 25

4. What courseware is used on your campus? Check all that apply.

> No courseware system is used at our Institution
> Blackboard
> WebCT
> FirstClass
> LearningSpace 4
> Centra Symposium
> Polycom
> CUseeMe Pro
> ATutor

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Other

5. How many classrooms at your Institution are equipped to project digital images?

None
1
2-5
6-10
11-20
More than 20

6. How many equipped classrooms are in your department?

None
1
2
3
4

7. Do you expect that in the future more of your institution's classrooms will be equipped for projecting digital images?

Yes
No

Part 2: Preparation, Delivery and Use of Digital Images

8. How are digitized images used in your institution? Please check all that apply.

Student instruction (to teach students)
Faculty instruction (to train faculty)
Faculty and/or Student research
Marketing and Information
Other

9. What sources does your Institution use to acquire digital images? (Check all that apply.)

Scanning slides from departmental collection
Scanning slides of faculty personal collection
Digital Image Subscriptions (licensed database)
Purchase of commercial digital scans (licensed in perpetuity)
Free image sources (textbook supplemental CDs, web sites, AICT)
Other

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10. What digital image resources are licensed on your campus? Check all that apply.

      AMICO

      Grove Dictionary of Art

      RLG Cultural Materials Collection

      Corbis

      Other

11. Through what delivery system or method does your Institution make images available for student instruction? Check all that apply.

      PowerPoint

      Unsecured web site

      Secured web site

      Online learning system (e.g., Blackboard or WebCT)

      Digital image database (e.g., Madison DID, Insight)

      Other

12. What Institutional departments are involved in the administration of delivering digital images *offline*?

      Visual Resources Unit

      Departmental Administrative Unit

      Information Technology/Network Infrastructure Unit

      Classroom Technology Unit

      Instructional Technology Unit

      Other

13. What Institutional departments are involved in the administration of delivering digital images *online*?

      Visual Resources Unit

      Departmental Administrative Unit

      Information Technology/Network Infrastructure Unit

      Classroom Technology Unit

      Instructional Technology Unit

      Not Applicable

      Other

14. What organizational unit performs the following tasks related to digital image delivery at your Institution? Check all that apply. If the tasks are not performed at your Institution, please select "Not Performed."

	Departmental Administration Unit	Visual Resources Unit	Instructional Faculty	Museum Curator	Information Technology Unit	Instructional Technology Unit	Library Administration Unit	Not Performed
Scanning images								
Image preparation and upload								
Image Cataloging								
Maintenance of image database server								
Maintenance of delivery system (e.g., Madison DID, Insight, Blackboard)								
User training								
Budget support								
Politicking/ Communication								
Management of Licensed Databases								

Part 3: Actions Related to the Transition to Digital Media

15. When it comes to incorporating digital media into the institution's visual resource library, who, in your opinion, is the **primary** "mover and shaker"? You must select **only 1** option.

        Instructional Faculty

        Department Head

        Other Department Head

        Visual Resources Curator

        Institution's Instructional Technology Center

        Information Technology Department/Computing Support

        Other

16. What are the 3 most important actions taken at your institution to help make the incorporation of digital media a success?

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17. What actions need to be taken in the future to make the incorporation of
digital media a success at your institution (or continue its success)? Who needs
to take these actions?

Part 4: A Little About You

18. What is your job title?

19. How many years have you worked in this position at your current Institution?

       Less than 1 year
       1-2 years
       3-5 years
       5-10 years
       More than 10 years

20. Who do you report to in your organizational structure?

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21. Do you use digital images in your work as an instructional faculty member?

Yes

No (If "No," please click **here**)

---

22. Think back about *2 years ago*. Of the images you used in your work then, approximately what percentage were *digital* images (versus slides, prints, etc.)?

Up to 25%
26%-50%
51%-75%
More than 75%

23. Of the images you *currently* use in your work, approximately what percentage are digital (versus slides, prints, etc.)?

