Application of Visual Interaction Technology in the Process of New Media Information Dissemination

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ABSTRACT
The purpose of this research is to summarize the application of visual interaction technology in the dissemination of information by the media. The rapid development of information technology has caused great changes in the way of information dissemination and realized the integration of vision and new media. It is under this technological background that new media interaction technology has been formed and developed. The development of the new media field has experienced a process from linear advancement to the convergence and integration of digital technology platforms, and the development results of this convergence have also greatly promoted the transformation of people's lifestyles. This article starts from the connotation and characteristics of new media interactive technology, analyzes the current common new media interactive art communication methods, and discusses the future development trend of new media interactive technology.

Keywords: *New media, Vision, Interactive technology, Innovation, Information dissemination.*

1. INTRODUCTION

New media interactive technology is one of the most representative art forms in the visual culture era. It is an effective integration of new media technology and art. It has changed the content, form, concept, channel, and platform of art communication and interaction, and comprehensively promoted the new Innovative changes in the theory and practice of media interactive art [1].

With the development of Internet technology, visual interaction began to receive more and more attention after the second millennium, which is also closely related to the increasing importance of user experience and ease of use. Advocates of product user experience and ease of use, such as Alan Cooper, Donald A Norman, etc., have contributed to the visual interaction technology that has gained greater attention in large companies and the Internet industry.

In the initial stage of the information revolution, when the personal computer was just invented, the user experience and visual interaction were not paid attention to. At this time, the way of interaction between humans and computers was the command line interaction-Command Line Interaction (CLI). After entering the command in the input area, press Enter, and the computer will give corresponding feedback according to the user's command, because this interaction method is extremely unintuitive, resulting in very poor ease of use and user experience.

Visual interaction technology took a turn for the better during Jobs' Xerox PARC trip in the winter of 1979. During that visit, Jobs "borrowed" Xerox's graphical user interface and screen two-dimensional positioning. Operating the two technologies of input devices and applying them to their personal computer (PC) devices is the beginning of the initial recognition and acceptance of Graphical User Interface (CUI) by the public [2].

The limitations of visual interaction technology in the field of new media are as follows. First of all, it's a communication space problem. If it needs to achieve a very good communication effect, it needs a certain space to create an environment to achieve a good

communication effect, but in many cases, it is restricted. The reason is that there is not enough communication space to achieve a good communication effect, making it difficult for this technology to be widely used under current technological conditions. Secondly, there is the issue of production time. A good visual interaction technology production requires a long time of conception to adapt to the content of the communication, which leads to a good visual interaction technology product, and the content of its communication often cannot have good effectiveness.

2. BACKGROUND OF NEW MEDIA DEVELOPMENT

2.1. The development of China's internet and mobile internet has gradually matured

As of December 2015, the number of netizens in China was nearly 690 million, and a total of 39.51 million netizens were added throughout the year, a growth rate of 6.1%, an increase of 1.1 percentage points from 2014 [3]. The Internet penetration rate in China reached 50.3%, 3.9 percentage points higher than the global average and 10.1 percentage points higher than the Asian average. At the same time, the mobile Internet has entered a relatively mature stage after years of development. The growth rate of mobile Internet users has far exceeded the growth rate of overall Internet users. The growth of overall Internet users in China has shifted from the growth of PC Internet users to the growth of mobile Internet users. Compared with PC computers that cannot be carried around in real time, users are increasingly dependent on mobile terminals.

2.2. The number of smartphones is gradually expanding

In 2015, the number of smartphones in China reached 950 million units, maintaining a year-on-year growth rate of 21.8% [3]. The number of smartphones continues to expand, mainly due to the following two points: First, the cost-effectiveness of smartphones has continued to increase. Thousand-yuan smartphones can provide a more complete application experience, and large-screen, cost-effective domestic smartphones are available to third- and fourth-tier cities. Rapid penetration; the second is the rapid iteration of the smart terminal itself, which enables smart terminals to have higher-speed processing capabilities, larger storage space, and a more complete operating system, and continuously introduce products with better performance, attracting users to upgrade.

2.3. The usage time of the mobile terminal is 2 times longer than that of the PC terminal

The effective monthly browsing time on the mobile terminal exceeds 2 times the usage time on the PC terminal. At present, the use time of the PC terminal has stabilized, and the mobile terminal is still growing at a relatively high rate. In the future, netizens' reliance on the mobile terminal will be further strengthened.

2.4. The trend of monthly coverage of the main network services on the PC side: news and information have the fastest growth

As of December 2015, search services and online video services have been the two network services with the largest number of users since 2014. The monthly coverage of online video and search services has maintained a relatively stable growth. News information and e-commerce have developed the fastest, with monthly coverage of news information reaching 480 million people, and e-commerce services reaching 460 million people, with growth rates of 13.2% and 10.6%, respectively.

