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Project title: Theatre Collection of Western Michigan University

Mission: To make the collection of the Western Michigan University Theatre Department available to the public by creating a web interface that will use a universally accepted approach to describing items related to a theatrical performance.

Abstract

Western Michigan proposes creating an image database that will consist of 1,500 slides, 150 associated programs, and approximately 300 design concepts documenting the history of the department. The goals of the project are:

1. To preserve and digitize the collection so people can have access to it. The collection is scattered throughout the building sitting in file cabinets and boxes. By digitizing it we will succeed in making the items available through a web interface.
2. To create a model for building a database that consists of images that capture the work of theatre artists.
3. Encourage other institutions to use the digital collection. People who use the collection will visually enhance their knowledge that will help to promote scholarly research.

Other Universities, Theatres, and Museums own similar items that are not easily accessible because they are often unidentified and often misplaced. This project will make the collection accessible to the general public by designing a web based interface that will allow people to browse and search for information. In order to create an effective search method, a metadata standard will need to be developed to accurately describe the slides of the collection.

In order to be successful, this project will need to develop a standard to describe the items in a way that makes them searchable through a web interface. It will establish a set of guidelines and best practices that will be used to help describe the diverse range of items that represent a theatre production. The experiences we be shared with other organizations who are thinking about making there collections available to the theatre community.

Narrative

Collection: With the help of the University, the theatre department will be able to digitize their entire collection of slides and make them available through an online portal. This will allow a diverse group of people to have access to the collection. It will be a way for universities to share their knowledge to help educate students about the design process.

Theatre history is often underrepresented in society and there is a need to capture it for future generations. The images represent the entire history of the department documenting the work of students, faculty, and guest artists. The slides have been taken by several different amateur photographers to preserve their work on film. For example, the pictures of the Julies Caesar production were taken without actors to emphasize the

scenery and lighting. The images provide a look into the history of the university recording the social impact, design and evolution of the department.

The WMU Theatre collection is made up of 1,500 color slides that were taken with a 35 millimeter camera that represent 150 different productions. Not every image is owned by the university, so research will need to be conducted to determine exactly which items are owned by the university versus items that are owned by other people. The collection is in good physical condition that does not require any special handling or repair. All of the items will be digitized and made available to the public, unless copyright cannot be cleared from the owners.

These materials will also include notes of the production team to help theatre educators understand the choices a designer made. This will help students to understand the design team's interpretation of a play or musical. For example, the production of Julius Caesar was set in the present to explore how people still have the same fear and anxieties as earlier generations. Without having the notes of the designers it would be difficult to understand how the production team modernized this play.

National Impact: The Department of Theatre is recognized for its top undergraduate program in the United States and in 2002 took top honors in the American College Theater Festival for the production of *Kiss of the Spider Woman*. The slide collection will have a national impact because we will provide a model for recording the work of theatre professionals. The university is nationally recognized as having a strong program designed to prepare students for graduate school or the work force. The advantage to this program is that it does not have a graduate program, so undergraduates have the opportunity to design and take on other leadership roles.

This project will digitize and create metadata for slides representing a variety of different theatre productions. This collection is significant because it represents the work of people who are currently working professionally. Hundreds of plays have been performed at the university representing every genre from children's theatre to the classics. The image database will serve as a model for other organizations who are interested in making their collections available to people around the world.

This project will demonstrate the importance of creating a new metadata standard to describe the people associated with a theatrical production. By conducting research through interviews a universal standard will be created. This will give the public a way to search for images using a language that is common to theatre. It will serve as the foundation for other organizations who are thinking about making their collections available through a web interface.

Audience: The audience for the slide collection will primarily be students and scholars who face the challenge of trying to locate images, programs and design concepts. The design concepts will prove to be the most useful information to scholars because they explain how designers interpret a play or musical. It also explains the importance of the collaboration effort of the design team to produce a show in a short period time. The production team has between eight and ten weeks to design and build scenery and costumes before opening night. As the phrase goes: "The show must go on".

It is impossible to predict all of the ways a collection will be used because of its diversity that captures a 100 year history of theatre at WMU. The slides will be used to

help document the history of the theatre department and educate future designers. A process will need to be created for digitizing images and capturing metadata. The images provide a valuable teaching tool allowing theatre educators to examine how scenery, costumes, and lighting compliment each other to tell a story of a playwright while entertaining and educating the audience.

