

Digital Transformation and Innovation in the Arts and Creative Industries

Zhiguo Wu

School of Art, Zhejiang Yuexiu University, Shaoxing 312000, China

ABSTRACT

This article delves into the background, current status, and future trends of digital transformation within the arts and creative industries, with a focus on the application of digital technology in artistic creation, exhibition and dissemination, as well as commercialization. Digital technologies such as VR, AR, and AI provide artists with new creative tools, enriching artistic forms and enhancing interactivity. Digital exhibition platforms and social media have broadened the channels for displaying and disseminating artworks. Additionally, digital technology facilitates copyright protection, precise marketing, and the commercialization of digital artworks in the arts and creative industries. Looking ahead, digital transformation will continue to drive the development of these industries.

KEYWORDS

Arts and creative industries; Digital transformation; Digital technology; Commercial application

1 Introduction

In the grand picture of the global economy and culture, the art creative industry plays a pivotal role with its unique charm and vitality. It is not only the source of innovation and creativity, driving the diversified economic growth, but also profoundly affecting the inheritance and innovation of culture. It has become the key yardstick to measure the soft power of a country or region.

This study is committed to in-depth exploration of how the flood of digital technology in this era reshapes the new face of the art and creative industry. With the rapid rise of cutting-edge technologies such as virtual reality, augmented reality and artificial intelligence, the boundaries of artistic creation have been infinitely broadened, the display methods have become increasingly diversified, the communication channels have become increasingly extensive, and the commercialization path has taken on an unprecedented new look. In this context, this study will carefully analyze the innovative application of these digital technologies in artistic creation, and reveal how they help artists break through the shackles of tradition and achieve an unlimited leap in creativity; At the same time, we will also examine the innovative power of these technologies in art exhibition and dissemination, and explore how they can enhance the interactive experience of the audience and broaden the audience of art works. In addition, this study will also focus on the far-reaching impact of digital technology on the commercialization of art and creative industries, and analyze how they inject new profit models and market opportunities into the industry.

In addition, by systematically combing the deep integration of digital technology and art creative industry, it can not only reveal the new trends and characteristics of the current industrial development, but also provide forward-looking thinking and Enlightenment for the future

development of art creative industry. In today's increasingly globalized competition and diversified demand for cultural consumption, this study will help policy makers, industry practitioners and academia have a deeper understanding of the potential and value of digital technology, so as to formulate a more scientific and reasonable strategic plan, promote the sustainable development of the art and creative industry, and contribute more to the prosperity of the global economy and culture.^[1]

2 Digital transformation of art creative industry

2.1 Digital transformation background

With the rapid development of Internet, big data, artificial intelligence and other technologies, the art and creative industry is undergoing unprecedented changes. With the popularity of Internet technology, the spread of art works is no longer limited by geographical location. Artists can display and sell their works through online platforms, which greatly widens the market scope. The application of big data technology enables the art and creative industry to more accurately capture market demand and consumer preferences and provide data support for creation and marketing. The introduction of AI technology has brought new possibilities for artistic creation, such as AI painting and AI composition, which not only improves the efficiency of creation, but also enriches the forms of artistic expression.

2.2 current situation of digital transformation

At present, the art creative industry has made remarkable progress and achievements in the field of digitalization. For example, the emergence of new display forms such as digital museums and virtual art galleries has greatly enhanced the popularity and influence of art by allowing the audience to enjoy precious works of art without having to visit the scene in person. At the same time, the rise of digital art has also provided new sources of income for artists. For example, the popular sale of NFT (non homogenous token) art is a typical case of successful digital transformation.

In addition, the application of digital technology in artistic creation is also increasingly widespread. Taking the game industry as an example, many game companies use 3D modeling, virtual reality and other technologies to create game experiences that are born in their environment, attracting a large number of players. In the film industry, the continuous progress of special effects technology has made the film picture more realistic and brought a shocking visual enjoyment to the audience.^[2]

2.3 digital transformation trend

Looking forward to the future, the digital transformation of the art creative industry will show the following trends:

1. deep integration of Technology: with the continuous progress of technology, digital technology will be more closely integrated with artistic creation. For example, AI technology will play a greater role in artistic creation, helping artists break through the bottleneck of creation and achieve more innovative works.

2. increased cross-border cooperation: digital transformation will promote cross-border cooperation between art and creative industries and other industries. For example, digital art can be combined with fashion, home furnishing and other industries to launch co branded products and

expand the application scene and market space of art.

