Application of Virtual Reality in Interior Decoration

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Abstract. We analyze the application prospect of VR technology in interior decoration, discuss how to use VR technology to make consumers better experience more convenient and independent decoration mode, and point out that the core of VR technology in interior decoration is the establishment of database in this paper.

Keywords: VR technology; Interior Decoration; Database.

1. Introduction

The rise of VR technology has made more and more interior decoration industry look to this business opportunity. Now there are tens of thousands of researchers and organizations around the world to research and develop it, and let VR be combined with the design and display of architecture. The platform we have established is in line with this wave, but it has a unique color. With the technical support of VR, it is better combined with the interior decoration industry in the construction industry, which has derived the platform's home decoration design stereo display technology, which can show the convenience and personality of the Interior improvement, and the intimate place must be the trend of the future interior decoration industry. The decoration style is as small as a city, as large as the whole world, and there are many, and the large database built by the platform has better included these designs for users' reference. There is such a rich and user-friendly database and quick and worry-free. The decoration design experience, it is foreseeable that every experience customer will be surprised and love this experience.

2. The Application Prospect of VR Technology in the Decoration Industry of Construction

Virtual Reality (VR) is an advanced computer user interface that provides users with intuitive and natural real-time sensing interactions such as audio-visual, touch, etc., to maximize user convenience. That will reduce the burden on users and improve the working efficiency of the whole system [1]. VR technology makes the content of human-computer interaction more vivid and rich, and the method is more convenient and natural. It is widely used in military exercises, product design, urban planning, entertainment art, clinical medicine, and so on.

As VR technology constantly infiltrates people's life, people's way of life and mode of thinking are slowly changed, and VR technology is gradually becoming popular in the interior decoration of building. Since 2015, many furniture companies have turned their attention to this market, and VR technology has attracted much attention from the industry. In December of 2015, the tubatu has announced that it would apply VR technology to the home installation, and it would work with Letv to build a virtual display platform, and the advance of the offline experience store. On March 16, 2016, the decoration network announces cooperation with the VR brand USA 365 to launch the VR home products. On March 19, 2016, the federal home office is hosting the event horizon digital marketing strategy launch, the first VRHome space experience system. On March 23, 2016, Yuezhuang launched VR technology service. After users input the required data size into the VR

system of Yuezhuang, they can see the three-dimensional decoration effect. On March 26, 2016, Opai launched VRhome experience house and established VR digital exhibition hall in the home furnishing industry...According to Digi Capital's report, in the first two months of 2016, the total amount of investment in VR and AR (Augmented Reality) has exceeded $1.1 billion [2].

We believe that VR technology is used in the interior decoration industry with the following advantages:

(1) Simulation: The ideal virtual reality can make people reach the level of true and false, and customers can intuitively feel the ideal home improvement environment and home decoration design.

(2) Sex: There are many home decoration companies that use 3D technology to design and decorate the design, but the design cycle is long and too cumbersome, causing customers to lose their enthusiasm for decoration when they see the home improvement effect. VR technology can display finished products to customers in the first time, shorten the decoration time and improve the decoration efficiency.

(3) Autonomy: Establish corresponding data information database, real-time updated materials and a large number of models can meet the needs of customers, let customers participate in the design, do their own home designers, VR technology in the decoration industry There is great potential in both commercial and practical aspects as well as technological innovation.

3. A Convenient Decoration Experience of VR

The platform is built with the platform self-built database as data support. By providing VR glasses to customers to realize the 3D virtual scene in front of the eyes, the decoration style and item position to be presented are better presented to the experience. Therefore, it is more intuitive to let the experiencer judge whether a decoration design meets their own appreciation requirements. Then VR glasses show what the customer wants to decorate and how to achieve it step by step? It is through the personality of the current platform, modern home, luxury and noble, free and comfortable four decoration style series, each decoration style series has several decoration style templates. The user selects the decoration style series that he likes, and selects the corresponding style template in the series to match the apartment type. After the space stereo rendering, you can feel the real space effect of the selected style series with the selected style series. The templates of various style series can be switched.

