

COMMERCIAL 3D PRODUCT VISUALIZATION PIPELINE AND ADVERTISEMENT

BY

Rafikul Islam Nayem

ID: 171-40-414

This Report Presented in Partial Fulfillment of the Requirements for the Degree of
Bachelor of Science in Multimedia and Creative Technology

Supervised By

Dr. Shaikh Muhammad Allayear

Professor & Head

Department of Multimedia and Creative Technology
Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

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APPROVAL

This Project titled “**COMMERCIAL 3D PRODUCT VISUALIZATION PIPELINE AND ADVERTISEMENT**”, submitted by **Rafikul Nayem** to the Department of Multimedia and Creative Technology, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Multimedia and Creative Technology and approved as to its style and contents. The presentation has been held on 13/02/22.

BOARD OF EXAMINERS

Dr. Sheikh Muhammad Allayear
Professor & Head

Department of Multimedia and Creative Technology
Faculty of Science & Information Technology
Daffodil International University

Chairman

Arif Ahmed
Associate Professor

Department of Multimedia and Creative Technology
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner

Md. Samaun Hasan
Assistent Professor

Department of Multimedia and Creative Technology
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner

Dr Mohammad Zahidur Rahman
Professor

Department of Computer Science and Engineering
Jahangirnagar University

External Examiner

DECLARATION

I hereby declare that, this project has been done by me under the supervision of **Dr. Shaikh Muhammad Allayear, Professor and head, Department of Multimedia and Creative Technology** Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:



Dr. Shaikh Muhammad Allayear
Professor & Head
Department of Multimedia and Creative Technology
Daffodil International University

Submitted by:



Rafikul Islam Nayem
ID: 171-40-414
Department of Multimedia and Creative Technology
Daffodil International University

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I really grateful and wish our profound our indebtedness to **Dr. Shaikh Muhammad Allayear, Professor and head**, Department of Multimedia and Creative Technology Daffodil International University,

Dhaka. Deep Knowledge & keen interest of our supervisor in this field to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior drafts and correcting them at all stage have made it possible to complete this project.

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ABSTRACT

Product visualization has recently become the most popular platform for presenting product information. And the 3D industry also has more job opportunities. Today, many companies do this by activating their e-commerce websites with visual product configuration software. This allows customers to view an image or representation of the product while completing their online orders. There are many things to do with 3D product animation. First, write a good storyboard, second, create a storyboard for each scene, third, product development begins in 3D, fourth, product animation begins here, we have to work a lot on the design of the environment, the lighting, the organization of objects by scene, animation, color correction and the most important part is that it Renders all the 3D development. Today, many companies do this by activating their e-commerce websites with visual product configuration software. This allows customers to view an image or representation of the product while completing their online orders. It is an inexpensive way to visualize architecture and products realistically. This technology provides high levels of photorealism so that a product can be viewed before it is actually manufactured. This saves expenses on prototyping time and gives the users a chance to observe the physical conditions like texture and materials which would have been otherwise difficult to see in 2D views. With the advent of huge computing power at an affordable investment, computer animations can be created by a small team of skilled resources. You can meet your organization's needs in a variety of ways and have specific measurable impacts on your business growth. Research shows that interactive 3D product presentations have a significant impact compared to still images. 3D visualization has a positive impact on buyer behavior, such as the time spent investigating a product and the likelihood of a purchase. Photo using

3D STEP(Standard for the Exchange of Product Data) files (a kind of wireframe model and production pipeline), using projected view principles, including lighting, shading, texturing, and finally the extensive process of rendering the scene. You can create realistic images. These renderings look so realistic that they are almost indistinguishable from the actual photo of the product. You can fine-tune the materials, colors, and lighting to achieve the desired results, taking into account the target design and the proposed environment, without having to prototype.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Visualization is a way of sharing information through images, diagrams, or animations. Visualization of a product exposes its form and function, but it is ultimately about communication. The tale must be effectively arranged in order to build a product for 3D visualization. I have to think about and remember a lot of things, from the plot concept to all of the pros and drawbacks in each scene. The most challenging element of finishing the story was keeping all of the scenes consistent with the plot. Companies can use product visualization to take their ideas from concept to reality. It's a crucial aspect of the Product Life Cycle Management process.. It enables investors to visually present concepts, simulate performance for analysis, and communicate product functionality without having to create a prototype. This will save you time and money if you take the right approach first.

1.2 Objectives

Imagine trying to sell or promote a tangible product for which you do not yet have a prototype. Isn't it challenging? Don't worry; a decent representation of the goods can have a favorable influence on the spectator and build enthusiasm. Images, as is generally known, are the most influential component in purchasing decisions. Adverts, point-of-purchase displays, and product logos can all benefit from photorealistic graphics, which can lend 3D realism to 2D print projects and presentations. Images are processed 60,000 times faster than text and aid in the retention of up to 65 percent of information by clients. During the ordering process, product visualization is a vital tool for informing your customers. And with 64.8% of manufacturing shipments coming from e-commerce orders, product display software is a must-have for any business looking to thrive in today's digital landscape. Visual product builders are more striking than text-based product descriptions when it comes to presenting your products. Customers will be astounded by the difference an image can make when comparing your presented products to those of your competitors.

1.3 Inspiration

Canon is the source of product visualization motivations. For exhibiting their product, they generate eye-catching 3D product visualizations. This is the primary motivation for creating this type of 3D depiction. Sometimes concepts can be traced back to a specific inspiration. Sometimes we create a 3D product prototype that we have not seen before, but we wish it existed so that we could develop our own sense of self. Open world games are also in high demand on the global market.



Figure 1.3: 3D DSLR cannon 5ds

CHAPTER 2

RESEARCH AND ANALYSIS

2.1 Background Study

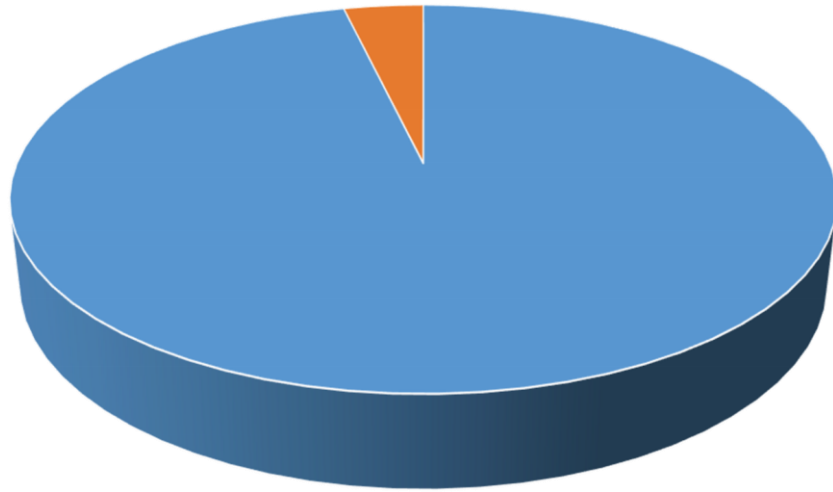
Currently technology is undergoing revolutions in a variety of areas, and One of them is 3D product visualization. Certainly, it has become relatively popular with IT Product brand, Interior designers, furniture companies, and many others. it has raised the bar for product advertising on a commercial level. There are numerous reasons why 3D product visualization technology is required. Let's start with some of the technology used in display.

Increase Engagement: Customers can actively participate in the purchasing process by displaying 3D products in your eCommerce store. Customer loyalty increases even more when they feel like they're a part of the process. As a result, it's easier to develop long-term relationships, which is crucial for increasing sales and customer loyalty.

Show products that can be customized: It was hard to expose how they are going to appearance , what are the functions and plenty extra. but proper now, via photorealistic visualization, clients can get a bigger photograph and study the changes that are approximately to happen.

Increase Conversion Rates: Interactive product display drives conversions. 83% of customers say visuals are the most compelling motive to buy. Product configurators play an crucial position in supporting clients discover what they may be searching out via supplying interactive images. This improves selection making and therefore improves conversion prices.

Almost 83% shoppers Say visuals are the most compelling reason to buy



Quick and Reasonable: It will be surprising to know that modern technology is quite affordable. Several skilled artists are well-versed in their craft and can provide quick 3D images at a reasonable cost.

To achieve a positive outcome: It allows customers to see how technology can be used effectively while also getting a glimpse of products such as mice, keyboards, and other accessories that fully meet their needs. They are able to enter 3D space and interact with real-world objects.

Easy to share: It's a digital 3D product display format that makes sharing photos with customers a breeze. Clients can also view the file extension without much difficulty.

Clients or professionals can make changes: It's simple to move objects, change colors, and replace elements when using the 3D product visualization. With the introduction of the 3D model, a space for innovation, experimentation, and modification can be created, allowing for faster and better results.

Add Special Features and Modification: 3D software allows users to easily modify their products and add unique features.

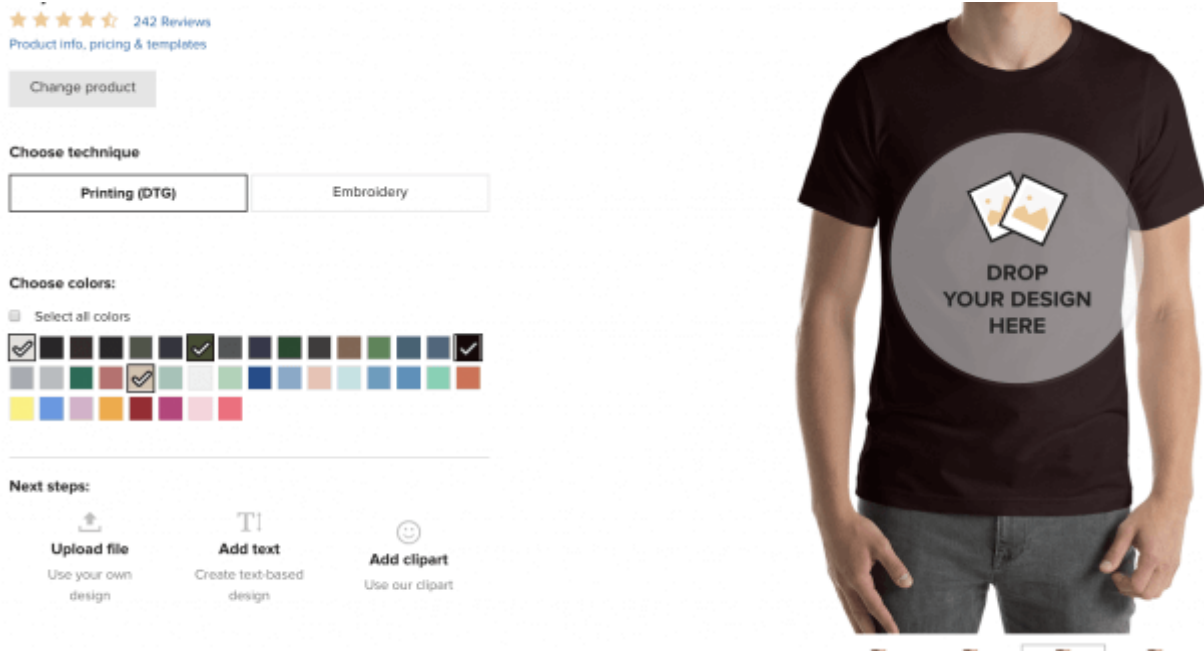


Figure 2.1: Web Product Design

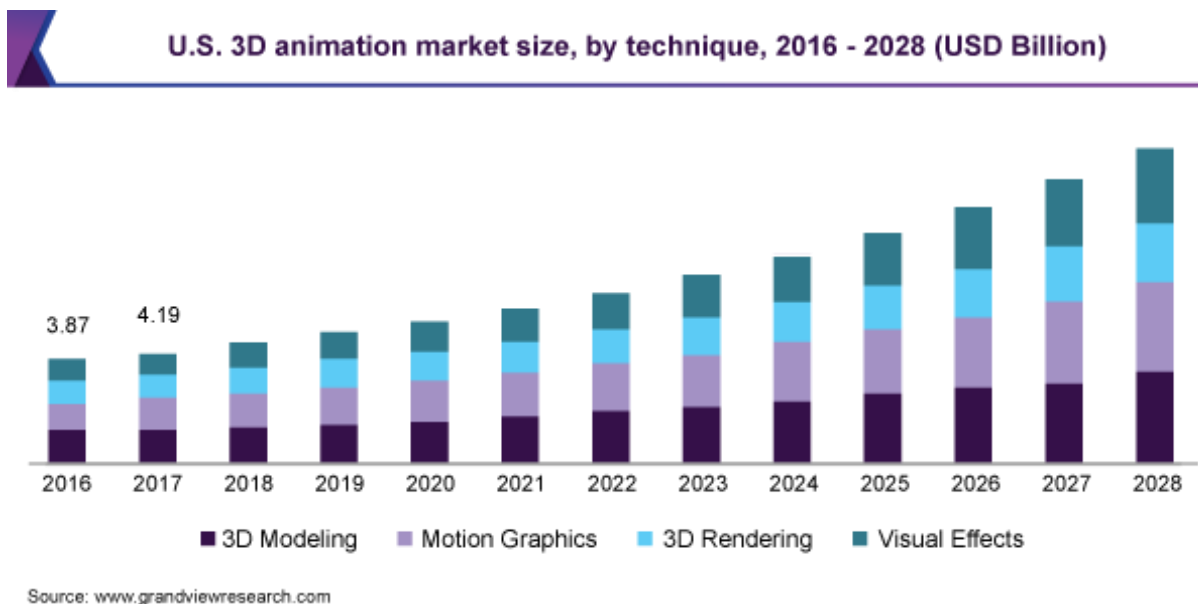


Figure 2.1.1: Product Life Cycle Management

2.2 Idea and Concept Development

An idea is a spontaneous inspiration or spark that emerges from the subconscious as a result of interacting with the environment. Interactive 3D product presentations, as opposed to still images, have a greater impact, according to research. Buyer behavior is positively influenced by 3D product visualization, including the amount of time spent exploring products and the likelihood of making

a purchase. In product lifecycle management, product visualization is critical. Design and styling, as well as sales and marketing, are all aided by the high level of photorealism in rendering.



