

# Multimedia uses for a Modern Library

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**Abstract**—Multimedia uses computers to present text, audio, video, animation, interactive features, and still images in various ways and combinations made possible through the advancement of technology. Library, Information Centres and Archives of library is to collect, organise, preserve, and disseminate information to users. With the passage of time, several techniques and technologies have emerged for handling information more speedily and effectively. Multimedia can be accessed through computers or electronic devices and integrates the various forms together. This is an exciting new field for those interested in computers, technology, and creative career options.

**Keywords:** Multimedia, Types of Multimedia, Roll of Multimedia in Libraries, Preserve and disseminate information.

## 1. INTRODUCTION

Multimedia refers to content that uses a combination of different content forms. This contrasts with media that use only rudimentary computer displays such as text-only or traditional forms of printed or hand-produced material. Multimedia includes a combination of text, audio, still images, animation, video, or interactivity content forms. “In everyday life, multimedia is everything you hear or see, e.g. text in books, sound in music, and graphics in pictures. In computing multimedia is the presentation of information by a computer system using text, sound and graphics.”[13] “By combining media and content, those interested in multimedia can take on and work with a variety of media forms to get their content. One example of multimedia would be combining a website with video, audio, or text images across.”[12] “Interactive Multimedia is the means to interface with these media typically with a computer keyboard, mouse, touch screen, on screen buttons, and text entry allowing a user to make decisions as to what takes place next.”[7]

Text		Sound	
	Graphics		
Writing	+	Speech	+
Pictures			
	Music		
Animations			
	Noises		

“The use of computers to present text, graphics, video, animation, and sound in an integrated way. Long touted as the future revolution in computing, multimedia applications were, until the mid-90s, uncommon due to the expensive hardware required. With increases in performance and decreases in price, however, multimedia is now commonplace.”[7] Nearly all PCs are capable of displaying video, though the resolution available depends on the power of the computer's video adapter and CPU.

“Multimedia is usually recorded and played, displayed, or accessed by information content processing devices, such as computerized and electronic devices, but can also be part of a live performance. Multimedia devices are electronic media devices used to store and experience multimedia content.”[11]

## 2. LITERATURE REVIEW

(Cezary Mazurek, Maciej Stroinski, Sebastian Szuber) focused on first attempts of PSNC and POL-34 network to build a digital library as a base system supporting different application areas. Digital Libraries are emerging technologies for document management. These documents include multimedia objects. It requires new methods of all aspects of multimedia data management. Starting from the source through storage to delivery. digital library an excellent foundation for other multimedia-based services such as distance learning. And they conclude that Pilot projects have already been developed and now, in several cases, the final stage will be entered. The most important thing is to concentrate on the implementation around the digital library concept as a framework for other services based on media transfer to an end user.

(Makulowich 2000; Bertot, McClure & Ryan 2001). Dramatic changes in technology and society are having a considerable impact on libraries and their instructional programs. These changes have created an urgency to teach library users how to become more effective, efficient, and independent in their search for information. But it has become increasingly difficult for librarians to reach library users for the following reasons. Fewer users are coming to the library because they can now access many collections through their personal computers.

(DeBruine, 1994).Multimedia removes many of the limitations faced by the reader by conventional books like difficulty to reproduce, update, share single copies, easy to damage, cognitive load etc. A number of publishers have accepted that multimedia publishing is the future for the publishing industry and the government of the countries such as Japan and USA are fully committed to electronic and multimedia publishing

### 3. MULTIMEDIA

Multimedia means that computer information can be represented through audio, video, and animation in addition to traditional media (i.e., text, graphics drawings, images). A Multimedia Application is an Application which uses a collection of multiple media sources e.g. text, graphics, images, sound/audio, animation and/or video. Hypermedia can be considered as one of the multimedia applications.

A good general definition is:

“Multimedia is the field concerned with the computer-controlled integration of text, graphics, drawings, still and moving images (Video), animation, audio, and any other media where every type of information can be represented, stored, transmitted and processed digitally.”[10]

Stages in multimedia development with an example

	<i>World Wide Web</i>	<b>Current &amp; future</b>	
<i>Digital Audio and Video</i>	<b>1990</b>		<i>32 bit</i>
<i>Graphical Operating Systems</i>	<b>1980</b>		<i>CD-ROM, Local and Wide Area Networking 16 bit processors Desktop Computer</i>
<b>1970-an</b>		<i>8 bit processor</i>	

