

Discussion on the Development Trend and Application of Digital Media Era

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Abstract: With the continuous development of China's digital media industry and information network technology, digital media technology has gradually grown up and become a very important force to spread China's cultural information and promote China's economic development. It also occupies an indispensable and important position in China's information construction. Based on this, this paper first discusses the basic concepts and characteristics of digital media technology, then analyzes the main wide application fields of digital media technology, and then introduces the thinking of the development trend of digital media technology for reference of relevant staff.

Keywords: Digital Media, Cultural Information, Communication, Media Industry

1. Basic Overview of Digital Media Technology (Framework of Digital Media Technology Architecture, See Figure 1)

With the development of the network, digital media technology has also been greatly improved, and even gradually integrated into many different system fields such as radio and television system and financial system, providing more application functions for people's daily life, production and learning. Spread information and culture to every corner of society through more efficient technical means, promote social economic development, and promote social institutional change, which has brought [1] great improvement and convenience to people's daily life and consumption. Its application scope and development prospects are very broad. In general, digital media technology mainly refers to the media form in which the text and image in the media information are stored in a special form by means of modern computer and Internet communication means, and then the application is realized through various technical means such as communication and management [2]. Digital media is a media form that uses the Internet as a carrier through the editing system of digital media, it can effectively process and process the collected information and quickly present a digital commercial product. It is a mode of communication with extremely fast transmission speed and more modern and paperless characteristics.

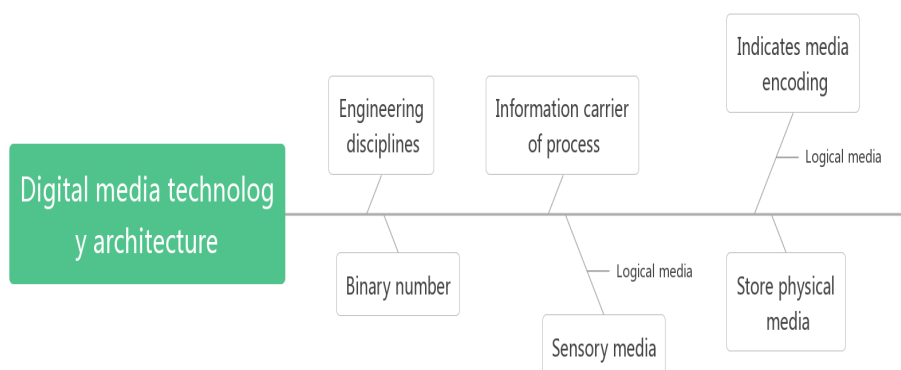


Figure 1: Framework of digital media technology architecture.

1.1. Technical Support of Digital Media (Main Classification of Digital Media Technology, See Table 1)

Table 1: Main classification of digital media technology.

Main classification of digital media technology	Time attribute	Still media
		Continuous media
	Source attribute	Natural media
		Synthetic media
	Element Properties	Single media
		multi-media

Digital media belongs to the engineering discipline, which refers to the information carrier that records, processes, transmits and obtains the process in the form of binary numbers. These carriers include digital text, graphics, images, sounds, video images, animation and other sensory media, as well as the presentation media (coding) that represent these sensory media. They are generally referred to as logical media, and physical media that store, transmit, and display logical media. Digital media technology is implemented through the specialty of information and communication engineering. Its concepts and analysis methods are widely used in information technology fields such as communication and information systems, signal and information processing, electronics and communication engineering. The development of digital media is no longer a matter of the Internet and IT industry [3], but will become the driving force and indispensable energy for the future development of the whole industry. The development of digital media has a profound impact on the development of various fields by influencing consumer behavior. The consumer industry and manufacturing industry have been strongly impacted by digital media. Various forms of digital media are developing rapidly, but they are also facing various development bottlenecks. China, which has the largest Internet user group, has become a must for international digital media giants. China's social networking site (SNS) has more than 150 million users, and about 1/3 of netizens are using SNS; The major mainstream Internet media have been transformed into social media, and many new SNS platforms and products have been launched [4] Video websites and social media have become the new direction of digital media development. Integrate the product service and innovative technology of digital media into the brand marketing system to maximize the marketing effect of digital media; How the existing advertisers, agents, media owners and other parties can quickly find their positions in the new media market and use the advantages of existing businesses to expand the new market has become an urgent question for the sustainable development of the current digital media industry. Digital media can be divided into still media and continuous media. Static media refers to digital media whose content will not change with time, such as text and pictures. Continuous media refers to digital media whose content changes with time, such as audio, video, virtual images, etc. According to the source attribute, it can be divided into natural media and synthetic media. Among them, natural media refers to the digital media obtained by digitizing and encoding the scenes and sounds in the objective world, such as photos taken by digital cameras, images taken by digital cameras, MP3 digital music, digital film and television, etc. Synthetic media refers to computer-generated (synthesized) text, music, voice, image and animation, which are represented by specific symbols, languages or algorithms using computers as tools, such as animated characters produced by 3D production software. In short, "digital media" generally refers to "multimedia", which is an information transmission carrier supported by digital technology. Its manifestation is more complex, more visual impact, and more interactive. Digital publishing of graphics and images is a part of new media technology. Based on computer technology, communication technology, network technology, streaming media technology, storage technology, display technology and other high-tech technologies, it is a new business form developed by integrating and surpassing traditional publishing content through design planning and using computers for artistic design. For example, digital audio-visual, digital animation, online learning, mobile entertainment, etc. all belong to the category of digital publishing of graphics and images. It generally relies on the technical support of the digital publishing base, focusing on the research and application of the key technology and content of graphic and image publishing, and establishing an all-media publishing section of dynamic digital publishing [6].

