

Lecture 1:: Multimedia

Objectives

After taking this Lecture, you will be able to:

Describe the meaning of multimedia and its usage.

Understand the stages of multimedia projects.

Introduction

Multimedia is something people can see, hear, touch and read on websites, radio, television, video games, phone applications, retail stores, cinema halls and ATMs. Multimedia can be defined as a combination of picture, text, sound, video and animation. In simple terms, multimedia is the combination of more than one media.

Multimedia is the medium which provides information to the users in the form of text, audio, video, animation and graphics. The information is delivered to the users by digital or electronic means. When a user is allowed to control the elements of multimedia then it becomes interactive multimedia. Interactive multimedia is called hypermedia when the user is given the structure of linked elements to control it.

Meaning and its Usage

Multimedia is a mixture of different forms of media. This includes text, graphics, audio, video, etc. Today, multimedia is found everywhere in educational institutes, offices, airports, railway stations, journalism, creative and entertainment industries such as TV, films, radio, etc., medicine, IT industry, research, etc. The kinds of media components and how they are used in a multimedia program matter a lot.



Example: A music video and sound should be used together as one without another would lose its significance.

Multimedia provides important information in an interactive way with the usage of images, graphics, animation, video and audios. For this reason, it is gaining popularity as a powerful educational tool. There are various multimedia software that are used in the field of education. CDs and DVDs are used to store information in different multimedia formats.



Example: A Powerpoint presentation involving text and graphics is a multimedia presentation.



Notes Combining Content from Various Media

There are various components that make up a multimedia production. In a program, more than one media element is necessary to call it a multimedia. Some examples of media are given below:

Text and typography.

Coloured, pictorial or graphical backgrounds

Images and graphics such as photographs, illustrations, cartoons, diagrams, shapes, arrows, lines, etc.

2D and 3D animation.

Audio files such as a song, sound effects, music, etc.

Video files such as a short movie clip, advertisement, etc.

Buttons and menu for easy navigation in a program.


Categories of Multimedia

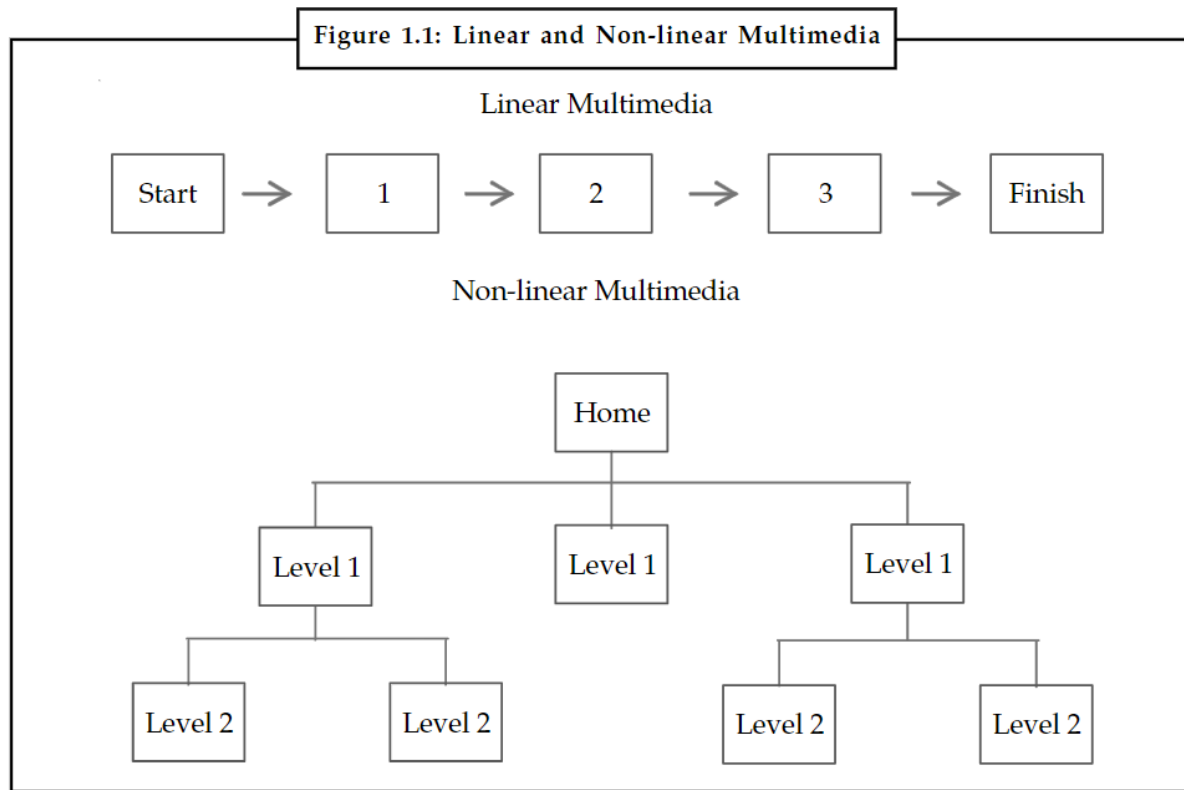
Based on how multimedia programs are used, multimedia can be divided into two forms – linear multimedia and non-linear multimedia. In linear multimedia, information is read or viewed in a continuous sequence. Usually, these presentations begin at a predetermined starting point and end at a predetermined end point. They can be automated so that each screen comes after a fixed time interval.



