

Analysis of the Application of 3D Special Effects Technology in Modern Advertising

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Abstract: Nowadays, three-dimensional special effects technology is an important technical means to realize the production of film and television advertisements, and it has some advantages such as high efficiency, low cost, excellent visual effect, and strong modifiability. Three-dimensional special effects technology is the actual operation of related software to complete the visual effect. The combination of three-dimensional special effects technology and advertising art can express complex information in advertisements in an intuitive way. Only the perfect combination of technology and art can present better works.

Keywords: Advertising art, Three-dimensional special effects technology, The visual effect.

1. The Development and Artistic Characteristics of Advertising

The term advertisement means spreading, inducing and attracting attention. In the early days, the advertising communication modes mainly ranged from oral advertising to signboard advertising, and then to later celebrity advertising. China's modern advertising spread mainly started from the First Opium War when western Powers invaded China, and foreign businessmen entered China to promote products and set up business magazines. During the First World War in 1914, China's national industry developed and advertising entered a period of evolution when western countries had no time to pay attention to China. During the May 4th Movement, the research and education of advertising started. With the gradual development, evolution changes have taken place in the form of advertising communication. The simple and single form of traditional advertising can no longer meet the aesthetic needs of the public. Traditional advertising shooting usually requires a team to shoot and set up the required scenes and props, which costs a lot of man Power, material resources, and financial resources. The shooting cycle is relatively long and the accountability of the shooting environment is relatively weak. The cost of cast members and staff are relatively large. The extent to which the advertisement can be adjusted and modified in the later period is limited. After the early shooting is completed, it is necessary to start the post-editing. However, if you feel that some visual elements are missing, you have to make up the shot in the process of editing but this requires rebuilding the scene for shooting.

Advertising creativity and picture quality performance become important standards to evaluate an advertisement. In the era of digital media, three-dimensional special effects technology is involved in advertising art, and it has gradually become mainstream. With the continuous updating and development of computer technology, the technology of three-dimensional special effects has been greatly improved and developed. Western developed countries mainly apply it to military science laboratories, which are very confidential and not accessible to ordinary people at all. In the 1980s, 3D technology went from military laboratory to the people with

the continuous development of industrial technology. This makes some film and television companies use this technology in movies. It is very limited because it has the expensive cost, a difficult process of the equipment operation. With the maturity of the semiconductor industry, graphics and image technology is becoming more and more prosperous, and the workstations needed to carry 3D special effects technology are getting cheaper and cheaper. 3D special effects technology is constantly updated and becomes relatively easy to master. After the 1990s, the workstations needed for the production of graphics and image technology gradually shifted to personal computers. Now, three-dimensional special effects technology has been widely used in the film and television industry, advertising industry, and software industry, and quickly occupied the market.

2. The Advantage Analysis of Three-dimensional Special Effects Technology in the Modern Advertising Production

(1) The advantages of three-dimensional special effects technology in the advertising production

Three-dimensional special effects technology is the product of the development of science and technology. With the development of the times, modern audiences have a higher and higher demand for visual aesthetics. In order to cater to the market trend, three-dimensional special effects technology is integrated into the production of modern film and television advertisements. Three-dimensional effects can be divided into character effects, scene effects, physical effects, and particle effects. The role special effect is that he models the characters in the 3D software after the designer designs the animated characters. And the costumes and hair of the characters can be made more realistic. It is also convenient for designers to observe the character model from multiple angles and make appropriate modifications and adjustments. Scene special effect means that designers build model scenes according to the concepts in the early stage of advertising. At the same time, they can simulate relatively real light sources. This can also provide convenience for later advertising production, and facilitate the adjustment of the

model in the future. Physical special effects refer to the use of computers to simulate real wind, fire, thunder, electricity, water, smoke, and other effects. Its advantages are high authenticity and strong visual impact. More importantly, it can help save the production cost of film and television advertisements by adding special effects. Animators can better deal with natural images such as wind, fire, water, smoke, etc., and can make the content of film and television advertisements more vivid and interesting.

In the initial stage of advertising production, real actors can also wear 3D capture equipment to perform on the green screen on the spot. At the same time, the actions of the actors can be captured in real-time on the computer side, and the designer can finish the animation only by slightly adjusting the model actions, which greatly saves the time of making film and television advertisements. The improvement of three-dimensional special effects technology has also promoted the development of modern special effects advertisements.

(2) Commercial cost advantage

After an advertisement finalizes the creative and planning copy, the process goes to the three-dimensional special effects technical group. Members of the special effects group can carry out the three-dimensional virtual design of the scene needed by the advertisement according to the creative idea of the advertisement and the director's demand. 3D tracking after real shooting is also very easy to combine with 3D, and the flexibility is relatively strong.

The cost is also one of the important criteria to judge the value of an advertisement for a commercial advertisement. The use of three-dimensional special effects technology can reduce the cost of early shooting, and the cost of using three-dimensional special effects technology compared with the cost of traditional shooting an advertisement is low. The completion of an advertisement has to be revised by the director over and over again until the best visual effect is achieved. It is relatively easy to modify the advertising scene or adjust the performance and rhythm of advertising special effects while modifying three-dimensional special effects. The cost is relatively low.