1.2. Characteristics of Digital Media (Distinguishing Framework of Digital Media Characteristics, See Figure 2)

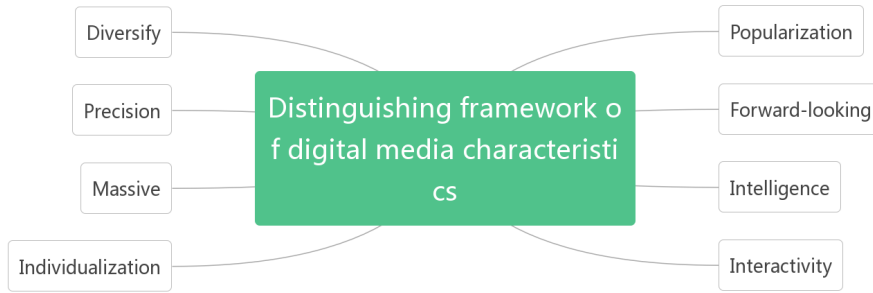


Figure 2: Distinguishing framework of digital media characteristics.

The characteristics of digital media mainly include the following five aspects: digital characteristics, interactive characteristics, entertaining characteristics, audio-visual enjoyment and the dissemination of culture and art.

First of all, in terms of digital features, compared with the media technology used in the past to store and process data by analog methods, digital media technology uses a digital binary method, which solves the problem of analog and digital conversion.

Then in terms of interactive features, digital media can fully interact with people in the process of application. For example, in modern education and teaching, the introduction of multimedia teaching method is a relatively high-quality application system.

Secondly, in terms of the characteristics of entertainment interest, the technology of digital media provides people with many forms of entertainment and space for entertainment. For example, digital games or digital videos have changed people's daily life. It is more interesting and has many entertainment options [5].

Moreover, in terms of audiovisual enjoyment, the technology of digital media combines different media forms such as sound and image, which gives people a very shocking audiovisual enjoyment.

Finally, in the aspect of cultural and artistic communication, the design of digital media technology can more effectively integrate some content related to social culture, literature and art, and can build a more effective path through the integration and dissemination of knowledge in the corresponding fields of digital media.

2. Application Fields of Digital Media Technology

Digital media technology is a comprehensive application technology based on information processing technology, including digital image processing and digital game design. (Application domain framework of digital media technology, See Table 2)

Table 2: Application domain framework of digital media technology.

Application domain framework of digital media technology	Text and text processing	Character stream
	Image and graphics	Vector sampling
	Digital sound	Continuous media
	Digital video	Image sequence

2.1. Application in Digital Field

In the current society, advertising and online television has fully integrated people's lives and occupies a very important position. Almost every corner of the city has the Internet of Things related to digital media technology. The application of digital media technology can show different kinds of information in social life to people in a more intuitive and dynamic way, which is more traditional and static. Compared with the plane way of information transmission, people can feel a greater impact on

their vision and hearing, which is more contemporary and more realistic. Apply digital media technology. It can make advertising promotion and art communication more timely and integrated. For example, on the street and on the bus, people are everywhere playing with mobile phones. Some businesses or operators are keenly aware of the social and economic benefits that digital media technology may bring, so they vigorously promote the use of 3D stereo imaging products to achieve the purpose of marketing profits. In the current development process of the film and television field, digital media technology plays an extremely powerful role. Whether it is film and television creation or production and dissemination, the application of digital media technology is extremely extensive in many different links. It can not only make people fully feel the audio-visual enjoyment brought by digital media technology, as well as the fun and convenience of entertainment, but also promote the development of various links such as film and television production, film and television distribution, and even film and television release. In the process of film and television production, the use of digital media technology can more effectively reduce the costs that may be incurred in the process of film and television production. In this way, the efficiency and quality of film and television production can be improved [7]. At the same time, for some images that are difficult to complete through shooting, digital media technology can also be used to simulate them, so as to increase the artistic sense and effectiveness of the film and television works. During the process of film and television distribution, digital media technology can enable the film and television to be released simultaneously around the world, which can not only reduce the cost of film and television distribution, but also bring considerable economic profits and social repercussions. Not only that, digital media technology can also permanently save and store film and television works, which is more conducive to the long-term dissemination of culture. In the process of film and television release, digital terminal system can be built through digital media technology, which can not only allow the audience to obtain more high-definition pictures, but also make the film play more convenient.