Example: Powerpoint presentation is one of the most common examples of linear multimedia.

On the other hand, non-linear multimedia information is not presented in sequential or chronological manner. Non-linear multimedia programs are usually interactive and require audience interaction.

 *Example:* One of the most common examples of this form of multimedia is the Web.



Features of Multimedia

Digital and computer based images, text, graphics, animation, audio and video that can be turned from one form to another are two fundamental features of multimedia. Generally, multimedia presentations are viewed in person in a boardroom, class, on stage or in an auditorium. They can be transmitted, projected or played on a projector using a media player such as a computer. A live or recorded presentation is called a broadcast.

Multimedia games can be used in a physical environment with multiple users in an online network, with special effects or with an off-line computer or game system. Interaction in a multimedia program can be increased by mixing multiple forms of

media content. However, depending upon the kinds multimedia content available, it may differ online.



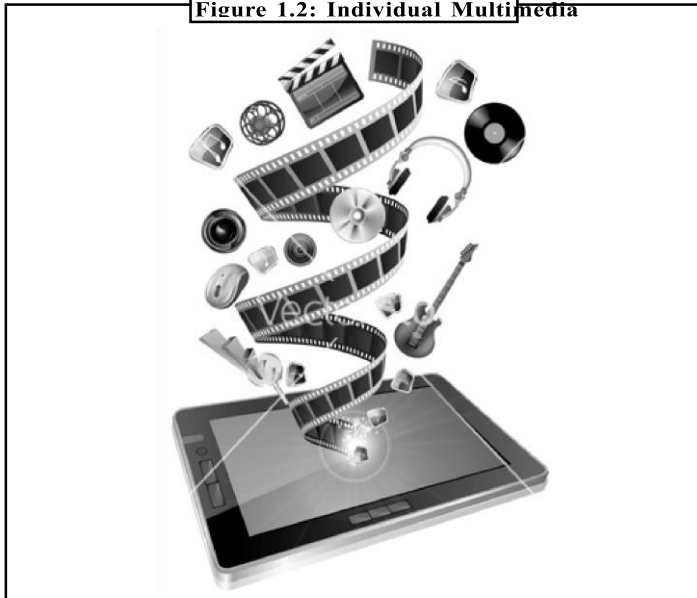
Did u know? Global positioning system (GPS) is popular multimedia device used for mapping routes and directions while driving, travelling or hiking.

