

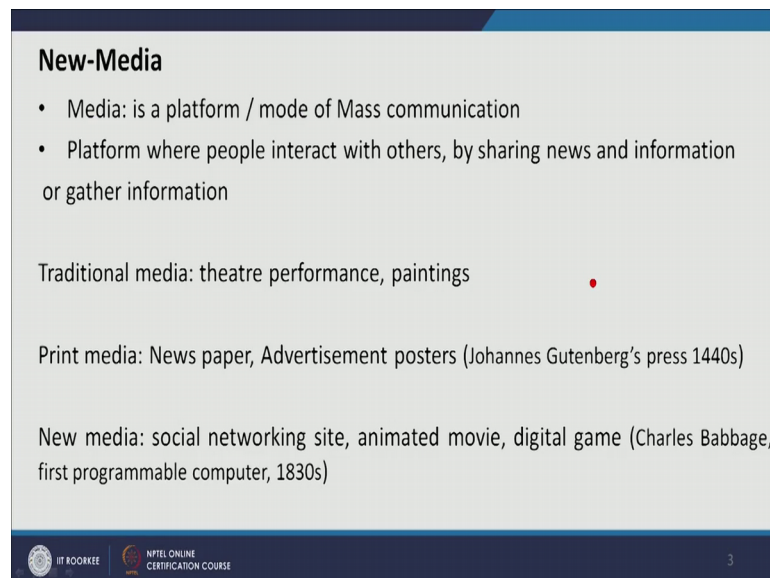
Visual Communication Design for Digital Media
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Lecture - 06
Types of Digital Media Technologies

Hello. Welcome students to the NPTEL course Visual Communication Design for Digital Media. And in this module we will start discussing about types of digital media technologies. In this before we have started desire discussing on we what is visual communication design. So, we discussed what are the elements of visual communication design, what are the principles of visual communication design and from this module onwards we will start discussing on what is digital media. Digital media is also sometimes called new media, because a new media is that paradigm where the digital influence digital platform is started.

So, to understand a digital or new media, we need to understand; what is media. What we talked about the; what we denote when we tell this is a digital or traditional media.

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New-Media

- Media: is a platform / mode of Mass communication
- Platform where people interact with others, by sharing news and information or gather information

Traditional media: theatre performance, paintings

Print media: News paper, Advertisement posters (Johannes Gutenberg's press 1440s)

New media: social networking site, animated movie, digital game (Charles Babbage, first programmable computer, 1830s)

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So, media is a platform or mode of mass communication. So, the platform where people interact where people interact with each other by sharing knowledge, by sharing news, sharing information or people take or gather knowledge from a particular interface it can be a digital interface, it can be a traditional interface.

So, for example, if we think about the previous times; so when people use to start used to spread news by announcing. A announcing in a public plaza and playing drums and then there were started on an announcing then announcing different news. And that was the initial started a starting of communication. Then there were school paintings then there were paintings on churches wall, painting on even the cave paintings are also way of communication. And gradually we evolve from that era and there are the newspapers, pamphlets, all this print media started and right now we are in the age of computer, and the computer became the platform of media. And from that time onwards we started talking about digital media as a new media, and that is a paradigm shift. So, initially the paradigm of media was completely different it was traditional; right now it is based on digital.

So, if we think about the evolution first the traditional medias were theatre performance paintings. Even in the Indian context we have our school paintings we have our wall paintings like madhubani, we have school paintings like patachitra s those were the traditional medias. And even the shadow puppetries those were the traditional Indian in Indian context was the traditional media or traditional old media, then when during the renaissance Europe, Guttenberg developed a machine which is press and the first he what he printed was the bible, that Guttenberg's bible that was around 1440s.

So, that time onwards print media started and the print media within print media we have newspaper we have we have pamphlets we have advertisement posters. So, actually from if we compare the theater performance theatre performance has the capacity to target less audience only a theatre hall only a whose even though paintings on the churches hall who is visiting the church can only see that can have the communication. Can however, interface between the painting and humans communication can happen, but in print media has larger reach it can target larger audience.