3. personalized customization service: the application of big data and artificial intelligence technology will enable the art and creative industry to more accurately grasp the needs of consumers and provide personalized customization services. For example, consumers can customize their own digital artwork or home decorations according to their preferences.

4. immersive experience has become the mainstream: with the maturity of virtual reality, augmented reality and other technologies, immersive experience will become the mainstream trend of the art and creative industry. The audience can experience the works of art and feel the charm of art through vr/ar devices. Taking the "2024 digital application innovation case of Shanxi Cultural Tourism" released by Shanxi Provincial Cultural Tourism Department as an example, the digital ancient architecture art exhibition of Shanxi Museum and the VR experience of Taiyuan "Jinci virtual world exploration Tour" are typical cases of successful digital transformation. These projects show the traditional cultural heritage to the audience in a new form through digital technology, which not only improves the audience's visiting experience, but also promotes the inheritance and development of culture.

3 The application of digital technology in artistic creation

With the rapid development of science and technology, digital technology is infiltrating into all fields of artistic creation in an unprecedented way, providing artists with unprecedented creation tools and platforms, and greatly enriching artistic forms and audience experience. The following is the specific application of digital technology, especially virtual reality (VR), augmented reality (AR) and artificial intelligence (AI) in artistic creation.

3.1 virtual reality technology: a new dimension of creative space

Virtual reality technology creates a computer system of three-dimensional environment through simulation, enabling users to immerse themselves in a virtual world generated by computer, and opening up a new creative dimension for artists. In the field of dance, VR technology can not only let the audience feel the charm of dance, but also let the dancers play freely in the space without physical restrictions and explore the infinite possibilities of body movement. For example, some avant-garde dance groups have created interactive dance works using VR technology. After wearing VR helmets, the audience seems to be in a dance scene and dance with dancers. This experience greatly enhances the sense of immersion and participation in art. In the field of drama, VR technology provides a new way for playwrights to build complex scenes and emotional atmosphere. Through VR, the audience can "enter" the play, observe the development of the story from different angles, and even affect the direction of the story. This interactivity gives the play a new life. In terms of music, VR concert has become a new art form. The audience can move freely in the virtual space, feel the shock of musical instruments or immerse in the dream world constructed by notes, and experience the unprecedented music feast.

3.2 augmented reality technology: the ingenious integration of art and reality

Augmented reality technology is to superimpose digital information on the basis of the real world, adding interactivity and interest to art works. In the field of public art, AR technology has revitalized traditional art forms such as street sculpture and murals. For example, some cities use AR technology to add interactive elements to historical buildings. Tourists can see the historical story behind the buildings in the form of animation through mobile phone scanning, which not only

protects the cultural heritage, but also enhances the public's cultural identity. In terms of exhibition, the application of AR technology has improved the audience's viewing experience. In the museum, visitors can watch the restoration animation of ancient cultural relics through ar glasses, or participate in virtual archaeological excavation, making the learning process vivid and interesting. Artists can also use AR to create dynamic installation art, so that the audience can become a part of the work in the interaction, blurring the boundary between the creator and the viewer.

3.3 artificial intelligence technology: intelligent assistance for creation

The application of artificial intelligence technology in artistic creation marks that artistic creation has entered a new era of intelligence. AI can not only automatically generate music, painting and design works, but also predict art trends and provide inspiration for artists based on a large number of data analysis. In the field of music, AI can create tracks with diverse styles and rich emotions by learning a large number of music works, and even cooperate with human composers to create music works that are difficult to distinguish between true and false. In the field of painting and design, AI analyzes master works, learns color matching and composition skills, and generates images and design schemes with artistic beauty. This not only saves time for artists, but also inspires new creative ideas. However, the role of AI in artistic creation is more auxiliary than replacement. It urges artists to think about the relationship between man and technology and explore the essence of artistic creation.

To sum up, the application of digital technologies such as virtual reality, augmented reality and artificial intelligence in artistic creation not only expands the boundaries of art, but also provides artists and audiences with a richer and diverse artistic experience. These technologies not only promote the innovation of art forms, but also promote the in-depth dialogue between art and technology, man and machine, indicating the infinite possibility of future art development.^[3]

4 Application of digital technology in art exhibition and dissemination

4.1 Melody and rhythm of music

With the continuous progress of digital technology, the display and dissemination of art works are undergoing profound changes. Digital technology not only provides artists with a broader creative space, but also opens up a new way for the display and dissemination of artistic works. The following is the specific application of digital technology, especially digital display platform, social media and online marketing, and cross media narrative in art display and communication.^[4]

4.1 digital display platform: an art palace that breaks through the limitation of time and space

Digital display platforms, such as digital museums and online galleries, have become a new favorite for the display of art works with their unique advantages. These platforms use digital technology to present art works to the audience in the form of high-definition images, 3D models, virtual reality, etc., so that the audience can enjoy art treasures around the world anytime and anywhere.