Up to 25%
26%-50%
51%-75%
More than 75%

24. What do you currently use digital images for? Please check all that apply.

Instruction in the classroom
Student homework assignments
Tests
Research

25. How do you obtain digital images? Please check all that apply.

Institution's visual resource library
Institution's online subscription to digital media
Personal library of resources
Free sources (Web sites, etc.)
Other

Part 5: Your Thoughts on Digital Media

26. What are your greatest concerns about the use of digital media in your work?

27. Thinking back 2 years ago, how would you describe your attitude then about the use of digital media?

28. How would you describe your current attitude about the use of digital media?

Thank you for completing this Survey!
Please click the Submit button to submit your answers.

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Appendix B

Summary of Survey Statistics

Pre-Workshop Survey Results

Data Collected October-December, 2003
Total Survey Group (N = 132)
Curators (n=98)
Curators-Instructional Faculty (n=12)
Instructional Faculty (n=22)

<u>Demographic Information</u>

Student Enrollment for Survey Institutions
(n=109)

None	6%
Up to 5,000	34%
5,000-10,000	15%
10,000-15,000	14%
15,000-20,000	9%
More than 20,000	23%

Number of Faculty at Survey Institutions
(n=102)

None	6%
Fewer than 100	9%
100-200	17%
200-400	14%
400-600	11%
600-1000	15%
1000-1500	6%
1500-2000	6%
More than 2000	18%

Number of AAH Faculty at Survey Institutions
(n=106)

None	5%
1-4	11%
5-10	29%
11-15	18%
16-25	14%
More than 25	23%

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Number of Years Curator in Current Position
(n=108)

Less than 1 year	6%
1-2 years	19%
3-5 years	23%
5-10 years	12%
More than 10 years	39%

Use of Images

Do Faculty Currently Use Digital Images?
(n=34)

Yes	87.9%
No	12.1%

Faculty Use of Digital Images in the Past
(n=34)

Question: Think back about 2 years ago. Of the images you used in your work then, approximately what percentage were digital images (versus slides, prints, etc.)?

Up to 25%	55.2%
26%-50%	6.9%
51%-75%	13.8%
More than 75%	24.1%

Faculty Use of Digital Images Currently
 (n=34)

Question: Of the images you currently use in your work, approximately what percentage are digital (versus slides, prints, etc.)?

Up to 25%	20.0
26%-50%	6.7
51%-75%	13.3
More than 75%	60.0

Uses of Digital Images by Faculty
(n=34)

Instruction	76%
Homework	38%
Tests	41%
Research	50%
Other	15%

Institutional Use of Digital Images
(n = 109)

Student Instruction	86%
Faculty Instruction	33%
Faculty Research	59%
Marketing	42%
Other	22%

Image Sources

Sources of Digital Images for Institution
(n = 109)

Scanning_Dept	90%
Scanning_Personal	72%
Subscriptions	37%
Commercial	48%
Free	65%
Other	20%

Sources of Digital Images for Faculty
(n=34)

Visual Resource Library	50%
Online Subscription	21%
Personal Library	62%
Free Sources	71%
Other	29%

Sources of Licensed Images for Institutions
(n=109)

Amico	40%
Grove	53%
RLG	12%
Corbis	1%
Other	17%

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Image Delivery

Image Delivery Tools
(n=109)

PowerPoint	67%
Website_Unsecured	16%
Website_Secured	63%
Delivery_System	59%
Database	46%
Other	12%

Number of Tech Classrooms in Survey Institutions
(n=107)

0 (number of classrooms)	24%
1	33%
2	14%
3	11%
4	18%

Percent Getting More Tech Classrooms
(n=108)

Yes	98%
No	2%

Courseware Available at Institution
(n = 109)

None	9%
Blackboard	52%
WebCT	34%
Centra	2%
Polycom	2%
CU	1%
Other	20%

<u>Responsibilities</u>
Person or Group Responsible for Tasks as Perceived by Curators and Curator-Instructional Faculty
(n=109)