Figure 2.2: Idea and Concept Development Process

2.3 Target Audience

According to scientists, the human brain processes visuals 60,000 times faster than texts, and our brain processes 80 percent of all information visually. As a result, marketers must recognize the importance of visuals in attracting, engaging, persuading, and, of course, targeting customers, and incorporate 3D visualization technology into their marketing strategy. Here's why and how to do it:

Interactive and immersive 3D product visualization

Through interaction, 3D visualization provides a thorough understanding of the product. All issues and constraints are now solved by this technology. Customers can see in real time while the owner of the website receives a customer behavior analysis. This service does not require any third-party plugins to be activated.

Targeted people on Digital Media

People of all ages who use social media are constantly looking for product video presentations. They want to see the goods in order to grasp its features. As a result, the importance of targeted people in digital media content cannot be overstated.

2.4 Global Market Value

The global visualization and 3D rendering software market was valued at USD 1,640.07 million in 2020, and is predicted to grow at a CAGR of 20.7% to USD 1,971.28 million in 2021. The demand for fast 3D rendering solutions is being driven by advances in 3D modeling and developing virtual reality / augmented reality technologies. Increasing industry competitiveness has pushed organizations to employ 3D models to better visualize their products and gain a competitive advantage in the fast-paced market.

Global 3D Animation Market, by Application, 2014-2024 (in MN USD)

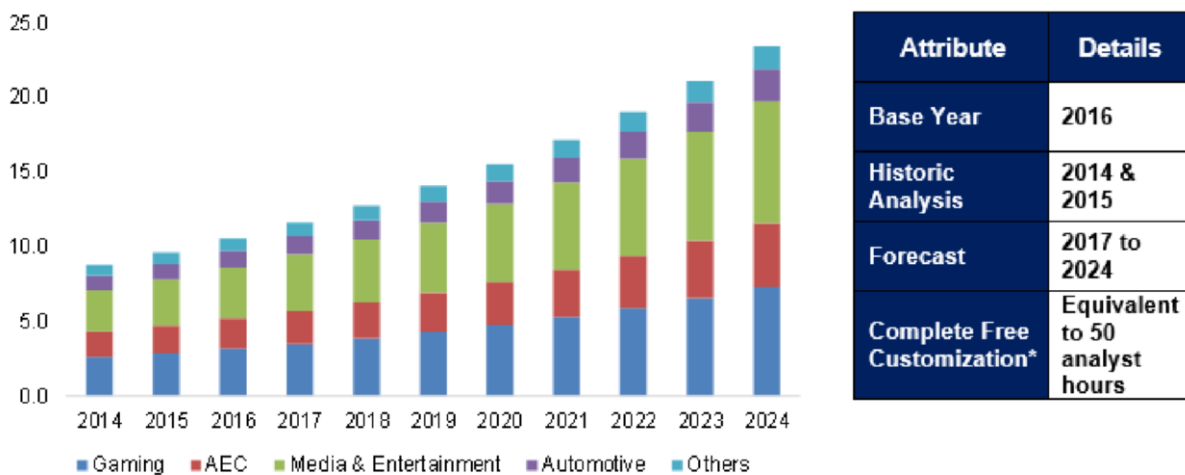


Figure 2.4: Global Market Value Chart

2.5 Industry Standard 3D Product Visualization

3D Product Visualization has very bright future in the world. I studied commercial layout at college. business designers create merchandise which are touchy to aesthetics, ergonomics, and cultural appropriateness. brand new business designers use CAD software program to understand their ideas in three-D digital space. once a virtual version has been created, designers use rendering software to feature textures, substances, and lighting fixtures. The quit end result of 3D rendering software is a computer generated photo (CGI), or photo known as rendering. The rendering is very similar to the product to be synthetic. commercial designers are very busy people. They frequently have a variety of responsibilities, with rendering being only one of them. During a design review, renderings are usually shown. A rendering can be thought of as a more photorealistic version of a drawing. When making a decision, only "good enough" representations should be used. A highly experienced specialist usually creates high-fidelity renderings.

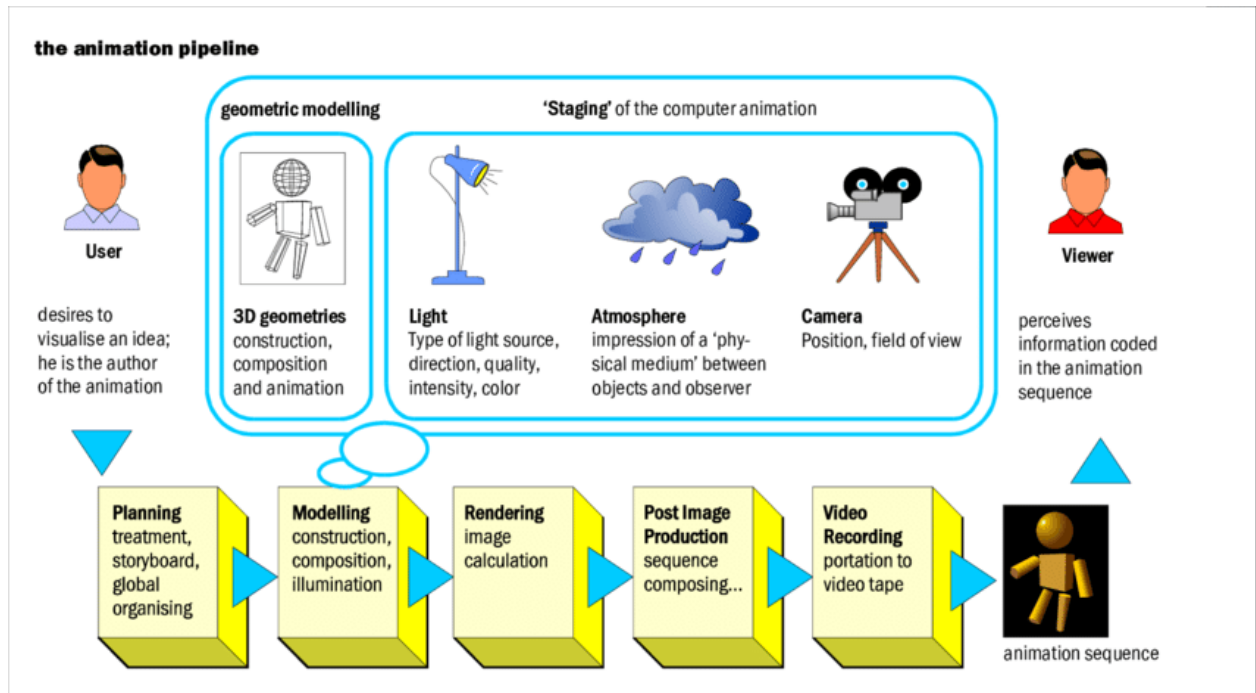


Figure 2.5: Industry Pipeline Prototype

2.6 Academic Standard 3D Product Visualization

In the field of education, multimedia learning tools and techniques are becoming increasingly important. Various complex phenomena and theories can be easily and conveniently explained and transmitted using multimedia learning. Students are learning product visualization techniques from a seasoned instructor in the field. We are learning the fundamentals of 3D Animation in the academic setting. From there, we learn 12 animation principles. We learn 3D modeling, lighting, and rendering, which we then put to use in projects. Academic education is the foundation for becoming an artist or a product visualizer.

2.7 3D Product Visualization in Bangladesh

The animation industry in Bangladesh is expanding day by day. Animation in Bangladesh originated in the 1980s when the National Institute of Mass Communications began offering animation courses. The first big animation project in Bangladesh was an animated series called Meena, which was created in collaboration with UNICEF as part of some social awareness programs. Meena made her debut in 1993 and quickly became a household name among Bangladeshi kids. In the year 2000, another animated television series, The Adventures of Montu Miah, was released, and it quickly became popular. Shishu

Academy hosted the first edition of the Bangladesh International Animated Cartoon Festival, the country's only major animated film festival, in 2013. The Dream Stage, the first Bangladeshi animated feature film, began production in 2013 and will be released in mid-2014. Bangladeshi 3D product animation is a new form of visual art that is rapidly gaining popularity. Another market for animation is social awareness programs and television commercials, and a few animation studios also produce animated shorts and feature films. Walton, a Bangladeshi electronics behemoth, significantly improves their 3D product animation category. They also use a 3D environment to develop their product designs.

CHAPTER 3

PRODUCTION AND WORKFLOW

3.1 Introduction

The process of creating a 3D Product animation is far more difficult than most people believe. Depending on the animation studio and the scope of the project, the number of steps required to create a 3D animated product part can vary significantly. However, in order to produce an animated 3D video, a 3D Product animation studio must go through a long list of tasks and hire a large group of people with various skills. A solid structure and detailed framework, such as a 3D animation pipeline, are required to efficiently and economically complete such a complicated process. Generally, there are 4 main reasons for using a pipeline in 3D visualization:

- a. Time management
- b. Budget management
- c. Team management
- d. Structuring and standardization