Goals: The main goal of this project is to create a free online resource for people to access Images, Programs, and Design Concepts. This will be accomplished by scanning 1,500 slides, creating a new metadata standard, a web portal and a relational database to contain all of the information. We propose to accomplish these goals by conducting research, consulting with scholars, and making our knowledge available to others.

Anticipated Results: After 14 Months the project team will have created a web interface allowing the general public to access the WMU theatre collection. The project will result in a sustainable image database that will grow over time. Furthermore, a model will be developed to assist other organizations wishing to undertake a similar project.

Project Description

Digital Creation: All of the slides and programs will be digitized in house based upon best practices that have been used by other Digital Libraries. A set of guidelines will be created to assist staff when scanning images and text. The necessary equipment will be ordered and installed by the media technician who will also provide training for staff. Each item will be saved as a TIFF and JPEG image in three different locations to prevent the accidental deletion of an item. Please look at the Image section for more information.

Copyright: Most of the slides in this collection are owned by the university; however there is know easy way to determine who took the photograph. The majority were taken by students and faculty for the department. Research will need to be conducted to determine which photographs were taken by people external to the university. For example, when a person writes a review about a production it is often accompanied by a photograph which is often given to the university. Permission will need to be cleared with some copyright holders.

Metadata: In order to meet our objectives, we will need to catalog items in such a way they can easily be found. This is a unique project that requires the creation of a new metadata schema that will be documented to help other institutions in cataloging theatre related materials. The work a slide depicts is of more interest to theatre professionals than the person who took the photograph. The items that appear in the image need to be described along with the people associated with a production. A universal standard will be created to provide enough detail about an image making it easy for a person to locate a slide using a search interface.

This collection contains multiple slides of the same production. For example the musical *Chicago* consists of ten different slides. Some examples are:

Slide 1 - Blank stage without actors

Slide 2 – Scenery and Costumes during a dance number

Slide 3 – Bedroom scene showing additional scenery that is only used once.

All of the photographs were taken during production rehearsals depicting different scenes and events. Most productions are discussed in terms of the name of the work it depicts, the

author or composer and a short description. An example of a new metadata standard for the production of Chicago may look like:

Name of Production: Chicago
Genre: Musical
Author: Bob Fosse & Fred Ebb
Lyrics by: John Kander
Music by: Fred Ebb
Name of Theatre: Laura V. Shaw Theatre
Location: Kalamazoo, Michigan
Performance Dates: December, 1995
Producer: WMU – Department of Theatre
Director: James Daniels
Musical Director: Jim Kraft
Assistant Director: Shawn Ford
Stage Manager: Kate Skarrit
Production Manager: Cheryl Bauman
Technical Director: David Downey
Costume Designer: Gwen Nagle
Assistant Costume Designer:
Lighting Designer: Matt Knewtson
Assistant Lighting Designer:
Scene Designer: Greg D. Rohrick
Sound Designer: Jeff Chaffin
Assistant Sound Designer: Aleece Landice
Props Master: Jennifer Myer

Description: “The play Chicago was Watkins' retelling of two very public trials for murder that occurred in Chicago in 1924, those of Beulah Annann and Belva Gaertner”
(Wikipedia, para. 1).



The Metadata Encoding and Transmission Standard (METS) standard will be used to describe the programs and design notes. According to the Humanities Advanced Technology and Information Institute, University of Glasgow, and the National Initiative for a Networked Cultural Heritage (2002), “...it allows you to express the relationships between multiple representations of the digital object..., as well as relationships between multiple parts of a single digital representation” (METS, para. 1). This will allow a relationship to be made between all of the digital objects that will be part of the WMU Theatre collection.

Project Management: This project will occur in three phases to address the usability concerns of creating a new metadata standard. The first phase involves working with 30 slides to conduct an in depth usability study for the web interface and metadata standard. A set of guidelines will be created for the scanning process and any necessary color adjustments that need to be made. After testing the next phase will involve scanning the rest of the slides, programs, design notes and creating metadata for these items. During

this phase research will be conducted to identify all of the people associated with a production and to look into copyright issues. In the last phase we will evaluate our work to determine the strengths and weaknesses of the project. A Project Plan showing the major activities of this project can be found in the appendix.

