The Definition, Fulfillment and Development of Digital Media

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ABSTRACT
The progress of digital media technology is a milestone event in the history of information storage and transmission. Compared with the access of information storage and transmission in the past, the digital media take the digital data as medium. It is worth paying attention to and do researches about the difference of digital media and traditional media, how to fulfil it, the value and characteristic of it. It is the characteristic of digital media that binary data is used as the medium of information storage and transmission, and network transmission is used to store and forward information to realize information interaction. Through the compiler, we can convert different forms of information including text, pictures, audio and so on into binary data, or reverse these digital types of data back to the original forms, so as to realize the conversion of traditional information and digital media information. Digital media technology has made great progress since its emergence. From the initial period of using telegraph to transmit information and only sending point-and-line data to the current way of massive data transmission through the network, digital media cutting-edge technologies: VR and AR have matured to be put into the use of civil equipment; VR glasses and other devices allow users to run corresponding functions to provide virtual reality services, and AR technology has been widely used in areas such as navigation enhancement and office interaction enhancement. By searching the literature, observing the changes of data in registers and solid-state drives, using the corresponding functions to realize the input and output of data, sending and receiving methods, analyzing the definition, implementation and development of digital media technology.

Keywords: *Digital media, Digitization, Information storage, Information transmission.*

1. INTRODUCTION

The emergence of digital media can be traced back to telegraph communication. This period of digital media mainly rely on radio technology to achieve. The technique emerged in the 1830s and was mainly studied in the United States and Britain. Because of the order of magnitude of transmission, telegraphy could only transmit text data, which had to be manually decoded after transmission. Although this mode of transmission is very advanced compared to the traditional mail in that time, the transmission volume is still small and the transmission type is relatively simple. With the development of Internet technology and computer technology, the progress of digital media technology also ushered in a take-off. Advances in computer technology have made it possible to convert more types of data. Through the compiler, in addition to text, images, audio also has the possibility to store and forward. At the same time, the development of network technology also means that large-scale, high-speed data transmission has become a reality. With the development of computer and network technology to support the progress of digital media, the advantages of high density, fast transmission and compatibility of various forms of digital media have been realized. Digital media technology is also fully reflected in the development of human life. In this situation, we should understand how digital media is realized, how it is used in our life, what kind of significance it has for us and how it will develop in the future.

2. DEFINITION OF DIGITAL MEDIA

2.1. The media

Media refers to the medium through which information is transmitted. There are many ways to transmit information, but no matter what way, they all

need to pass through an intermediary carrier, and this carrier, including the information stored and transmitted in it, is the media.

Traditional media generally refers to newspapers, articles and other paper items recorded in the form of words. With the development of science and technology, broadcasting, Internet and other communication methods have emerged.

2.2. Digital Media

The emergence of digital media means a revolutionary progress in the way of human information transmission and storage. Different from traditional information, digital media makes all kinds of information into binary data, which greatly increases the density of data and makes the quantization of information easy to realize. And make the information copy, transmission efficiency greatly improved.

The development of digital media in storage, including data, text, images, audio and other ways to convert and save, enrich the diversity of information; At the same time, in the transmission of information, all connected network, satellite signal equipment, can achieve data communication, communication channel interaction. In the case of further development, it can also realize accurate query and download data, personalized data sharing becomes a reality, and intelligent data transmission.

3. REALIZATION OF DIGITAL MEDIA

3.1. Implementation method of digital media

The emergence of digital media in addition to development is also a challenge, how to successfully digitize information is the key method. The binary approach requires a methodology mature enough to input and output various types of information in binary form. In order to achieve this purpose, compilation has higher requirements [1].

In order to display these binary data on all devices, a unified compilation, modulation and demodulation method is needed. If the user uses different data processing procedures, it may lead to data distortion, or even garbled code, which violates the basic principles of information transmission, and the advantages of digital media can not be reflected. This is also the disadvantage of digital media: compared with traditional media, binary data cannot be read directly by human beings, which is weaker in terms of ease. Without proper conversion, the binary information is useless numbers.

We only need to dig out the meta attributes of each type of data and allocate binary data corresponding to the corresponding attributes. For the definition of meta-attribute, we should require it to be able to fully express the information it needs to express, and it is difficult to be divided into smaller data types. You simply bind this meta property to binary data. For natural information such as sound and image, we only need to analyze its physical characteristics, and then transform the corresponding physical characteristics. However, for the artificial information type like text, we need to explore by ourselves, summarize the formation methods, and then identify the attributes corresponding to binary data.

3.2. Realization types of digital media

At present, the main types of digital media are text, image and audio. On the basis of these three types, new forms can be formed by combining with each other. For example, video can be formed by playing images in sequence and adding audio.