Multimedia is progressively becoming data-driven and object-oriented which allows applications with cooperative end-user innovation and personalization on many forms of content over a period. For instance, content available on various websites such as photo galleries that have both content and images user-updated, to simulations whose events, animations, illustrations or videos are changeable, enabling the multimedia experience to be changed without reprogramming.

Applications of Multimedia

Multimedia can be used in a variety of ways in myriad fields. A multimedia presentation can be put together in varied formats. Some of the most common applications are given below:

Figure 1.2: Individual Multimedia



Source: <http://www.vectorstock.com/i/composite/33,45/tablet-multimedia-vector-743345.jpg>

Business

Multimedia is used for advertising and selling products on the Internet. Some businesses use multimedia tools such as CD-ROMs, DVDs or online tutorials for training or educating staff members about things the employer want them to learn or know. Staff members can learn at their own speed and at a specific time suitable to them as well as the company. It also saves money of the employers as now they don't have to pay extra expenses on training or education of their human resources. Multimedia is one of the best ways to provide short-term training to the workers in a company.



Caution Make your multimedia to the point and precise or it can have adverse effects on the business in financial terms.

Research and Medicine

Multimedia is increasingly used in research in the fields of science, medicine and mathematics. It is mostly used for modelling and simulation. For instance, a scientist can look at a molecular model of a particular substance and work on it to arrive at a new substance. In Medicine, doctors acquire training by watching a virtual surgery or they can simulate how the human body is affected by diseases spread by germs and then develop techniques to prevent it.

Public Access

Public Access is an area of application where several multimedia applications will be available very soon. One of the application is the tourist information system, where a travel enthusiast will be shown glimpse of the place he would like to visit. With the help of multimedia various source providing applications could be created.

Entertainment

Multimedia is used to create special effects in films, TV serials, radio shows, games and animations. Multimedia games are popular software programs that available online as well as on DVDs and CD-ROMs. Use of special technologies such as virtual reality turn these games into real life experiences. These games allow uses to fly aeroplanes, drive cars, do wrestling, etc.



Example: Flight simulator is an example that creates a real life imaging.

Did u know? IBM released the first portable computer with fixed monitor with keyboard and data storage in 1975.

Industry

In the Industrial sector, multimedia is used to present information to all people related to the industry such as stakeholders, shareholders, senior level managers and co-workers. Multimedia is also helpful in advertising and selling products all over the world over internet.

Commercial

Creative presentations are used to grab the attention of the masses in advertising. Industrial, business to business and interoffice communications are mostly developed by firms providing creative services. They work on advanced multimedia presentations rather than simple slide shows to sell ideas or make training programs more interesting.

Education

Multimedia is used as a source of information in the field of education. Pupils can research on various topics such as solar system or information technology using different multimedia presentations. To make teaching more interesting and fun for pupils, teachers can make multimedia presentations of chapters. Visual images, animation, diagrams, etc., have more effect on pupils. Various computer-based training (CBT) courses are also available online for study.

Multimedia in Public Places

In railway stations, hotels, museums, grocery stores and shopping malls multimedia will become available at stand-alone terminals to provide information and help. Such installation reduce demand on traditional information booths and personnel, add value, and they can work around the clock, even in the middle of the night, when live help is off-duty.

Engineering

Software engineers may use multimedia in computer simulations for anything from entertainment to training such as military or industrial training. Multimedia for software interfaces are often done as collaboration between creative professionals and software engineers.

1.2 Stages of Multimedia Project

A multimedia program should go through various multimedia production phases. There are three main stages of a multimedia project:

1. ***Pre-production:*** The process before producing multimedia project.
2. ***Production:*** The process in which multimedia project is produced.
3. ***Post-production:*** The process after the production of multimedia project.

These stages are sequential. Before beginning any work, everybody involved in the project should agree to what is to be done and why. Lack of agreement can create misunderstandings which can have grim effects in the production process. Therefore, initial agreements give a reference point for subsequent decisions and assessments. After the clarification of why, what multimedia product has to do in order to fulfil its purpose is decided. The “why” and “what” determine all the how decisions including storyboards, flow chart, media content, etc.

