MMGD0203 Multimedia Design

Chapter 1
Introduction to Multimedia
Topics:

- Definitions
- Types of Media
- Advantages
- What is Multimedia Application
- Multimedia Applications
- Multimedia Software Development
- Minimum Hardware Requirement
Definition - Multimedia

- **Multimedia** is any combination of text, graphic, sound, animation and video that is delivered by computer.
- Integration of **multiple forms of media**, including text, graphics, audio, video, etc.
- Multimedia is used to convey information in an interesting way.
Definition - Multimedia Developers

The people who create multimedia projects.
Definition - Multimedia Projects

The multimedia materials, which are part of a particular topic or subject, presented on a computer or television screen.
Definition - Multimedia Title

A multimedia project shipped or sold to consumers.
Definition - Interactive Multimedia

When the multimedia user is allowed to control what elements are to be delivered and when they are to be delivered.
Multimedia Usages

Multimedia can be used in:

- Education
- Marketing
- Training
- Scientific Research
- Engineering
Multimedia Usages

Computer-Based Training

Teaching Aid
Multimedia Usages

References

Entertainment
Introduction to Multimedia

Multimedia Usages

Simulation

Virtual Reality
Multimedia Usages

Virtual Surgery

Information Kiosk
Multimedia Requirements

- Creative skills
- Technology tools
- Organization and business talent
Advantages of Multimedia

1. Enhancement of Text Only Messages

Multimedia enhances text only presentations by adding interesting sounds and compelling visuals.
Advantages of Multimedia

2. Improves over Traditional Audio-Video Presentations

Audiences are more attentive to multimedia messages than traditional presentations done with slides or overhead transparencies.
Advantages of Multimedia

3. Gains and Holds Attention

People are more interested in multimedia messages, which combine the elements of text, audio, graphics and video.
Advantages of Multimedia

4. Good for "computer-phobics"

Those who are intimidated by computer keyboards and complex instructions are more comfortable with pressing buttons with a mouse or on a screen.
Advantages of Multimedia

5. Multimedia is Entertaining as Well as Educational
Disadvantages of Multimedia

1. Expensive
2. Not always easy to configure
3. Requires special hardware
4. Not always compatible
Multimedia Categories

- Linear
- Non-Linear
Multimedia Categories

- **Linear** active content progresses without any navigation control for the viewer such as a cinema presentation.
## Multimedia Categories

<table>
<thead>
<tr>
<th>Advantages of linear presentations</th>
<th>Disadvantages of linear presentations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predictable, every audience will see exactly the same presentation</td>
<td>Not very interactive with the audience, they cannot change the order of presentation</td>
</tr>
<tr>
<td>Relatively easy for another person to do the presentation should the author be unavailable as the presentation always runs in the same order</td>
<td>Not flexible in terms of changing the time taken to do the presentation, for instance a presentation planned for 1 hour may now need to be done in half an hour, this is not simple in a linear presentation</td>
</tr>
<tr>
<td>Simple to prepare handouts as slides are always in the same order</td>
<td>It is apparent to the audience they are not seeing the full presentation if slides need to be skipped</td>
</tr>
<tr>
<td>Timing of the presentation is very predictable</td>
<td>Can be boring as the audience may have to view slides that happen to be irrelevant to them</td>
</tr>
</tbody>
</table>
Multimedia Categories

- **Non-linear** content offers user interactivity to control progress as used with a computer game or used in self-paced computer based training.
## Multimedia Categories

<table>
<thead>
<tr>
<th>Advantages of non-linear presentations</th>
<th>Disadvantages of non-linear presentations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slides can be accessed in any order</td>
<td>More complicated than a simple linear presentation</td>
</tr>
<tr>
<td>User can go both forward and backwards through the slides should they want to view a particular slide again.</td>
<td>Harder to predict the timing of the presentation</td>
</tr>
<tr>
<td>Can provide a presentation that meets the needs of the individual user.</td>
<td>Harder to hand over the presentation for someone else to do</td>
</tr>
<tr>
<td>The presenter can use the same presentation for different audiences</td>
<td>Need to incorporate navigation method into the slides</td>
</tr>
<tr>
<td>Improved interactivity. Non-linear allows the presenter to invisibly skip slides should they want to, for instance the points covered in the next slide may now be irrelevant following a dialogue with the audience</td>
<td>Harder to prepare a set of handouts</td>
</tr>
</tbody>
</table>
Multimedia Categories

