

# JOB ROLE – ROTO ARTIST

Sector – Media and Entertainment Sector

(Qualification Pack Code: MES/Q3504)

( Class-XI )

विद्यया ऽ मृतमश्नुते



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**UNIT 1: ROTOSCOPY TECHNIQUE**  
**Chapter 1: Animation and Visual Effects**

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# Chapter Objectives

The students will be able to:

- ❑ Describe the term Animation and Visual Effects(VFX),
- ❑ Differentiate between Animation and VFX,
- ❑ Describe Media and Entertainment industry (M&E) in India,
- ❑ Differentiate various segment of M&E industry,
- ❑ Explain Indian Animation and VFX industry and its key factor,
- ❑ Identify job opportunities in Animation and VFX field.

# Introduction

**Animation:** Method of photographing successive drawings, models, or even puppets, to create an illusion of movement in a sequence.

**VFX (Visual Effects):** Any imagery created, altered, or enhanced for a film or other moving media that cannot be accomplished during live-action shooting.



*Fig. Animation*



*Fig. Visual Effects*

# Differences between Animation and VFX

|                     | Animation  | VFX (Visual Effects)   |
|---------------------|--|--|
| <b>Source</b>       | Pictures/ drawings of puppets.   | Real things/scenes/ people   |
| <b>Software</b>     | 2D animation – Toon Boom Studio, Adobe Animate.<br>3D Animation – Autodesk Maya and 3Ds Max. | Autodesk Maya, 3Ds Max, Foundry’s Nuke, Black magic fusion, Adobe Photoshop, Adobe after effects, Silhouette FX. |
| <b>Applications</b> | Animation Film, Animated Logos, Advertising campaigns, TV cartoon series, E-Content          | Films and Documentaries  |
| <b>Examples</b>     | Chaar Sahibjade, Chhota-Bheem, Motu-Patlu  | Baahubali the beginning, Spiderman, Avatar, Pirates of the Caribbean.  |

# Media and Entertainment

**Media** is a tool of mass communication, used to deliver information through various channels such as Television, Radio, Newspaper and many more.

**Entertainment** encompasses events that allow people to spend a good time. Entertainments include film, games, cartoon, television serial and many more.

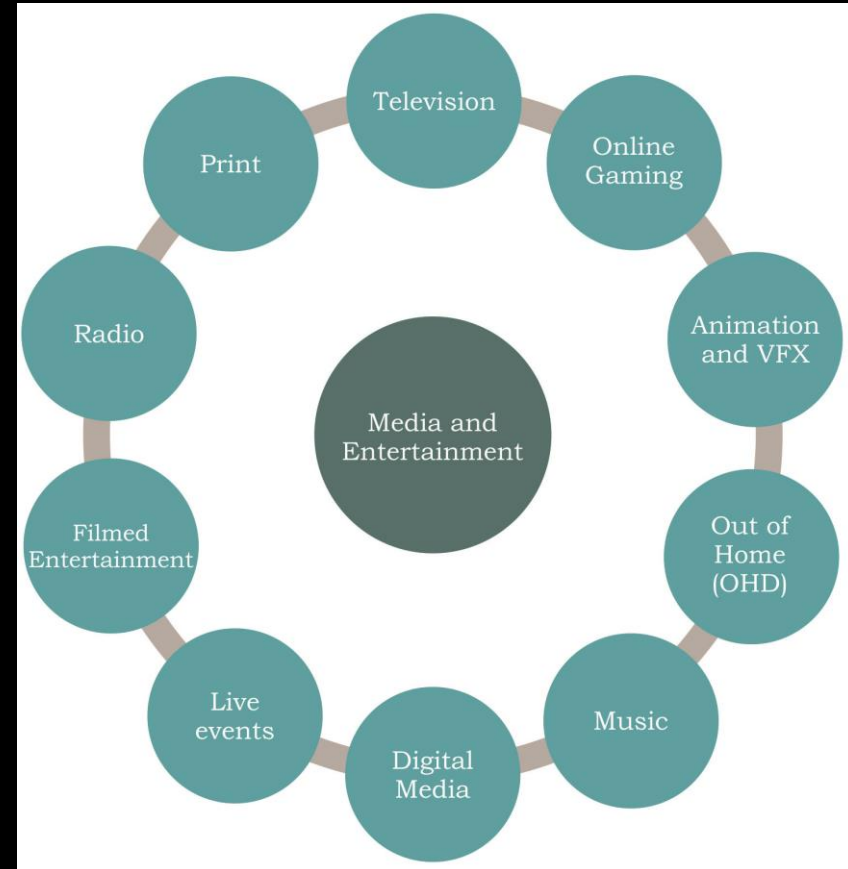
Hence, media and entertainment represent a range of fields that can **inform, teach and entertain** you.