So, this was actually required during the renaissance where people migrated from village to a cities and industrial revolution started. So, during industrial revolution advertisements of new products were required, and that time rain engines and all these things were started developing. So, newspapers were easy to distribute, it distributors through vehicles like legends and it reaches the larger target audience. So, the capacity to target an audience is gradually becoming higher. Even from print media to be if we think about the invention of first programmable computer, that is what happened on 1830s by

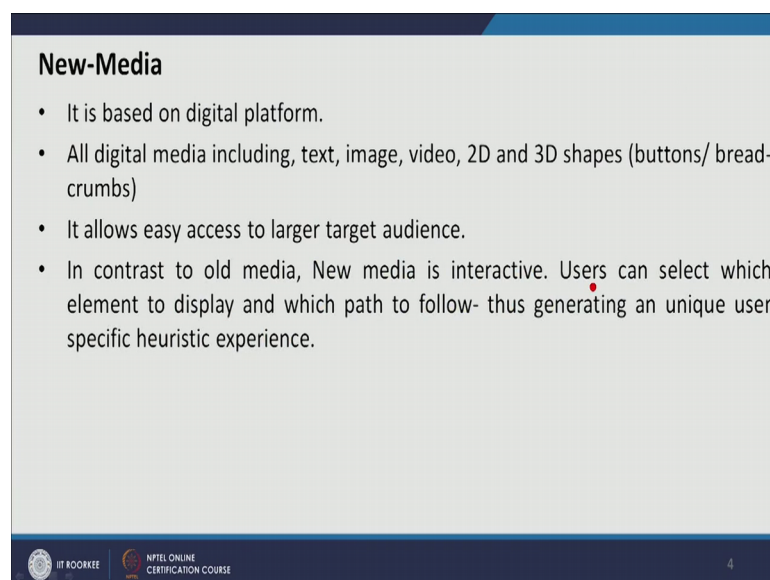
Charles Babbage. So, computer has even larger it can target even larger target audience. So, it can actually have an impact globally. So, it does not need to reach the user in turn in forms of tangible newspapers.

The information's can be digitally stored and anybody from all over the world can access the media. So, gradually the media become more popularized, it can one information can be accessed by many people. So, in today's digital or new media we have social networking sites like Face book like or coat which initially was there and other social networking sites like over Whatsapp mobile application where people communicate and even the people who is especially distant like a sitting in a different country they can communicate through these social networking sites.

And in a exchanger information and knowledge even the animated movies which can which we can upload in digital platforms like YouTube, and all over the world people can see that. And even the digital games somebody from other side of the earth is programming the game and we are playing it.

So, these are the new digital media platforms which are available today. So, what are the characteristics of new media?

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New-Media

- It is based on digital platform.
- All digital media including, text, image, video, 2D and 3D shapes (buttons/ bread-crumbs)
- It allows easy access to larger target audience.
- In contrast to old media, New media is interactive. Users can select which element to display and which path to follow- thus generating an unique user specific heuristic experience.

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So, it is based on digital platform definitely, and all digital media including text, image, video, it can be 2D and 3D shapes. All are 2D and 3D shapes for example, buttons and

bread crumbs bread crumbs are the button on which we use for navigation which we will discuss in the later classes and. So, all these are actually digital information's which we can store which we can use in digital media platform. And the main thing is it can allow easy access and larger target audience, which we discussed earlier that the target audience and accessibility and is gradually increasing in media from traditional old media to the new paradigm of digital media.

So, in contrast to old media, new media is interactive and yes if you consider the painting on the wall of churches or the school paintings, users cannot interact with that. The way the performance are performing the theatre the way a painter is painted, user can only have that information. But here if you think about animation if you thought think about it give me fire experience of a web application we can click on a particular button and see what information we need.

So, here actually uses involving is much more and user can tweak, user can select what elements they want to display, and they can create their own path of instructiveness. So, there is a heuristic experience which they can generate and each and every users heuristic experience will be based on their it is its will be subjective and based on the particular user. So, heuristic experience is like the term heuristic is means that the way user interacts with the interface or the way they evolve the interaction evolves to around the user. So, so the term which will be again discussed in the detail of detail discuss detail in detail in design methodology.

