

Basic Contents of Multimedia

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Abstract: The term multimedia defines applications and technologies that include text, data, images, voice and full motion video objects. Instructional designers develop a variety of multimedia products such as print based material, job aids and electronics support systems, websites, games and simulations. It is essential for instructional technologists to develop high quality multimedia products. “Quality” in a multimedia product signifies 1) functionality 2) look and feel and 3) effective instructional content. For the students to stay current with the latest multimedia tools in the market, and develop quality products it is important to identify multimedia competencies that they have to be competent in.

Keywords: Multimedia – Definition – VLSI – 2D – Elements – Text – Graphics – Animation – Interactive – Hyperactive – linear – New Technology – VR – Digital Image – Conclusion.

I. INTRODUCTION

Definition of Multimedia:

Computer-based techniques of text, images, audio, video, graphics, animation, and any other medium where every type of information can be represented, processed, stored, transmitted, produced and presented digitally.

Multi: more than one

Medium (singular): middle, intermediary, mean

Media (plural): means for conveying information

- Media in the press, newspaper, radio and TV context - mass media

- Media in communications: cables, satellite, network – transmission media

- Media in computer storage: floppy, CD, DVD, HD, USB – storage media

- Media in HCI context: text, image, audio, video, CG – interaction media

- Multimedia: refers to various information forms text, image, audio, video, graphics, and animation in a variety of application environments

- Multimedia product, application, technology, platform, board, device, network computer, system, classroom, school, Word “multimedia” is widely used to mean many different things.

II. CLASSIFICATION OF MULTIMEDIA

Multimedia system design presents challenges from the perspectives of both hardware and software. Each media in a multimedia environment requires different processes, techniques, algorithms and hardware implementations. Multimedia processing which necessitates real time digital video, audio, and 3D graphics processing is an essential part of new systems as 2D graphics and image processing was in current systems. Multimedia applications require efficient VLSI implementations for various media processing algorithms. Emerging multimedia standards and algorithms will result in hardware systems of high complexity. In addition to recent advances in enabling VLSI technology for high density and fast circuit implementations, special investigation of architectural approaches is also required.

In the past few years, multimedia hardware design has captured the most attentions among researchers. New programmable processors, high-speed storage and modern parallelism techniques are among the variety of subjects, which are being addressed in this domain. A detailed categorization of available multimedia processing strategies is required to help designers in adapting these techniques into new architectures. Some of important options in multimedia hardware design include: processor structure, parallelization and granularity, data distribution techniques, instruction level parallelism, memory interface and flexibility. In this paper, we address important issues in the design of a programmable multimedia processor.

Elements Of Multimedia :

- Text
- Graphic art
- Sound
- Animation
- Video

Types of Multimedia

- Interactive multimedia
- Hyperactive multimedia
- Linear multimedia possible.

III. TYPES OF MULTIMEDIA

Interactive Multimedia

Interactive multimedia, any computer-delivered electronic system that allows the user to control, combine, and manipulate different types of media, such as text, sound, video, computer graphics, and animation. Interactive multimedia integrate computer, memory storage, digital (binary) data, telephone, television, and other information technologies. Their most common applications include training programs, video games, electronic encyclopedia's, and travel guides. Interactive multimedia shift the user's role from observer to participant and are considered the next generation of electronic information systems.

A personal computer (PC) system with conventional magnetic-disk memory storage technically qualifies as a type of interactive multimedia. More advanced interactive systems have been in use since the development of the computer in the mid-20th century—as flight simulators in the aerospace industry, for example. The term was popularized in the early 1990s, however, to describe PCs that incorporate high-capacity optical (laser) memory devices and digital sound systems.

The most common multimedia machine consists of a PC with a digital speaker unit and a CD-ROM (compact disc read-only memory) drive, which optically retrieves data and instructions from a CD-ROM. Many systems also integrate a handheld tool (e.g., a control pad or joystick) that is used to communicate with the computer. Such systems permit users to read and rearrange sequences of text, animated images, and sound that are stored on high-capacity CD-ROMs. Systems with CD write-once read-many (WORM) units allow users to create and store sounds and images as well. Some PC-based multimedia devices integrate television and radio as well.

Among the interactive multimedia systems under commercial development by the mid-1990s were cable television services with computer interfaces that enable viewers to interact with television programs; high-speed interactive audiovisual communications systems that rely on digital data from fibre-optic lines or digitized wireless transmissions; and virtual reality systems that create small-scale artificial sensory environments.

Hyperactive multimedia

Hypermedia, an extension of the term hypertext, is a nonlinear medium of information that includes graphics, audio, video, plain text and hyperlinks. This designation contrasts with the broader term multimedia, which may include non-interactive linear presentations as well as hypermedia. It is also related to the field of electronic literature. The term was

first used in a 1965 article written by Ted Nelson.