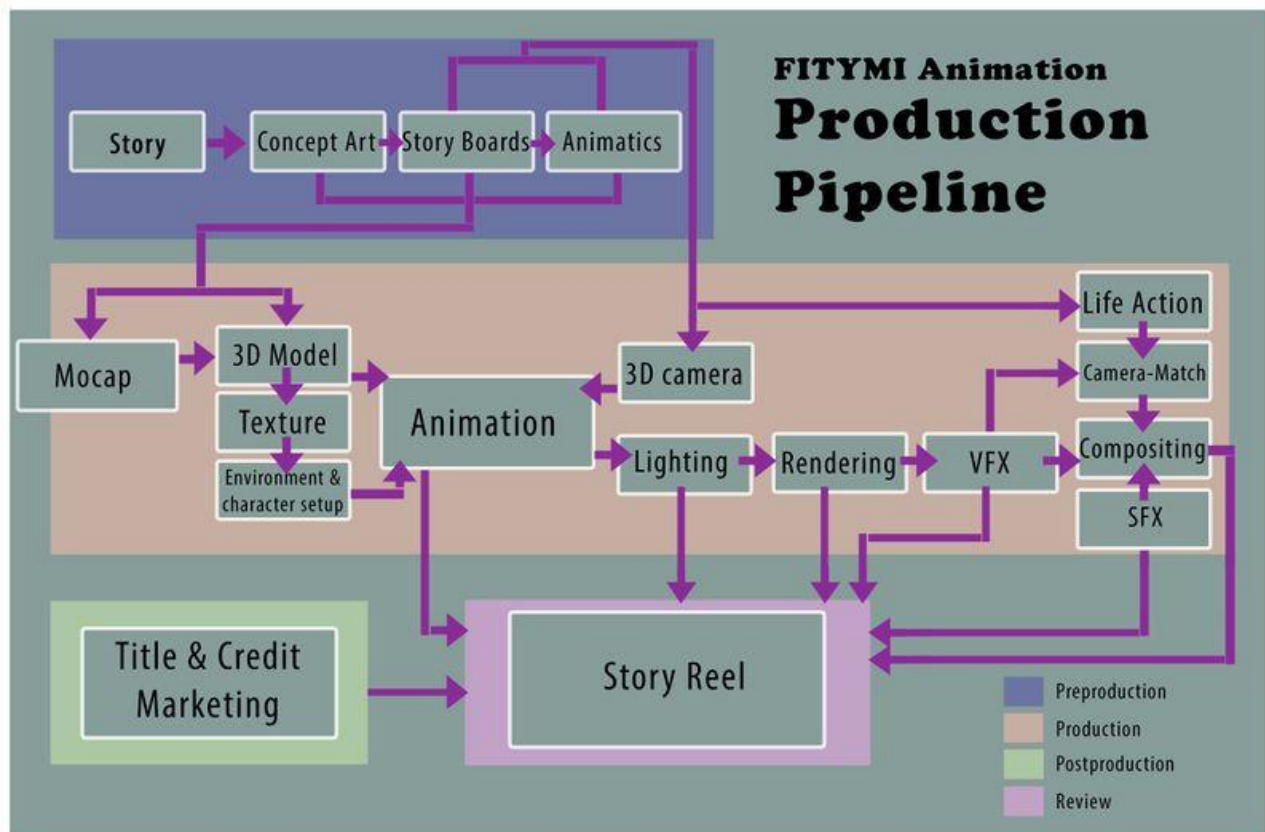


Figure 3.1: Production Pipeline

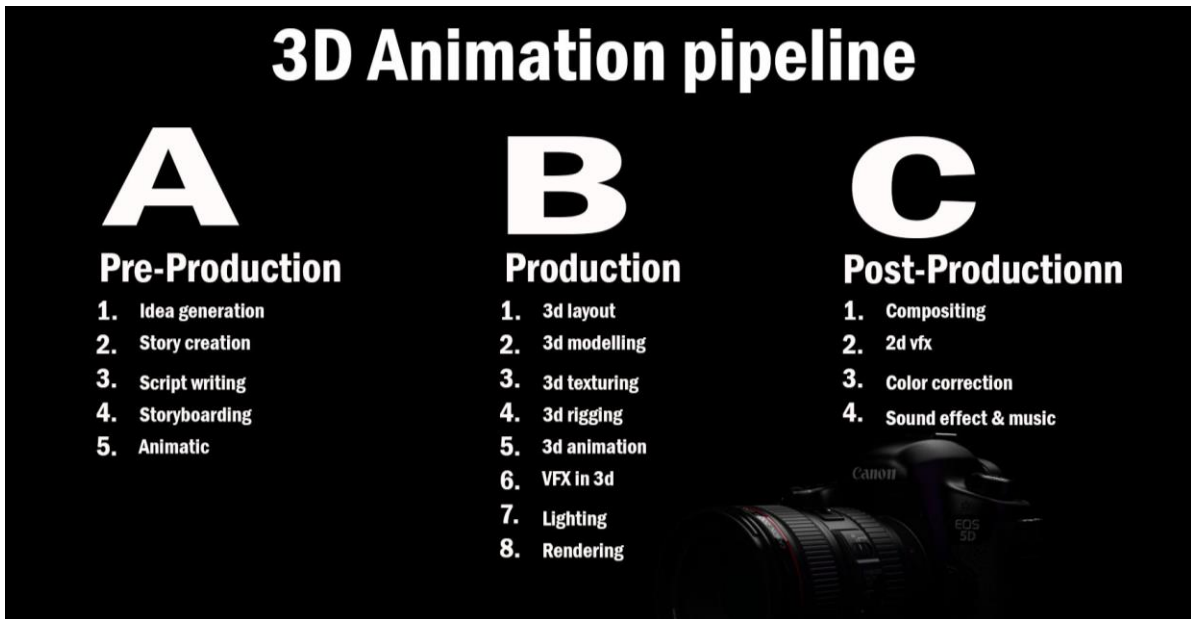


Figure 3.1.1: Production Development Process

3.2 Project Timeline

The production plan is a project plan that specifies how the production budget will be spent for each step of a project over a set period of time. The planning process starts with the concept, or script, which is broken down into a series of breakdown sheets, each of which records the resources needed to perform the scene. Boards for traditional production. The strips can then be rearranged and sequenced to indicate the desired rotation order, resulting in a production schedule.

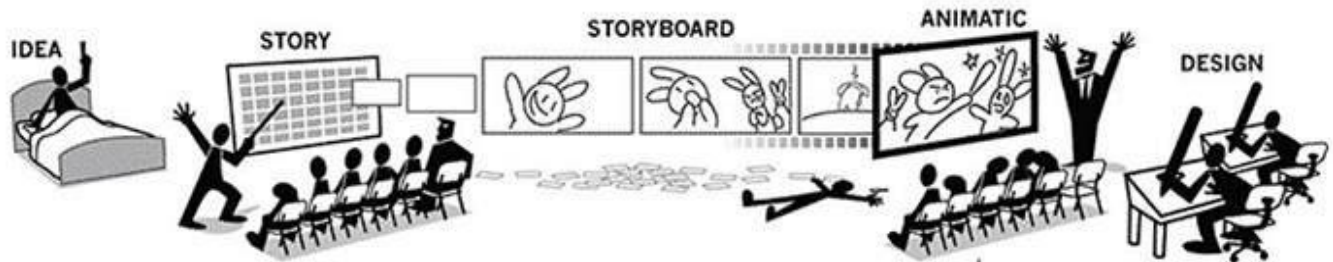


Table-1.1: Gantt chart of working process timeline

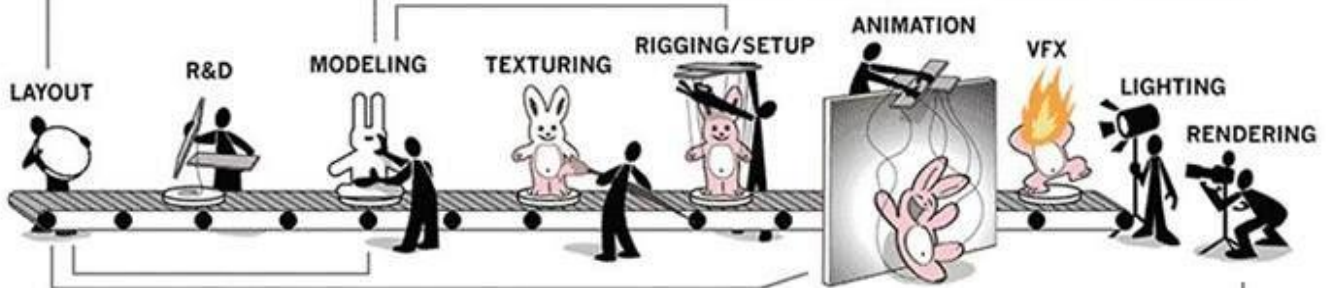
3D Production Pipeline

by Andy Beane

PRE-PRODUCTION



PRODUCTION



POST-PRODUCTION

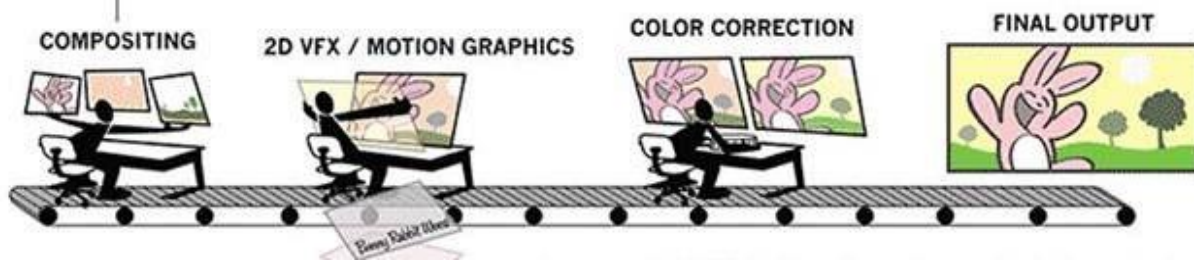


Figure 3.2.1: Production Pipeline Chart

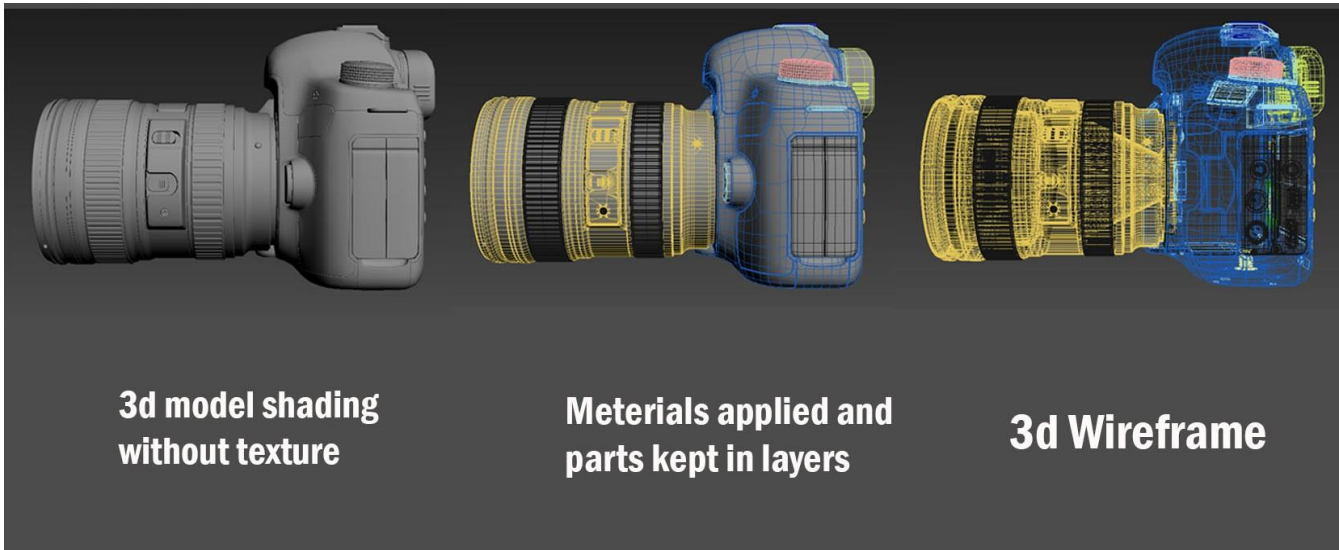


Figure 3.2.2: 3D Mesh Processing

3.3 3D Product Design



Figure 3.3: My 3D Product Design Prototype 01 Angle 01



Figure 3.3.1: My 3D Product Design Prototype 01 Angle 02



Figure 3.3.2: My 3D Product Design Prototype 02 Angle 01

3.4 3D Wireframe

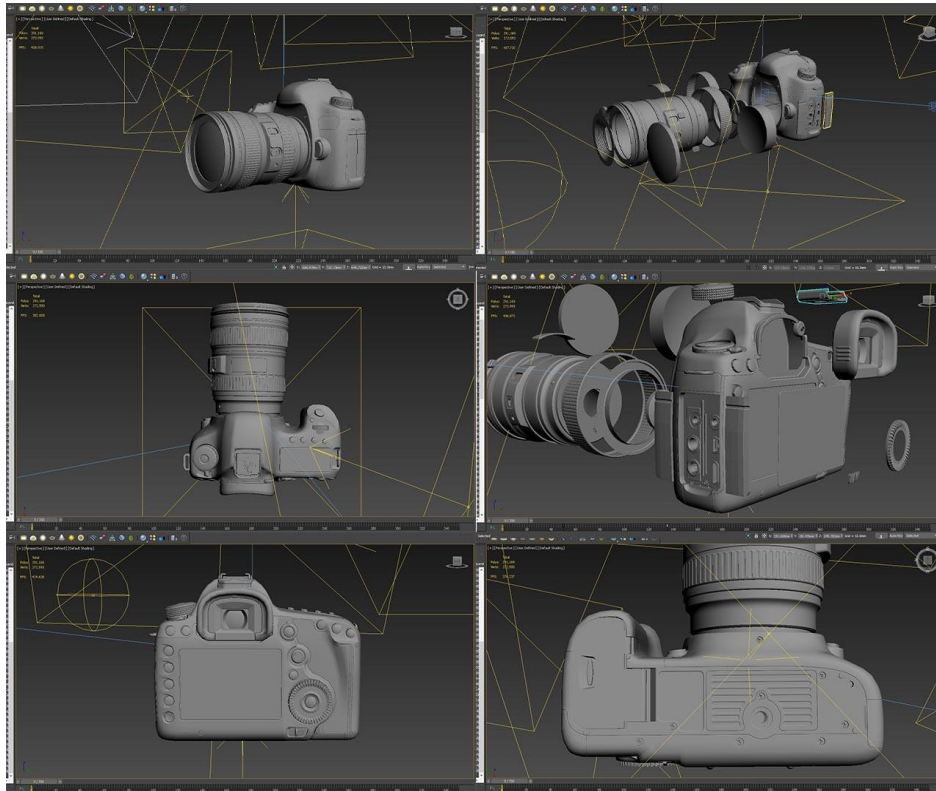


Figure 3.4: 3D Wireframe

3.5 Software Used In This Project





Figure 3.5: Software Used In This Project

3.5.1 Vray

V-Ray is a biased computer-generated imagery rendering software program developed by Bulgarian Chaos Group, which was formed in Sofia in 1997. V-Ray is a commercial plug-in for third-party 3D computer graphics software packages that is used for visualizations and computer graphics in industries such as media, entertainment, film and video game development, industrial design, product design, and architecture. The company's chief architects are Peter Mitev and Vladimir Koylazov.

Vray is most likely the industry leader for still images in architectural visualization. It is known for its speed and produces high-quality images using either biased or unbiased rendering algorithms. The speed difference between biased and unbiased rendering is the most important differentiator.