# Media and Entertainment Industry in India

Media and Entertainment (M&E) industry has multiple sectors namely Television, Online gaming, Animation and VFX, OHD, Music, Digital media, Live events, Film, Radio and Print.

The Indian M&E Industry is a booming sector for the economy and is making high growth. The M&E industry in India displays the solid growth of **13%** during the year 2019-20.



*Fig. Various sectors of media and entertainment*



# M&E Sector Growth Rate

At present, India is one of the largest broadcasters in the world with approximately **800 TV** channels, **242 FM** channels and over **100 community radio networks** working at present.

Indian film industry is the largest producer of films around the globe with over **1500-2000 films** every year. The Indian M&E industry is growing rapidly. It reached INR 1.63 trillion, a growth of 13.2% over 2018. With its current trajectory, we expect it to grow up to INR 2.35 trillion by 2021.

The Animation and VFX segment witnessed a strong growth of **18.7 %** in FY-19.

# M&E Sector Growth Rate

| Overall industry size (INR billion) | FY 15       | FY 16       | FY 17       | FY 18       | FY 19       | Growth in FY19 over FY18 | CAGR (FY15-FY19) |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|--------------------------|------------------|
| <b>Digital</b>                      | 47          | 65          | 86          | 121         | 173         | 43.4%                    | 38.5%            |
| <b>TV</b>                           | 490         | 552         | 595         | 652         | 714         | 9.5%                     | 9.9%             |
| <b>Print</b>                        | 268         | 288         | 308         | 319         | 333         | 4.5%                     | 5.6%             |
| <b>Films</b>                        | 127         | 137         | 145         | 159         | 183         | 15.1%                    | 9.6%             |
| <b>Animation &amp; VFX</b>          | 47          | 53          | 62          | 74          | 88          | 18.7%                    | 17.2%            |
| <b>Gaming</b>                       | 24          | 28          | 32          | 44          | 62          | 41.6%                    | 26.4%            |
| <b>OOH</b>                          | 22          | 26          | 29          | 32          | 34          | 5.0%                     | 11.2%            |
| <b>Radio</b>                        | 20          | 23          | 24          | 26          | 28          | 6.2%                     | 8.6%             |
| <b>Music</b>                        | 10          | 11          | 13          | 14          | 17          | 15.3%                    | 13.0%            |
| <b>Total</b>                        | <b>1055</b> | <b>1183</b> | <b>1295</b> | <b>1440</b> | <b>1631</b> | <b>13.2%</b>             | <b>11.5%</b>     |

(Source: KPMG India analysis, 2019)

# Overview of Indian Animation and VFX industry

Indian Animation Industry enriched by 300 animation, 40 Visual effects and 85 Gaming development studios with 15000 plus professionals working in this sector. India has now become a favourite destination for animation services because of cost efficiency in animation services up to 50 percent.

Indian animators have also major contribution in Hollywood projects like Kung Fu Panda, The Jungle Book and Shaun-The Sheep.



*Fig. Stills from the movie  
'Kung Fu Panda'*

# Overview of Indian Animation and VFX industry



*Fig. Stills from the movie  
'Baahubali the beginning'*

Indian animated films like **Chaar Sahibzaade** (2014), a 3D animated historical movie, made in low budget of INR 20 Crore and has generated box office revenue of approximately 50 Crore. This film was solely created in India.

Disney's **The Jungle Book** – which has grossed about \$1000 million worldwide, as per the box office. It has a major portion created by Indian artists. Another Indian blockbuster **Baahubali: The Beginning** (2015) delivered 4000 to 5000 VFX shots with a high budget of \$18 million and gained \$90 million in India.

# Animation and VFX in Advertising

Varied techniques and styles of animation like **stop-motion**, **Claymation**, **Puppet animation**, **2D**, **3D** and **live action animation** have been incorporated mainly in the television commercial space.