The WWW (World Wide Web) is a classic example of hypermedia, whereas a non-interactive cinema presentation is an example of standard multimedia due to the absence of hyperlinks.

The first hypermedia work was, arguably, the Aspen Movie Map. Bill Atkinson's HyperCard popularized hypermedia writing, while a variety of literary hypertext and hypertext works, fiction and non-fiction, demonstrated the promise of links. Most modern hypermedia is delivered via electronic pages from a variety of systems including media players, web browsers, and stand-alone applications (i.e., software that does not require network access). Audio hypermedia is emerging with voice command devices and voice browsing.

Linear multimedia

Linear active content progresses often without any navigational control for the viewer such as a cinema presentation; Non-linear uses interactivity to control progress as with a video game or self-paced computer-based training. Hypermedia is an example of non-linear content.

IV. APPLICATIONS OF MULTIMEDIA

Residential services

- Video-On-Demand
- Video phone, A/V conferencing
- Home shopping

Business services

- Corporate education
- E-business

Education

- Digital libraries
- Distance learning

Science and technology

- Virtual environment
- Scientific visualization
- prototyping

Entertainment

- Games
- Interactive TV
- Post production of movie and music

Online uses include

- Books and Magazines
- Movies
- News and Weather
- Education
- Maps

Medicine, Web applications, etc.

V. NEW TECHNOLOGIES

VR- Virtual Reality

Virtual reality (VR) is an interactive computer-generated experience taking place within a simulated environment, that incorporates mainly auditory and visual, but also other types of sensory feedback like haptic. This immersive environment can be similar to the real world or it can be fantastical, creating an experience that is not possible in ordinary physical reality. Augmented reality systems may also be considered a form of VR that layers virtual information over a live camera feed into a headset or through a smartphone or tablet device giving the user the ability to view three-dimensional images

VR systems that include transmission of vibrations and other sensations to the user through a game controller or other devices are known as haptic systems. This tactile information is generally known as force feedback in medical, video gaming and military training applications.

Graphic design

Graphic design is the process of visual communication and problem-solving through the use of typography, photography and illustration. The field is considered a subset of visual communication and communication design, but sometimes the term "graphic design" is used synonymously. Graphic designers create and combine symbols, images and text to form visual representations of ideas and messages. They use typography, visual arts and page layout techniques to create visual compositions. Common uses of graphic design include corporate design (logos and branding), editorial design (magazines, newspapers and books), wayfinding or environmental design, advertising, web design, communication design, product packaging and signage.

Digital imaging

Digital imaging or digital image acquisition is the creation of a digitally encoded representation of the visual characteristics of an object, such as a physical scene or the interior structure of an object. The term is often assumed to imply or include the processing, compression, storage, printing, and display of such images. A key advantage of a digital image, versus an analog image such as a film photograph, is the ability make copies and copies of copies digitally indefinitely without any loss of image quality.

Digital imaging can be classified by the type of electromagnetic radiation or other waves whose variable attenuation, as they pass through or reflect off objects, conveys the information that constitutes the image. In all classes of digital imaging, the information is converted by image sensors into digital signals that are processed by a computer and made output as a visible-light image. For example, the medium of visible light allows digital photography (including digital videography) with various kinds of digital cameras (including digital video cameras). X-rays allow digital X-ray imaging (digital radiography, fluoroscopy, and CT), and gamma rays allow digital gamma ray imaging (digital scintigraphy, SPECT, and PET). Sound allows ultrasonography (such as medical ultrasonography) and sonar, and radio waves allow radar. Digital imaging lends itself well to image analysis by software, as well as to image editing (including image manipulation).

VI. CONCLUSION

A Multimedia is a largest process of mass communication. They are used to transmit the information sharing in resources to resources for the path of international network. The computer networks to connect by the worldwide communications. Today trending in multimedia working for in voice communication, messenger, virtual calls and mobile apps. So the multimedia is the major one of a message sharing for in people.

REFERENCES

- [1] Multimedia systems by Ralf Steinmetz and Klara Nahrstedt.
- [2] Multimedia Communications by JD Gibson.
- [3] Multimedia Systems, Standards, and Networks by A Puri and T Chen.
- [4] Introduction to DATA Compression by K SAYOOD
- [5] Handbook of Multimedia Computing by BORIVOJE FURHT.

- [6] Intelligence interactive multimedia systems and services by HOWLETT JAIN VIRVOU TSIHRINTZIS
- [7] Wireless multimedia communication systems by BAKMAZBOJKOVIC RAO.
- [8] Best We and Interactive Websites [http:// WWW.AWWWARDS.COM](http://WWW.AWWWARDS.COM)
- [9] <http://WWW.Digitalhill.com>
- [10] <http://WWW.Searchenginewatch.com>