Unbiased render algorithms examine illuminance at each pixel in a picture, making them more precise but also slower than biased render algorithms. In general, biased algorithms divide a scene into 'cells' of equal (or nearly equal) illumination and interpolate between them. This is a significant improvement. Some more complex sampling algorithms allocate more samples to regions with higher contrast to reduce blotchiness. Although biased renders are more accurate than unbiased renders, you may not notice a difference in quality with a good engine configured properly, but the speed difference could be significant. It's possible that you'll notice a five-fold change in speed. For an unbiased version of a 20-minute biased render, you'd have to wait 3 hours or more.

3.5.2 Autodesk 3ds Max

I used autodesk 3ds max for modeling creating.i thinking that 3ds max is very helpful and easy for creating any type 3d modeling .also 3ds max optimize power also very good.

3.5.3 Autodesk Maya

Autodesk maya software is also industry label software for any type 3d work. Im expert of autodesk maya also and this software make photo realistic render output and texture. So that I use autodesk maya for uv texturing. Maya has a range of tools that make creating and editing UV texture coordinates for texture mapping polygon and subdivision surfaces a breeze. The UV Editor (UV > UV Editor) is the main tool for organizing and laying out UVs for the best possible texture.

3.5.4 Adobe Photoshot

I used adobe photoshot for creating texture of my 3d model. Photoshot is popular software for photo manipulation .i learn all of my software from my university .realistic 3d model need photo realistic texture that's why I make photo realistic texture by adobe photoshot. Multiple materials on a 3D model can utilize a diffuse texture file to aggregate numerous content sections that are applied to different surfaces on the model. UV mapping is a technique for matching coordinates in a 2D texture map to specified locations on a 3D object. UV mapping enables the accurate application of a 2D texture to a 3D model.

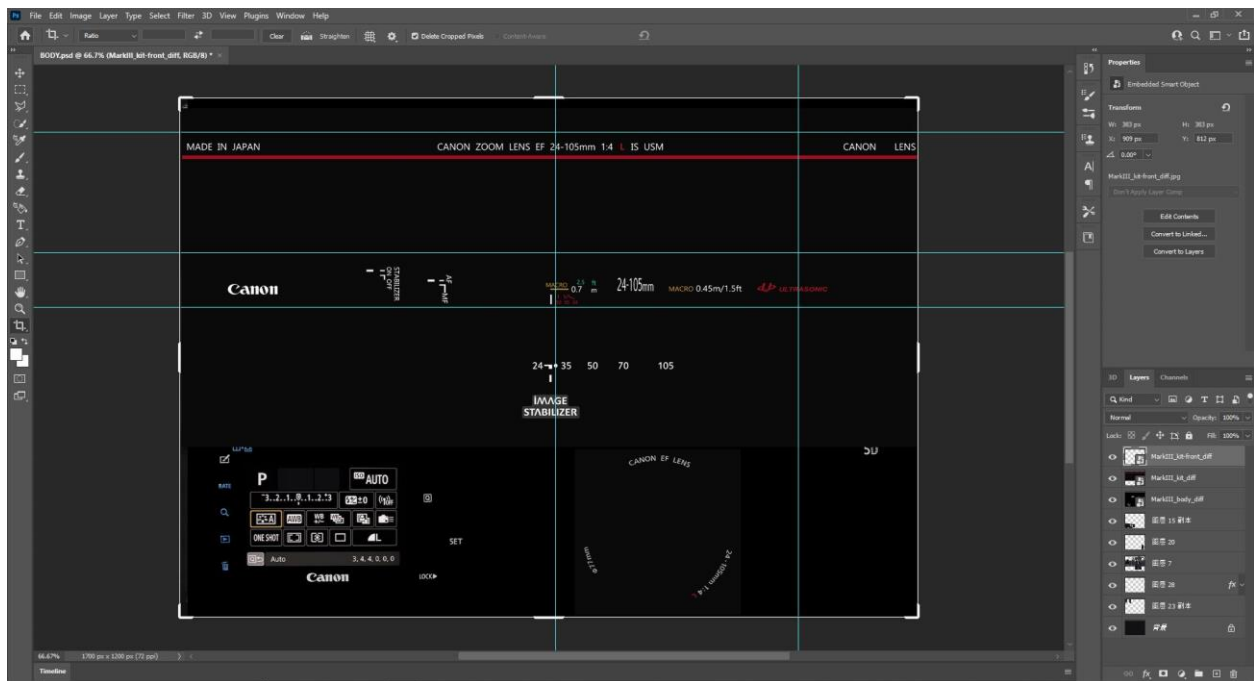


Figure 3.5.1: using photoshot to making texture for 3d model

3.5.5 Adobe Illustrator

Adobe illustration is also important software for 3d model creating. I also used adobe illustrator near by adobe photoshot .this software similar with adobe illustrator. So both software I used in my post production part .

3.5.6 Adobe After effect

This software is most import software in adobe .it is video editing software .i used this software after rendering my all frame . After Effects is well-known for its flexibility, and work generated using it can be seen all over the internet. Some of the following examples may be familiar to you, but you may not be aware that they were made with After Effects or even how they were generated.

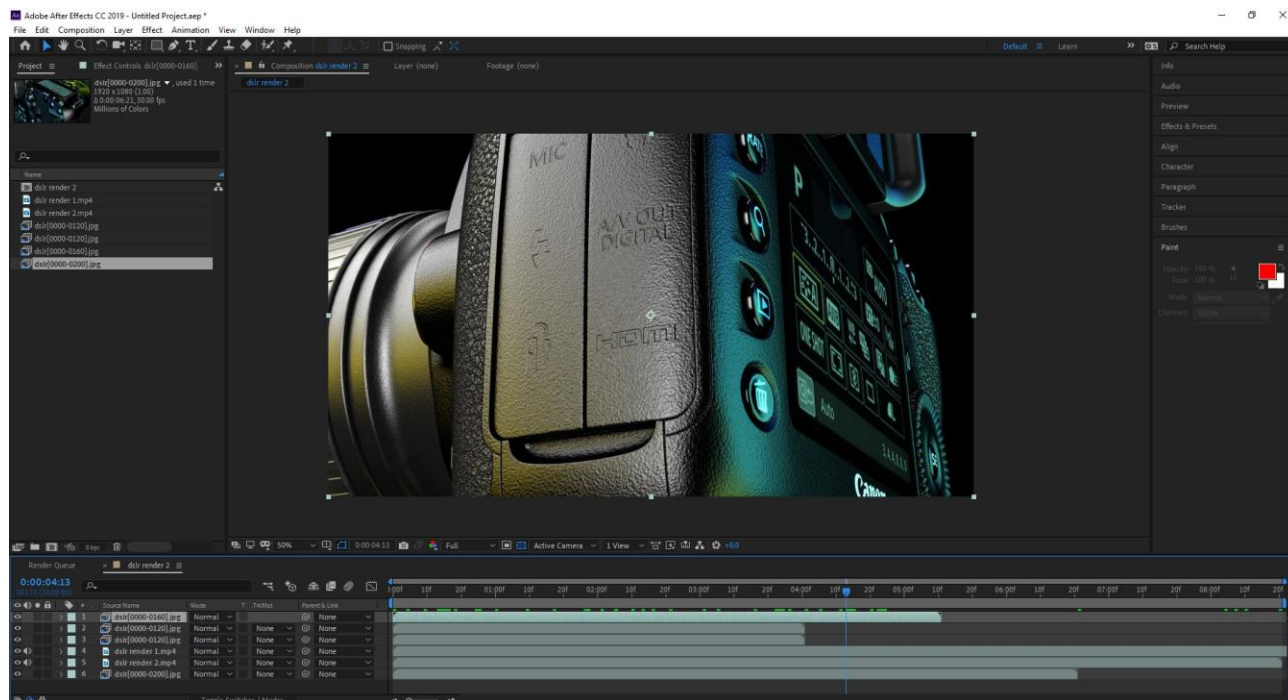


Figure 3.5.2: using after effect for 3d model composition

3.5.7 Adobe Premiere pro

Adobe premiere pro also video editing software I used this software in post production .when I render my all 3d model frame then its need color grading and time ramping . so I my 3d product visualize color grading and time ramping work done by adobe premiere pro software.this software is very user friendly . I learn this software from my university

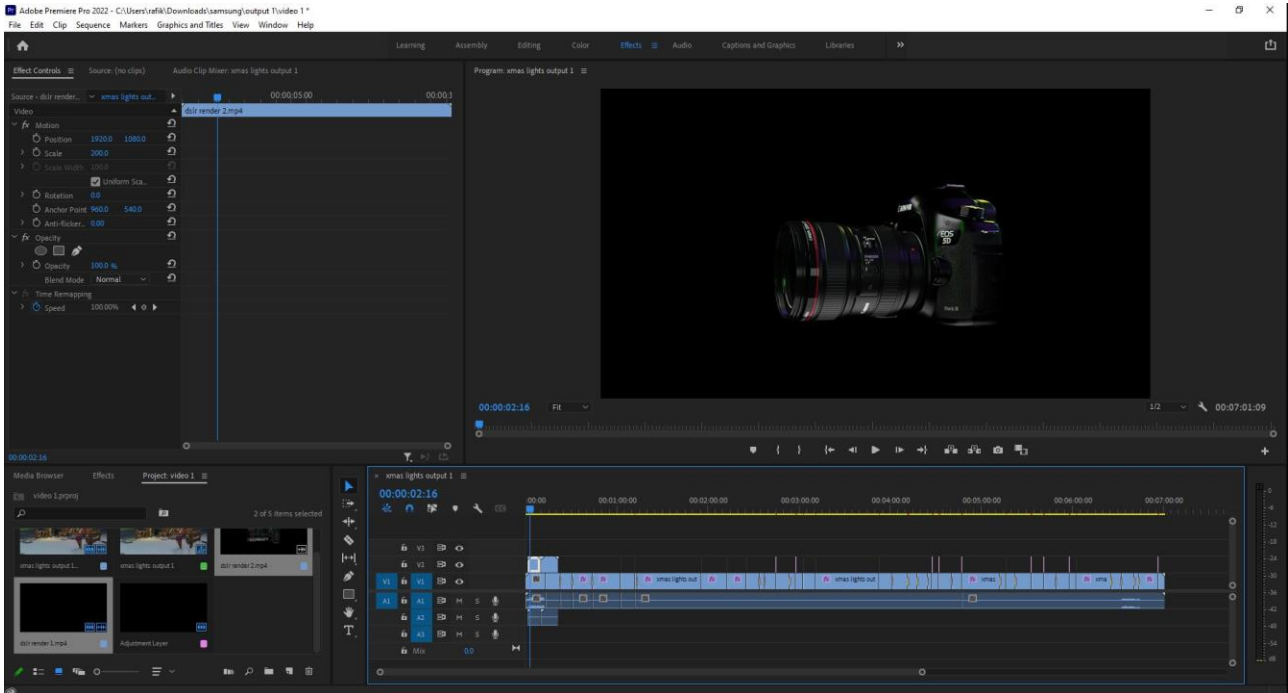


Figure 3.5.3: using premiere pro for color grading composition

3.5.8 Adobe Media Encoder

Adobe Media Encoder is a program that lets you make multimedia content for the web and other platforms. It allows you to change the format of material and convert it in a variety of ways. By compressing media files, Media Encoder reduces their size.