The famous Vodafone **Zumi 3D advertisement** has been created using computer generated imagery (CGI). In this advertisement character **Zoo Zoos** was not an animated characters. They were the real human, wore the costumes.



*Fig. Vodafone Zoo Zoos Campaign*

## Key factor of Indian Animation and VFX Industry

### Cost efficiency and improved quality

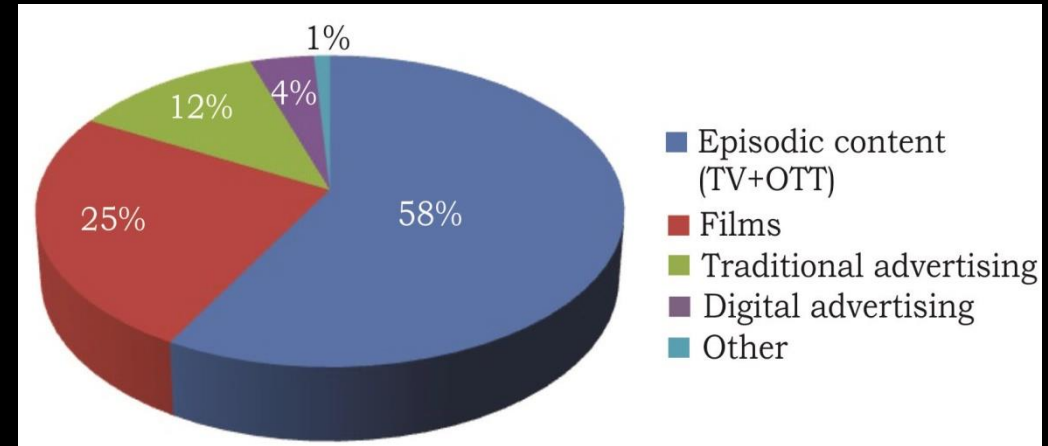
International producers are attracting towards Indian Animation and VFX services, because of those two reasons-

- ❑ Cheapest animation and VFX services all over the world, that is **1/3<sup>rd</sup>** to **1/4<sup>th</sup>** lesser than North America and **25%** cheaper than Korea and Philippines.
- ❑ The quality of animation and VFX services has improved tremendously.

# Key factor of Indian Animation and VFX Industry

## Episodic Content generated major revenue

In India, Episodic content has the biggest revenue share (**58% in FY-19**) in animation and VFX services. Episodic content denotes the work for 11 or 22 minute program, which is prepared for television and OTT platform.



