

# Research on product design and application based on virtual reality technology and media interactive art

Gang Liu<sup>1,a,\*</sup> and Xiao-cheng Zhou<sup>1,b</sup>

<sup>1</sup> Wangjiang Road, Hefei city of Anhui Province, No. 555, China

<sup>a</sup>liugang0558@qq.com, <sup>b</sup>zhou\_xiao\_cheng@163.com

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**Abstract:** in the process of the new period technological development, virtual reality technology and interactive media art as products of the new digital technology and media art, more and more apply in people's work and life. By using of virtual reality technology in the early stage of product design, can more intuitively express creators of intentions, then make a more artistic treatment on the screen, develop interactive mode, use new digital media art, which can give users a new experience and perception, so that it can provide more suggestions and solutions to the feasibility of the latter part of the product design and diversity. This paper mainly analyzes the application of virtual reality technology and media interactive art in product design.

## Virtual reality technology and media interactive art overview

Virtual reality technology is to use computer simulation to generate a virtual space to provide to the user view in the visual, auditory, tactile and other sensory simulation; the user can realize the true nature and interactive virtual environment. The virtual reality technology generally has the characteristics of immersion, interaction and imagination, and then further produces a kind of experience and feeling of the real environment. Virtual reality technology also includes a multimedia technology, sensor technology and intelligent human, man-machine interface, graphics, and other technology, is a new way of human-computer interaction. This interaction is different from past remote control tools such as interactive, and it is a computer and natural interaction, a wide range of for in the new era of the industry product design and display areas.

In the development of digital media, the characteristic of interaction is gradually evolved from the development and progress of digital media technology, and it is a new mode of digital media formed under the premise of the user operation. Compared with other traditional art forms, digital media art not only has powerful performance and more fresh and diverse the theme, but also has a unique advantage in the interactive. New era interactive mode main includes object, space, color, interactive interface. The method of interaction is changed by digital media creation innovation, and it is combined with virtual reality simulation concept, so that the product design will generate a new experience to users.

## Virtual reality technology and media interactive art application in product design and display

Product design is a creative process, through a variety of elements such as lines, symbols, numbers, text, color and so on the combination to show of the shape of the products in form of a plane or three-dimensional. It is to convert people need or some kinds of purpose to a specific

physical or tools; and it is a process to express plan, problem solving method, through the specific operation. Product design reflects the current development of economy, technology and culture. In the product design phase, the layout of the whole product is determined by determining the overall product plan, appearance, structure and function. If the product design is short of production view, then the production will consume a lot of cost to adjust and replace the equipment, materials and labor. On the contrary, good product design not only shows the superiority of the function, but also is easy to manufacture, the production cost is lower, so that the comprehensive competitiveness of the product can be enhanced. Many companies in the market competition are very attention to the details of product design, in order to design low cost and unique features of the product. However, even the best and unique product design also need to rely on modern art exhibition to show the unique side out, and modern art show no longer simply rely on panels, showcase, plane of text, pictures, video, etc. the pure static display mode, but uses a lot of new simulation virtual reality technology, a dynamic, interactive display performance. The audience can not only watch the exhibits in a multi-dimensional dimension, but also can operate the exhibits and interact with the products to make the audience more direct and understand the function and features of the product. So that it can reflect the product design more intuitive, more meet the needs of social development.

Virtual reality technology and interactive media art is the typical combination of technology and Arts. In most people's opinions, art is expression and perception, science is logos and explore. If art is eternal spiritual home, then science is a extreme obscure theory in the logical. Then, many people will feel science and art often seem out of place. "But in fact, many artists are taking art to the science road slowly. A successful design should meet the requirements of many aspects. In the development and maturation of the virtual reality technology also makes interactive media art with new and innovative starting point, the usual media interactive art may only limited in basement of plane advertisement , and the color art makes the products get more people's attention. At the present , the virtual reality technology and media interactive art should be combined to develop a new way of expression and expression effect. The display product designed by virtual reality technology compensate for the lack of the passive observation of the traditional 2D display design effectively. The use of today's virtual reality technology is real-time display art of product design is one of the most important and the most attractive features, making visitors to observe and know the products from any angle , so that the product take with stronger display and expressive force.