Person/Group Responsible for Task	Scanning	Image Prep	Cataloging	Database	Delivery System Management
Department_Admin	12%	9%	6%	7%	0%
Visual Resources Curator/Coordinator	80%	73%	80%	28%	22%
Instructional Faculty	28%	20%	6%	1%	2%
Museum_Curator	9%	7%	10%	1%	0%
Information Technology (IT)	14%	13%	4%	48%	45%
Instructional Technology Center	17%	14%	6%	13%	31%
Library_Admin	30%	28%	24%	27%	17%
N/A	5%	7%	6%	13%	12%

Person/Group Responsible for Task	Training	Budget	Politics	Licenses
Department_Admin	8%	40%	23%	2%
Visual Resources Curator/Coordinator	61%	44%	56%	17%
Instructional Faculty	4%	3%	10%	0%
Museum_Curator	0%	1%	4%	1%
Information Technology (IT)	24%	19%	27%	16%
Instructional Technology Center	39%	21%	20%	11%
Library_Admin	19%	34%	40%	49%
N/A	10%	12%	17%	28%

Primary Mover and Shaker as Perceived by All
(n=109)

Primary Mover and Shaker	Instructional Faculty	Curator-Instructional Faculty	Curator	Total
Instructional Faculty	36%	33%	9%	16%
Department Head	9%	0%	6%	6%
Visual Resources Curator	41%	33%	70%	62%
Institution's Instructional Technology Center	9%	17%	5%	7%
Information Technology Dept/Computing Support	5%	8%	1%	2%
Other	0%	8%	8%	7%

Appendix C

Summary of Faculty Concerns

Strategies for Transitioning to the Age of Digital Media
Summary of Faculty Concerns*
*from Digital Media Survey (N=32)

Images
Projected image quality (caused by image itself and/or projector)
Fate of the slide collection
Archival and storage issues
Unavailability of some images in digital format
Possibility that file formats will become obsolete
Copyright issues

Delivery Systems/Technology/Infrastructure
Possible unreliability of the system
Limitations of technology
Complexity of technology
Lack of tech classrooms
Possibility that delivery systems will become obsolete
Accessibility of images throughout campus and for all students
Cross-platform capability of delivery systems
Appropriate equipment

Time/Labor
Manpower/labor/support
Lack of time to digitize images and keep up with technology

Self Competence
Training/ability to master the technology
Keeping up with continual changes in media

Financial Costs
Expense of all that is required/funding

Support
Administrative, faculty and library buy-in
Technical backup

Appendix D

Key Actions Worksheet

Strategies for Transitioning to the Age of Digital Media
Worksheet 1: Key Actions*   **includes input from survey respondents*

Key Players: Visual Resources Curator, Faculty, Department Administration, Information Technology (IT), Security Engineers, Instructional Technologists, Classroom Technologists, Library Administration

Key Actions	Specific Needs/Issues	Suggested Key Players	Key Players in Your Institution
Build Collaborative Relationships	• Identification of key players • Key players' possible concerns • Collaborative relationships may address concerns • Individual and small group meetings with key players • Communication/keeping people informed	• All	•
Share Vision	• Clearly stated need to use digital media • Level of institution's familiarity with quality of digital images and delivery options	• Department Administration • Faculty	•
Secure Funding	• In-kind contributions • Funds for outsourced scanning and image prep • Salaries for new positions • Funds for equipment (hardware and software)	• Visual Resource Department • Instructional Technologist Department • Library	•

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Key Actions	Specific Needs/Issues	Suggested Key Players	Key Players in Your Institution
Research and Plan	•Grants (e.g., Equipment Trust Fund) •Faculty needs •Pilot project •Faculty/student survey •Most appropriate digital databases and technology for institution	•Faculty •Department Administration •Institution Administration	•
Obtain Images and Process for Image Preparation	•High resolution and good quality •Commercial licenses •Catalog/Metadata	•Visual Resource Curator •Library Administration	•
Use Institutional Computing Infrastructure	•Campus computer network •High-speed network lines •Caching/Storage space	•Information Technology •Security Engineering	•
Provide Image Delivery Tools (Software/System)	•Database system (preferred) •Web Sites •Classroom presentation tools	•Instructional Technologists	•
Obtain Equipment	•"Smart Classrooms" (Computer-Projector systems) •High-speed computers •Scanners (internal or out-sourced)	•Classroom Technologists/Media Resources	•

