

The Multi-Media Approach to Preservation and Presentation of Special Collections

Jean Hofacket
Triadigm Technologies

Cory S. Lund
Triadigm Technology

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Hofacket, Jean and Lund, Cory S.

*Triadigm Technology,
San Francisco, CA, USA*

Introduction

Information is power. Power to be an informed participant in today's world rather than a passive spectator; power to make the choices necessary to live well and participate as an effective member of our societies; power to help shape the issues related to our social, economic and political ways of life. We live in societies with varying levels of literacy. We live in societies that are increasingly multi-lingual. We live in the midst of generations that are increasingly television, video and computer oriented.

Effective information delivery requires that the materials we provide be identified by our target populations as those most pertinent to their lives. Information providers must not assume that we know what is needed; we must proactively seek out our customers, listen carefully to their stated needs and find the appropriate information, in the appropriate format, to meet those needs. Providing access in a variety of formats, through a variety of literacy levels and in a variety of languages adds measurably and immeasurably to the impact we have on our patrons and on our societies.

As a student of history, an educator, a librarian and an activist now involved with the application of multimedia technology to information delivery, I am amazed and excited about the possibilities, actual and envisioned, that surround us today.

Today's technology gives us the ability to move beyond static and instantly dated information to a continually current, interactive, visual and aural presentation of information. As we move from the industrial to the information age, we have the capability to overcome barriers previously presented by time, physical limitations and print dependency.

And while it is exciting to be caught up in this revolution, the challenge for us as librarians and information scientists remains the same as ever. From the days of an oral tradition, through the times of clay tablets, papyrus rolls and illuminated manuscripts into the broad ranging distribution of information through printed and bound materials made possible by moveable type, it has been our responsibility to utilize the prevailing technology to provide high quality information services for our patrons and clients. While the technology that is becoming a part of our everyday lives is extraordinary, it is the transfer of knowledge that must continue to be our focus, for it is the information itself that is truly powerful.

The Possibilities

While the constant evolution in all areas of communications and information technology give us myriad opportunities, I am focusing today on the possibilities presented by multimedia and digital media applications.

Initially, the large amounts of storage required for even the simplest applications limited multimedia implementations. This constrained their use to standalone environments where two configurations dominated; the “Information Kiosk” and “Desktop Multimedia”. Both shared one key conceptual limitation: the multimedia information was stored locally using laser disk or CD-ROM technology and were static in nature. Though these devices may have been connected to a network for character based information, multimedia was generally not available through the network and updating capabilities were limited. This characteristic of early multimedia hindered the wide spread acceptance of this technology.

The emergence of affordable multimedia PCs and improved compression technologies are at the center of a major technological evolution as cost effective multimedia comes of age. With the availability of high-speed, affordable network components, real-time delivery of multimedia information is eminently feasible. A new era in information systems has emerged as the advantages of a client/server architecture are applied to powerful new ways of communicating.

The term multimedia indicates the capability of applications utilizing multiple data types and covers a wide range of definitions from 35 mm slides to computer visualization systems. Client-server or networked multimedia is often referred to as digital media. Digital media consists of data types such as video, audio, photo-realistic images and text.

There are many reasons to provide digital media through networks to individual users. The continuing evolution of this technology provides us with the increasingly practical option of customizing products for specific purposes and audiences. The dynamic nature of networked digital media is of paramount importance. It is this technology that supports information systems capable of being updated at any time. This allows current information to be presented to all users across a network with no delay. Evolving applications will provide simultaneous access to digital media while coexisting and interacting with current network functions and applications.

For the educator and student, digital media can provide integrated learning systems that provide courseware customized to both the subject-matter and the abilities and requirements of the student and enable instructors to become better resource managers. The interactive, dynamic capabilities of digital media in supporting the creation of individualized learning tools will change forever the concept of “my textbook”. It also provides the foundation for highly effective video documentation and distance learning systems.

For the historian and archivist, digital media provides the ability to preserve artifacts, documents and representations and to link the facsimiles of these various items in such a way as to record the totality of the human experience.

As librarians, digital media gives us dreams fulfilled with vast and powerful tools for optimum management and integrated presentation of information. The benefits of this technology are compelling. Digital media can be fully indexed, both for content and context, and can be instantly linked to other digital media of similar or associated subject matter. It can be searched, abstracted or ordered on any number of user defined parameters and stored in a manner that will not degrade with use or time. Networked digital media moves beyond the present barriers of the physical production of information and makes current, comprehensive information delivery a literal possibility.

For the educator and student, the historian and archivist and the librarian, this information can be made available through local and wide area networks as well as across the Internet.

Digital media substantially enhances and transforms the way information is communicated and applied. The interactive, multi-sensory communication of information enhances the transfer of knowledge and the understanding of complex concepts. As an ancient Chinese proverb appropriately states:

“I hear, I forget. I see, I remember. I experience, I understand.”