2.2. Application in the Field of Education (*Digital Media Art Architecture in the Field of Education, See Figure 3*)

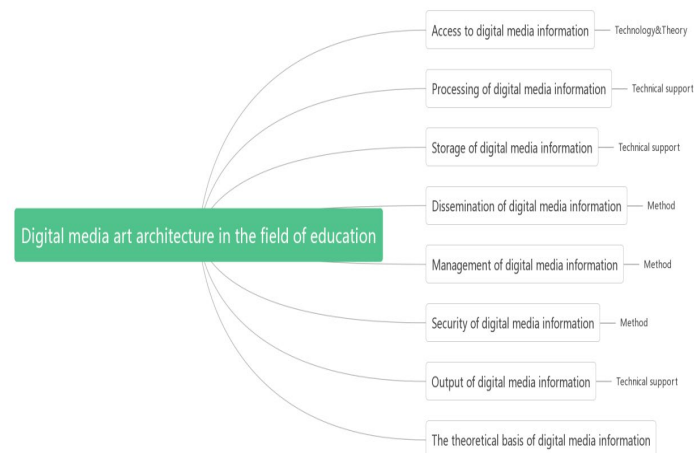


Figure 3: Digital media art architecture in the field of education.

At present, China's campus teaching is undergoing continuous reform. In such an environment, the multimedia audio-visual teaching mode has gradually been widely welcomed by people. The use of multimedia video teaching by teachers can make classroom teaching more efficient. Compared with the traditional teaching mode, multimedia video teaching can make teachers' explanations no longer boring, make the whole classroom more interesting, and ease the embarrassing situation that students can't answer questions. Multimedia audio and video teaching can combine various media forms such as voice and video, let students learn the knowledge in the article more intuitively through dynamic audio and video, and static pictures, and create a more authentic content and richer teaching situation, so that teaching resources can be expanded, and let teachers create a vivid role in the process of teaching. To make students' learning more interesting, the interaction between teachers and students has been enhanced, and the atmosphere of classroom teaching has become very active, fully mobilize the senses of different students, so that students can consciously integrate into a good learning atmosphere, help students expand their knowledge, promote students' thinking, and enhance their information literacy. For example, teachers can use digital media to show students the content of pre-class preview, so that

students can preview the textbooks independently, and actively understand the problems raised by teachers and the tasks assigned. In the classroom, digital media can create different scenarios related to the teaching content for students, so that students can go deep into the study and explore, so as to make the study more systematic and complete.

3. Interaction between Technology and Art in Digital Media Technology

Every development of digital media is driven by innovation, constantly bringing fresh feelings and surprises to the public, not only creativity but also technology. The digital media industry needs more innovation than other industries, especially the innovation of mass participation.

3.1. Interaction with Technology

The digital media technology specialty is aimed at the digital media field of electronic information, cultural education, art design, radio, film and television, advertising design, film and television stunts, digital animation, game entertainment, network application, architecture and other industries, and is engaged in the management of digital graphic image works, digital film and television works, digital animation works production and other job groups, and serves the needs of high-quality technical and skilled talents at the front line [8]. Therefore, the major of digital media technology is a comprehensive discipline system with computer technology, art, humanities and social sciences and other disciplines intersecting, penetrating and integrating. Among them, the course content of computer technology covers the application of computer software, such as the collection and processing of media materials, the design of scripts in the creation process, and the secondary development of software for the realization of special effects.

3.2. Interaction with Art

Digital media technology can enrich the content of media art. The development of digital media technology has largely realized the updating of digital communication tools. Based on this premise, the design concept of media art has been fundamentally changed and innovated, affecting the design ideas of users. In the process of media art design, users can expand their vision, thinking, etc. through digital media technology, constantly use new technologies to increase what they see and hear, and obtain the inspiration of media art design. On this basis, users can be guided to break the previous design forms and deepen their understanding of media art design to the greatest extent. At the same time, it can also improve the quality of art design. In the new era, the essence of integrating digital media technology and media art design is to further improve the overall quality of art design. Therefore, in the process of media art design, users should deepen their understanding and attention to digital media technology, and then give full play to the value of digital media technology innovate the path of media art design, and ensure the quality of the final design effect.