The digital museum carries out high-definition scanning and 3D modeling of the collections of the physical museum through digital means. Visitors can visit the museum and watch the exhibits at close range by clicking the mouse on the network. For example, the digital museum project of the National Palace Museum not only enables the audience to browse precious cultural relics online, but

also enables the audience to experience ancient palace life through virtual reality technology, which greatly enhances the audience's sense of participation and immersion.

Online galleries provide artists with a new window to show their works. Artists can upload their works to the gallery website, and let the audience fully understand the artistic value and creative background of the works through high-definition pictures, videos and other methods. At the same time, the online gallery also provides a convenient purchase channel, so that the audience can easily buy their favorite art works.

4.2 social media and online marketing: the accelerator of art communication

Social media has become an important channel for the dissemination of works of art. Artists and art institutions release the information and dynamics of art works through social media platforms such as microblog, wechat and dithering, and interact and communicate with the audience. This mode of communication is not only fast and wide-ranging, but also can accurately locate the target audience and improve the popularity and influence of art works. Network marketing strategy also plays an important role in the promotion of art and creative products. Artists and art institutions can improve the exposure and click through rate of art works and attract more potential audiences' attention through search engine optimization, advertising, social media marketing and other means. For example, some art institutions will use big data to analyze the audience's interests and buying behavior, develop targeted marketing strategies, and improve the sales conversion rate of art works.

4.3 cross media narration: building a multi-dimensional artistic experience

Cross media narrative refers to the presentation and dissemination of works of art in a variety of media forms through digital technology, in order to enhance the attraction and influence of works of art. This narrative mode breaks the single presentation form of traditional works of art, and allows the audience to understand the works of art from multiple angles and levels. For example, some artists will present their works in films, animations, games and other forms, so that the audience can experience the unique charm of different media forms while appreciating their works of art. In addition, cross media narration can also realize the interactivity and participation of works of art through digital technology, so that the audience can participate in the creation and dissemination of works of art and become a part of works of art. Taking the famous artist caiguoqiang's work "Da Vinci the farmer" as an example, the project is not only displayed in the form of traditional media such as films and exhibitions, but also combined with virtual reality technology, so that the audience can experience the fantasy world created by the art works. This way of cross media narration not only improves the attraction and influence of the works of art, but also enables the audience to have a more profound and comprehensive understanding of the works of art.

The application of digital technology in art exhibition and dissemination provides a broader space and possibility for artists and audiences. The digital display platform breaks the time and space constraints, so that art works can be appreciated by the audience anytime and anywhere; Social media and online marketing accelerate the spread of works of art, and improve the popularity and influence of works of art; The cross media narrative enhances the attraction of works of art and audience experience through multi-dimensional presentation. The application of these digital technologies not only promotes the innovative development of art exhibition and dissemination, but also injects new vitality into the prosperity of art.^[5]

5 The application of digital technology in the commercialization of art creative industry

With the rapid development of digital technology, the commercialization process of art creative industry has also ushered in unprecedented opportunities. Digital technology not only provides rich forms of expression for artistic creativity, but also opens up a new path for the protection, marketing and commercialization of new artworks. The following is the specific application of digital technology, especially digital copyright protection, digital marketing and data analysis, as well as the commercialization of digital art in the commercialization of art creative industry.

5.1 digital copyright protection: Escort creativity

In the art creative industry, copyright is the core asset of artists and creative institutions. Digital technology provides strong support for copyright protection, and effectively prevents the occurrence of infringement and piracy through digital watermarking, encryption technology, blockchain and other means. Digital watermarking technology is to embed specific information into digital works and realize the tracking and identification of copyright on the premise of not affecting the quality of works. When works are illegally copied or disseminated, digital watermarking can be used as a legal basis to help copyright owners safeguard their rights and interests. By encrypting digital works, encryption technology ensures that only authorized users can access and use works, thus effectively preventing unauthorized copying and dissemination.

As a distributed ledger technology rising in recent years, blockchain technology provides a new solution for copyright protection. By storing copyright information on the blockchain, the copyright can be transparent, traceable and tamper proof, providing a more secure and reliable guarantee for copyright owners. For example, some art trading platforms have begun to use blockchain technology to provide a safe trading environment for artists and collectors and ensure the authenticity and copyright ownership of art.