To help you grasp Encoder better, here's an example of how it works. Assume you have a project that you'd like to export files from. You'd enter this project in Encoder and change the export parameters to get the desired file format (MP4, mov, Apple prores4444, H.264

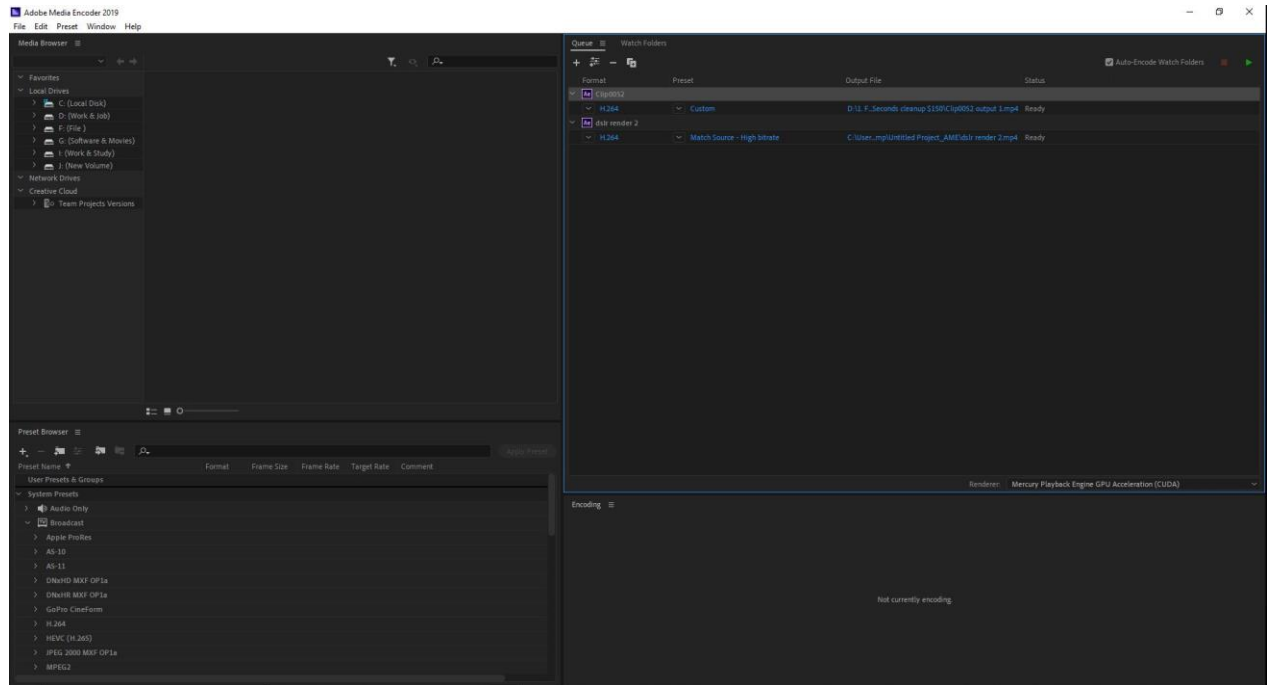


Figure 3.5.3: using Adobe Media Encoder for rendering final composition

CHAPTER 4

PRODUCTION DEVELOPMENT

4.1 Project Prototype & Scene Development



Figure 4.1: My 3D Product DSLR Lense Modeling

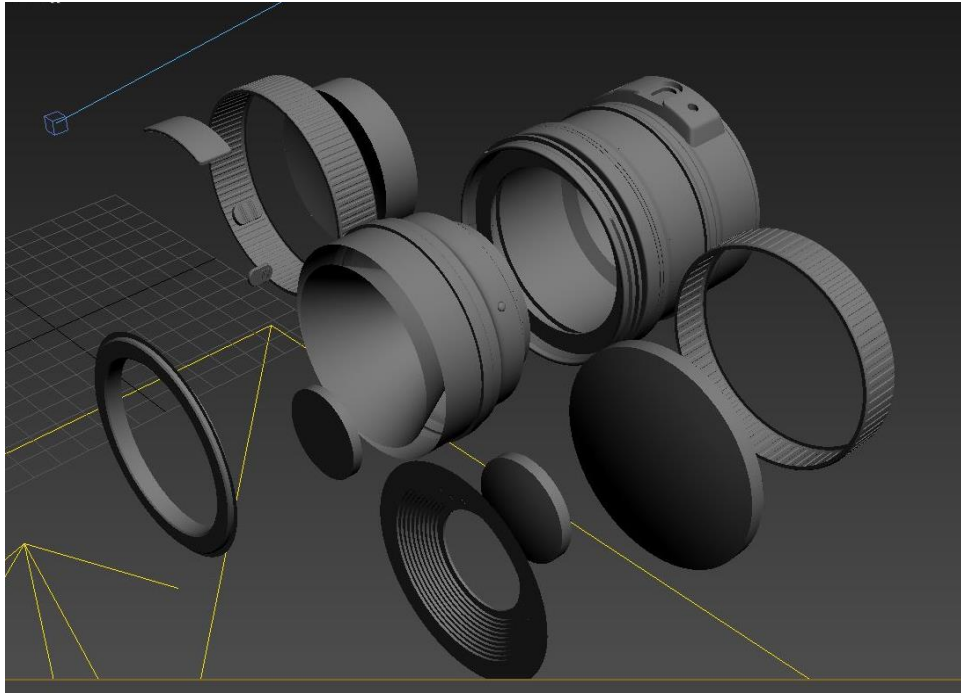


Figure 4.1.1: My 3D Product DSLR Lense mirror Modeling.

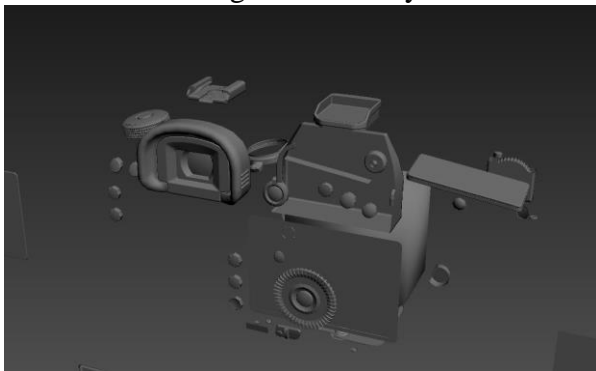


Figure 4.1.2: My 3D Product DSLR Parts Modeling.



Figure 4.1.3: My 3D Product DSLR parts Modeling

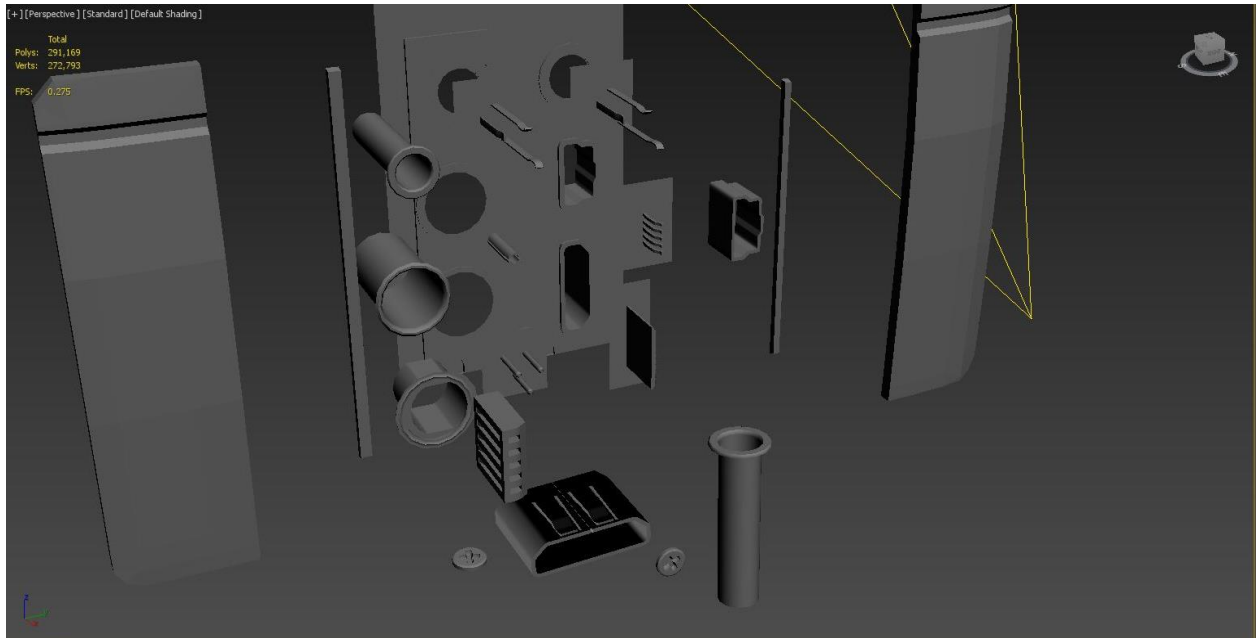


Figure 4.1.4: My 3D Product DSLR Parts Modeling.

