

Multimedia

What, Why and How

What is Multimedia?

Multi = "many", Media = plural of medium

A medium is a means of communicating information



A Definition ↙

"Multimedia is the seamless integration of text, sound, images of all kinds and control software within a single digital information environment." ←

Tony Feldman, multimedia consultant
(quoted in England and Finney, "Managing Multimedia")

Another Definition

"When you weave together the sensual elements of multimedia - dazzling pictures and animations, engaging sounds, compelling video clips, and raw textual information - you can electrify the thoughts and action centers of people's minds. When you give them interactive control of the process, they can be enchanted. Multimedia excites eyes, ears, fingertips, and, most importantly, the head."

Tay Vaughan, "Multimedia: Making It Work"

A Simple Example

- Which is easier to follow?



- From England and Finney, "Managing Multimedia"

What is Multimedia Useful For?

- Education
 - Tutoring systems
 - Encyclopaedias
 - Instruction manuals
- Information
 - Tourist information
 - Museums / art galleries
- Entertainment
 - Games
 - Art



Dorling Kindersley's Virtual Reality Bird
(Image from McGloughlin, pg 27)



(Image from McGloughlin's CD)

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Dorling Kindersley's Ultimate Human Body
(Image from McGloughlin, pg 26)

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Images from
Toolbook's
Showcase
Web Site

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Intel's 3D Technology Web Site
(Image from McGloughlin, pg 35)

How is Multimedia Built?

- Using mixed media
 - Paper / videos / stereos / film / lasers
 - Art works using mixed media have been around for years
 - Not very portable!
- Using computers
 - Digitization of media
 - Output on computer monitor or projection display
 - Replaces separate devices
 - Almost ubiquitous

How is Multimedia Delivered?

- Offline
 - Installations / kiosks
 - single site with known hardware
 - CD-ROM / DVD / Software download
 - multiple sites with no control over target hardware
 - Just you and the computer
 - no feedback or interaction
- Online
 - Communication over networks
 - limited bandwidth
 - User requires plugins
 - Feedback and interaction possible

So we want to produce...

Multimedia

- The first question we ask ourselves is **WHY?**

Why use **Multimedia** at all????

IMPACT...

HUMANS HAVE LIMITED ATTENTION ...

Pros of Multimedia

- Grab and hold attention
 - humans have a limited attention span
- Alternative media for the same message
 - text, sound and images
- Combined media can enhance message
- Interactivity
 - Doing aids learning



Cons of Multimedia

- Poor design leads to total confusion!
- Reliance on multimodal input/output acts against people with disabilities
- Lack of suitable computer
 - still certainly possible!



How Do I Build A Multimedia Presentation?

- Design process
 - to be considered in later lectures
- Content produced by disparate software/hardware
 - drawing / animation packages
 - word processing
 - image capture with scanners / cameras / videos
 - sound recording / generation
- Presentation produced using an authoring tool
 - brings elements together
 - adds control and navigation

Styles of Presentation



CARD / PAGE BASED



ICON / EVENT BASED



TIME BASED



CARD / PAGE BASED

- Presentation consists of 2D pages
- Elements arranged in the way text and images are laid out in books and magazines
 - text, images, videos, sound
- Time-based elements
 - occupy a fixed space
 - controls to start/stop playback
- Links between pages: *hypermedia*
- Hypercard, Toolbook, World-Wide Web (HTML)



ICON / EVENT BASED

- Presentation is an *event-driven system*
 - user does something (e.g. clicking an icon) and something happens in response (a movie is played)
 - contemporary GUIs
- Associating *actions* with *events*
- Events initiated by user (mouse clicks, key presses etc) or generated internally (movie finishes, time passes etc)
- Actions (behaviours) predefined or scripted (playing a movie, changing images, doing the unexpected...)
- Authoring tools include Macromedia's Authorware



TIME BASED

- *Time* is the organizing principle
- Elements arranged on a timeline
 - presented in sequence (e.g. like a slide show)
 - parallelism: more than one thing going on at once
 - synchronization (e.g. display text while video is playing)
- May still incorporate some user control
- *De facto* standard time-based authoring tool is Macromedia's Director

The Complete Presentation

- Actually most multimedia presentations contain aspects of all three presentation styles
- Elements laid out in space
- Elements change over time
- Elements change under user control / navigation

Multimedia in IT82

We will consider only multimedia on computers.

Topics:

- Multimedia authoring - design and testing
 - HCI skills important
- Comparison of multimedia authoring tools
 - but no HTML

Software:

- Director
- Demos of:
 - Authorware (and possibly others)
 - PowerPoint in every lecture!

Multimedia Books

- Stephen McGloughlin: "Multimedia: Concepts and Practice", Prentice-Hall, 2001
- Tay Vaughan: "Multimedia Making it Work", McGraw Hill, 1998
- Elaine England and Andy Finney: "Managing Multimedia", Addison Wesley, 1998



End of Lecture

- Next lectures look at multimedia design and the authoring tools, Director and Authorware from Macromedia