*Fig. Revenue share from various sector*



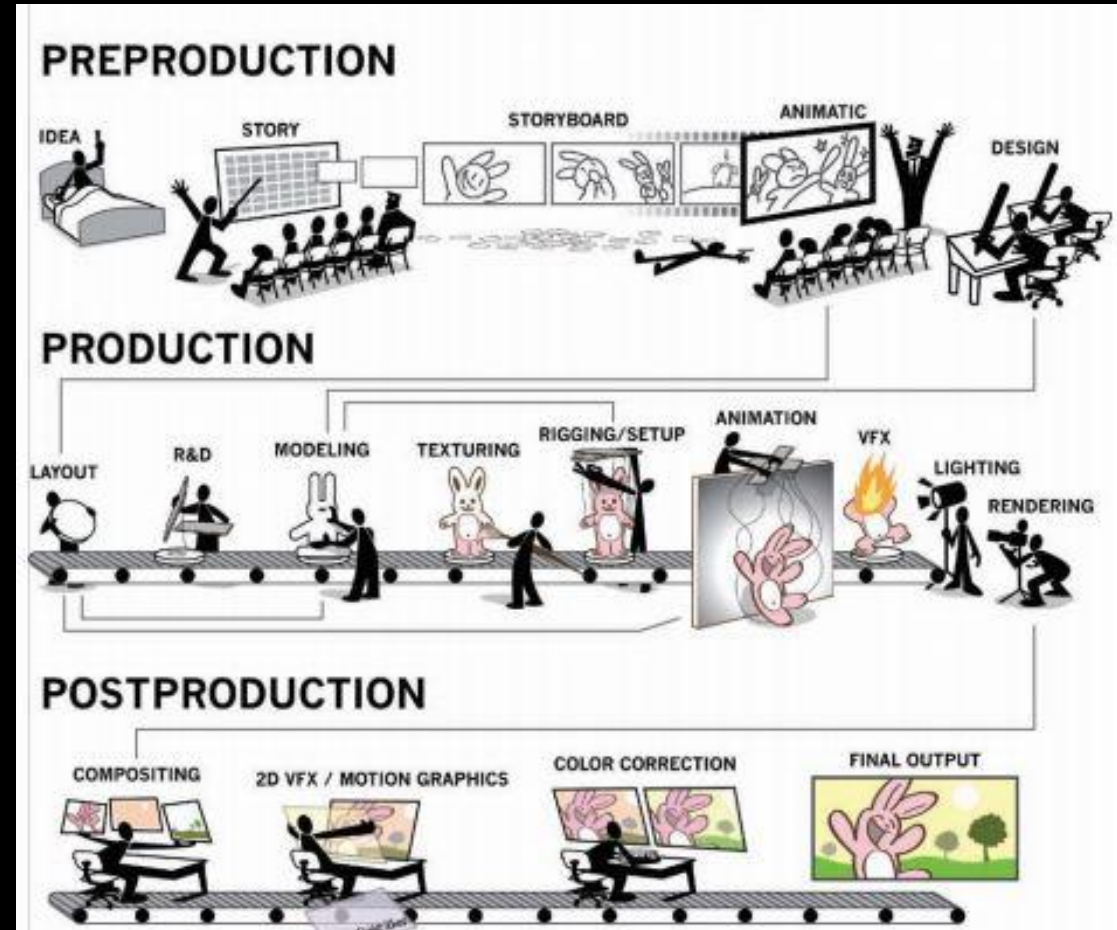
**Motu Patlu** is an example of Indian animated television series.

# Job opportunity in Animation

**Story Broad Artist-** A person, who visualize a series of events of a story and convert the word/text into sketches and graphics.

**Modeler-** A person having sound knowledge of form, volume, shapes and anatomy. The role of a modeler is to create 3D models for animation.

**Texture Artist-** gives the surface details of an object according to its nature.



*Fig. Graphical breakdown of the 3D animation pipeline*



# Job opportunity in Animation

**Digital Ink and Paint Artist**– add colours to each frame using digital ink. The background artists, paint the background of the characters /scenes involved in the project.

**Lighting Artist**- create lighting in the scene as much as it is close to real.

**Layout Artist**- Placements of lights, camera angles and background design are done by the Layout Artist.

**Rigger /Rigging Artist**- Involves in the process of creating the bone structure of a 3D model. The bone structure is used to manipulate the model like a puppet for animation.

# Job opportunity in Animation

**Morphing Artist-** Organisms contains several emotions which cannot be shown on screen from a single model. A series of different deformation of a object is created by Morphing artist.

**Character Animator-** The person, which brings characters to life. he/she have the knowledge about the walk-cycles of organism, traditional animation and stop-motion animation.

**2D Animator-** The basic job of 2D animator is to create a very high volume of separate drawings that define an animated sequence of character.

**Key-frame Animator-** The important frame, which contains initial pose and final pose of a movement of an object or character in a scene. The job of key frame animator is to draw those key frames.

# Job opportunity in Animation

**Clean-up Artist-** Traces the animator's rough sketches and drawings. It allows him to check the accuracy, continuity and consistency of a design. A cleanup artist is basically assisted to character animator.