4. Thoughts and Prospects on the Development Trend of Digital Media Technology (Framework for the Development Orientation of Digital Media Technology, See Figure 4)

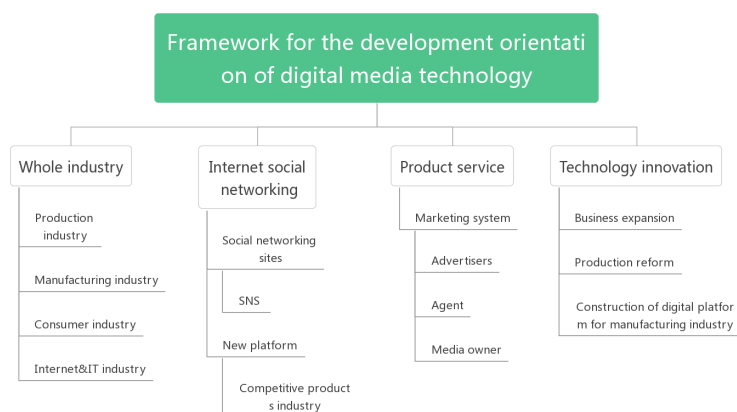


Figure 4: Framework for the development orientation of digital media technology.

Digital media includes cultural content products and services generated, produced, managed, disseminated, operated and consumed by digital technology, with the attributes of high value-added, strong radiation, low consumption, wide employment and soft penetration [9]. "Culture is the body, technology is the enzyme" is the essence of digital media. Because the development of the digital media industry to some extent reflects the strength and industrial level of a country in information services, upgrading of traditional industries, research and integrated innovation of cutting-edge information technology, digital media has been highly valued by governments around the world, and major countries and regions have formulated relevant policies and development plans to support the development of digital media. The United States, Japan and other countries regard vigorously promoting digital media technology and industry as an important strategy for sustainable economic development.

4.1. Thinking and Discussion on Digital Media Technology

In China, digital media technology and industry have also received high attention from leading departments at all levels. The National 863 Plan has taken the lead in supporting the research and development of key technologies such as online game engine, collaborative animation production, 3D motion capture, human-computer interaction, and the construction of public service platforms for animation online games, and has built four national digital media technology industrialization bases in Beijing, Shanghai, Changsha, Hunan, and Chengdu, Sichuan, It has played an important exemplary and leading role in the formation of the accumulation effect of the digital media industry and the development of digital media technology. The digital media industry chain is long, and the technologies involved in digital media are all-inclusive. The next five years will be a critical period for the development of digital media technology and industry in China. In order to further promote the development of digital media industry with high added value and low consumption during the "Eleventh Five-Year Plan" period and overcome the technical bottleneck in the development of digital media industrialization [10], under the guidance of the High-tech Department of the Ministry of Science and Technology of the People's Republic of China, the software and hardware technology subject expert group of the National 863 Plan organized relevant forces to deeply study the concept, connotation and system architecture of digital media technology and industrialization development. It has extensively investigated the current situation and trend of the development of digital media technology industry at home and abroad, carefully analyzed the bottleneck of the development of digital media technology industrialization in China, and proposed the strategy, objectives and direction of the development of digital media technology in China in the next five years [11].

4.2. Prospects for the Development Trend of Digital Media Technology

With the continuous development of digital media technology over the years, it has been applied in TV and radio from the beginning to advertising, marketing and other related fields [12]. Up to now, in many different fields such as the Internet and radio and television communication, its application prospect and development trend are extremely impressive. At present, the technology of digital media is developing very fast in China, and with China's support for relevant key projects, the innovation of digital media technology has also achieved extremely significant results, especially in the discussion of augmented reality technology. AR technology is a relatively typical one [13]. By applying virtual technology to the real world using computer technology, and then presenting entity information through a simulation method, it can realize a familiar real world. This technology can not only fully display some physical information in the real world, but also display virtual information in the same space or picture at the same time, so that users can experience a more realistic environment through 3D or 4D glasses and helmets [15]. According to the current development situation of science and technology in China, it is not difficult to find that AR technology is also gradually growing and has gradually developed into the stage of media integration. In the future, it will be widely used in some digital media fields, which is also the inevitable trend of the development of digital media technology. As a new media form, the value evaluation of digital media technology is great. For example, the value of digital TV advertising has exceeded the traditional advertising, and many services provided have also exceeded the scope of more traditional TV services [14]. According to data monitoring, it is not difficult to find that the value that digital media technology can provide will be difficult to measure. At present, the number of digital TV users in China is even close to 100 million, and the scale has been initially shown. At this time, advertising profits may bring subversive changes to the traditional media. In such an environment, the prospects of the digital media era will be immeasurable.

5. Summary

In short, with the continuous development of digital media technology, it also has an important impact on media art. Current political, economic and cultural activities are all affected by digital media technology. And with the development of social economy, people have higher requirements for art design, which increases the difficulty of media art. Therefore, we should actively integrate with digital media technology and innovate the concept and method of design, so as to promote the sustainable development of the media industry.

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