



Working of VFX Industry and It's Pipeline

Ramandeep Sharma,

Assistant Professor, University Institute of Films and Visual Arts (Animation),
Chandigarh University, Gharuan (Mohali), Punjab, India

Abstract: The rationale of this research Article is emphasized on how the VFX industry Works and an in-depth knowledge of its structure and pipeline. This paper will also focus on the working of some VFX Companies and comparing the structure with real life outputs.

The aim of this research is to knowing the typical working and pipeline structure of a VFX Company and how the pipeline is implemented in order to achieve the required output. The thesis will also focus on how a typical VFX pipeline looks like and what are the things that affect the working and structuring of this pipeline and what a real world example looks like .The information highlights the strategies used inside the research paper to obtain sufficient information for the topic highlighted in the research article.

IndexTerms - Visual Effects (VFX), Computer Generated Imagery (CGI), VFX Pipeline

I. INTRODUCTION

We live in a world where technology has an impact on our lifestyle and with these advancements in technology every sector of the world is affected and so is the Film Industry. As we know that the movies adapted the use the VFX to create some high end quality movies and to achieve this output and the implementation of VFX we shall have a knowledge of the structure and Pipeline. The vast scale of gaming and films industry requires use of VFX. The assets have to pass through a series of different pipelines from being a concept to become a final product that creates a need and order of a structure to achieve the output required that makes the artists and technicians to know how this is done. There's a huge amount of files and data that is passed through, renamed and modified .It is very important for an artist to know how and what is the order to do this. Therefore there is a need for VFX companies to have a proper structure known as **Pipeline**.

Aim

The aim of this study is to understand how the Visual Effects pipeline works and what are the key stages in this pipeline that make it up, and what influences its structure This article also discusses workflows and the various complexities involved in structuring these pipelines.

This research focuses only on artistic elements such as storyboarding, modelling, compositing and rendering and will not focus into the detail of bidding, publishing and marketing.

Pipeline

Pipeline can be defined as the order and Workflow of a VFX Studio. The visual effects pipeline consists various stages of production that add visual effects to a **movie**.

A pipeline helps an artist to understand and guide the artist on how an asset will move through different stages of production and stored and who and when will work on the given asset to make it a final product. Pipeline is a tool that improves efficiency and it also supports the VFX Production workflow

Stages of a VFX Pipeline

The VFX Pipeline starts with Pre-Production as the first Stage followed by Production and Post-Production that can be seen in the following figure 1.1.However the Post-Production is a vast pipeline itself that has a organized order to take out an asset to the final product as shown in Figure 2.2