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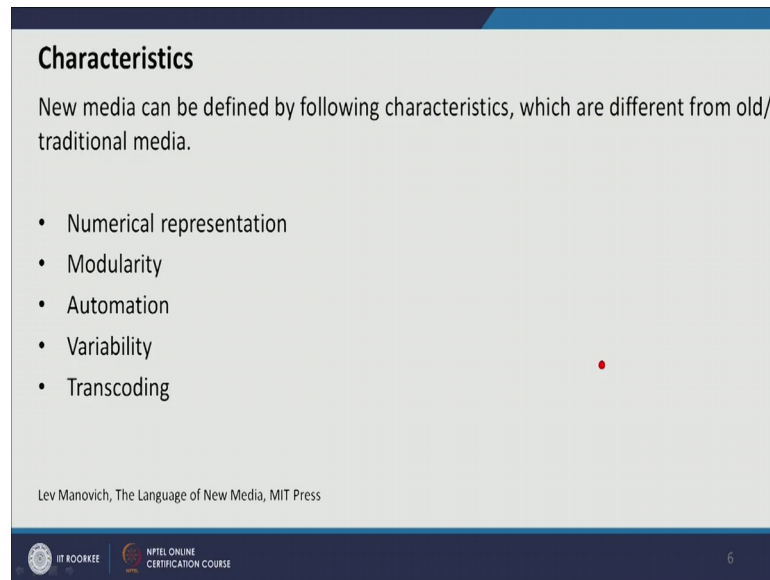
So, here on this side we have traditional old media, I have selected Indian traditional media for example, this first is covered painting, covers wooden chain based on Rajasthan. So, they used to tell a story by this folded panels of wooden panels. So, gradually one wooden panel will unfold and one story will they will they will be a nudity there will be a song attached to each and every paintings, and then again they will unfold another panel and the another song will start.

So, gradually this is actually a story telling approach by traditional Indian the Rajasthan vernacular artist used to follow. This one is actually on Bengal patachitra, this is Bengal patachitras diagram khadana. So, this was also was school painting of Bengal. So, similarly they also have each and every patter has one song associated to this.

So, this is actually a vertical scroll where there are multiple frames. So, actually this each and every frame you can connect this with animated movies. So, each and every frame has one shot and one song is there, and the next shot begins and next painting they unfold the next painting and the next song starts. So, this is a traditional media which evolved into animation and movie from there. So, this is also a Kalamkari painting for south Andhra Pradesh. So, here the paintings are there and also Telugu scripts are also there which describes the painting. This is a cover printing from Bihar, this is a wall painting where there is a graphics there is a story telling approach is applied here through the via the base is wall.

And here in the new media we have on the other side where applications, digital graphics animated films and digital gaming interfaces. So, that if we start discussing new media we need to understand the silent features and characteristics of new media.

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Characteristics

New media can be defined by following characteristics, which are different from old/traditional media.

- Numerical representation
- Modularity
- Automation
- Variability
- Transcoding

Lev Manovich, The Language of New Media, MIT Press

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So, new media as described by le Mano rich in his book the language of new media is might press, you can follow this book. In this book Manovich describes the five key characteristics of new media. The first he says it is it has the potentiality of numerical representation, second it has a modularity it has to represent new media the modular approach is followed it there is provision of automation and variability based because of the numerical representation and modularity of representation modularity of data representation and it follows a principle of transcoding. So, we will discuss this 5 principles in detail.

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• Numerical representation

- All new media objects can be described mathematically, which transforms the information into digital language
- Manipulation using algorithm is feasible in New-media design

For example- noise reduction, increasing or decreasing colour contrast

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So, the first is the numerical representation; all the new media objects can be described is represented mathematically, which computer stores the information are stored in the computer is a mathematical information, which transforms into a display system. And we understand that the way we do not see the mathematical code behind the new media design. We see a visible a display it can be in terms of text it can be in term of videography sound, it can be in terms of steel pictures.

So, because of this numerical representation manipulation using algorithm is possible, which was not possible in the form of tangible old traditional media. So, new media design for example, other the manipulation using algorithm is like noise reduction, we can reduce the noise digitally after creating first numeric the mother copy of the digital media. Then we can also increase for example, we can increase or decrease colour contrast after creating a the visual. So, these are possible because the information stored is in turns terms of mathematical numbers.

Another thing is the information stored has the same pattern, the same basic modular is repeated to store an information. The same module can be scaled up can be scaled down; within a module the same module can be repeated. So, it has a actually it has a fractal structures. So, the fractal structures are represented in graphically here.