- Multimedia presentations can be live or recorded.
- A recorded presentation may allow interactivity via a navigation system.
- A live multimedia presentation may allow interactivity via interaction with the presenter or performer.
Multimedia Systems

- A **Multimedia System** is a system capable of processing multimedia data and applications.
Multimedia Systems

- A Multimedia System is characterized by
  - The processing
  - Storage
  - Generation
  - Manipulation
  - Rendition of Multimedia information.
Characteristics of a Multimedia System

A Multimedia system has four basic characteristics:

- Multimedia systems must be computer controlled.
- Multimedia systems are integrated.
- The information they handle must be represented digitally.
- The interface to the final presentation of media is usually interactive.
Characteristics of a Multimedia System

1. Computer Controlled

- Producing the content of the information – e.g. by using the authoring tools, image editor, sound and video editor.
- Storing the information – providing large and shared capacity for multimedia information.
- Transmitting the information – through the network.
- Presenting the information to the end user – make direct use of computer peripheral such as display device (monitor) or sound generator (speaker).
Characteristics of a Multimedia System

2. Integrated

- All multimedia components (audio, video, text, graphics) used in the system must be somehow integrated.
- Every device, such as microphone and camera is connected to and controlled by a single computer.
- A single type of digital storage is used for all media type.
- Video sequences are shown on computer screen instead of TV monitor.
Characteristics of a Multimedia System

3. Interactivity

- Level 1: Interactivity strictly on information delivery. Users select the time at which the presentation starts, the order, the speed and the form of the presentation itself.
- Level 2: Users can modify or enrich the content of the information, and this modification is recorded.
- Level 3: Actual processing of users input and the computer generate genuine result based on the users input.
Characteristics of a Multimedia System

4. Digitally Represented

- Digitization: process involved in transforming an analog signal to digital signal.
Components of a Multimedia System

• Capture devices / Input Devices
  – Keyboard, scanner, video camera

• Storage Devices
  – Hard disk, optical disc

• Communication Network
  – Modem, network card, cables

• Computer System
  – CPU, RAM, Display card

• Display Devices
  – Monitor, Projector, Printer
What is Multimedia Application?

• Any computer application that contain or use Multimedia elements.
• A multimedia application is more like a movie or a book.
• Content must be created and produced.
• Usually interactive.
Examples of Multimedia Application

- World Wide Web
- Hypermedia courseware
- Computer-based Training (CBT)
- Interactive TV
- Computer Games
- Virtual reality
- Multimedia Database systems
Delivering Multimedia

• Multimedia can be delivered using
  – Optical disk (CD-based)
  – Over a distributed network (Web-based)
Delivering Multimedia

Optical Disks

- The most cost-effective method of delivery for multimedia materials.
- These devices are used to store large amounts of some combination of text, graphics, sound, and moving video.
## Delivering Multimedia

### Optical Disks

<table>
<thead>
<tr>
<th>Media</th>
<th>Storage</th>
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<tbody>
<tr>
<td>Compact Disc (CD)</td>
<td>650MB</td>
</tr>
<tr>
<td>Digital Versatile Disc (DVD)</td>
<td>4.7GB</td>
</tr>
<tr>
<td>Bluray Disc (BD)</td>
<td>27GB</td>
</tr>
</tbody>
</table>
Delivering Multimedia

Distributed Network

- Suitable for web-based content e.g. website
- Files need to be compress before transfer
Delivering Multimedia

<table>
<thead>
<tr>
<th>Web-based</th>
<th>CD-based</th>
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</thead>
<tbody>
<tr>
<td>Limited in picture size and low video resolution</td>
<td>Can store high end Multimedia elements</td>
</tr>
<tr>
<td>Can be changes, damaged or deleted by irresponsible individuals</td>
<td>Can be permanently stored and not changeable</td>
</tr>
<tr>
<td>Information can be updated easily and cheaper</td>
<td>Information can be quickly outdated</td>
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