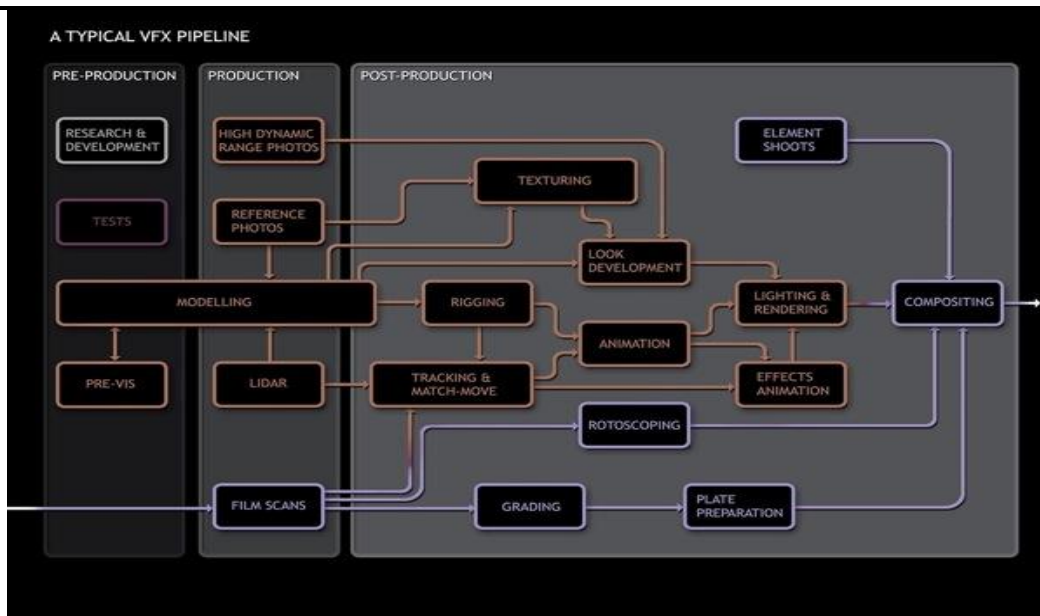


Figure 1.1: Structure of a VFX Production Pipeline

Andrew Whitehurst <http://www.andrew-whitehurst.net/pipeline.html>

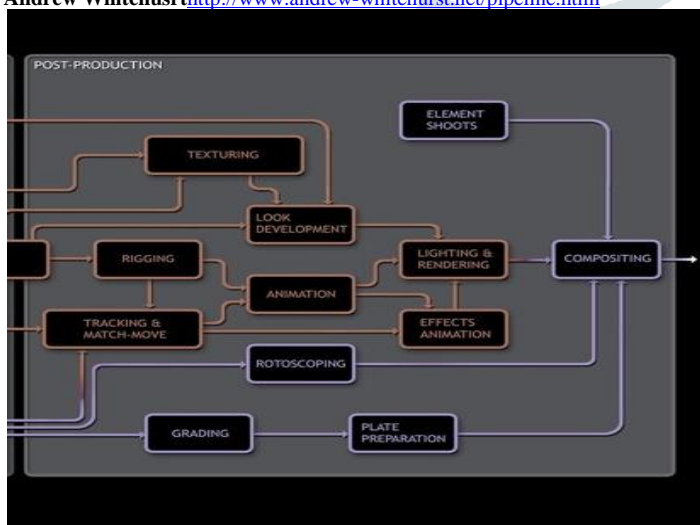


Figure 2.2: Structure of a Post production Pipeline

“Andrew Whitehurst <http://www.andrew-whitehurst.net/pipeline.html>”

Pre-Production

Pre-Production generally known as Pre-Prod is a planning stage in which the company receives the story, concepts and references for a film. By the use of the script VFX Company decides and estimates a rough Budget for the film

Then the VFX company works with clients to create Conceptual arts, storyboards and animatics thus finalizing the budget giving a more precise number and the early production of assets also begins in some cases and these assets can be used in both sets and 3D.

Production

In this stage shooting for a film is done. The VFX Studio sends their VFX Supervisors on shooting sets after to help out the crew assigned for the film shoot and ensure that the artist gets what he needs in the post production and makes sure that the green screen is used and no unnecessary things be placed that will later on make it more time consuming and costly to remove in post-production.

Post-Production

This is the stage where all of the VFX work will be done for the film. This stage can also be categorized in Pre -Production, Production and Post-Production within on which the following discussion has been done

Pre-Production in VFX

Pre-Production in VFX is also a stage of planning in which the estimated time, research & development of tools and risk calculation is done in order to prevent any problems that may occur while the actual implementation in production of VFX in the film.

Production in VFX

In this stage the actual work of creation is done by different artists in production. Elements such as texturing, modeling, animation, rigging, lighting, compositing and rendering is done in this stage

Post Production in VFX

In this stage the final touches are made and the final grading of the movie is done and this is just the ideal, in reality there are a lot of changes made and it can be a stressful for artists in production. Once you are in this stage the movie is generally finished and all the scene assets and renders will be done,

Reasons that affects Pipeline

The Flow of Information

Many of the VFX companies work in a hierarchy system which means only a few selective supervisors receives information directly from the client and that information is passed to the team leads or Head of Departments of various departments and that information or instruction is passed on the artist assigned which is known as flat hierarchy that goes from leads to mid-level artists so that they can advise other artists artistically.

One of the major drawbacks of this strict hierarchy is that the data(information) gets distorted as it passes down to the hierarchy which leads to misunderstandings and misinterpretations

Modularity

One more common part of this pipeline is its modularity. It is not unique that one VFX company will work on a single project therefore it is important to have a flexible pipeline and different VFX companies will work with different file formats.in order to re-use it should be made possible to convert the file formats using in-house tools for different software so that the conversion can be done

VFX companies usually have their in house tools developed by the developers hired in the company known as tech team and it should be possible for these tools to be used in multiple software and to help understand and easy to translate other programming languages