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Key Actions	Specific Needs/Issues	Suggested Key Players	Key Players in Your Institution
	• Digital cameras • Copy stands		
Recruit Expertise	• Scanning • Image management • Equipment setup and maintenance • Database management • Instructional design • Change management	• Visual Resources Curator • Media Resources or Classroom Technologists • Instructional Technologists • Information Technology (IT) • Department Administration	•
Establish Policy and Procedure	• Copyright issues • Image management • System security	• Legal Officers • Visual Resources Curator • Security Engineers	•
Provide Faculty/Staff/Student Development (Training)	• Expertise • Schedule • Space • Training documentation • Ongoing support	• Visual Resources Curator • Instructional Technologist	•

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Appendix E

Summary of Key Player Concerns Activity

Strategies for Transitioning to the Age of Digital Media
Summary of Key Player Concerns Exercise

Key Player	Questions/Concerns	Possible Answers
Department Administration	1. How much will it cost? 2. Do I have to use it? 3. Training issues? 4. Are you going to throw away the slides? 5. Staff? We don't need you anymore? 6. Image quality? Are Digital Images poorer quality than slides? 7. What if (the) my computer crashes? 8. How much equipment? 9. Why? 10. Responsibilities? 11. Meetings? 12. Other institutions? 13. Process involved? 14. Who will it serve?	1. Likely to be more expensive than slides to develop; some costs for maintaining digital collection can be shared. 2. Eventually, you will learn to <u>LOVE</u> it. 3. Learning curve for faculty (for MDID) is low (15-30 minutes per person) - Then PRACTICE. 4. We envision a lengthy transition period (relative to size of slide collection / faculty). 5. Data standards, metadata - integral to retrieval of digital images. 6. "Let me show you." 7. There are delivery systems that do not require a live internet connection and small file sizes ..... Support in smart classrooms available. 8. Present Statistics; annual report; present collaborative possibilities; grants. 9. Demand from students and faculty; greater access for user groups; resource sharing. 10. Discuss collaborative ideas. 11. Need for support, keeping them informed of progress and involved in the process. 12. List of others institutions involved, case studies. 13. Outline steps. 14. Art/Art History dept. Other humanities departments.
Visual Resources/Museum Curator	1. How do I get faculty on board? 2. Where will I get images? 3. How will image be used? 4. Who will train users? 5. Will I be provided with adequate staff? 6. Time frame? (shared vision) 7. Support - A/V, IT? 8. Image presentations tool? 9. Data management tool?	1. Students request it; one willing face to lead. 2. Licensing, in-house scan, outsource, faculty personal collections. 3. Instruction, review/study, publications. 4. VR Curator; University training. 5. No answer provided. 6. Immediate vs. long term; reachable goals, obtainable expectations. 7. Possible source of server, tech support. 8. MDID, Luna Insight, PowerPoint, Extensis Portfolio, ARTstor. 9. IRIS, Pictor, MDID (Access, FMP) Snapdragon, Embark, Re: Discovery.