Decorate the space again after the style chooses, the platform provides a variety of choice of furniture and building materials for the decoration of the space. All furniture and building materials in the platform are modularized and numbered, and each building materials and furniture has the specific information of the supplier. The experiential user will drag the selected position to the desired position and adjust the position where can be placed, which can help users experience the comfort and personality of their design. Then use BIM modeling technique to build the showing content, the 3D effect in the plane can be displayed on the screen through AR after the model is completed. If the customer's conditions permit, VR glasses can be used to present virtual three-dimensional decoration space in front of the user. Is not only rendering display space, also can support 720 ° panoramic roaming, accompanied by induction experience changes in visual orientation, VR glasses of 3 d scene changes, 720 ° panoramic roaming to experience different decorate a design experience, live is the most able to attract customers, it really will be in each individual heart ideal home outfit perfect show come out. Compared with the ordinary decoration industry, the three-dimensional decoration space model established by the platform is the personalized display of each user. It gives the experiential person the real experience of roaming in the house designed and decorated by himself. This kind of intimate and detailed expression is absolutely impossible and impossible for the traditional decoration design industry.

4. The Composition and Application of Database on using VR for Interior Decoration

Database is the foundation of the whole VR decoration experience, which is the support of customers experienced service. The database is divided into four different parts, namely customer information base, household design library, cooperative merchant commodity information base, data overall analysis library.

Customer information base is mainly the record of each customer's personal information and elated design and historical decoration design . First, it is possible to create personal files for each customer, and give each customer a private custom experience. Second, the customer database can be used to analyze the local decoration style preferences, and the detailed reference for the subsequent decoration style template is also the source of analysis data for data integration analysis.The house pattern design gallery is a spatial structure model built by BIM and other professional software according to the various house pattern diagrams of each experiential customer and the neighborhood around the location. It is the carrier that the client chooses to decorate a style, of door model design picture storehouse rich or not decided whether the client can continue to experience directly, so door model design picture storehouse is right seat periphery door model enclothe approval rate is very important a bit. Merchants commodity information database is really quick and convenient for the customer to decorate experience, the details of the ability to some of the larger "one-stop" work style furniture, building materials, commodity to sort and modular code, import the VR system, experience can satisfy various customers' ideas and requirement for decoration, furniture or building materials can be put inside rendering family environment for customer choice, production is to satisfy every customer's real window, this also is the advantages of informatization. Data pooling analysis database is similar to the current Al intelligent system, that is, database is similar to the current Al intelligent system, that is, through the local customer experience and customer information database data to analyze the local residents of the decoration style preferences, for all kinds of decoration style template rich addition and decoration style adjustment to do scientific reference.

5. Existing Problems on Applying VR to Interior Decoration

(1) Seeking a suitable survival mode

The application of VR technology to the home improvement industry is a new type of field that has just begun to get involved in the VR industry. In terms of capital turnover, it is not as fast as the VR game model, and the fund reflow period is longer due to uncertain factors such as the realization of the liquidation period. Business models are at risk. Therefore, the development of a suitable survival mode is the only way for VR technology to be applied to the home improvement industry.

(2) The uncertainty of consumer acceptance

VR technology will inject new opportunities into the home decoration industry, but there is also the problem of whether there is really no difference between the home presented by virtual reality and the real home after future decoration. Whether VR home decoration can obtain greater consumer satisfaction is worth considering.Second, the application of VR technology is only a link of decoration, not a one-time individual consumption, such a service can make consumers fully satisfied and worth considering.Only when consumers are satisfied, the application of VR technology in home decoration industry can continue to push forward.

(3) Industry chain needing to be optimized

VR technology platforms mostly cooperate with merchants in advertising to better implant merchandise into the designer's design plan. It is easier for designers to find and incorporate appropriate scenarios into the design plan by extracting a brand's products. This is not a rigid compulsory use, but a more realistic need. This will also show the brand merchants some open excellent designs of their products, so that when they communicate with consumers, they can display their own products in these designs. Through the exchanges among businesses, platforms and consumers, we can form an industrial chain model. However, at present, this kind of industrial chain is not perfect and needs to be optimized.

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