### 4. TYPES OF MULTIMEDIA

“There are many different types of multimedia technology, though these various forms often consist of either hardware or software. Hardware for use in multimedia typically consists of either input or output devices, which are used to create multimedia or to display or present multimedia that has been created. Software used in multimedia is typically utilized to create multimedia, and this can include anything from programs used to create images and audio to applications used to display or showcase a multimedia presentation.”[6] There are also pieces of multimedia technology that incorporate both aspects of hardware and software to create a more comprehensive multimedia application. “Multimedia applications can include many types of media. Multimedia items generally fall into one of five main categories and use varied techniques for digital formatting.”[14]

### 5. TEXT

Text in multimedia systems can express specific information, or it can act as reinforcement for information contained in other media items. This is a common practice in applications with accessibility requirements. For example, when Web pages include image elements, they can also include a short amount of text for the user's browser to include as an alternative, in case the digital image item is not available.

### 6. IMAGES

Digital image files appear in many multimedia applications. Digital photographs can display application content or can alternatively form part of a user interface. Digital image files use a variety of formats and file extensions. Among the most common are JPEGs and PNGs. Both of these often appear on websites, as the formats allow developers to minimize on file size while maximizing on picture quality. Graphic design software programs such as Photoshop and Paint .NET allow developers to create complex visual effects with digital images.

### 7. AUDIO

Audio files and streams play a major role in some multimedia systems. Audio formats include MP3, WMA, Wave, MIDI and RealAudio. When developers include audio within a website, they will generally use a compressed format to minimize on download times. Web services can also stream audio, so that users can begin playback before the entire file is downloaded.

### 8. ANIMATION

Animated components are common within both Web and desktop multimedia applications. Animations can also include interactive effects, allowing users to engage with the animation action using their mouse and keyboard. The most common tool for creating animations on the Web is Adobe Flash, which also facilitates desktop applications. Using Flash, developers can author FLV files, exporting them as SWF movies for deployment to users. Flash also uses Action Script code to achieve animated and interactive effects.

### 9. THE MULTIMEDIA LIBRARY

The Multimedia Library (MML) is a public institution functioning as a library but containing not only traditional books, newspapers and magazines, but also video recordings (movies, documentaries), sound recordings (music, audio books) and all sorts of electronic resources.[8] its provides the resources and environment for independent study and research. These resources include a wide variety of audio, video, and CD-ROM materials, as well as more conventional books. All of the materials are searchable through the OPAC. There are 2 DVD workstations, 4 video workstations, 4 audio

workstations, and 5 multimedia PCs for use on a walk-in or advanced sign-up basis. "The collection offers materials for studying a variety of languages, including English, French, German, Hungarian, and Russian. Language study is only the beginning. The selection of DVDs and video cassettes includes feature films, and the audio collection also incorporates books on tape. The Multimedia Library's collection is constantly being updated and expanded to address the specific study and research needs of the CEU community." [9] Selected, non-reference books, videos and DVDs are available for loan. Please read the Multimedia Library Policies posted near the door for more specific information about access and usage rules. The CDs and audio cassettes in the Multimedia Library are not for loan at the moment.

## 10. ROLL OF MULTIMEDIA IN LIBRARY

"Multimedia technology is adopted by the libraries, information centres and archives in various functions like multimedia kiosks, user orientation programs, multimedia based reference collection, heritage collection in the form of multimedia resources etc. Many libraries have a separate media centre for the production of audio-visual and multimedia resources. Multimedia is used to prepare presentations to enrich its contents and increase the effectiveness." [15] Multimedia resources are an integral part of libraries starting from non-print materials of eighteenth century to the introduction of most recent digital multimedia. Following is a brief account- of application of multimedia technology in libraries.

### (a) Multimedia Kiosk/Walk-through Program

Kiosk is a free-standing furnishing equipped with a multimedia computer to allow users to retrieve information via a touch screen, used in airports and other public locations to provide directions, scheduling information, etc. (Rowley, 1996). In case of libraries improving accessibility to both collections and services has always been a concern. Kiosk is designed for libraries usually located near the entrance of the library, used for displaying announcements, reading lists, comments and suggestions from library users, and other information concerning library operations and programs. Library collection, catalogue, archives, services and location of those collections, responsible persons of various library services showing the floor layouts are graphically represented in a library kiosk.

### (b) Webcasting and Video Conferencing

Webcasting is the live telecast of real time programs through internet. Video conferencing is conducting a conference between two or more participants at different sites by using computer networks to transmit audio and video data.