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Key Player	Questions/Concerns	Possible Answers
Visual Resources/Museum Curator (cont)	10. Funding/budget? 11. What about future/sustainability? 12. Security/Copyright Issues? 13. Image standards?	10. Collaborate with library, grants, other Deans/colleges in University. 11. No answer provided. 12. Password, Specific users. 13. Roundtable Campus decision.
Media Resources	1. How many classrooms, students, faculty are needed/supported? 2. What equipment is required for the types of teaching within the classroom? 3. Where is the funding coming from? 4. How much will it cost? 5. Which rooms are priorities? 6. What kind of staffing needs? Classroom support? 7. Who needs training? Who will provide training? 8. Who decides on type of Equip? "Software" 9. Student needs - Users needs 10. Licenses and legal questions 11. Mission Statement fulfillment 12. Relationship w/ vendors	1. 3-300 seat auditoriums, 12 "smart classrooms" @ 30 each; 200 faculty, 2500 students – undergraduates. 2a. LCD projectors, Internet access, computers, quality screens, slide projectors, etc. 2b. Document camera. 3. Technology grant, administrative funding. 4. Shared expense between library, computing, dept, media center + University (campus wide community). 5. Decision made by committee. 6. Various department include HR, IT, VR, Library Media. 7. Depending on initiative and skills of Dept. + institutional make-up 8. Committee. 9. Survey and response. 10. Council / University lawyer. 11. Review by committee. 12. No answer provided.
Library Administration	1. Who will use images/image database 2. How many users might there be? 3. How many $$$? 4. What are data storage needs? 5. Who will maintain storage? 6. What are staffing implications? 7. Why can't we get images off the web? 8. Can't we just scan the slide collections? 9. Why do you need the library?	1. Art history, art, architecture, drama, religion, history, American Studies, museum, languages. 2. Potentially 1000 +. 3. Depends on the package. 4. Servers, IT staffing and maintenance. 5. Information Technology (IT). 6. Depends on IT involvement - on-going staff for digitalizing, cataloging, reference. 7. Lack of quality, copyright issues, no source information, lack of metadata. 8a. No. 8b. Lack of quality - or add 15 staff + $1 million to budget - but you'll get ugly images. 9. Because library has money and infrastructure, experience and resources.

Key Player	Questions/Concerns	Possible Answers
Library Administration (cont)	10. What can you offer the library? 11. Why do you need metadata? 12. Why should the library buy image databases? 13. What are copyright issues? 14. What are the advantages to other disciplines? 15. How much work will this mean for me? 16. Where will the funding come from? 17. What is the scope/limit of the project? 18. Will this collection be integrated with the library cataloging system...how?...when?	10. Image expertise; we can serve the University. 11. So you can find the images. 12. To provide access to images 13. Many. 14. Access to images. 15. Workload will be determined by collaboration (library + VRC+ IT). 16. From the stakeholders (grants, alumni, departments, etc). 17. Pilot Program w/ time limit w/ planned flexibility. 18. (No answer provided.)
Information Technology/Security Engineering	1. What kind of image delivery are you expecting in the classroom? 2. Do you expect to have images delivered to users outside of the university community? 3. Does everyone have the same level of permission? (Password protection) 4. What kind of platforms? What kind of software? 5. Firewall? 6. Training for staff, faculty and student? 7. What type of department collaboration? 8. Equipment changes? 9. Additional Staff?	1. High quality images via the Internet, and user interface. 2. Yes, with authorized password protection. 3. No. Hierarchy of responsibility. Administrator and Curator: read/write access; user: read only. Password w/ user id. 4. Consider funding and other resources. Consider user needs. 5. Yes. 6. IT people. 7. IT, VR Staff, Faculty , Library Staff. 8. Depends on funding, etc. 9. Job description changes?
Instructional Technology Center	1. What type(s) of software? 2. How many users? 3. Audience? 4. How will images be used? 5. How do you want to manipulate images? (tag or mark) 6. File size? Growth predictions? 7. How is Tech person getting images? 8. Where will original be housed?	1. Commercial package or in-house developed. 2. Thousands. 3a. Campus community? General public? 3b. At-large faculty only? Students? 4. Teaching, research, study sets or web pages. 5. Search, download, group by theme. 6. Shopping for server depends on knowing need. 7. Upload site, CD's, file transfer from commercial company. 8. What department? What machine? What media?