The Model

The digital media model presented here is an integrated set of applications that enable the acquisition, authoring, maintenance and presentation of interactive media in a client/server environment. Networked digital media consists of large, self-contained quantities of information and continuously flowing streams of data that utilize multi-dimensional information types such as full motion video, animation, photorealistic images, document images, text, graphics and audio.

The dynamic nature of stream digital media, as well as the constantly evolving relationships among digital objects are unique attributes of multimedia systems. Interactive digital media can be used to significantly increase productivity in research, archival endeavors, information dissemination, education and communication. It is revolutionizing the way information is compiled and dispersed, the scope and content of distance learning and the way students acquire and apply knowledge.

This model interrelates seven methodologies that are currently available and are considered standard, user configurable applications for acquisition, storage, communication and presentation. They are:

- A digital media acquisitions system
- A large object database management system
- An authoring system for interactive productions
- Stream management and digital media protocol supports
- A system administration, maintenance and production archival system
- A presentation system for digital media and interactive productions
- A “Windows” based US MARC (or equivalent) cataloging application

A digital media acquisitions system provides a combination of visual(graphical) and textual functions for acquiring, storing, managing and organizing multimedia collections. Ideally, it automatically records all pertinent acquisition information and provides both pre-defined and user-definable cataloging facilities. Unlimited catalogs or logical databases with user defined data fields and free form notebooks for database specific information can be created.

User definable groups of digital objects (folders) can contain one or many objects and consist of any combination of object types such as photo images, document images, animation, graphics, audio and video segments.

A high performance, rules based, large object database management system provides the mechanism to store and manage digital objects. Rules based objects contain the information and protocol requirements necessary for the performance or configuration of an object. This includes compression, format, display and sound characteristics, scaling definitions and conformity to end station requirements. A large object database management system organizes and manages digital objects such as images and graphics and digital streams such as video and audio. This is a cataloging object database which allows developers to change, share and reuse digital media objects in many applications without re-programming.

An authoring system for interactive productions enables the creation and maintenance of interactive digital media productions which replace programming procedures for easier media integration. Production events allow users to control digital media devices, define user manageable image windows, display text, define menus, and create interactive presentations without programming.

Stream management and digital media protocol support provides the data gathering, synchronization, video and audio management and specialized protocols required for simultaneous users accessing productions containing digital media streams. This technology locates and gathers each component of a production (from one or more sources), establishes the data path and virtual circuit to the client station and server. A system administration, maintenance and production archival system provides for the management of system information, object databases, production databases, system configuration, client/server profiles, user profiles and production statistics.

A presentation system for interactive productions provides functions allowing the playback of interactive productions and access to digital media collections using one of three channels: the Internet, local area networks and wide area networks.

A “Windows” based cataloging application that allows for the documentation, inventory and management of information and enables search capabilities adhering to the current standards of information delivery.

Illustrations

I have chosen four programs, two already implemented and two that have been envisioned and are now moving through the creative process, to illustrate the application of this model. They are the San Francisco Public Library Multimedia Project, the African American Museum and Library at Oakland Prototype, the San

Francisco Art Commission Slide Registry and Civic Owned Art Collection and the California State Library Virtual Reference Workstation.

The City and County of San Francisco Public Library (SFPL) has become a leader in the dynamic provision of information for its client communities through digital media. As with many libraries, the SFPL collections contain a wealth of information including historical documents, photographs, sheet music, artifacts, correspondence, video and film archives and audio tapes. These types of materials deteriorate with time and exposure. Additionally, it is difficult to devise a simple and secure way of providing public access to these types of collections. The challenge, for the San Francisco Public Library, was to, in an efficient and cost effective manner, preserve the information while making it widely accessible through the presentation of actual facsimiles of the documents and pieces of the various collections.

The Multimedia Project has made comprehensive and wide ranging access to the multi-dimensional information in the SFPL collections a reality through the centralized storage, management, distribution and presentation of digital information. With the completion of their new Main Library, this system has been installed on multiple workstations throughout the six floors of the library. These workstations are connected by advanced LAN/fiber optics technology. In the next phase of this project, the use of Asynchronous Transfer Mode (ATM) and fiber optics technology will allow patrons at remote branches throughout the city and county connection to the central store of images, audio and video information. In the future, SFPL will have the capacity to make their multimedia collections accessible through their Web site. Currently:

- Library patrons who previously had little or no access to rare or fragile collections can, through a multimedia workstation interactively view and listen to materials preserved in the SFPL database.
- The various departments within the library have the ability to update and manage their own repositories of information and have it immediately accessible to throughout the library through networked multimedia workstations.
- All collections in the Multimedia Project are supported by full MARC record search capability.