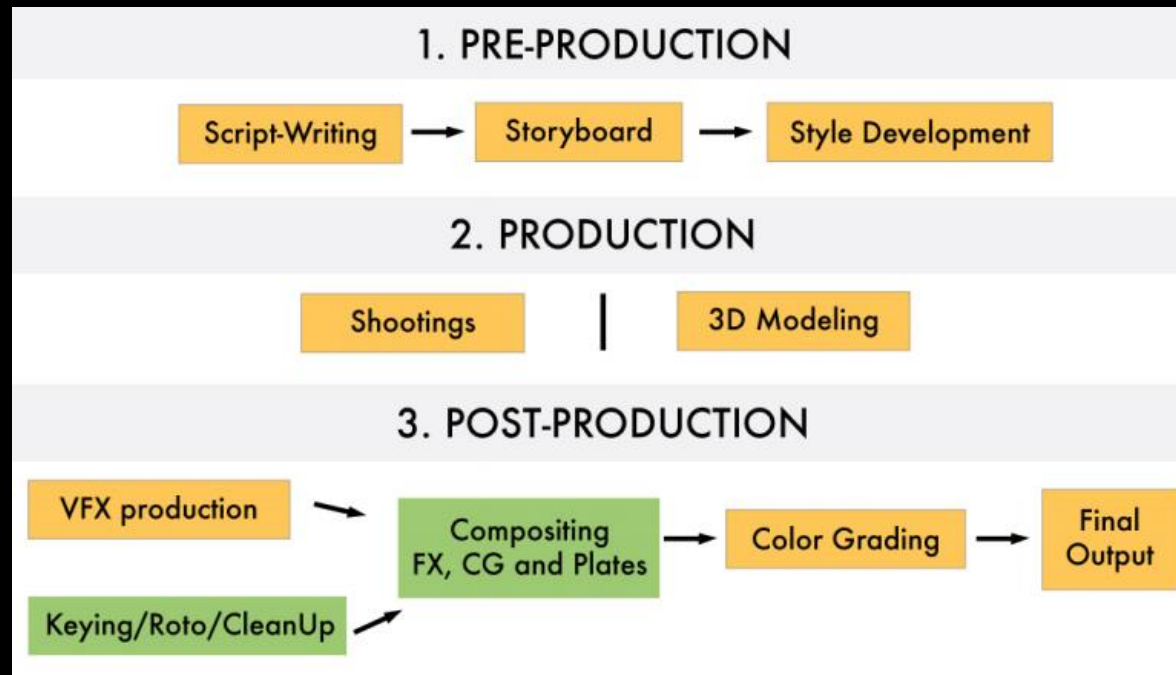
**Composer-** Brings, all the different characters, backgrounds and environment into a single animation frame. Along with, it can make changes in the composition of the pictures or frames and combine live-action footage with computer generated graphics.

**Rendering artist-** The basic job of 2D animator is to create a very high volume of separate drawings that define an animated sequence of character.

# Job opportunity in Visual Effects (VFX)

**Roto Artist**- Person who does the Rotoscoping work is known as Roto Artist. S/he carefully traces, creates motion path, selects a moving character or object and ingest into another motion picture.

**Paint/Prep Artist**- The person, who cleanup the unnecessary items from the scene such as wire removal.



# Job opportunity in Visual Effects (VFX)

**Dust buster** – A person who paints out dust on scanned film or glitches in digital capture footage. They, typically clone from an adjacent frame or area next to the spot.

**Layout Artist** – A person, who does the same work as the camera operator on a live action set, but here lighting is not involved. Layout Artist creates the camera moves for full CG features.

**Compositor** – The Compositor Artist combines layers, which is already prepared such as rendered animation, special effects, graphics, live action, static background plates, rotoscoping footage and pre-elements to create final images that meet art direction.

# Job opportunity in Visual Effects (VFX)

**Lighter / Lighting TD** – He/She focuses on the lighting of a computer graphics scene. Used interchangeably with technical director at some companies. He works in a visual effects or animation team. In this way, he is responsible for applying all lighting effects in a scene.

**Rendering Artist** – Combine models, textures, animation, lighting and to produce the correct blend in the form of individual frames of animation.

**Render Wrangler** – Person who monitors the computers and render farm, rendering CG images and digital composites. They are involved in calculating the number of procs (processor unit time) available.

## Job opportunity in Visual Effects (VFX)

**Matte Painter** – One who creates backgrounds, unlike concept artists, matte painters must create environments that feel absolutely photo real and are tightly and seamlessly integrated into the footage.

**Match mover** – Match CG camera to live action camera. Use of both automated tools and manual alignment. Match mover is also responsible for camera tracking.

**Color Grader / Color Timer** – One is responsible to adjust color in shots to keep a consistent look for the sequence.

## Summary

In this chapter you have learnt about Animation and Visual Effects(VFX) and its differences. Further, overviewed of Indian Media and Entertainment industry and also knowing about various segment of M&E industry. You have also learnt about Indian Animation and VFX industry, its key factor and various job opportunities in the field of Animation and VFX.



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