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Key Player	Questions/Concerns	Possible Answers
Instructional Technology Center (cont)	9. Images / presentations? 10. Who is liaison? Curator or IT 11. What levels of access do you need? 12. What type of investment in time and money? 13. How many IT staff would be needed for training faculty?	9. Download to Powerpoint (offline) accessing via web. 10. Most likely Curator. 11. People inputing data, view only, administrator level, different administrator for different departments. 12. Support to create funding proposal to present to administration. 13. Semester - heavy support at beginning, minor at end: provide targeted workshops.
Legal Officers	1. Who owns the copyright to this stuff? 2. What's involved in getting permission? 3. How to protect ourselves from legal action? 4. What have our efforts been to secure copyright or permissions? 5. How will we restrict access when appropriate? 6. Will rights be restricted to outside the classroom? 7. Re-appropriate images, change size/content, in so doing can you sidestep the copyright law? 8. Do you have the right to digitize? 9. Do you have any licensing along with images you need for faculty? 10. Are you reselling images? 11. Will images be used for publishing?	1a. It depends. 1b. Educational Use Only, Fair Use Clause. 2. Have to know answer to 1st question. 3a. Restrict access to images without permission. 3b. Precedent and Practice. 4. Vendor purchases, deed or gift, location photography by "friends." 5. Establish restriction through computer IP addresses, etc. 6. Password Protected. 7. No answer provided. 8. Faculty giving images to be scanned. They took images and gave permission. 9. Dept use and campus wide research tools. 10. Fair Use notice required, post copyright. 11. No answer provided.
Instructional Faculty	1. What happens if equipment breaks? 2. What if I need an image before class? 3. How do I learn to do this? 4. Will the quality be good? 5. Impact on pedagogy? 6. How are we transitioning from analog-digital? 7. Access from home? 8. More work for me?	1. Specify who is responsible for what. 2. Teach faculty, can't add on fly. 3. Organize workshop, push them to the right people. 4. As good as the source. (No answers provided for 5-8)

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Appendix F

Key Player Concerns Worksheet

Strategies for Transitioning to the Age of Digital Media
Worksheet 2: Key Player Concerns

For each of the following **key players** at your institution, list their possible concerns about the transition to digital media.

Key Player	Typical Responsibilities in Digital Media Environment	Questions They May Have/Suggested Answers
Department Administration	• Sharing and supporting the vision • Politicking • Funding	
Visual Resources/Museum Curator	• Sharing the vision • Image preparation • Metadata/cataloging • Coordination and Planning • Training	
Media Resources/Classroom Technology	• Equipment setup and maintenance • Purchase of equipment for "Smart"/Tech Classrooms	
Library Administration	• Purchase of database subscriptions	

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Key Player	Typical Responsibilities in Digital Media Environment	Questions They May Have/Suggested Answers
Information Technology (IT)/Security Engineering	• Network infrastructure • System security (user access/passwords)	
Instructional Technology Center	• Training and support • Design and development of delivery tools • Liaison between Visual Resources Department and tech departments (esp., IT and Media Resources)	
Legal Officers	• Advise regarding copyright issues	
Instructional Faculty	• Using delivery system for instruction and research • Selecting images	

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Appendix G

Strategies for Transitioning to Digital Media
Resources Reference List

Strategies for Transitioning to the Age of Digital Media
Resources Handout – selections compiled by Christina B. Updike

VRA Digital Initiatives Advisory Group: The Digital Scene
http://www.vraweb.org/diag/index.htm

The Executive Board of the Visual Resources Association formed the Digital Initiatives Advisory Group (DIAG) in the fall of 2001 charging the members to monitor the activities of shared resource initiatives having digital components and to keep the VRA membership informed.

The Digital Scene is provided by DIAG to fulfill that charge. It features updates, insights and important trends for managers of digital images collections. Summaries point to additional articles and resources on the web.

Areas of interest include collaborative projects, new standards in imaging and metadata, digital preservation issues, consortia developments, training opportunities, test bed reports, and an extensive Resources section.

VRA members and others in the digital imaging community are encouraged to contribute news, reports, lists of resources, and descriptions of innovative projects.