5.2 digital marketing and data analysis: accurate access to enhance competitiveness

Digital marketing and data analysis are important applications of digital technology in the commercialization of art and creative industries. Through digital marketing means, such as social media advertising, search engine optimization, content marketing, etc., we can accurately locate the target audience and improve the exposure and popularity of art and creative products. At the same time, data analysis technology also provides strong support for the commercialization of art and creative industries. Through the collection and analysis of user behavior, market trends and other data, we can deeply understand user needs and market changes, and provide a scientific basis for the development and marketing of artistic creative products. For example, some art institutions will use big data to analyze the audience's interests and buying behavior, develop targeted marketing strategies, and improve the sales conversion rate of art works.

5.3 commercialization of Digital Art: Exploration of emerging markets

Digital art, especially digital art represented by NFT (non homogenous token), is gradually becoming a new hot spot in the commercialization of art creative industry. NFT is a digital asset based on blockchain technology, which is unique and non replicable, and provides a new solution for copyright protection and trading of digital art.

The business model of NFT artworks mainly includes sales of original works, limited edition sales, copyright sharing, etc. Artists can sell their works in the form of NFT to ensure the uniqueness and

copyright ownership of the works. At the same time, NFT artworks can also conduct secondary transactions, providing more profit opportunities for artists and collectors. In terms of market prospects, with the continuous development of blockchain technology and the gradual maturity of the digital art market, the commercial value of NFT art will be further explored. Some well-known artists and collectors have begun to set foot in the NFT art market, which has promoted the rapid development of the market. For example, the digital artist beeeple's work "every day: the first 5000 days" was sold at Christie's auction house for nearly \$70million, setting an NFT art auction record. The application of digital technology in the commercialization of art creative industry provides a safer, more efficient and diversified commercialization path for artists and creative institutions. Digital copyright protection technology provides strong support for copyright protection; Digital marketing and data analysis technology provide a scientific basis for the development and marketing of artistic creative products; The commercialization of digital art has brought new business opportunities and market prospects for the art creative industry. The application of these digital technologies not only promotes the commercialization process of the art creative industry, but also injects new vitality into the prosperity and development of the art industry.

6 Conclusions

With the vigorous rise of Internet, big data, artificial intelligence and other technologies, the art and creative industry is stepping into an unprecedented wave of digital transformation. This transformation not only greatly enriched the artists' creative toolbox and display stage, but also opened up a broad new world for the dissemination and commercialization of artistic works.

In the creative field, digital technology, especially the deep integration of virtual reality, augmented reality and artificial intelligence, has unlocked unprecedented creative space for artists. VR technology leads artists to the infinite possibility of entering the virtual world, creating excellent works of art with both immersion and interactivity; AR technology skillfully adds interest and interaction to the works of art, allowing the audience to immerse in a more vivid artistic experience; AI technology, with its powerful computing power and learning ability, has become an indispensable creative assistant for artists to jointly promote art creation towards a new chapter of intelligence. Art exhibition and dissemination are also revitalized by digital technology. Digital display platforms, such as digital museums and online galleries, span the boundaries of time and space and make the beauty of art within reach; Social media and online marketing strategy have become the accelerator for the popularity of art works, significantly improving their popularity and influence; Cross media narrative technique, with the help of digital technology, realizes the diversified interpretation of artistic works, which greatly enhances the attraction of the works and the immersion of the audience. At the level of commercialization, digital technology is also indispensable. Digital copyright protection technology has built a solid defense line for the copyright security of the art and creative industry; Digital marketing and data analysis technology can accurately locate the market demand and enhance the market competitiveness of art and creative products; In particular, the rise of the digital art market represented by NFT has opened up a new business model and broad market prospects for the art creative industry.

References

- [1] Harsanto W P .Fotografi: Sains, Teknologi, Seni, dan Industri.Nirmana,2011,13(1):34-42.
- [2] Emily , Lunna Y . Visual Arts Innovation in the Digital Age——Explore the Intersection of Virtual Reality and Art Design.Frontiers in Art Research,2024,6(8).
- [3] Deng Z .Cross-border Integration: Synergies and Impacts of New Media Arts in the Cultural Industry.Frontiers in Art

Research,2024,6(6).

[4] Lihaifeng. Cultural speculation on the development of digital art. Journal of Ningbo University (humanities edition), 2008, (01): 131-134.

[5] Huang Kaixi, Chen Yu. Innovative research on digital transformation of art market art market, 2024, (09): 88-89.

About the Author

Zhiguo Wu, Professor, Research direction: Art education and cultural communication.