3.2.1. Digitization of characters

Text is an important way for human to convey information, and this ancient tool cannot be ignored in digital media. Compared with other types of information, text itself has diversity, and different languages need corresponding conversion methods. If English is used as an example, you only need to allocate the corresponding binary digits for all letters, and then allocate the corresponding binary digits for blank lines and symbols. The alphabet language itself saves a step for digital conversion, and the number of letters plus symbols is small and easy to implement; If you take Chinese as an example, you have a large number of characters, but you also need to allocate binary data for each character. In short, every language should have meta-attribute properties: English letters, Chinese characters, for example, just by converting these hard-to-subdivide meta-attribute types into their binary counterparts. A method similar to a telegraph.

For the existence of a variety of different characters, should be changed to allocate corresponding transformation mode; However, from the aspect of hardware, it is impossible to design input and output devices for each language. For example, it is impossible to design their own keyboards for input devices such as keyboards for each language. For Chinese, a language with a large number of basic characters, it is also unrealistic to set direct corresponding keys for each meta-character. In the development of computers, English was the earliest and most widely used environment, so the initial development of digital media was naturally based on English. Under this premise, we can design the second transformation on the basis of the first transformation, that is, on the basis of the designed English letters, and then use English to continue to transform into other languages. For example, in Chinese, tools such as pinyin and Wubi are designed to realize this idea. In this way,

the versatility of input equipment is greatly enhanced, and users can easily switch between different characters.

3.2.2. Digitization of images

Compared with the traditional image preservation using optical properties, digital image preservation conditions are more relaxed, and dissemination is more convenient. How to binary and save the image is the primary problem. Digital preservation means that we need to translate the optical properties of the image itself into digital properties. The main properties of images are color, brightness and gray scale. We cut an image into multiple different regions and record the color of each region. On this basis, we only need to record the coordinate information and the color information of the current coordinate, and then allocate data for each color and coordinate to achieve the preservation of image data [2].

3.2.3. Digitization of audio

Sound is essentially a kind of wave. To understand the nature of this kind of sound, we only need to digitize the wave data. The preservation characteristics of audio are mainly loudness, tone and timbre, which are reflected as frequency, wavelength, wave speed and extreme value in the form of wave. Therefore, we can assign numeric types to each of these attributes in turn [3].

4. DEVELOPMENT OF DIGITAL MEDIA

Demand is the driving force of development. For the transmission and dissemination of information, what we desire is faster transmission speed and higher data accuracy and accuracy, which requires both the development of hardware and the improvement and optimization of software [4].

4.1. Software Optimization

The main realization process of digital media is the digitization of information input and the visualization of data output. Software optimization is to optimize the tasks in this process. Each data should be saved in a more excellent way. How to save data in a minimum without losing data? For example, most images have similar color in large areas. Instead, it is a method to save data in the form of blocks for data modification to improve accuracy [5]. At the same time, software optimizations include ways to read transformed data faster.

4.2. Hardware Optimization

Digital media is a large amount of binary data, but in the process of input and output data, are reflected in the way of human perception. Image input and output require higher pixel density displays and generators, while audio files require larger sounding parts and more elaborate frequency modulators. The finer the data, the larger the data amount. Even if we adopt the optimization method to reduce the data amount, the basic data principle cannot be changed. Therefore, a larger amount of data depends on a higher transmission speed [6]. The development of digital media needs to be synchronized, and the progress of a single development needs the cooperation of other attributes before it can be put into practical use.

4.3. Combination of digital media information

Video is the most intuitive example of digital media information integration. The form of video is formed by continuously playing the image by frame, plus the superposition of audio on the audio track [6]. The combination of digital media still has various possibilities to explore and explore.

4.4. Development trend of digital media

AR and VR are two main development trends of digital media technology.

VR technology makes people feel immersive through images and 3D technology. Through digital media technology, VR technology is committed to giving users a feeling of being fully placed in another real world [7][8].

AR technology implants enhanced information into the real world we are in in the form of digital media to enhance our perception and provide information [9].

4.5. Development direction of digital media

Information transmission is ultimately determined by human perception. At present, the digital media technology for vision and hearing has a good development, but the information transfer technology for touch and even smell is still in its infancy. How to comprehensively enhance the transmission of all perceptual information is still the direction of research for digital media [10].

5. CONCLUSION

All technologies are created and developed based on requirements; The emergence of digital media is because people have higher requirements and expectations for the communication and storage of information. Digital media allows the emergence of new forms of information data, so that data transmission speed and data density are greatly improved. The realization principle of digital media is to digitize data, and rely on computer technology to realize the transformation process. The digitized data can be saved through hard disks and other hardware, and high-speed transmission and accurate transmission can be realized through network technology. There are infinite possibilities in the development of digital media. Virtual

reality and augmented reality technologies are developing steadily, but there are more possibilities worth exploring by digital media: the transmission of taste information and smell information, the development of digital media for human-computer interaction; Even digital media should not be limited to the preservation and transmission of information, we deliberately pursue creation, explore new human perception, create sensory perception information that does not belong to the natural world. Digital media has much more to discover. At the same time, whether there is still the possibility of optimization of digital transformation, and how to realize the digitization of new forms of data, these are still worth further research.

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