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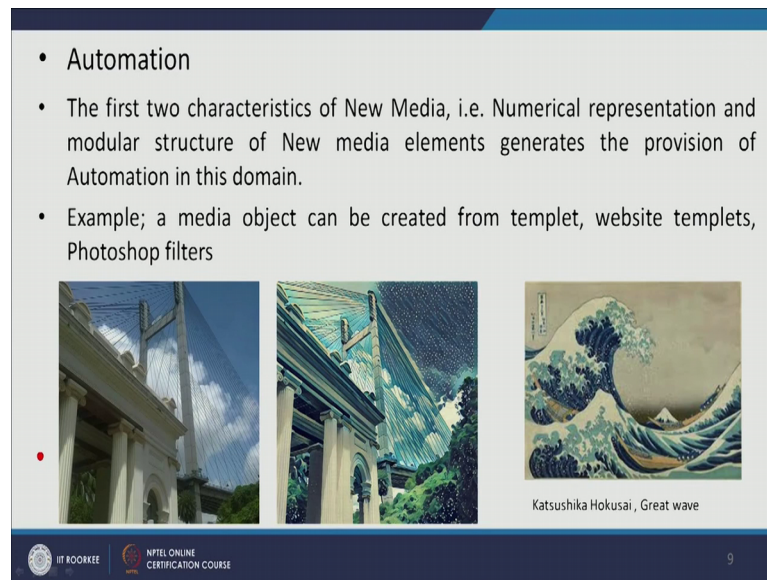
- Modularity
- Fractal structure of New media, same modular structure through out, in varied different scale
- New media elements, like, image, sound, shapes can be represented by –pixels, voxels, characters, scripts.

So, all informations in digital medias are has the same modular unit. So, the modular unit can be represent can be like pixels to represent a 2D image, it can be of voxels to represent a 3D image, a 3D digital image like when we are designing and animation 3D animation we are creating a character of a 3D animation, all informations of a 3D three d informations presented in terms of voxels. And similarly characters and scripts head to represent the typography image and all informations in the digital media.

So, the next characteristics is automation. Automation is actually possible because of numeric and modular representation of the possibility of modular representation and numeric coding of new media. So, for example, if we have a template which is already automated template and we can create a website based on the same template multiple website can be created form based on a particular single template. Even the Photoshop filters, so, they are already programmed filters in Photoshop and other graph digital graphics tool like illustrator and others. So, their filters which the proper algorithm is written for this filter and we can have different image to go through that filter and transform into a particular visual style stylistic visual.

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- Automation
- The first two characteristics of New Media, i.e. Numerical representation and modular structure of New media elements generates the provision of Automation in this domain.
- Example; a media object can be created from templet, website templets, Photoshop filters



Katsushika Hokusai, Great wave

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So, for example, in the first we have a busy we have a photograph, real photograph of prince of garden Kolkata, and on the right hand side we have Katsushika Hokusai is a great wave. So, great wave is our famous wood woodcut printing. So, this is actually a filter which new mobile based application is generated a filter which has the visual quality of this painting Katsushika Hokusai gateway. So, visual qualities are disappeared in terms of elements of design.

So, same blue colours, the colour tones of blue the line qualities and the textures are taken from this original painting, and if you see the colour of this is actually different, the colour of this is also a different tone. But when I have applied the filter which is derived from Katsushika Hokusais gateway to the original pc photograph this colour is changed into the original the inspiration of where the filter is inspired from this gate ways colour. So, the elements of design is changed and then the line qualities which where we see in the way are also repeated over here in this two depict the cloud.

So, the line qualities are also borrowed from this gate way and the painting of Hokusai and translated into the image. So, by this way actually the elements of designs are transformed and merge with a image by the principal of automation. This is only possible because of new media applications and the new media applications, all this images are actually stored in mathematical numbers and module in modular format. That is why they and a previously quoted algorithm, which is taken from this image can be applied

on the other image. So, this is possible in new media which was not possible in the old and traditional media digitally.

So, another quality of another characteristic of new media is variability. So, it can the new media objects are not fixed forever. So, it can be manipulated in variable format.

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The slide features a blue header and footer. The main content area is white with a blue border. It contains a bulleted list on the left and a 360-degree panoramic view of the Hampi ruins on the right. The panoramic view shows a circular structure with people inside, and a small red dot is visible in the center of the slide.