Special Issue: The Digital Transition, Part 1 (Part 2 forthcoming)
VRA Bulletin, Winter 2005, Volume 31, Number 2

"Separating the Baby from the Bath Water: Developing a Digital Image Library at the Cleveland Museum of Art" by Sara Jane Pearman
"Start Small, Think Big: Digital Collaboration at the University of California" by Maureen Burns
"Going Beyond the Electronic Database: A Case Study of The Ruth Chandler Williamson Gallery at Scripps College" by Krista Coquia
"Visual Resources, the Web, and Classroom Teaching; A Case Study of the Canterbury Cathedral Project at Western Michigan University" by Miranda Haddock
"Digital Emblematica: Emblem Books Online" by K.C. Elhard and Nuala Koetter
"Prospects for the Shared Cataloging of Images" by Amy Lucker
"Elements of a Shared Cataloging Resource" by Mary W. Elings
"Beyond Google: A Union Catalog for Art Image Metadata" by Bradley D. Westbrook and Trish Rose
"Responding to Diverse User Groups: Usability Testing of the Web Interface of the Visual Resources Collection" by Jodie Walz and Barbara Brenny
"Managing a Digitization Project" by Trudy Levy and Howard Brainen

Digitization for Cultural Heritage Information Professionals: Links to Digitization Resources and Sites, May 11-16, 2003
Archives; Libraries and Museums; Digitization of Arts and Heritage Assets; Funding of Digitization in Cultural Sector; Articles and Readings; Journals
http://ils.unc.edu/DCHP/links.html

Digital Images and Art Libraries in the Twenty-First Century, **edited by Susan Wyngaard, MLS**
Journal of Library Administration, **Volume 39, No. 2/3, 2003**
http://www.haworthpress.com/store/product.asp?sku=J111

Table of Contents:
"CITY2000: A Holistic Approach to Administering Image Resources" by David Austin
"Architectural Archives: To Web or Not To Web" by Susan Koskinen
"Integrating Digital Images into the Art and Art History Curriculum" by Sharon P. Pitt, Christina B. Updike, Miriam E. Guthrie
"Today's Ephemera, Tomorrow's Historical Documentation: Access Options for Artists Files" by Terrie L. Wilson, Erika Dowell
"ARTstor: A Digital Library for the History of Art" by Max Marmor
"The Case for Collaboration: The OhioLINK Digital Media Center" by Charly Bauer, Jane A. Carlin
"Smothering Free Speech: Filtering the World Wide Web" by Susan Travis Bissonnette
"Enhancing the Value of Museum Web Sites: Lessons from the Practical Engagement Front" by Bradley L. Taylor
"Image Delivery and the Critical Masses" by Henry Pisciotta
"Link It or Lump It: Basic Access Strategies for Digital Art Representation" by James L. Murphy
"Evolution of a Profession: The Changing Nature of Art Librarianship" by Amy Lucker

Annotated Review of the Literature on Digitizing Visual Resources Collections
Christine Madsen, University of San Diego
VRA Bulletin, **Summer 2003, Volume 30, Number 1, pp. 71-81**

Article abstract:
　　　　Given the financial and staff resources available, how does one go about turning an analog slide collection into a digital image collection? Information professionals who deal with images are at a pivotal point now. There are still a lot of questions that have been left unanswered. Copyright, ownership vs. access, technical specifications and standards; these are all things that have been on the minds and in the writings of information professionals for several years now. It is time to comb through the available writings and glean from them the information necessary to make informed, studied decisions regarding the creation of digital visual resources collections.
　　　　This literature and resource review strives to provide an entrée into this process. For the sake of organization, the citations are grouped broadly into two categories, but there are bound to be some writings that would be equally at home under both. The first section deals with the theory behind the creation of a digital image collection. The second category, practice, is one that until very recently seems to have been the more neglected of the two. It is an attempt to gather some information about the practicalities of the process: the hardware, software, and management of a digital image collection, as well as a discussion of some of the current digital imaging projects that are underway.

Also, many feature articles on digital imaging issues are included in the above cited **VRA Bulletin**.

Madison Digital Image Database (MDID2), demo and information:
http://mdid.org/mdidwiki

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Appendix H

Action Plan Worksheet

Strategies for Transitioning to the Age of Digital Media
Worksheet 3: Action Plan

3 Things I Will Do When I Return to My Institution

1. _____

_____

_____

2. _____

_____

_____

3. _____

_____

_____

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