Pre-Production

Idea or Motivation

During the initial why phase of production, the first question the production team ask is “why” you want to develop a multimedia project?

Is the idea marketable and profitable?

Is multimedia the best option, or would a print product being more effective?

Product Concept and Project Goals

It takes several brainstorming sessions to come up with an idea. Then the production team decides what the product needs to accomplish in the market. It should keep in account what information and function they need to provide to meet desired goals. Activities such as developing a planning document, interviewing the client and building specifications for production help in doing so.

Target Audience

The production team thinks about target age groups, and how it affects the nature of the product. It is imperative to consider the background of target customers and the types of references that will be fully understood. It is also important to think about any special interest groups to which the project might be targeted towards, and the sort of information those groups might find important.

Delivery Medium and Authoring Tools

The production team decides the medium through which the information reach the audience. The information medium can be determined on the basis of what types of equipment the audience have and what obstacles must be overcome. Web, DVDs and CD-ROMs are some of the common delivery mediums. The production team also ascertain what authoring tools should be used in the project. A few of the authoring tools are graphics, audio, video, text, animation, etc.



Task Buy two game or educational CDs, study them and list their features.

Planning

Planning is the key to the success of most business endeavours, and this is definitely true in multimedia. This is because a lack of planning in the early processes of multimedia can cost later.

The production team works together and plan how the project will appear and how far it will be successful in delivering the desired information. There is a saying, “If you fail to plan, you are planning to fail.”

Group discussions take place for strategic planning and often the common points of discussions are given below:

What do you require for the multimedia project?

How long will each task take?

Who is going to do the work?

How much will the product cost?

Planning also includes creating and finalizing flowchart and resource organization in which the product's content is arranged into groups. It also includes timeline, content list, storyboard, finalizing the functional specifications and work assignments. Detailed timelines are created and major milestones are established for the difficult phases of the project. The work is then distributed among various roles such as designers, graphic artists, programmers, animators, audiographers, videographers, and permission specialists.

Production

In the production stage all components of planning come into effect. If pre-production was done properly, all individuals will carry out their assigned work according to the plan. During this phase graphic artists, instructional designers, animators, audiographers and videographers begin to create artwork, animation, scripts, video, audio and interface. The production phase runs easily if the project manager has distributed responsibilities to the right individuals and created practical and achievable production schedule. Given below are some of the things that people involved in production have to do:

Scriptwriting

The scripts for the text, transitions, audio narrations, voice-overs and video are written. Existing material also needs to be rewritten and reorganized for an electronic medium. Then the written material is edited for readability, grammar and consistency.

Art

Illustrations, graphics, buttons, and icons are created using the prototype screens as a guide. Existing photographs, illustrations, and graphics are digitized for use in an electronic medium.

Electronically generated art as well as digitized art must be prepped for use; number of colours, palettes, resolution, format, and size are addressed.

3D Modelling and Animation

The 3D artwork is created, rendered, and then prepared for use in the authoring tool. The 3D animations require their own storyboards and schedules.

Authoring

All the pieces come together in the authoring tool. Functionality is programmed, and 2D animation is developed. From here, the final working product is created. Every word on the screen is proofread and checked for consistency of formatting. In addition, the proofreader reviews all video and audio against the edited scripts.

Shooting and Recording Digitizing Video

The edited scripts are used to plan the budget, performers, time schedules and budget, then the shoot is scheduled followed by recording.

Quality Control

Quality control goes on throughout the process. The storyboards are helpful for checking the sequencing.

The final step checks should be done for the overall content functionality and usability of the product. The main goal of production is to make the next stage, post production, run smoothly and flawlessly.



Notes Production provides the raw components that will be blended together to create the final outcome of the multimedia

project. If the components are flawed, the end product will also be flawed.

Post-production

After the production of the multimedia project, post-production technicalities should be addressed to produce a perfect and error free project. It is one of the most fundamental of all stages of production.