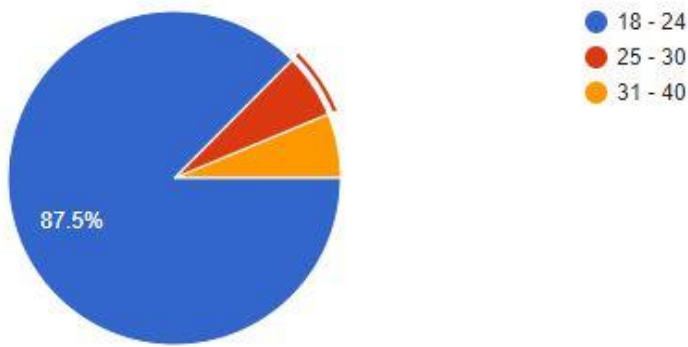
Structuring of files

One of the anonymous company uses a management system for project management called “Lime Pi” which is used to assign projects, software that will be used in the project, assign artists to the project, assigning shots to the artists and calculating of Working hours on a shot (Man-days). This management software helps to properly structure the folders and shots of the projects thus resulting in the proper structuring of projects in a VFX company and also helps in preventing the leak of data as these kinds of software doesn’t require internet access to work and resulting in no data transfer outside of the company.

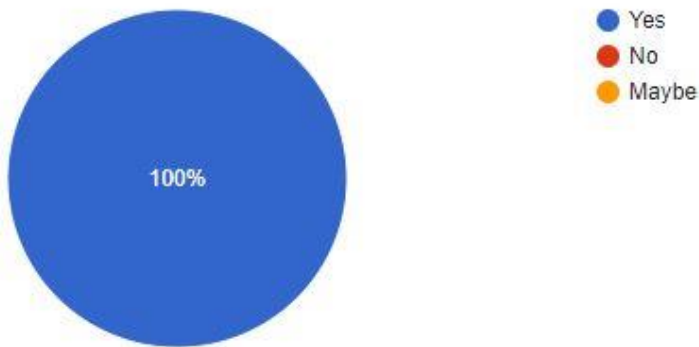
I. RESEARCH METHODOLOGY

This research has been done on the basis of interviews of numerous artists and articles that are present online and on the personal experience gained by the Author throughout the years working in various VFX Films and organizations and on the following Survey based on the following questions:

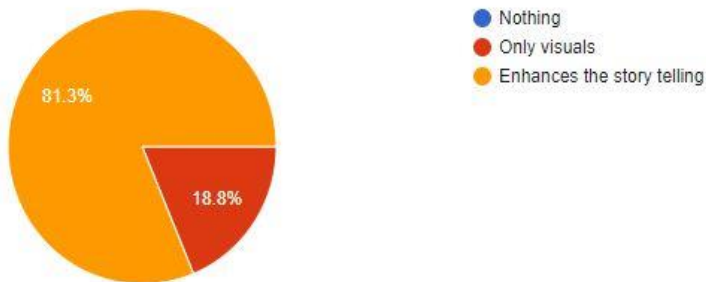
Q1.What is your age group?



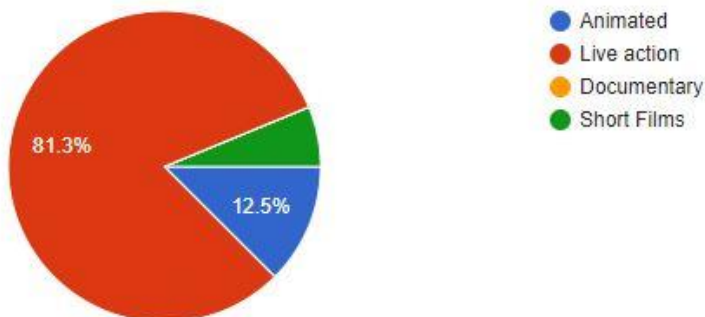
Q2.Do you know what VFX is?



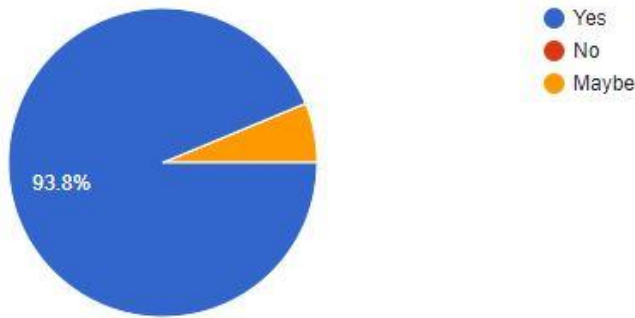
Q3.How much does VFX contribute to a movie?