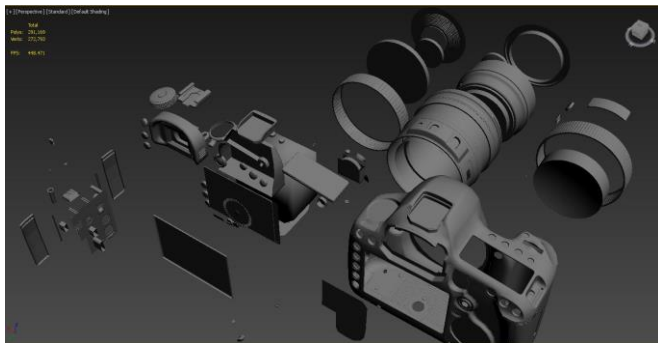


Figure 4.1.5: My 3D Product DSLR Parts Modeling

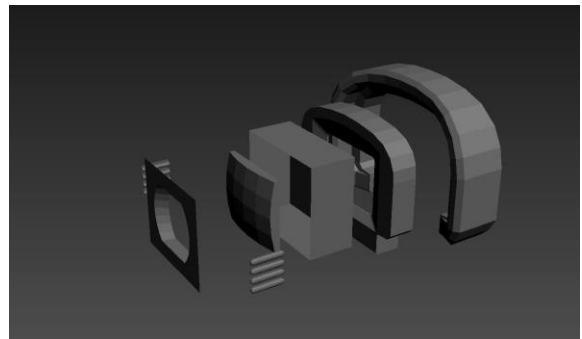


Figure 4.1.6: My 3D Product DSLR Parts Modeling



Figure 4.1.7: My 3D Product DSLR with Lense Modeling

4.2 UV Texture and Shading

Texturing & Shading DSLR and Lense 3D Model

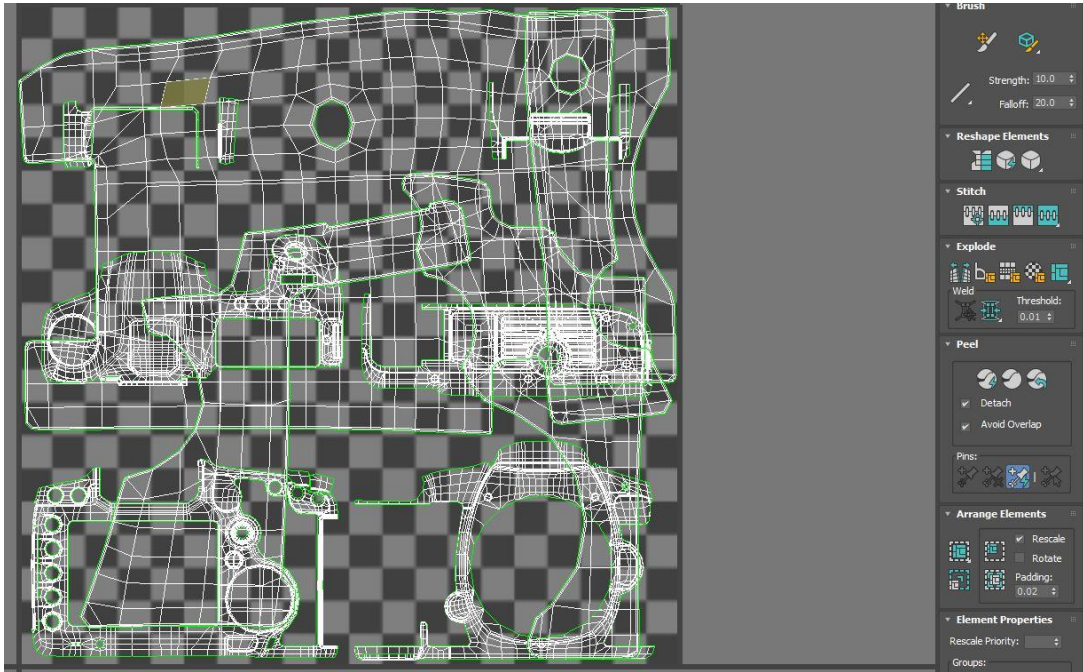


Figure 4.2: UV Texture and Shading

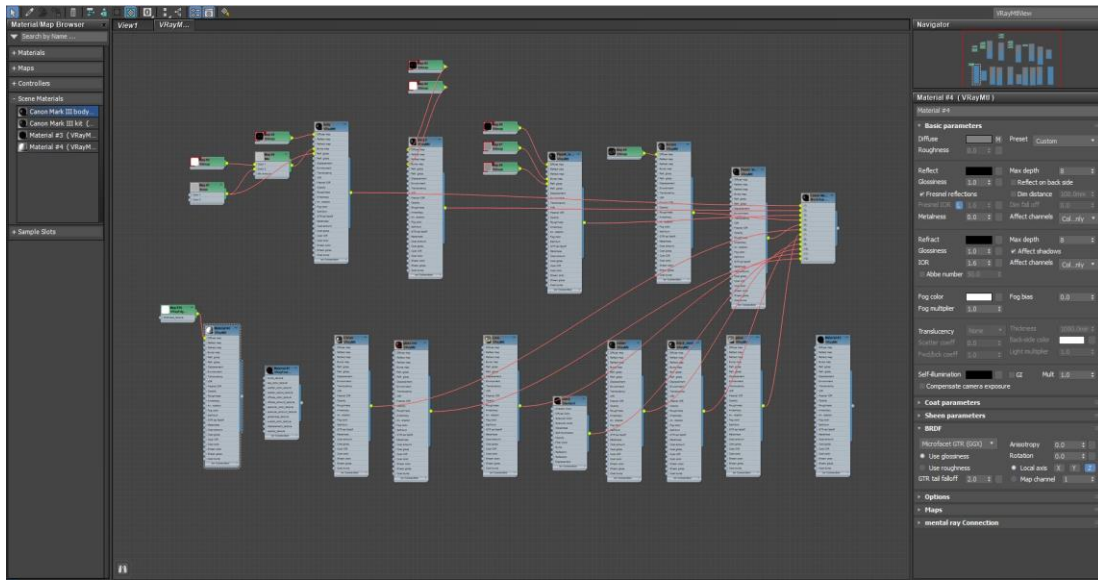


Figure 4.2.1: UV Texture and Shading

4.3 Project Prototype 02

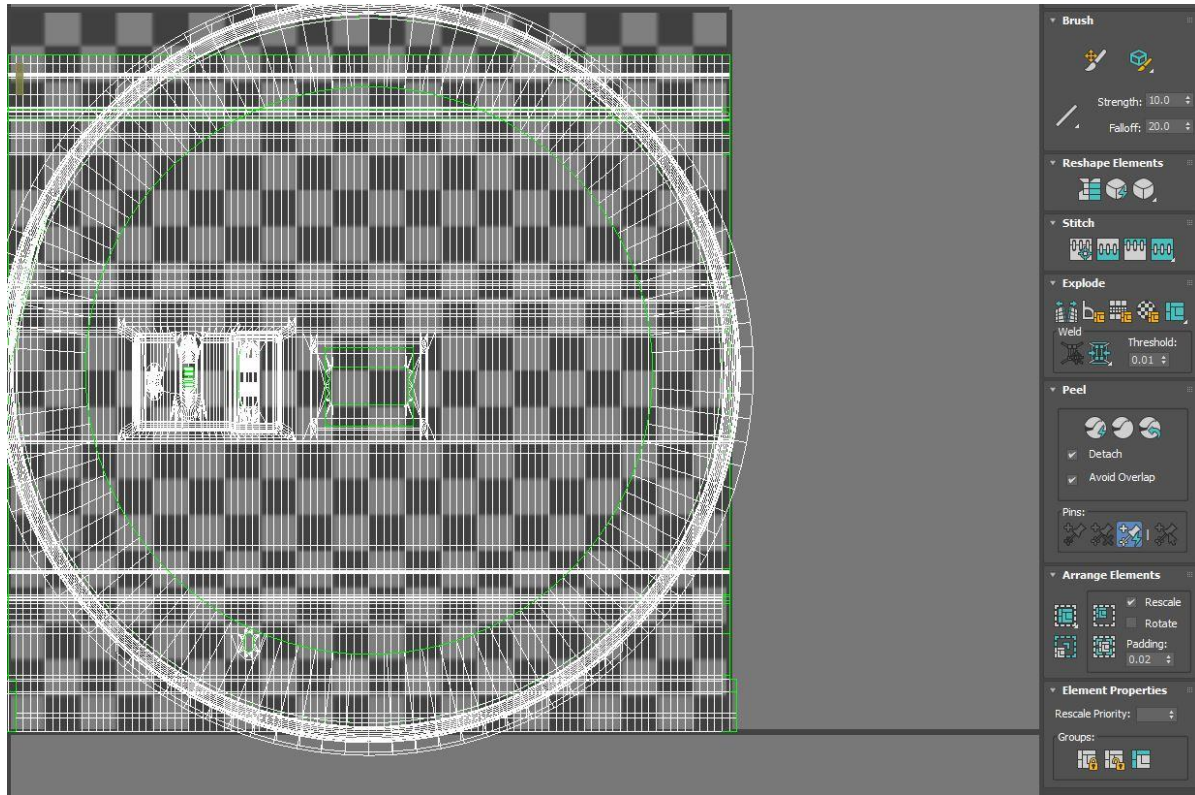


Figure 4.3 UV Texture and Shading

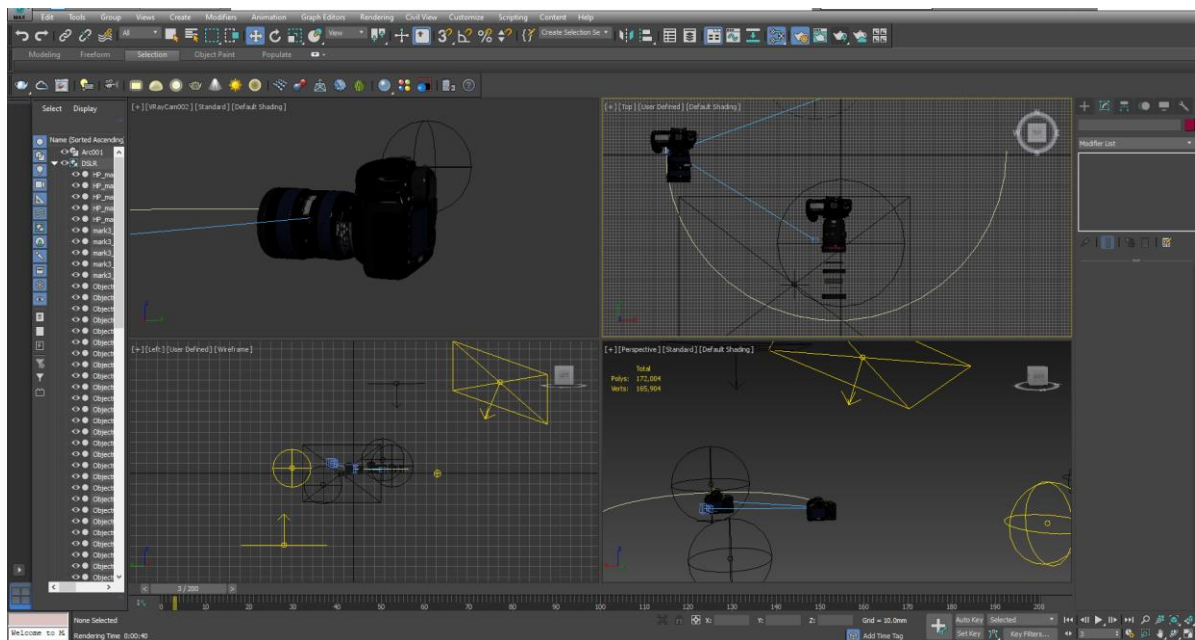


Figure 4.3.1: My 3D Product working time screen shot

4.4 Setting up the camera

We switch to camera after the lighting and texturing are complete. Add a camera to the viewport by going to camera. V Ray or a physical camera can be used. After that, link the camera and camera target to a dummy item. The camera movement will then be affected by animating the dummy.