The interaction of the new media interaction can let the customer exhibit a certain interactive mode, understanding of the characteristics and functions of the product more intuitive directly. Human eyes are the origin of beautiful things, so it is not enough to use simulation of virtual reality technology in display products time, should combine with new media hand, making interactive form colorful. Today is no longer the traditional light, electricity and sound technology, but through the simulation authenticity and interaction of the art of the whole virtual reality technology in the product to display increased environmental color and light contrast levels show, thus making the whole environment of harmony and unity, strengthening the product's atmosphere and emotional expression on process of displaying , enhancing artistic, attracting more customers to watch and understand the new products.

From this we can know that the introduction of a new product is not just its innovative efficacy and unique practicality, but more importantly, to meet the market recognized by the community. So in the future development of society, using virtual reality technology and new media interactive art to display the new product launch in the early time, getting better economic effects of manufacturing and customer protection. Making new products more valuable.

Virtual reality technology and media interactive art for product design form and function display

In the process of product design, the economic benefit of the customer and the merchant are the first thing to consider, good design can solve problems of the customer concerned, such as product function, feeling, appearance, quality and so on; at the same time good design can save energy and materials, reducing the cost, improving labor productivity, also considering whether the products can put into mass production possibility. A new product get into the market need a long period of time, and need to consider the safety and reliability. In the information situation, the sale of commercial products gradually to the digital, the efficient and economic information dissemination of digital media to improve the competitiveness of products. With the development of computer hardware, the computing power of 3D is increasing, the display mode of 2D image is developing to 3D virtual reality.. Coupled with the new media interactive art to implement interactive Tinian, let the customer in the visual, auditory, tactile and other sensory the real effect of the full range of products knowledge and cognitive, make the customer can better for later research and development of new products. As a result, not only greatly shorten the development cycle and the effectiveness of the product delivery, but also to attract the consumer's desire to buy. At present not only the enterprise began using virtual reality technology to display the commodity and national defense, energy, education and scientific research, biomedical five core areas of also uses the virtual reality technology to carry on the simulation, training and learning. New products can be found everywhere, and is also increasing its competitiveness, in addition to products new and strange then needs to be combined with virtual reality simulation effect and interactive media unique on the show to win a better victory and inject fresh blood for their own products.

In the modern new product design and means of product design from hand-painted drawings to computer production renderings to animate the development process, mankind has always been in a constant search for new technology and high quality to achieve the effect of virtual reality technology. In the product display in the process of making the effect of virtual reality the most important is the software technology, the general use of 3DMAX, Maya 3D modeling software to produce a three-dimensional image, with flat panel display to achieve three-dimensional display, which is currently used most widely used a form and low cost. And then the hardware, such as multi-channel projection, air imaging, etc.. In the sound can be 3D sound technology, through the human head recording to achieve a highly realistic simulation of the real world in the virtual environment. The voice also enables customers to determine the distance, and the sound source location. Interactive art are the most important is to make the product in the display process is not only a true and makes the whole display environment of rising to art appreciation class, using light and shadow create fantasy, warm, strange and different environment. Let the customer understand the product can also feel the same feeling. This has prompted to combine virtual reality technology and new media interactive art applied to display products to make customers in highly concentrated and thinking hyperactive conditions, to display products, the entire contents not memory, make the attention of customers continue to focus on and eventually the memory content to persistent and deep direction development.

Combination of interactive media art and virtual reality technology, but also greatly improve the customer will come to visit without the television ads, print ads and other intrusive communication to the customer, planar advertisement not only investment and long time, and produces the effect. And virtual reality technology in report design process has unique advantages, and customer communication design opinion expression, interactive features unmatched by traditional expression. In the process, it can also strengthen the calculation of the project cost, improve the budget and structure of the material, avoid the loss caused by the inaccurate budget.. In product design, exhibition, the provinces can construction of specialized equipment and facilities for virtual reality

Exhibition Center, using panoramic image technology, three-dimensional reality technology, stereo effect technology and media art interactive technology, for merchants and customers a common exchange learning place. That led to the development of the whole society and the improvement of the life level of the appointed.