A project manager will oversee all aspects of this project making sure it stays within budget and is delivered on time. This person will be responsible for overseeing the digitizing of images, the creation of a web interface and metadata. A metadata expert will be responsible for creating a new standard by researching how images are currently being described and interviewing theatre professionals at various institutions around the country. Once the interviews are finished, a new metadata schema will be developed to address the requirements of a theatre production.

After a new metadata standard has been created, a usability specialist will analyze the research to understand how people will look for theatre related images. This person will create categories for the slides based upon the research done by the metadata specialist. They will also design the web interface and conduct usability testing and user studies for the search interface. Another component of the second phase will be to scan all of the programs and design concepts.

Training and Guidelines: For this project to be successful a set of guidelines will be created for scanning, metadata creation, and color adjustments that need to be made. The project manager and full time staff will work together to develop a workflow process to conduct research and enter metadata into the database. After the completion of Phase I they will be revised to reflect the work that was actually done. It is imperative that the production team trust each other and maintain communication to develop best practices to be used during Phase II. At this point, training workshops will be conducted by staff to train student workers responsible for scanning images and writing metadata.

Cataloging and Metadata Creation: This is the most important component to ensure that we meet the goals we set out to achieve. There will be a solid commitment by all staff members to work with other organizations to create a standard that clearly describes all of the objects that are part of the collection. The first step of the process will require us to conduct research to identify all of the items that could help describe a theatre production. After research has been conducted a new standard will be written and presented to theatre professionals to solicit feedback. The feedback will be used to make sure the new standard will be universally accepted.

Quality Control: The scanners will be calibrated to use the best settings for scanning the slides. The scanning team will be asked to check the settings at the start of each work day and after someone else has used the computer to make sure they match the guidelines. After scanning, some of the slides may need to be color adjusted depending on how much black appears. As items are being scanned the media technologist will look at every slide for the first five productions to ensure quality. After these slides have been scanned only one in every 25 slides will be analyzed to verify color correction.

Storage and Delivery: The metadata records and images will be made available through the internet at no cost. A page turning application will be incorporated into the web interface to provide users a way to navigate the programs and design notes. The technical components of this project include:

- A database that will contain all images and metadata related to them.
- Web interface for accessing the collection.
- A web server to host both the database and web interface.
- A search interface to locate images based upon metadata.

The university will provide the infrastructure and technical components required for this project.

The database specialist will design a system for recording the metadata, slide collection, programs and design concepts. A relational database will be used to enter and edit data that will be available through the web interface. The collection will reside on the universities equipment. After the images have been scanned they will be saved in the following locations:

1. On the hard drive of a server
2. A DVD that is saved on site
3. A second DVD that is kept for safe keeping off site

Materials: A set of guidelines will be created and made available on the website to assist other organizations interested in cataloging their materials. It will consist of the following items metadata schema, digitization process, and the categorization of images. These materials will also include notes about the research that was conducted to create the new metadata standard.

Specification for Images

Slides: Master – Each slide will be scanned into the computer at 24-bit RGB color and saved as an uncompressed TIFF file. Master files will be saved in three different locations to help protect from the loss of data. The scanning software will be used to color match the scanned image with the original one.

Access – A 600 by 400 pixel image will be created from the master and saved in JPEG format. The access images will be saved on the web server and accessed through the web interface.

Thumbnail – A 125 by 75 pixel image will be created for each slide and saved in JPEG format. The thumbnail image will be used for when the browse feature of the web interface is used.

Programs and Design notes: Master – All pages will be scanned in at 600 dpi and saved as an uncompressed TIFF. All programs that have color covers or pages with color images will be scanned in using 24-bit RGB color; However if the pages are black and white they will be scanned in at 8-bit grayscale. The scanning software will be used to color match the scanned image with the original one.

Access – A 600 pixel by 775 pixel image will be created from each master TIFF files.

Thumbnail – A 115 pixel by 150 pixel image will be created for each cover page of the program and the first page of the design notes and they will both be saved in the JPEG format.