- Variability
- New media objects are not fixed for ever. It can be in multiple variable format. This is also the consequence of modularity and numerical coding.
- From master to multiple copies

Project Hampi, by UNESCO
Conservation through digital media

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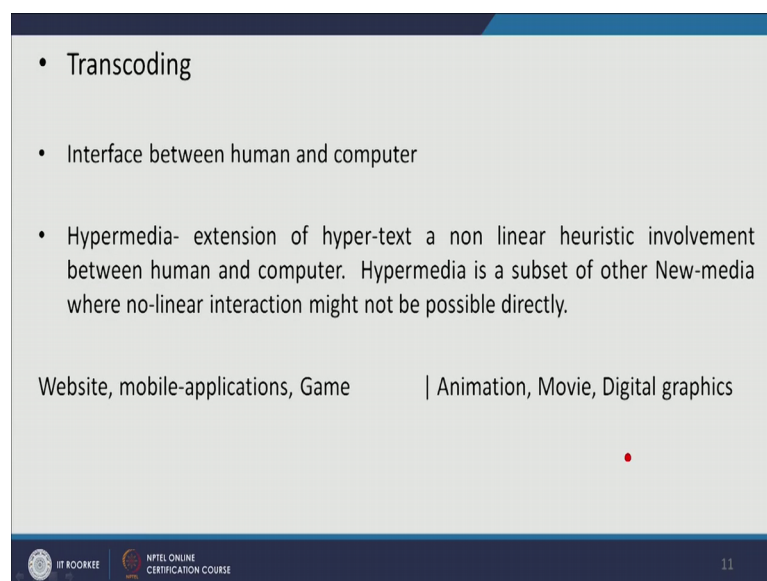
So, there is because this is also happening because of the modularity and numerical coding, which we which are the first two characteristics we are discussed. So, for example, from the mother copy we can change, we can make many other different copies we can change the format of the copies. For example, the when a movie releases the movie can also be seen in mobile which can also be transform into a fit into the screen of a particular aspect ratio for example, the flight in the flight there are this movie display systems, were the movie is a digitally modified to fit into that display system which we see in the flights. So, for example, we have this a project Hampi which is created by UNESCO for conservation of Hampi of India, which is a UNESCO world heritage site digitally.

So, digitally what UNESCO did digitally documented digitally photographed Hampi and created a 360 degree panoramic view of Hampi, so Hampi this project. So, then this project is actually digitally stored and they can display this in any form in a 360 degree panoramic view in any part of the world. So, this after documenting they can be multiple copies. So, people do not need to go to the Hampi, and see the monuments of traditional

Indian monuments. So, they can be this Humpi project is also displayed in Australia. So, people can go to Australia, and Australian people can also see this project by just going there and digitally experiencing what was what is there in the Indian heritage site Humpi.

So, again simultaneously this project can be shown in many places of the places of the world, and in many format we can see this thing in t v television, we can see this in laptop, we can see this in mobile, also we can see this in this kind of 360 degree panoramic screen. So, another characteristic another possibility with new media platform is transcoding. It is a interface between human and computer, the computer understands the different language, but human peruses the different language, but a new media can cater to the because of the digital platform it can cater new media can cater to the computer that it can take the benefits of computer programming, and also it can display things to human being.

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The slide is titled "Transcoding" and contains the following content:

- Transcoding
- Interface between human and computer
- Hypermedia- extension of hyper-text a non linear heuristic involvement between human and computer. Hypermedia is a subset of other New-media where no-linear interaction might not be possible directly.

Website, mobile-applications, Game | Animation, Movie, Digital graphics

At the bottom of the slide, there are logos for IIT ROORKEE and NPTEL ONLINE CERTIFICATION COURSE, and the number 11.

And so, there is another term we have to discuss here is hypermedia it is an extension of hyper texting and for the non-linear heuristic interaction happens between user and computer. So, if we have hypertext. So, people can select a particular hypertext and they can select the particular path, which we were discussing in the beginning of the lecture.

So, a process of co evolution co creation and co design is there, and which unfolded because of the new media paradigm. So, for example, exit mobile application game which we have, which we can interact as the way we want. And there are also some

multimedia where which cannot be that interactive for example, animation movie and digital graphics, but still we can pause; we can switch we can pause the movie again we rewind and see it again which was not possible in the traditional media like school painting and if you are singing a performance in theater.

So, these are the characteristics of a new media. And we will again discuss in detail in the next lecture, how visual communication design can affect in can be applied in new media paradigm.

Thank you.