### (c) User Orientation Program

The role of multimedia in training is very popular because of its interactivity. Hence, it is being used by several libraries for designing individualized library instructional packages and also to provide in depth subject training to their staff. Many librarians in schools, colleges, universities and technical libraries are using multimedia for providing orientation and training to the user and training to the staff.

### (d) In-house Production of Multimedia Resources and E-publishing

Many libraries produce in-house, audio-visual and multimedia resources to serve the parent organization. Emergence of CD/DVD and their writers has solved some of the problems of libraries in storing/achieving their materials. Multimedia tools along with CD-writers have made it possible to publish information from different sources in a most easy to use as well as in acceptable form to library users. Several libraries started publishing their special collections, image databases, OPACS etc.

### (e) Multimedia Resources in Libraries

The kind of multimedia are sources available in libraries and information centres may include video discs, laser discs, audio and video cassettes, databases on servers, compact discs and digital video discs. Multimedia got introduced in libraries in the form of non-print material as photographs, filmstrips, slides, motion pictures, audio spools, audio and video tapes etc. (Ramaiah, 1998). With the introduction of digital media the libraries started digitizing the old formats into new multimedia formats. These resources are either organized on shelves or in a digital library accessible through networks. The librarian has to organise these varying types of resources and provide efficient access to the users. There are many libraries, having rich collection of multimedia resources e. g.

- Library of Congress,
- British Library,
- Bibliotheca Alexandrina,
- Libraries of major news channels etc like
- BBC,
- Doordarshan,
- Discovery channel etc.

Other multimedia information resources available in the libraries are commercial multimedia tools available in market. Any library can purchase and provide these tools to its users. These also come in libraries in the form of accompanying materials. Many leading and prominent publishers have now converted their reference books including encyclopaedias, dictionaries, handbooks, etc. from the traditional print form to interactive multimedia format. Some examples are:

- Encyclopaedia: Crompton's interactive encyclopaedia, Britannica Video CD, World Book Multimedia Encyclopaedia
- Dictionaries: Oxford English Dictionary, The Dictionary of Living World
- Reference Books: Earth Quest, Interactive Periodic Table
- Electronic Books: Manual of Medical Therapeutics, The Electronic Whole Earth Catalogue etc.

#### (f) Digital Multimedia Libraries

Digital libraries are basically decentralized and easily extensible, able to support interoperability between different tools, applications and systems, support heterogeneity both in terms/forms of data and systems/tool supported, able to support a rich information seeking environment, and scalable in terms of the size of the system (users, tools, information). Digital information may include digital books, scanned images, graphics, data, digitized audio-visual clips etc.

The first Digital Library Project was started in 1995 in USA in Carnegie-Mellon University. Previously digital library projects were based on only textual data but later on all other media elements were also integrated into digital library collection like images, audio and video recordings. IBM digital library provides a hardware/software solution for the libraries to develop their own multimedia digital libraries. It is an integrated system for capturing, indexing, storage and retrieval of tabular, textual, audio, still images, and video data at compressed and full resolutions.

In India, many Digital multimedia library projects has been initiated e.g.

- Digital Library of India,
- Kalasampada –The digital library of IGNC,
- Indian Institute of Astrophysics,
- Sarai Multimedia Archive,
- Digital Library of DESIDOC,
- Muktabodha Digital Library,
- Archives of Indian labour, etc.

The IGNC has created a Multimedia Digital Library in which contains text, image audio, video. DESIDOC has also created a well-structured image and video gallery which is available on DRDO intranet.

#### 11. CONCLUSION

Information Technology has become ubiquitous with current and future social and organizational growth. Multimedia is a fertile ground for both research and development of new products, because of the breadth of possible usage, the dependency on a wide range of technologies, and the value of reducing cost by improving technology. The technology is

being used in developing many applications for primary as well as higher education, entertainment, health services, public places and many more. With the advent of low cost computers and easy to use word processing software, computer based image processing techniques paved way for digitized information comprising textual to multimedia-data consisting of text, images along with digitized voice and video. Thus the information stored in libraries has taken a major shift from volume-limiting printed to limitless multimedia digital form. The libraries and information centres instigate production of multimedia resources in various forms, however archival collection of library also have audiovisual and multimedia resources. All these resources are either organized on shelves in the multimedia library or in a digital multimedia library having different content forms. i. e. text, music, videos, images, which can be accessed simultaneously from geographically distributed areas through internet

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