Gathering Input: The first thing that needs to occur with this project is to talk with theatre professionals to understand how they label and categorize their photographs. This will involve conducting interviews with professionals and educators from around the country. The United States Institute Theatre Technology (USITT) will be able to offer recommendations based upon conventions that are currently being used. If no standards

exist for cataloging images we will need to work together with USITT to create one that can easily be implemented.

Usability studies will occur throughout the project to gather feedback from potential users. After conducting interviews a sample metadata record will be created and then shown to theatre professionals to solicit feedback. The feedback will be incorporated into the metadata standard that will be created to describe the images. Studies will also include:

- Conducting a card sort to identify subject categories that will be used to browse images
- Paper prototyping of the user interface
- Conducting user studies to determine a controlled vocabulary for the search interface.

The project will involve potential users at various stages to understand how they search for information about theatre.

Staff:

Project manager – Will oversee the entire project providing leadership to the rest of the production team.

Metadata Specialist – Is responsible for conducting the research to create a new metadata standard. Once a new standard is created this person will document their work and provide training for students who will be entering the metadata.

Media Technician – Will create a set of guidelines for the digitization of the slides and programs. After the guidelines have been developed he will provide training for the scanning team and will oversee the digitization process to ensure a high level of quality is maintained.

Web Developer/Usability Specialist - This person will spend most of their time creating different categories to make it easy for people to search and browse for the information they are looking for.

Database Programmer – Is responsible for creating the database that will contain the metadata and images related to the project.

Research Assistant – This person's main responsibility will be to look into the copyright issues surrounding the images that will become part of the collection. As a secondary role this person will lead team students who will be identifying actors that appear in a slide.

Students – Will be hired on a part time basis to scan, create metadata, and help the research assistant with the identification of the actors appearing in the slides

Budget: The major cost for this project will be the creation of a new metadata standard and a web interface used to display images and text. The support requested from IMLS is for the hiring of part time staff, travel, equipment and materials. The budget requested from IMLS is \$69,610 dollars (45% of the overall budget) with Western Michigan University providing the rest of the funding for the project. Please see the appendix for more detailed information. The following table represents the amount of money requested from IMLS along with our contribution to the project.

Direct Costs	IMLS	Cost Share	Total
Salaries & Wages	\$62,610.00	\$ 59,781.00	\$122,391.00
Fringe Benefits		\$ 20,325.00	\$ 20,325.00
Consultant Fees			
Travel	\$ 3,000.00		\$ 3,000.00
Materials, Supplies & Equipment	\$ 3,000.00		\$ 3,000.00
Services			
Other	\$ 1,000.00		\$ 1,000.00
Total Costs	\$69,610.00	\$ 80,106.00	\$149,716.00
Total Amount of Cost Share		\$ 80,106.00	
Amount Requested From IMLS		\$ 69,610.00	

Please see the appendix for more detailed information about the budget.

Evaluation: The success of the project will be determined by meeting the goals we have set out to accomplish. The first one is to create a new metadata schema which could be used by other institutions that need a way to catalog items related to theatre. A survey will be sent out to participants in the research phase to gather feedback helping us to determine if we are able to meet the needs of the theatre community. By analyzing the web logs of the server, we can determine to what extent people are using the web interface.

The Web Site will be developed by the library staff of the university and coordinated by the Web Developer/Usability specialist. They will guide the development team throughout the process through conducting appropriate usability studies. Interviews will be done as an iterative process to evaluate the web sites strengths and weaknesses. This process will involve faculty and students from a variety of disciplines from WMU and other universities from the Mid-West.

The information about the project will be made available through the web site that will be developed. The metadata standard will be made accessible via the Internet through many outlets such as a Wiki and the Universities web site. Over the course of a year we plan on making presentations about what we have learned at various conferences including the American Library Association and United States Institute for Theatre Technology annual conferences.

The theatre slide collection of Western Michigan University will contribute to the knowledge about the visual resources related to theatre. After the project has been completed we will have developed a way to manage a collection of theatre related items through the creation of an image database. It will provide a way for the theatre department to support research and document future productions.