### **Virtual reality technology and media interactive art in the product display advantages and disadvantages of the art**

With the development of science and technology, human civilization has taken a big step forward, from the former coach to a car, from the previous lamp into a lamp. Products are also the same, wave after wave of new things appear in our daily life, social and material living standards will continue to improve also makes people to product design requirements continue to improve, in the material life of continue to engage at the same time, people's requirement of the spiritual life is also rising, art products to human life brought convenient, speed up the efficiency of people life. The new product design is defined by the essence of the product and the appearance of the new product design, which has a wide range of scope.. The new product must not only be recognized by the society, but also to achieve economic benefits, it must start from the market and the user needs, fully meet the design requirements. In the design process, the safety of the product is considered, the ergonomics performance, the use of the condition, the reliability of the product, the beauty and the package of the appearance of the product. The practicality of the product is particularly important, details determine success or failure, details of the competition is the highest level of competition. In the market a wide range of similar products in the consumer more inclined to choose the more beautiful, detail and more delicate products of the industry. People start with feelings of cognitive activity, by feeling can be to understand the different objective things, and of mental activities and consciousness further understanding is the basis for human brain and the external world contact, so the use of virtual reality technology in intuitive, vivid and visible way to show up, a combination of interactive new media art atmosphere to attract customers, emotional expression to meet the people's demand of life. Customers can be personally, there is a choice of understanding, watching and operating exhibits, it has a previous era can not match.

Although product display in the combination of virtual reality technology and new media interactive art to businesses and customers bring many advantages, but many disadvantages will also cannot be waived. In the product design, the use of virtual reality technology to give customers a visit, which is undoubtedly the creator of the design concept. In the present Chinese patent law is not very mature, once the product in a virtual reality simulation results, and then similar or better products may in the creator of products has not yet been produced, the market of similar or better products has everywhere, then product creators also lost original meaning. Virtual reality technology can only be for everyone to learn and watch in a multi perspective, and can not better provide interactive feelings for you. Interactive media art can add color to the effect of virtual reality, but many businesses will the product display effect more too boast Zhang, lead to a great difference to produce the final products and display products. Virtual reality technology and interactive art can give the customer the real feeling of the environment, but it can't guarantee the safety of the production.. For example: along with the accelerating process of urbanization in our country, real estate industry has been rapid development, the virtual reality technology application in real estate sales is more and more widely, but the crash after, building security is really reliable? Several recent residential building collapse incident, is really natural? So while we focus on new developments in science and technology at the same time to human see virtual reality technology of

real production, let virtual reality technology and interactive media art play a real role in the product design of the display, rather than become the sword of business profits.

### **The development of virtual reality technology and media interactive art of product design**

Virtual reality technology in the development of science and technology or in a new stage, is a branch of the new digital media, although many fields has a wide range of using this technology, but in many second and third tier cities in this regard a technology development and integration or momentum. Some cities use the virtual reality technology has been widely effect, if the latter can be the combination of virtual reality technology and media interactive art better in demonstrating the product design, so the more can reflect the charm and the advantage of the new technology. Besides entity simulation model of a kind of any display doesn't have its reality and interactive experience, it's pure natural interactive mode not is a computer mouse interactive operation, but to add natural and use the feeling and atmosphere to interact. This will not only shorten the product development cycle and product later television and print ads and save unnecessary expenditure.

### **Summary**

The virtual reality technology is more and more accepted by people, and in the future the virtual reality technology and interactive media art in the product design and the show art will be used more and more widely, make an irreplaceable contribution to the research and development of products. To create a brand new society and exchange way for human. The product design should have the virtual reality technology and the media interactive art demonstration essence to have the artistic feeling, the practical feeling. This paper is a research on virtual reality technology and media interactive art in product design to improve the product design, and it is hope to provide useful reference for the industry colleagues.

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