A remarkable example of the revolutionary capabilities of this technology is The Dorothy Starr Collection. Ms. Starr, the proprietor of a music store in San Francisco during the heyday of sheet music publication, amassed a collection of over 300,000 copies of sheet music. After her death, the Friends of the San Francisco Public Library purchased the collection and presented it to the library. Until now, general access to this rich and varied musical legacy was impractical. With the advent of the Multimedia Project, anyone sitting at any one of the multimedia workstations in the library can browse the Dorothy Starr Catalog. When the desired song is selected by “clicking on” the image of the cover page, the coversheet with full color artwork and the musical scoring appear, full-screen. Simultaneously, an instrumental and vocal track plays on speakers or headsets. The music historian, the student, the music lover can stop, move forward or backward, or change selections at any time. What was once a hidden treasure is now visible and audible.

The Gay and Lesbian Collection clearly demonstrates the effective preservation and presentation of multi-dimensional information. Included in this aggregation are the pulp fiction titles of the “Barbara Grier/Donna McBride Collection”, the correspondence of such notable figures as Harvey Milk and Randy Shilts and the video clips of the “Peter Adair Collection”.

The San Francisco History Photo Collection is an enormous accumulation of three million irreplaceable black and white photographs and movie clips. The Multimedia Project is preventing the extinction of this collection, presenting the collection to the public via the multimedia workstations and allowing the integration of media types into new and unique photo-essay presentations. The African American Museum and Library at Oakland (AAMLO) Prototype demonstrates the broad application of digital media.

AAMLO is dedicated to discovering, preserving, interpreting and sharing the historical and cultural experiences of African Americans in California, the American West and the United States for present and future generations. Their collections include manuscripts, photographs, oral histories, clippings and periodicals and artifacts. Their public services include the mounting of exhibits, the provision of research and public information delivery.

With the combining of digital images from their various collections, artifacts, correspondence and photographs, AAMLO is creating a prototype that:

- Serves as an on-site introduction and overview of the museum and library
- Provides the foundation for a traveling exhibit highlighting the AAMLO collections
- When mounted on a portable PC and overhead projector, provides a powerful tool for marketing and fund-raising demonstrations
- Includes U.S. MARC cataloging to support full search capabilities
- With expansion will have network and Internet capability
- Create unique, on-line exhibits that document the aggregate of the African American experience

The San Francisco Art Commission is the city agency that champions the arts. Believing that a creative cultural environment is essential to the city’s well being, their programs integrate the arts into all aspects of city life.

The goals of the Art Commission are:

- To ensure the highest quality of urban design where the arts are a constant presence
- To be a leader in developing innovative programs driven by the assessed needs of the community
- To expand and improve the public’s perceptions of the arts, raising the importance of the arts in everyday life and
- To ensure economic and organizational strength for the department.

The Art Commission is responsible for oversight and maintenance of the publicly owned art located throughout the buildings and communities of San Francisco. Additionally, they are charged with providing economic opportunity for local artists

and encouraging an interest in the arts through the development of local exhibitions. The Art Commission is currently using digital media to:

- Create a slide registry of the work of local and regional artists that can be viewed on line and is searchable by artist, medium style and title. This registry will be used for marketing and exhibition purposes.
- Create and maintain a catalog of all publicly owned art in the city and county of San Francisco. This subject searchable, on-line catalog will be continually updated and will be used internally for inventory and maintenance and publicly for kiosk and on-line exhibits.
- Create on-line exhibits of current and retrospective displays mounted at the San Francisco Art galley to showcase the work of local and regional artists.

The California State Library, believing that information is power, is utilizing digital media technology to provide both information and education for Hispanic women ages 18-35 with low literacy skills in both English and Spanish. Focusing on the health issues identified by the target populations as those most impacting their lives, The California State Library Virtual Reference Center:

- Incorporates print, audio and video formats to provide comprehensive information on pertinent health issues
- Provides complete narration of all printed materials
- Is language and dialect appropriate
- Is accessible through networked, stand-alone or portable PC's
- Incorporates training within the program to ensure ease of use
- Provides collection development support pertinent to subject content
- Provides internal technical support through help screens and menu options
- Incorporates future planning involving Internet/WWW and BBS access and services

The virtual reference center concept is adaptable to any subject matter and presents us with a primary example of the possibilities of interactive multi-dimensional information.

Summary

It truly is an amazing thing to be alive now and to be a part of this universal revolution. The technical term I often use when speaking of these things with other librarians is WOW!. Look at where we are today. Look at where we will be tomorrow, in eighteen months, in the fast approaching 21st century.

But beyond that, look at who we are and the tools of the trade now in our grasp. What we as librarians, information scientists, educators do and do well, better than anyone in the world - is make information manageable and accessible to those who need it.

Today's technology, interactivity, digital media, expanding network and communications capabilities, moves us from the static to the dynamic and presents us with unlimited possibilities as we continue in the tradition of libraries and universities sharing the transformational power of information.

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