References

- Chapman, S. (2000). Considerations for project management. *Handbook for Digital Projects: A management Tool for Preservation and Access*. Skitts (Ed.). Andover, Massachusetts: Northeast Document Conservation Center, Retrieved November 13, 2005 from <http://www.nedcc.org/digital/iii.htm>
- Humanities Advanced Technology and Information Institute (HATII), University of Glasgow, and the National Initiative for a Networked Cultural Heritage (NINCH) (2002). *The NINCH Guide to Good Practice in the Digital Representation and Management of Cultural Heritage Materials* (chap. V). Retrieved August 31, 2005 from <http://www.nyu.edu/its/humanities/ninchguide/V>
- Wikipedia (n.d.) *Chicago (musical)*. Retrieved December 10, 2005 from http://en.wikipedia.org/wiki/Chicago_%28musical%29

Appendix

Cost for scanning and metadata creation:

Scanning Costs		Metadata Costs	
Slides		Slides	
\$ 3.00	scan as tiff	300	Productions
\$ 0.25	save as JPEG	9	hours per production
\$ 3.25	cost per slide	2700	Total Hours
1500	Slides	\$ 9.00	per hour to scan
\$ 4,875.00	Total Cost	\$ 24,300.00	Total Cost
150 Programs 10 pages each		Programs	
\$ 0.50	to scan	150	Programs
\$ 0.35	to OCR	1.5	hours per program
\$ 0.85	cost per page	225	Total Hours
1500	total pages	\$9.00	per hour to scan
\$ 1,275.00	Total Cost	\$ 2,025.00	Total Cost
		Design Concepts	
300 Design Concepts 2 pages each		300	Design Concepts
\$ 0.50	to scan	1	hours per concept
\$ 0.35	to OCR	300	Total Hours
\$ 0.85	cost per page	\$ 9.00	per hour to scan
600	total pages	\$ 2,700.00	Total Cost
\$ 510.00	Total Cost		
\$ 6,660.00	Total Scanning Cost	\$ 29,025.00	Total Metadata Cost

Chapman, S. (2000). Considerations for project management. This article was used to calculate the scanning costs for this project.

Salary:

Full Time Staff	Salary for 14 month Duration	Commitment	Salary	Benefits	Cost
Project Manager	\$ 52,500.00	25%	\$ 13,125.00	\$ 4,462.50	\$ 17,587.50
Metadata Specialist	\$ 43,200.00	33%	\$ 14,256.00	\$ 4,847.04	\$ 19,103.04
Media Technician	\$ 40,900.00	25%	\$ 10,225.00	\$ 3,476.50	\$ 13,701.50
Usability Specialist	\$ 43,200.00	25%	\$ 10,800.00	\$ 3,672.00	\$ 14,472.00
Database Programmer	\$ 45,500.00	25%	\$ 11,375.00	\$ 3,867.50	\$ 15,242.50
Total	\$ 225,300.00		\$ 59,781.00	\$ 20,325.54	\$ 80,106.54
Part Time Staff	Per hour	Hours			
Research Assistant	\$ 10.00	800			\$ 8,000.00
Metadata Entry (students)	\$ 9.00	3225			\$ 29,025.00
Scanning Team					\$ 15,150.00
Total					\$ 52,175.00
				20% Contingency	\$ 10,435.00
					\$ 62,610.00
				Total for Staff	\$ 142,716.54

Project Plan:

Time	Major events of process
4 months	Phase I – Research
5 months	1. build a web interface
3 ½ months	2. do research for new metadata standard and write xml
1 month	3. scan and create metadata for 30 slides
2 ½ weeks	4. create guidelines for scanning process
2 months	5. Start design and build a relational database for slides and metadata
2 months	6. Start Research to identify people responsible for production and identify actors appearing in slides.
9 months	Phase II –Production
5 months	1. Finish Research to identify people responsible for production and identify actors appearing in slides.
3 months	2. Finish building the relational database for slides and metadata
2 weeks	3. Training for part time staff
6 weeks	4. Research copyright
5 months	5. scan the enter 1,500 slide collection of the university
2 months	6. scan the 150 associated programs
1 month	7. key in approximately 300 design concepts
8 months	8. create metadata for all items, use new standard for slides, use METS for books
6 weeks	9. do usability testing
1 month	Phase III – Evaluation
2 weeks	1. mail surveys to working professionals
2 weeks	2. Write up report
1 week	3. look at server logs
3 Weeks	4. present findings and solicit feedback at conferences (i.e. USITT, ALA)