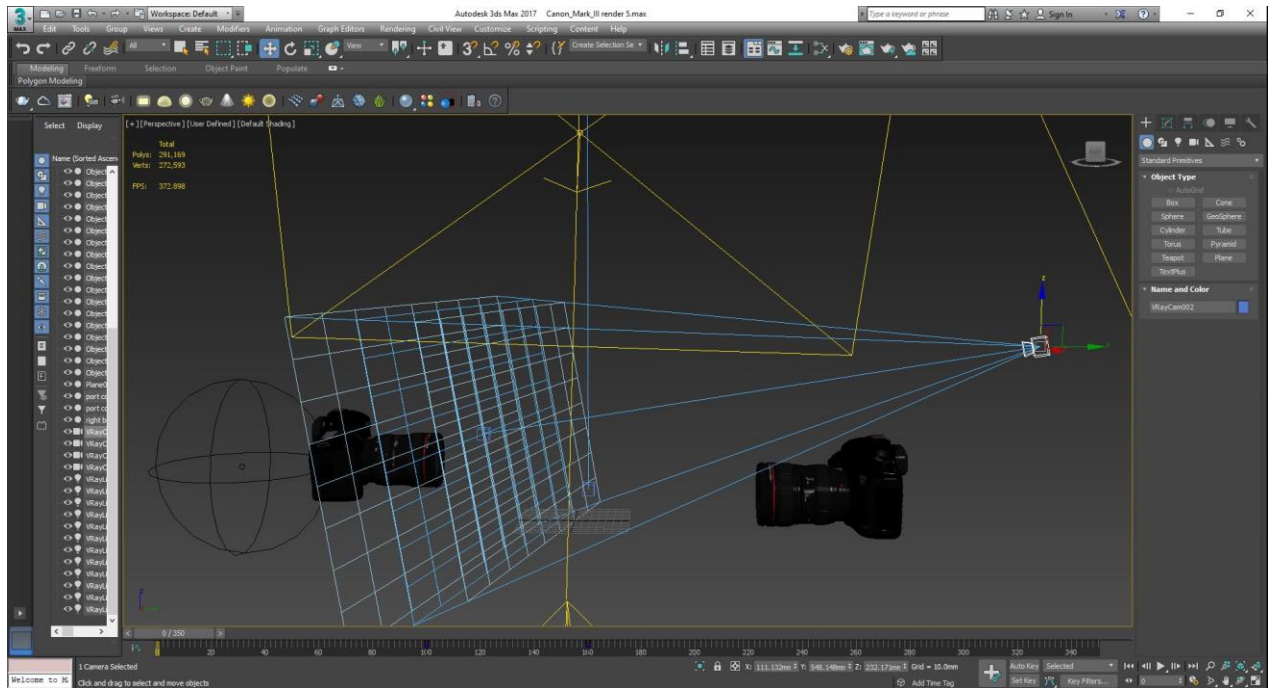


Figure 4.3.2: Camera angle setting and camera setup in software

4.6 Final Render Output



Figure 4.4: Final Render Output Images



Figure 4.5: Final Render Output Images

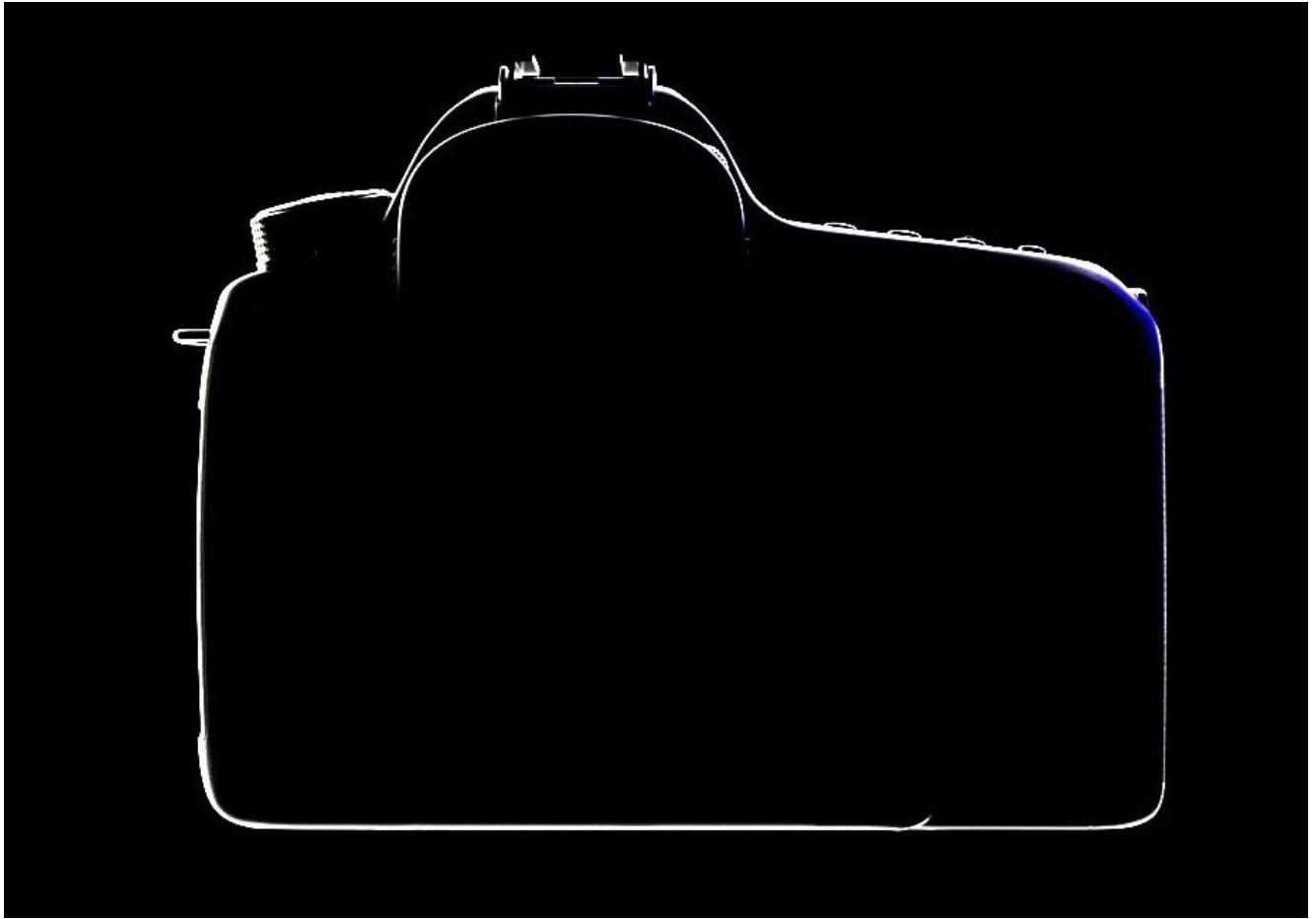


Figure 4.6: Final Render Output Images

4.7 Academic Pipeline

4.7.1 Simple Academic Pipeline Diagram

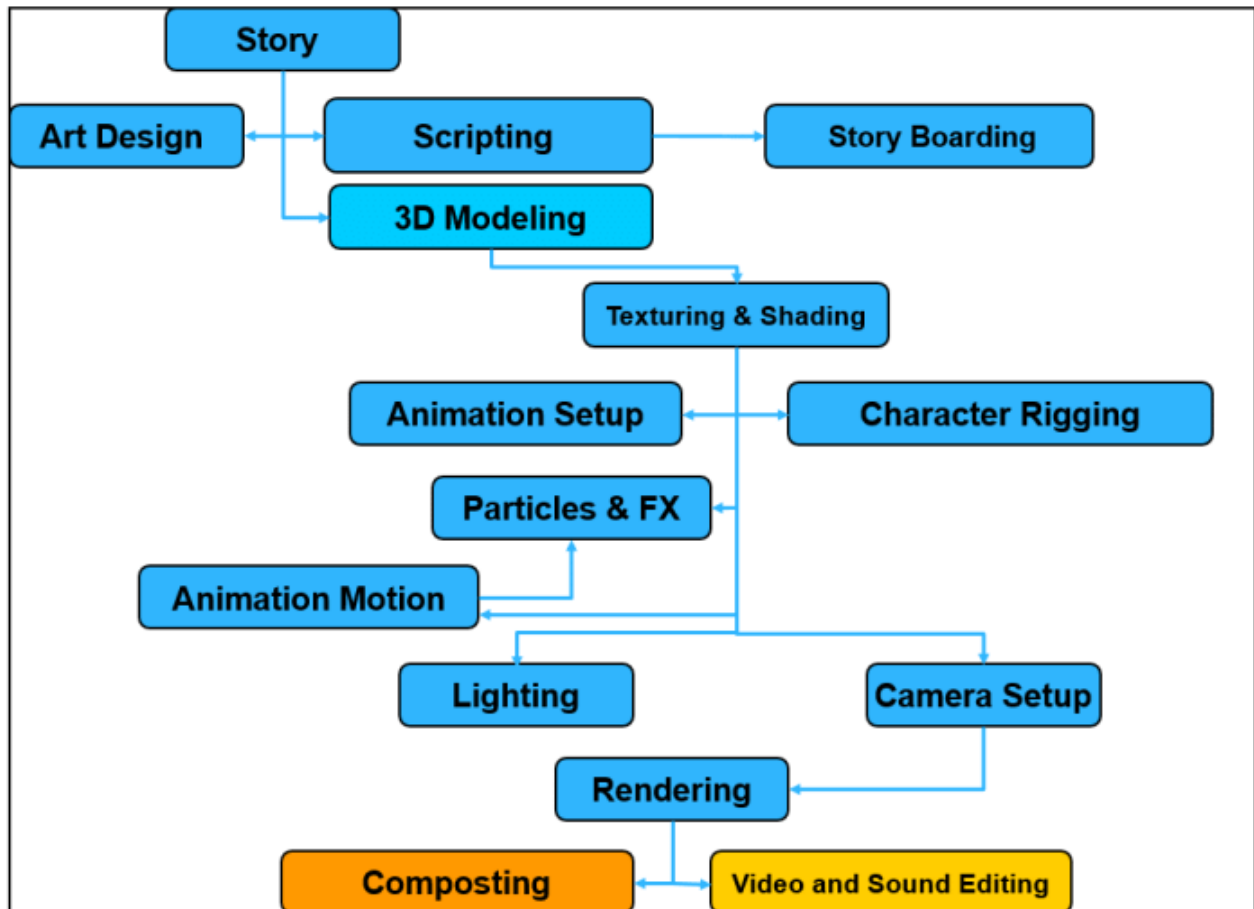


Figure 4.7: Pipeline.

4.7.2 Pre Production

In academic visualization we use simple pipeline for workflow. The steps we cover for pre-production in academic line. :

- ✓ Story Development
- ✓ Script Writing
- ✓ Design
- ✓ Storyboarding

We'll go over the overall pre-production process in order, but bear in mind that these aren't hard, separate steps that flow from one to the next; each phase can have an impact on the others, and the team can go back and alter the elements of each phase as needed.

Everything that happens during production and post-production should be prepared in advance.

4.7.3 Production

We have a simple production stage at the academic stage that does not cost a lot of money. The phase of production is when all of the visual aspects for the final project are generated. The 3D pipeline is where 3D models and settings are developed. It's effectively the same process as a live production with actual sets, cameras, and performers, even though it's done online.

4.8 Industry Pipeline

In industry stage 3D product visualization has detailed workflow. There are separate team for every department.

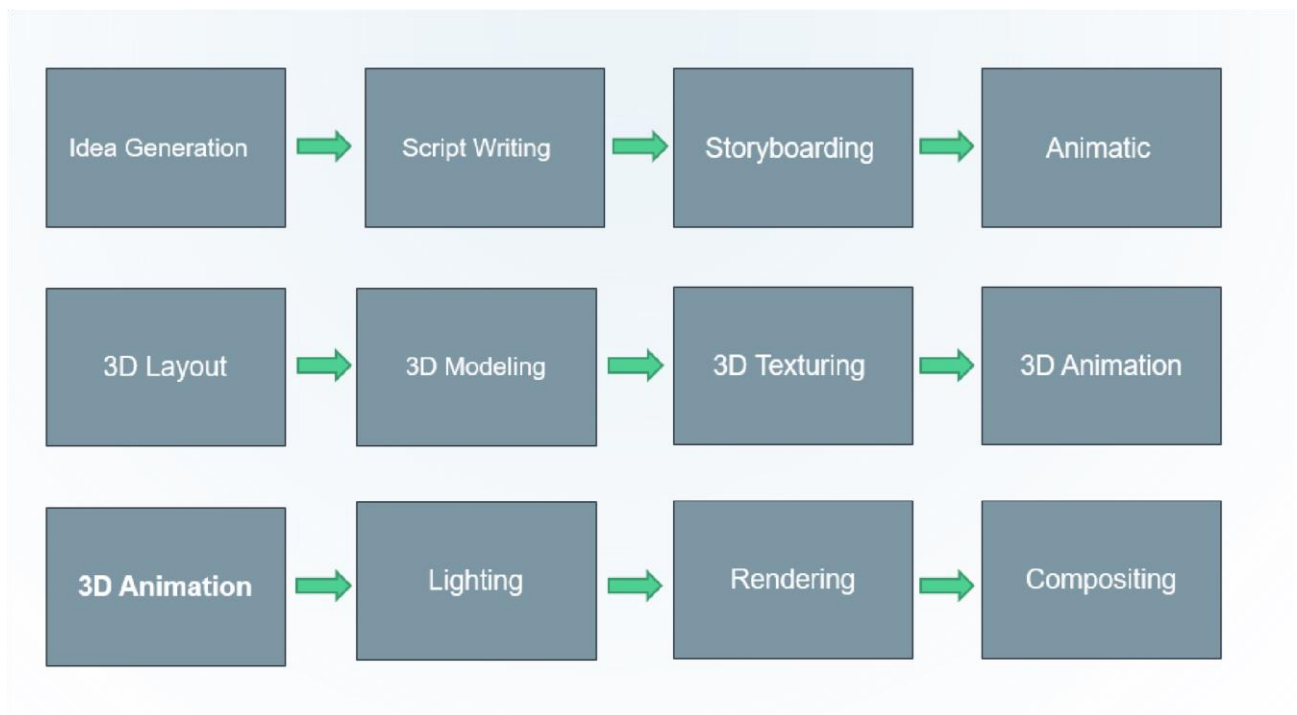


Figure 4.8: Industry Pipeline.

4.8.1 Idea Generation

The tale of product visualization begins with a wonderful product idea. As a result, having a good and well-thought-out idea is critical to the success of animation.

4.8.2 Script Writing

Character movements, environment, timing, actions, and language are all included in the script, which is a formal, written, and literary rendition of the story.

4.8.3 Storyboarding

A storyboard is a set of drawings used to preview film footage. It's a useful tool for the director to obtain a sense of how the movie will look and feel. The most important job of a storyboard is to properly portray the story, as close as feasible to how the movie will look at the end.

4.8.4 3D Layout

In simple words, a 3D design is a 3D version of 2D animatics. Basic 3D properties such as size, shape, character environment, simple character animation, proxy geometry, and so on are all included in 3D design.

4.8.5 3D Modeling

3D modeling is the process of developing a representation of the geometric surface of any object in specialized 3D software such as Maya or 3Ds Max.

4.8.6 3D Texturing

3D texturing is the process of developing and applying textures to a 3D object. 3D models normally have a common spot color and shading before they go to the Texture Artist.

4.8.7 3D Animation

The movements of 3D objects or characters in a scene or environment are created during the animation phase. Animation is usually the most important and time-consuming part of producing an animated 3D video.

4.8.8 Lighting

Lighting in animation has evolved into a distinct art form that isn't always bound by physics or reality, as it is in traditional film. Although the concept of lighting fixtures is derived in part from traditional cinema, it allows for complete aesthetic freedom in terms of where and how lighting fixtures are employed, enriching the cinematography of exciting films and television shows.

4.8.9 Rendering

Each scene is divided and produced into numerous layers in 3D product visualization, including items, colors, background, foreground, shadows, lights, and so on. The layers are reunited in post-production.

4.8.10 Compositing

Previously rendered layers are rebuilt into the composition for final output. Layering can be as simple as merging two layers or as difficult as altering hundreds of layers and their characteristics.

CHAPTER 5

FINDINGS AND COMPARISON

5.1 Product Video and advertisement in studio

Product photography and videography is an important aspect of your business that you should consider when trying to persuade consumers to buy your goods. Especially now that online purchasing is becoming so prevalent. Not only can you get practically anything you need with just a few clicks, but internet shopping saves time, which is something that customers value.



Figure 5.1: Product videography in studio

The power of a picture is undeniable, and if you don't have high-quality product photography images on your website, you might be missing out on a lot of sales. Product photography is so crucial that it might mean the difference between a sale and a large number of lost client.

5.2 Product videography market value

Today product videography is valueable job in other job. We notice that day by day increase demand of this side.videography mainly use for any kind of advertisement .when any company relese their new product then they make advertisement of their new product for promoting. There are many reasons why product videography is important to your business.

5.3 Product videography pipeline

Every sector have workflow line or working pipeline so that video production have also pipeline All people maintain their pipeline for work improvement. Video content creation frequently necessitates a vast number of resources and actions. A workflow may aid in process management, increase production team responsibility, and allow everyone to keep track of progress. If you're in charge of a marketing or video production team, a well-organized, well-executed production process can help you finish projects on time, on budget, and according to requirements. In this post, we clarify the notion of a video production workflow, explore its relevance, show you how to make one for yourself, and give you some pointers.

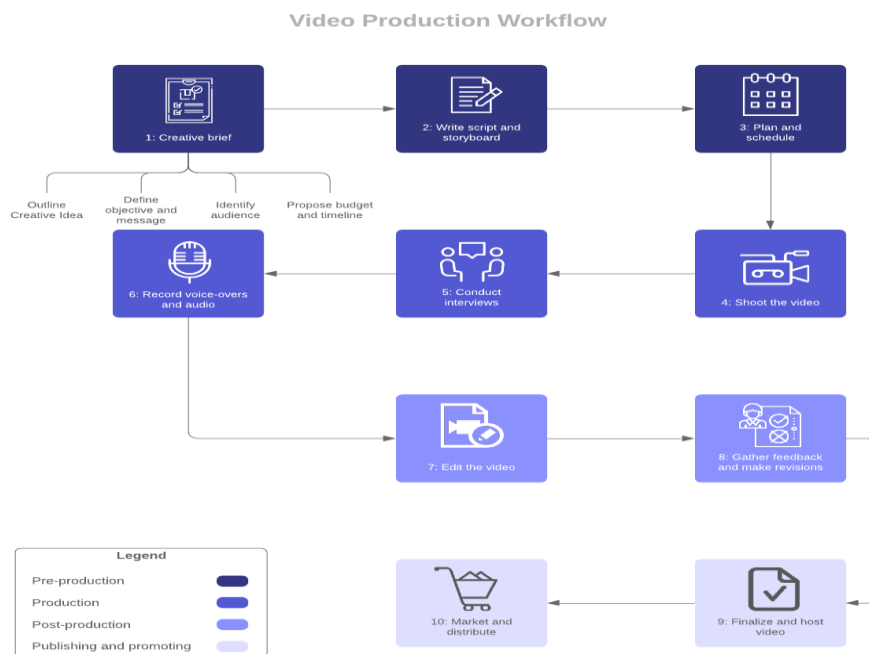


Figure 5.2: Product videography pipeline

5.3.1 Video production workflow

A video production workflow is a logically ordered set of operations that are required to create video content. The video production process involves a large number of people and jobs, which can be difficult to manage without a comprehensive strategy. A well-designed process streamlines activities, increases productivity, and reduces waste. As a consequence, the steps of the process are carried out in a systematic manner

5.3.2 Preproduction

The term "preproduction" refers to the process of conceptualizing and planning audiovisual material. Formulating objectives and strategies, choosing the budget and timeframe, determining the aspects of

the content, creating and storyboarding the material, recruiting crew members, and deciding on issues such as equipment and location are all part of the preproduction process. A well-executed preproduction phase sets the tone for the rest of the project and brings all of the stakeholders' aims and visions together.

