CRITICAL REPORT:

PRODUCTION PIPE LINE FOR VISUAL EFFECTS

Saurabh Waikar

22044813

s.waikar0620221@arts.ac.uk

+44 7778443096

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ABSTRACT:

This critical report will focus on the pipeline of visual effects which used in Films and Television.

KEYWORDS:

Visual Effects, Procedure, CGI, 3D, Production.

❖ **INTRODUCTION:**

VISUAL EFFECTS:

The field of Visual Effects helps in bringing together CGI i.e., computer generated images and the real-life world. In VFX the live footages are manipulated and refined with the helps of computers and its various softwares. Not only they are refined, but various clips and computer-generated elements such as 3D objects, images, plates etc. are edited and combined with the actual footage to get the final project. Visual effects are typically a mixture of realistic and unrealistic footage and images to achieve the maximum results. "The integration of live-action footage and other live-action footage or CGI elements to create realistic imagery is called VFX." (wikipedia).

❖ **PRODUCTION PIPE LINE FOR VFX:**

Typically, the visual effects field is sorted into three groups, first being pre-production, followed by production and then post production.

1. **PRE-PRODUCTION:**

Pre-production is the process of planning some of the elements involved in a film, television show, play, or other performance, as distinct from production and post-production. "A Poorly executed pre-production tends to set the tone for everything that follows, making the next months or years of work a nightmare." - (Renee Dunlop, 2014)

➢ RESEARCH:

Reaching is the most crucial and critical part for any project. When the research is critically well defined the project tends to be in a better position, resulting in better outcomes in the future steps for the project. It all starts by researching about each and every element that is going to be required for a project. For getting the best result in a project, having a detailed research is a must. Movies and films which have a strong foot hold in their research program never fails to deliver audiences with the best result. During this stage VFX leads as well as CGI leads come together and work along the side of directors and other members, to communicate and to figure out what and how the project can be accomplished. All of the visual effects pipeline is solely dependent upon research for getting better results at work.

➢ TESTING:

After the first process of research, testing is required to have a rough idea of how the project would look like. Testing includes of having a story board, where all the idea meets up in a single place. This part helps in blocking out the unnecessary information or

distractions which are not needed for the current project or have no use at all. Testing also helps in gathering additional information which are going to be essential for the project. Getting and idea into formation is what testing is all about. It gives the directors an idea about things which are going to support the running project, as Pre-Production is the backbone of any Visual Effect Project.

➤ PRE-VISUALISATION:

The step of pre-visualisation takes place at the end of scripting and before the step of production. In pre-visualisation elements such as storyboarding and the story has to be delivered by each shot as per the story. Usually, these story boards are hand drawn as they are a rough view or reference for the future elements. These elements consist of animation, Fx, 3D elements, and much more. All of these elements ate conveyed in a 2D manner. The pre-visualisation is taken care by pre-vis artists or concept artist.

After pre-visualisation the area of pre-production comes to an end and that of Producing starts.

2. PRODUCTION:

"During the production phase, the focus of the work shifts from planning to building."
– (Renee Dunlop, 2014)

➤ FILM SCANS:

The first process of production starts with Film scans. Film scan is a process in which all the video data is converted into a file sequence, using high ended electronic devices. DPX, TIFF, CINEON are considered the most as they are reliable. Along with being reliable, these formats are also known for giving less errors during the further process in production. These film scans are raw data provided to the artist on which they can carry on their process. Film scans are high dynamic range photos which gives the artist a detailed information about the images.

➤ REFERENCE PHOTOS:

One of the most important aspects in the production process is referencing of photos. Reference of photos means the collection of images of various kinds of the same types, which would be used in the further process in making of the films. The reference photos include of matte paintings, conceptual arts and its varieties, etc. A reference photo is simply a point of departure for a skilled artist. It shows a way for the artist to complete their assignments.

➤ MODELLING:

Modelling plays a special part in the field of VFX. Modelling is a part of Pre – production as well as Production. It is a back bone of the VFX field as all the concepts are inter linked along with it. Modelling is thoroughly used for creating terrains, 3D objects such as car, concept arts, swords, tablets, etc, not only this but also architectural designs. Modelling art is a very wide spread field which is only limited to your imagination. This is why modelling is the base of all the 3D concepts in the field.

3. POST PRODUCTION:

"This stage is your final opportunity to make those tweaks that can rescue a failing movie or, turn a good game into a great one." - (Renee Dunlop, 2014)

➢ GRADING, ROTOSCOPING:

The first process in post-production is started by Grading along with Rotoscoping. Grading of the plate is a process where the film scans are colour graded to the look wanted by the movie directors for their projects. Usually, these colour grades are finished by using a LUT which is used in order to enhance the mood of the videos. For example, for getting a look of danger or horror a Dark LUT is used, where as that used for a happy occasion is usually brighter. After the process of colour grading the output is used for plate preparation i.e., main look of the shot which is going to be carried forward in Compositing.

Similarly, at the same time, the step rotoscoping is also carried on. Rotoscoping is a way through which elements of a video are cut and taken it of the video frame by frame. This is usually carried out by rotoscope artist. When these elements are cut from the frame, they can be individually altered as per needed. With the help of these cuts, other elements such as 3D renders or any 2 elements can be put behind other elements, creating a depth effect. These rotoscopes are also carried forward to the compositing process.

➢ TEXTURING & LOOK DEVELOPMENT:

Consecutively, after the modelling process, look development as well as rigging takes place. Texturing is a method in which images/photos are mapped on a CGI element. The models from the previous process are textured in a way that it blends with other texture, to give CGI a more natural look, by which it can look real. Texturing plays the most important aspect as it is used for making a 3D objects have physical characteristics.

➢ RIGGING & ANIMATION:

Simultaneously, rigging process is taken care of. Rigging is a process through which we apply bones to the 3D models. These bones are crucial for the animation of the characters or the models. The bones are thoroughly and keenly skinned to the objects for getting the maximum of real-life results. These models are later on animated as per the reference. Animators usually take real-life scenarios for it. For example, they make CGI human body have all the characteristic when compared to that of a human. The way it moves its arms, the skin that is wrinkled while it is done, the reaction of the other body parts to the same movement, all these things are taken into consideration and crucially animated to get the best result.

➢ FX ANIMATION:

3D Special Effects also known as FX used in films and television, is the making of 3D elements through CGI to add more realistic elements to the scene. Special effects are usually based on how to create smoke fields, pyrotechnics, destruction, particle effects and many other elements. The most used software for these effects are Houdini, Maya, Blender etc.

➢ LIGHTNING AND RENDERING:

Following to FX animation, Lightning and Rendering is carried on. Lightning and rendering are the most important aspect that merges the computer-generated elements to the plate. Lightning is a way of illustrating all the CGI elements to have the appropriate ambiance. Things such as colour, hue, brightness, specular etc of nature is taken into reference so that it gives the best result while rendering.

> COMPOSITING:

Compositing is the final and the most vital concept for the whole VFX field. It is a process of combining all the previous processes into one, for getting the desired output needed by the director of the project. It is a process where the elements and merged together to make the output feel like it was one since beginning. After the composition is completed, the project comes to an end and is released to the audience.

❖ **CONCLUSION:**

This critical report gives us a brief information about all the various contents and process by which the production pipeline of the VFX field takes places. It is a process in which a project cannot succeed even if one element of the pipe line is omitted. They are all inter linked with each other and cannot be carried forward if one step is messed up.

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