2.5. The trend of monthly coverage of mobile new media apps

The three major categories have grown. The three major categories of new media-online video, online music and news information have maintained a steady development trend in 2015. In December 2015, the monthly coverage of online video reached 470 million, with online music and news information of 310 million and 230 million respectively.

3. THE DEVELOPMENT STATUS OF THE NEW MEDIA INDUSTRY

Among the commonly used media forms, the number of new media users who use video websites/clients/Apps has increased from 24.7% five years ago to 64.9% in the last three months; news clients have increased from 15.1% five years ago to 58.6% in the past March; Internet TV and audio websites/mobile radio apps also have similar trends. In contrast, to paper newspapers, paper magazines, television, radio stations, etc. The popularity of new media terminals in China has been relatively high, and the use of multiple new media terminal devices and cross-screen usage by new media user groups is also relatively high. Statistics show that the ownership rate of Internet TV by new media users is 48.9% higher than that of traditional TV 47.3%. Smart phones are still the new media terminal with the highest ownership rate. 68.5% of new media users "play with mobile phones" while watching videos, and 38.5% of new media users choose to use laptops or desktop computers at the same time. The phenomenon of "multitasking" is common when watching TV. While watching videos, Internet users will use other devices to communicate on social networks and other behaviors. In response to the multitasking phenomenon of TV media and video, related industries can create ways to achieve multi-screen interaction, such

as being widely spread on social networks. The survey shows that 60.8% of new media users use WeChat, Weibo and other social media as their main ways to obtain news and information in the past three months. Users have increasingly developed the habit of relying on social media for information and expressing their demands. At the same time, 58.9% of users Use mobile news client as the main way to obtain news and information 42.6% of users use TV news as the main way to obtain news and information [1]. Compared with traditional one-way communication media, social network information is fragmented, highly quantitative, fast, and interactive, which is suitable for the circulation of information. In addition, under the influence of traditional concepts, the strong relationship and interaction of social media has strengthened the credibility of information on these platforms, making social media an important information channel. The survey shows that 33.8% of new media users have already paid for new media content, 15.6% of users are willing to pay but have not yet done so, and 50.6% of new media users are unwilling or planning to do so. Paying for new media content, In the 2014 survey data, 69.7% of users are unwilling to pay for new media [3]. Due to the traditional free-of-charge viewing and reading habits of netizens, and the relatively weak awareness of intellectual property rights in China, Chinese netizens have not been willing to pay for Internet products other than game products. Nowadays, nearly half of users have paid or intend to pay. This shows that user education for new media users to pay for high-quality content has achieved initial results, and marketing opportunities or simplified payment processes are needed to attract a considerable amount of consumer willingness but have not yet been completed. Consumers of new media users.

4. BASIC SUPPORT AND EVOLUTION OF NEW MEDIA VISUAL INTERACTION TECHNOLOGY

4.1. Basic support

4.1.1. Metaverse

Metaverse the concept of Metaverse first appeared in Neil Stephenson's 1992 science fiction novel Avalanche, in which humans interact in a 3D world in the form of avatars. With the development of Internet technology, this concept gradually evolved into a new connotation. The Metaverse is a digital world where anything we can imagine can exist. With extended Reality (XR) technology, we can expand our vision, hearing and touch, integrate digital objects into the real world, or enter a fully immersive 3D environment at any time essentially, Metaverse will be a bridge between the physical world, a digital mirror image of the physical world and a digital world constructed by the human imagination [4].

The meta-universe is made up of many parts. The most basic elements are the Internet, open standards for media (including text, graphics, audio, video 3D and the programs that make up those things), standards for programming languages (including HTML, JavaScript, Web Assembly, Web XR, Web GPU Shader Language, etc.), extended reality (XR) hardware (e.g., smart glasses, haptics, and the all-inclusive treadmill), decentralized ledgers and smart contract platforms (e.g., blockchain, Ethereum, Bitcoin, and the non-homogeneous token NFT) [4].

4.1.2. AR and VR

Augmented Reality (AR) is a technology that calculates the position and Angle of camera images in real-time and adds the corresponding pictures [4]. It is a new technology that seamlessly blends information from the real world with news from the virtual world. The goal is to put the virtual world on the screen and interact with the real world.

Virtual Reality (VR) technology, also known as spiritual environment technology, is a new practical technology developed in the 20th century. Virtual reality technology includes a computer, electronic information, and simulation technology. The basic realization method is a computer simulation of a virtual environment to give people a sense of environment immersion.

