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Brief Analysis of Product Packaging Visual Design Points Based on VR Technology

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Abstract: The emergence of VR technology provides a new idea for the packaging visual design of products. In the traditional packaging design process, designers often rely on two-dimensional graphic design means, such as paper, ink and so on. However, this design approach often fails to fully show the true face of the product, nor can it provide a full range of visual experience. VR technology can provide a new way of packaging visual design, it can simulate the real environment, provide consumers with an immersive experience, so that consumers can be more intuitive, more comprehensive understanding of the product.

Keywords: VR technology; Product packaging; Design essentials

As VR technology continues to evolve, designers need to understand the characteristics and application scope of VR technology. VR technology can provide an immersive experience, allowing consumers to feel as if they are in the environment of the product packaging, so that they can more intuitively understand the characteristics of the product. In addition, VR technology can also provide consumers with a more comprehensive visual experience by simulating different lighting and angles. This new way of design can not only enhance the attractiveness of the product, but also enhance the brand image of the company. Through continuous trial and exploration, designers can find the most suitable VR design method for product characteristics, so as to enhance the competitiveness of products.

1. VR technology Overview

Virtual Reality (VR) technology is a technology that enables users to be physically present through computer-generated three-dimensional images and audio, as well as interactive virtual environments. By wearing a VR headset or glasses, users can immerse themselves in a virtual world, interact with virtual objects, and generate physical perceptions and experiences.

With the development of the technology, VR technology has been widely used in various fields. In the field of gaming, VR technology enables players to play immersive games, enhancing the immersion of games. In the field of education, VR technology can provide students with a more realistic and intuitive learning experience, simulating a variety of real scenarios. In the field of health care, VR technology is being used to treat psychological disorders such as phobias and post-traumatic stress disorder. In addition, VR technology is also applied to architectural design, tourism, entertainment and other fields [1].

In short, VR technology provides a new way of virtual experience, enabling users to interact with the virtual world, providing rich opportunities for learning, entertainment and immersive experiences. In today's market competition, the importance of product packaging visual design is self-evident. It is not only about the sales of products, but also about the brand image of the company. With the continuous progress of technology and the expansion of applications, VR technology began to gradually emerge in the packaging design industry, and played a huge role. Therefore, the research on product packaging visual design has very important practical significance.

2. VR technology in product packaging design

2.1 Immersion

With VR technology, designers can create a virtual immersive environment that allows consumers to better experience products during the shopping process. This experience not only helps to enhance the appeal of the product, but also increases the desire of consumers to buy. For example, VR technology is used to simulate the use scenario of the product, so that consumers can feel the characteristics and advantages of the product [2].

2.2 Interactive

VR technology allows consumers to interact with virtual products, providing a more intuitive presentation of the product. Designers can use VR technology to adjust the packaging design in real time to meet the needs of consumers in different scenarios. For example, in the virtual environment to show the opening of product packaging, use of tutorials, etc.

2.3 Innovation

VR technology provides designers with unlimited space for innovation, and in the virtual environment, designers can try various ideas, such as combining product packaging with virtual reality scenes to create a unique brand image. In addition, VR technology can also help designers quickly verify the design scheme, through real-time rendering and simulation, to find the best packaging design scheme.

2.4 Personalization

With VR technology, designers can provide consumers with personalized packaging designs. For example, unique packaging patterns and visual elements are generated in real time based on consumer preferences and needs.

2.5 Brand marketing and promotion

VR technology can help enterprises better promote products and brands by creating virtual reality scenes that allow consumers to understand product information in an immersive experience and improve brand awareness. For example, virtual reality events are held to allow consumers to experience new products online [3].

2.6 Reduce trial and error costs

Packaging design in the VR environment can reduce the cost of trial and error in the actual production process. Designers can try out various design schemes in the virtual environment and predict the market reaction in advance, thus reducing unnecessary losses.

3. VR technology product packaging visual design points

With the progress of science and technology, virtual reality (VR) technology has penetrated into various fields, especially in the visual design of product packaging, VR technology provides designers with unprecedented possibilities. Product packaging visual design is an important part of product marketing, it is not only related to the image of the product, but also affects the consumer's first impression of the product. Therefore, how to enhance the attractiveness of products through visual design and enhance consumers' desire to buy is an important topic in the field of packaging design.