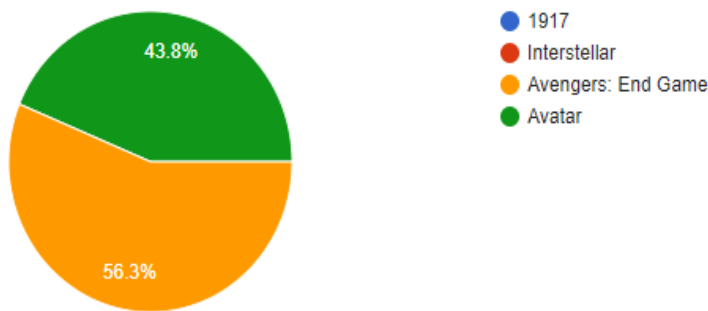
Q4.What kind of movies do you prefer?



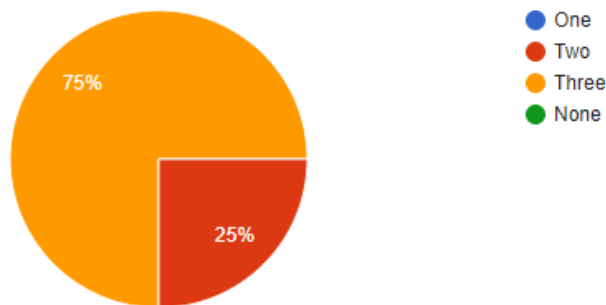
Q5.Are you aware of the pipeline of a production studio?



Q6.Which of the following has used the most VFX work?



Q7.How many stages of pipeline do you know?



IV. RESULTS AND DISCUSSION

The research on the topic “Working of VFX Industry and It’s Pipeline” is a fascinating area of research as it provides the latest information about the Structure and pipeline of VFX Industry and also creates awareness among the readers. The Implementation of a proper structure of pipeline in a VFX company leads to the proper workflow and management .Therefore, the research article becomes a valid source in surfacing the pipeline used in a VFX company and helps to understand the structure of some anonymous companies with the mentioned pipeline learned by an artist working the same company No matter if it’s on books or in the real world a pipeline consists of three phases in which it is implemented. There are three stages: Pre-Production, Production and Post-Production .And it’s also concluded that post-production has its own Pre-production, production and Post-Production readings of which are provided in the thesis itself.

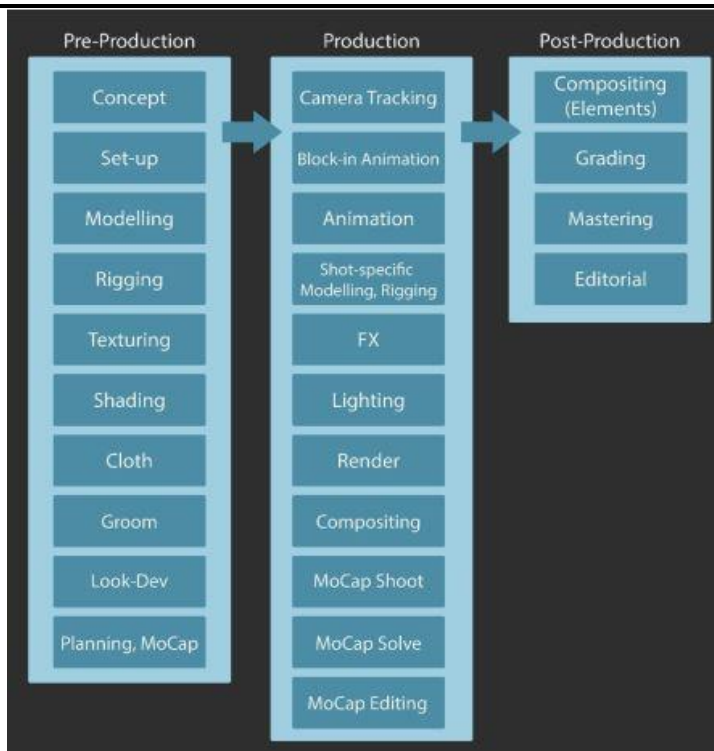


Figure 2.1: An anonymous Companies VFX Pipeline, Reference Anonymous VFX Production

II. ACKNOWLEDGMENT

Through this research article the Visual Effects companies working and its pipeline are elaborated resulting in a better chance for the artist to in the VFX Company if he is familiar with the structure and pipeline and if an artist has an understanding of the pipeline he will be able to work efficiently in the company.

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