4.2. Evolutionary process

Any designer is well aware of the impact of the advent of new technology on the industry. The emergence of new technology often brings designers new ideas. Designers use bolder and more imaginative ideas to apply new technologies to their industry and bring new experiences to their audiences. The audience gets more satisfaction with the latest products and has a great interest in the products combined with new technologies, thus causing the industry's evolution. New media interactive technology is no exception. With the popularity of smartphones in 2007, the main channels for the public to obtain information have changed, from TV and radio to smartphones. The most significant change is that people are no longer limited to a specific space and time to access information. They can access it anytime, anywhere. This change, to a large extent, promoted people's demand for information. People's request for information is more outstanding. It required more media to disseminate information, so early interactive platforms were born. This platform is similar to traditional newspapers, but the audience can browse the information they need by clicking on the screen. With the development of programming technology and computer technology, interactive technology has more powerful functions, that is, "interactive technology relies on computer technology to comprehensively process text, sound, graphics, images, and other information, so that information becomes

concrete and tangible from an abstract. At the same time, with the continuous progress of the theory, designers are increasingly aware of the real needs of the audience, namely, the yearning for the fragmented information of video and sound, the impact of sound and light, and the multi-sensory experience [5]. Designers know this demand and apply it to product design, created a lot of experience of various senses to meet the person [5]. The VR technology into the news report, the birth of "VR + news," this new news form, with the introduction of "immersive virtual interactive mode, the audience's perspective as the first to break the traditional news in time and space. Increase the audience's sense of experience, and make the news report more comprehensive, trustworthy, and objective [6].

5. THE APPLICATION FIELD OF MEDIA VISUAL INTERACTION TECHNOLOGY AND THE INNOVATION OF COMMUNICATION METHODS

5.1. Innovative application of AR interactive technology

Toyota Rayling constructs an interactive table used to showcase its products. The technique is called the AR Interactive Table. This AR interactive table is made up of touch screens and object recognition systems. It is an interactive set of experience device. The system uses a variety of visual interactive forms to convey brand information by identifying the location of objects on the desktop, which can be text, pictures, videos, etc. This table insights introduces the system, lamp set, tire details and other settings of some of Toyota Rayling's models in an interactive display. It also introduces the dynamic maps and videos that provide rich information about the car, and achieves good introduction results [7].

Customers need to place a small column model on the desktop, which allows the desktop to display one of Toyota's Lei-ling car models through its system. When people turn the model left and right, they can enter the next introduction - the body structure of a comprehensive display. The experiencers can select the specific options he or she wants to know by manually rotating the model. In addition, in the introduction video, users can also mobilize the video progress bar. The freedom in visiting is pretty high, and the experience is enjoyable [8].

This car introduction not only includes a comprehensive information and vivid display, but also provides customers with an excellent interactive mode. This allows customers to refer to the model rather than just watching and listening the explanation, but also more integrated into the process of understanding the car. In this way, customers can get a more complete picture of the car's information from this interaction, and can also make informed choices without being guided by the buyer.

5.2. Application of Interactive Game Virtual Technology

Moutai Group has held a fair in Kweichow International Convention and Exhibition Center to display Moutai culture. One of the Moutai wine production interactive games to many customers brought a different experience [9]. The main facility of this interactive game is a three-sided electronic big screen with elaborate animation of the brewing process on the screen [10].

The experiencer needs to stand in front of the screen, where the camera's recognition technology monitors the experiencer's body. At this point, the winemaker in the animation will work in the real winemaking order, at which point the experiencer needs to imitate the action in the animation. After the screen shows that the movement is successfully completed, the participant can view next winemaking step.

This interactive game not only tells the audience about the process of winemaking, but also lets them feel the process of making wine. Thus, people can know more about Moutai’s wine, which has great benefits in promoting Moutai wine.

6. CONCLUSION

By studying the application of visual interaction technology in the process of disseminating information in new media, we find that new technology has brought more interactivity and greatly improved the efficiency of information dissemination. Besides, it changes the original single-line push form, and bring audiences a new way to accept information. For example, when we use technologies such as artificial intelligence or social interaction or guidance control, audiences stimulate more sensory experiences through visual interaction processes. Furthermore, it also allows more information to be disseminated in a more rational way. The use of this technology has become very popular, whether it is new media art exhibitions or street advertising windows using this technology. In this age with an increasing in information, people accept information in ways that grow exponentially. However, the time is limited. Under such conditions, therefore, how the media can effectively accept the information they want to convey is a question worth thinking about. We have found that through visual interaction technology, the efficiency of information dissemination can be greatly improved, so that their information can be better accepted by the public. At the same time, the application of new technologies has also made the traditional art find a new vitality. Through visual interaction technology, the form of art becomes more diverse, and the audiences’ participation and perception are greatly improved. As the maturity of

virtual reality technology, it is likely to be applied to the process of disseminating information in new media, and becomes a new visual interaction technology. By combing through the original visual interaction technology, this paper fully reflects the great influence of technology on the development of the new media information dissemination process. This can give us deeper thinking and help us make adjustments and changes when new technologies emerge.

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