3.1 Creation of virtual world

Through VR technology, designers can create a virtual packaging world that provides an immersive visual experience. Designers can use VR technology to simulate the use of the product and create a real packaging environment, so that consumers can feel the characteristics and advantages of the product in the virtual world. For example, by simulating the appearance, texture and details of the product, consumers can understand the design of the package in detail. Before the creation of the virtual world, the designer needs to clarify the actual needs of the scene, such as the scene needs to be similar to the actual display of goods, the designer should consider the background, lighting, material and other factors. In the process of editing scene materials to adjust the color and gloss properties of objects, designers can use Substance Painter, Quixel Mixer and other software for design and adjustment. At the same time, designers also need to consider the illumination of the scene, through professional lighting software such as Arnold, V-Ray, etc., to achieve scene construction. The designer should comprehensively consider the placement of the scene and camera position and other factors to achieve a reasonable construction of the scene [4].

3.2 Interactive packaging design

Designers need to fully demonstrate the interactive features of packaging design, helping consumers interact with virtual packaging through devices such as handles, gloves or motion-sensing sensors, and adjust packaging design in real time to add their own creativity and personalized needs. Designers can quickly optimize packaging design according to user feedback and needs to achieve personalized and customized results. Designers can add an interactive character model to the virtual scene, which can be modeled and adjusted in detail through NURBS. In the design process, we also need to help the characters have corresponding movements, such as walking, running, standing and jumping. Through the design of interactive character models, the interactivity of packaging design can be greatly improved, giving consumers a more real visual experience.

3.3 Presentation and adjustment of 3D vision

Traditional packaging design mainly relies on plane drawing and rendering, and can not fully show the three-dimensional effect of the product. VR technology can provide three-dimensional visual performance, so that consumers can more intuitively understand the appearance and form of the product. Through the three-dimensional presentation in the virtual environment, consumers can observe the

packaging design of products from different angles and distances, and obtain a more comprehensive visual experience. VR technology can simulate a variety of lighting, materials and animation effects to provide a richer variety of visual effects. Designers can use real-time rendering and simulation in virtual environments to adjust lighting effects, color matching and texture texture to achieve the best visual effects. This flexible adjustment can help designers better show the characteristics of products and brand image [5].

3.4 Communication of brand image

VR technology can seamlessly combine packaging design with brand image to present consumers with a complete brand story. Designers can use the scene design in the virtual environment, brand element implantation and brand storytelling, so that consumers experience the packaging design at the same time, in-depth understanding of the value and concept of the brand. VR technology provides a more direct and immersive way for brands to communicate. In the process of product packaging visual design, designers can comprehensively use virtual reality technology to show brand elements to consumers in interactive ways, so that consumers can have an immersive feeling, a better impression of the brand, more real.

3.5 User research and product testing

VR technology can help designers conduct user research and product testing in the early stages of packaging design. Designers can understand users' preferences and needs for packaging design through user experience and feedback in the virtual environment, so as to improve and optimize accordingly. This virtual user research method can reduce the cost and time of actual production and market testing, and give designers more opportunities for trial and error. The designer can give the user an immersive experience through virtual reality technology, so that the user can put forward their own objective opinions on the packaging design of the product, and the designer can use VR technology to debug the online according to the user's opinions. This enables designers to solve most packaging design problems before products enter the market and improve consumer satisfaction [6].

3.6 Joint design and collaboration

VR technology supports multiple people to enter the same virtual environment at the same time to achieve joint design and collaboration. Designers can communicate and collaborate with team members in real time through VR technology to complete all aspects of packaging design. In addition, VR technology can also be combined with other design software, data analysis tools, etc., to achieve more efficient design processes and decisions.

Concluding remarks:

To sum up, the research on product packaging visual design based on VR technology has very important practical significance and future potential. It can not only enhance the attractiveness of products, enhance consumers' desire to buy, but also bring more business opportunities for enterprises. With the continuous development of VR technology, product packaging visual design based on VR technology will become the mainstream trend in the field of packaging design in the future. In addition to the above points, there are many other factors to consider. Designers need to deeply study the application of VR technology to make greater contributions to the development of product packaging visual design.

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