5.3.3 Production

When you're in the production phase of a video project, you're trying to make your vision a reality. Based on the content you had prepared and storyboarded in preproduction, you set up shoots and film the real video. During this phase, you may also collect B-roll (supplemental video to complement the primary footage) and provide voice-over work in addition to capturing the content.

5.3.4 Postproduction

The postproduction step entails actions such as editing and merging the material into a completed video output. In most cases, the director and editors collaborate to thoroughly evaluate the video collected, plan its assembly, change it, and organize it. To improve the product, they may also include music and sound effects. Stakeholders are likely to assess the output near the conclusion of postproduction and make recommendations, resulting in further editing and maybe reshoots before final delivery.

5.3.5 The importance of a video production workflow

A video production workflow, like a project plan, guides the completion of actions inside a process and describes the timetable, resources, and employees required to do so. In video production, there are many persons and tasks involved, but the workflow outlines who is engaged in which phases and when. In preproduction, for example, after identifying needs with stakeholders, the production crew knows to inform the authors and storyboard artists of the decisions. The steps are in a logical order, and each one has a clear goal in mind.

5.4 Difference Between 3d product Animation and product video in studio

There are many difference between 3d animation and product video in studio. Both option are important for every company and product marketing ,but now day 3d animation technology is better than product video in studio. There are many things that can be done with 3d animation . but those can not be dobe with product video.some work can speed up product video from 3d animation. One of the reason is that 3d animation take longer time for realistic render . This is an intriguing subject since, depending on how you define it, a video and an animation might be regarded the same thing. You might argue they're both made up of a sequence of pictures that provide the impression of movement. When people mention "animation" in CG movie and video game companies, they are typically referring to the data that describes how a character will move across 3D space. Later, it will be captured (rendered) in video format. When animating a character, the posture is recorded as 3D position data, along with a host of additional information. The animator can watch their postures in real time without having to convert

them to video. Although this realtime playback has the same qualities as a video, the distinction is that it is not stored for subsequent viewing.



Figure 5.3: Compare 3d animation and product video

Given below some of topic about difference between 3d product animation and product video in studio

- Budget
- Team management
- production equipment
- work stress
- software licenses
- skills
- production house

5.4.1 Budget:

There are many difference between 3d animation and product video in studio in budget .normally a 3d artist can do any type product modeling within 5 to 10 days but they don't need any physical product for making 3d animation. But if any production house make product video then they need product

So I think 3d animation better option to make product animation for budget

5.4.2 Team management

In visualization research, collaboration and teamwork are crucial. You have total control over your work schedule and who you collaborate with. Artists in the field are working for a larger goal. The ability to

communicate and work together is crucial for team members. And normally one 3d artist make any type 3d modeling but only one person cannot do product video in studio they need many equipment also man support

5.4.3 Producton equipment

Some of difference between 3d animation and product video in studio about equipment .when any production studio make any product video then they need studio setup ,light setup ,camera setup , production man power and many more think but 3d animation make did not any more .one high configuration computer setup and one 3d artist need and they can also same output in 3d software

5.4.4 Work stress

Working in academia gives you the freedom to choose your own schedule, choosing when to conduct 3d objects modeling, lighting, and rendering, as well as when to publish your work. On a regular 9-to-5 weekday, artists within the company are usually consistent.

5.4.5 Software licenses

Normally 3d all software are not free in official. Need license for 3d artist to their working in software but in production house there did not need software license for 3d software because they make production animation in studio and physically so that they are not use any 3d software

5.4.6 skills

3d animation artist and product video team both are need different skill both skill are not same .3d animation maker or 3d artist need their 3d modeling skill for making 3d product but production house

Need camera control and others equipment use skill for making product video in studio so skill are not same of them

5.4.7 Production house

Evry production house do any type video making work like docomentory ,product video, shot flim, advertisement work and many more work but every 3d artist don't have any production house any 3d artist working at home and make any type product modeling also 3d animation . 3d animation have production house and its but they are working only 3d work also vfx work so some of difference between 3d animation production house and video production house

Difference between 3d product animation and product video in reallife table are given bleow

All topic are importance about both side

| Topic | 3d product animation | product video in reallife |
|------------------------|--|--|
| Equipment | they do not need lots of equipment for 3d product animation | they do need lots of equipment like light setup ,camera, studio |
| Spacial sence | any type spacial sence like , product in under water, inside of product and many more that that you want | all spacial sence cannot take in reallife |
| Pre-make product | They do not need any physical product for making animation | They cannot taking any video recording without any physical product |
| VFX for movie industry | 3d industry is related of movie industry with vfx | They cannot make any vfx work without 3d industry |
| Compuny prefer | every big compuny like apple, sumsung , tesla all compuny made product promo video by 3d industry | every big compuny like apple, sumsung , did not use product video in reallife for making promo video |
| E-commers side | 3d product animation and render image use of maximam ecommers product | product video also use ecomers side but 3d industry is most popular |

Figure 5.4: Compare table of 3d animation and product video

5.5 Difference Between Industry and Academic Pipelines:

There are some few difference between academic and industry 3D visualization project pipeline:

- Budget
- Team Management
- Software Licenses
- Intellectual Freedom of Creativity
- Timeline
- Project Management
- Skills
- Advertisement
- Work stress
- Research

5.5.1 Budget:

Budget is one of the primary factors that has resulted in a significant difference in academic goals. We didn't have a lot of money for our project at school. We make it with our own imagination. Our projects are overseen by us.

5.5.2 Team Management

Collaboration and teamwork are important aspects of visualization research. You have complete control over when and with whom you work. Artists in the profession are working toward a broader aim. It is critical for team members to be able to collaborate and work together.

5.5.3 Software Licenses

Industry has a lot software and tools support rather than academy.

5.5.4 Intellectual Freedom of Creativity

Students in academics have intellectual freedom, as they are not bound by short-term deadlines. Working in industry has the advantage of receiving the most up-to-date funds and resources from the larger organization. However, unlike the academic sector, it was solely focused on research.

5.5.5 Timeline

In terms of timeliness, they are on opposite ends of the spectrum. We have a four-month semester in college, and we have a lot of projects to complete in that time. In industry, we must keep our tasks on a strict timetable. Because we have a deadline to meet with our client.

5.5.6 Project Management

Academia is distinctly studies and discovery focused, and lots of studies are carried out for the sake of learning. In industry, paintings has a tendency to be greater time-orientated, as groups paintings at the business-orientated problem. These painting permits researchers to experience an instantaneous effect in actual applications.

5.5.7 Skills

Industry peoples are maximum skilled. They have a variety of experience. In educational vicinity pupil are fresher. They don't have lots experience. They growing their competencies day via way of means of day.

5.5.8 Advertisement

Industry people are advertisement focused. On the other hand ,academic personals don't have that kind of advertisement related issue .

5.5.9 Work stress

Working in academia is the liberty to dictate your personal schedule, selecting whilst to do 3-d modeling lights 3d render and post your work. Artist withinside the enterprise typically constant on a popular 9-to-five workday.

5.5.10 Research

In the academic life you've got many duties including making use of for scholarships, doing all of your very own research, publications, conferences, advising students, presenting specialized services. A profession in industries targeted generally on carried out research. He should be capable of expand tasks that align with the goals of the corporation and, on the equal time, help the marketing strategy of the corporation.

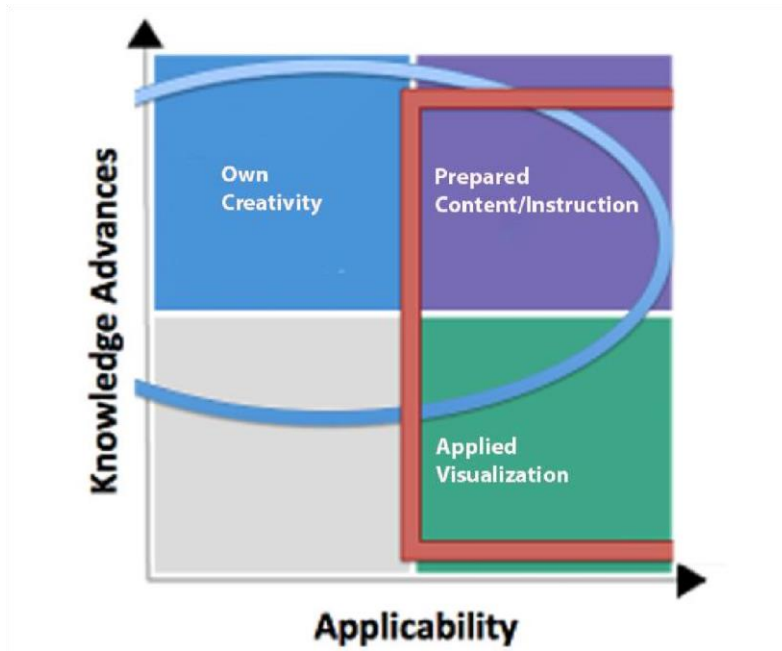


Figure 5.4.1: Applicability for Academic and Industry










| Academic Research | Professional Research |
|---|---|
| <p>Also called as Scholarly Research</p>  | <p>Also called as Applied Research</p>  |
| <p>Seeks to add to a larger "body of knowledge"</p>  | <p>Seeks to find solutions to instant problems and issues</p>  |
| <p>Questions tend to be more conceptual</p>  | <p>Problems tend to be more practical</p>  |
| <p>Theoretically focused</p>  | <p>Organisationally focused</p>  |
| <p>Findings are generally made public</p>  | <p>Findings are generally kept private</p>  |

Figure 5.4.1: Research in academic and Industry

5.6 Uses for Different Criteria

One of the maximum crucial factors in any buying choice is the capacity to visualise a product. With 3d product visualization, manufacturers can without a doubt talk the particular sense in their merchandise and permit clients to assume merchandise as they could exist of their day by day lives, from the consolation in their very own home. Brands additionally use 3d visualizations to illustrate exceptional product variants. 3d product visualization permits manufacturers to supply the particularly attractive stories cutting-edge clients have come to expect. Potential clients can very well observe a product earlier than shopping for it to higher apprehend what they're shopping for. Customers view merchandise from all angles and transfer among exceptional hues and styles with a easy click.



Figure 5.5: 3D Product Visualization In Different Criteria

5.7 Problems and Findings

- Time
- Project Management
- Tools/Equipment
- Budget
- Teamwork
- Linkup

5.7.1 Time

For creating a 3D product visualization there are enough quantity of time we need. In academic vicinity we didn't get that a lot time for a selected project.

5.7.2 Project Management

Academia is highly research and discovery focused, and plenty studies is executed for the sake of learning. In industry, paintings has a tendency to be greater time-orientated, as groups paintings at the business-orientated problem. This paintings permits researchers to sense an instantaneous effect in actual applications.

5.7.3 Tools/Equipment

Industry has more 3D Software tools enrollment than academia. This tools can be very useful for creating eye simulation 3D product visualization.

5.7.4 Budget

In general, commercial 3D initiatives want extra cash than educational initiatives. Budget is one in every of primary purpose that's create a chief exceptional in educational purpose. In Academic we didn't have a far finances for our project.

5.7.5 Teamwork

Teamwork plays a critical function in enterprise purpose .Every branch has its very own artist and that they have performed the work. Like folks who are committed for modeling they best do 3-d modeling component that product. They professional in this field.

5.7.5 Linkup

In industry pipeline there are of lot experienced people. So one can learn different technique from them for creating 3D product visualization.

5.8 Advantages

- Highly effective 3D virtualization technology that allows full-fledged mechanical drawings
- Quicker verification of product design against design guidelines and specifications
- 3D sectional view enabled
- Simpler design of assemblies and subassemblies
- 3D commercial animations are visually stunning
- It takes relatively less time to produce
- Less Cost

CHAPTER 6

CONCLUSSION

To get the attention of the audience, it is essential to make certain that the products are marketed skillfully and effectively. 3D product visualization may be the important thing to success while looking for effective approaches to market products or services and increase sales. In recent decades, animation has been a main advertising and marketing tool and mass conversation medium, with many outstanding properties that other marketing tools can infrequently match. It also can be used for getting to know purposes. Product visualization helps businesses save considerable time and money. Traditionally, product engineers and developers have typically needed to prototype to analyze performance. This changed into now no longer a smooth challenge and regularly took months. This procedure additionally includes good-sized overhead costs. Visualization lets for you to quick redesign, rebuild, and recreate your product, saving significant resources and time. There are additionally business benefits in terms of efficiency. Last but not least, the visible product configurator is an extra impressive manner to present a product than a text-primarily based totally product description. And while clients evaluate your visualized merchandise to the ones of your competitors, they'll be beaten through the variations that the image can make

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