3. Take the Advertisement Short Film "Shuai Power" as an Example, the Practical Application of Three-dimensional Special Effects Technology.

(1) Setting and formation of the scene

The short film "Shuai Power" is a three-dimensional advertising short film based on the Chinese character "Shuai". The meaning of "Shuai" means cool and beautiful from the aesthetic point of view, and its literal meaning refers to the highest-ranking officer in the army. Two sports cars, red and blue, were chosen as the protagonists to show the charm of "Shuai". The shape of the sports car itself is outstanding, the curve of the car body is gorgeous, and the speed of the Canadian bank is unmatched, which can all reflect the king's demeanor and fully explain the meaning of "Shuai".

Short films mainly focus on special effects, so the scenes are mainly concise and generous, reducing some trivial decorations and highlighting the essence (Figure 1). This scene is divided into three scenes, mainly indoor scenes with bright lights. The sports car model is a modern sports car, and its appearance is more prominent. The color of the sports car

is blue and red, and this group of contrasting colors is chosen to enhance the color impact of the picture (as shown in Figure 2). At the same time, the scale of the whole scene must be adjusted to avoid problems in the later stage. In terms of the material of the scene, a matte material will be used. The ground not only has its texture but also can map the color and curve of the car body. The material of the sports car is mainly red and blue paint, which strengthens the reflection and refraction of sports car material, looks bright and Shuai on the whole and improves its aesthetic feeling.



Figure 1. (by Wang Nan) Figure 2 (by Wang Nan)

(2) The special effects in the short film are connected with the lens

Making short films needs to use four software for joint production. Therefore, the lens connection is not only the lens connection in editing but also the lens import and lens connection between software. In the works, there are many three-dimensional special effects made around the car body, including crushing, explosion, tail smoke, and lightning (as shown in Figure 3). In order to better interpret these special effects elements, the fixed lens is the main lens in the lens processing, and a few large-angle moving lenses are equipped to make the whole picture more rhythmic. Processing of imported lenses between software: First, set the position and angle of the camera in MAYA, adjust the motion speed of the lens by setting keyframes, then output each lens one by one, and then import it into other related software.



Figure 3. (self-painted by author Wang Nan)

(3) The application of three-dimensional special effects software and the problems found

This work is made by the combination of several 3D special effects software, including MAYA, 3DMAX, and HOUDINI

in the early stage, and AFTER EFFECT and NUKE in the later stage. In the early stage of scene design, the main software used is MAYA. MAYA has its unique advantages in building models. Its polygon module can build simple models relatively quickly, and then gradually depict them in depth. In this short film, MAYA's lighting is also the main lighting. In this work, 3DMAX is mainly aimed at the production of the fluid special effect "smoke". Fluid special effect is usually the most memory-intensive in the field of special effects, and their shape is relatively difficult to control. It is relatively easy to control the effect by using 3DMAX, and it is relatively fast in rendering. NUKE plays an important role in the later CG synthesis. It can adjust and modify the effect of the previous rendering and change the color of the film as needed.

Lighting is a very serious problem in the joint production of multiple software. The illumination direction of each lamp will change in brightness, darkness, reflection, and refraction. However, the lights set in one software cannot be recognized in another software when multiple software is co-produced. If the lights are reset, it cannot be guaranteed that the directions and angles of the lights are consistent. Therefore, we cannot complete the production in one software and the final rendering can only be imported into the scene with the lights set. The final solution is to mask and render all the special effects elements belonging to a scene.

4. The Visual Performance of the Combination of Three-dimensional Special Effects Technology and Advertising Art.

In a short commercial, the best expression effect is to present the information to be disseminated in the most direct and clear way within a relatively short video time. In the advertising short film "Shuai Power", we should show the attitude and spirit of "Shuai", which is vigorous, firm and brave. The special effect of fabric tearing directly shows that the sports car shed its old skin and was reborn. It also showed dangerous and difficult adversity when the car body went

through the explosion and lightning. And it kept going forward and never gave up. The design and production of each visual effect in the short film corresponds to the concept to be expressed in the short film. Therefore, viewers can clearly understand the contents of the short film when they watch. They can also feel satisfied with the whole short film, its effect, production time and the difficulty degree.

5. Conclusion

Three-dimensional special effects technology belongs to a more realistic technical category while advertising art is relatively abstract and conceptualized. We need to use realistic technology to express abstract advertising art more intuitive. It is necessary to combine three-dimensional special effects technology with advertising art. We sometimes will come to a misunderstanding that the three-dimensional special effects technology will make the picture very beautiful and shocking and it will cover up the significance of advertising art itself. In order to achieve good advertising effects, three-dimensional special effects technology and advertising art need to complement each other and stimulate each other, which can not only highlight the three-dimensional special effects technology but also effectively combine technology with art. Although there are many problems in the production, I believe that technology and art in the future advertising art will be better and more valuable works will be obtained.

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