

A Study of the Impact of Digitized Artworks on the Traditional Artwork Appraisal System

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Abstract: *Background:* Artificial Intelligence Generated Content (AIGC) technology has brought about profound changes to the paradigm of art creation, rendering the traditional assessment system in the field of digital art ineffective. As a result, there is increasing pressure to reevaluate the standard used to judge value in the art market. *Purpose:* This study aims to analyze how AIGC technology disrupts the cultural capital-based valuation paradigm of traditional art. It seeks to construct a new theoretical framework for digital art valuation by integrating Bourdieu's cultural capital theory and Roland Barthes' concept of the "death of the author." The research proposes dynamic appraisal dimensions, such as algorithmic transparency and social consensus mechanisms, to reconcile technological innovation with the institutional norms of the art market. *Methods:* The research employs a mixed-methods approach, involving a critical interpretation of cultural capital theory within the context of algorithmic production. It features a comparative analysis of over 300 traditional and digital art auction records (2018–2024) from platforms like Christie's and OpenSea. Additionally, in-depth case studies of high-profile disputes, including the 2023 Picasso-style AI artwork infringement case, will be conducted to trace shifts in value attribution. *Findings:* The study reveals a paradigm shift from "cultural capital accumulation" to "algorithmic capitalization," where technical parameters and social participation metrics emerge as core value drivers. This change challenges the authority of traditional art institutions. It highlights the necessity of legal innovations, such as hybrid copyright systems recognizing "algorithmic authorship with human oversight," to address issues related to ownership. *Conclusion:* This research offers an interdisciplinary framework for reconstructing art valuation as a process that is integrated with technology and encourages public participation. It provides practical guidelines for art markets, including algorithmic audit protocols and decentralized governance models. Additionally, the study provides policy recommendations advocating adaptive legal frameworks to balance innovation and cultural heritage protection.

Keywords: Artificial Intelligence Generated Content; Digital art valuation; Cultural capital theory; Algorithmic transparency; Social consensus mechanism

1. Introduction

1.1 Background of the Study

The field of art valuation is undergoing unprecedented changes due to the wave of digitization. The exponential development of digital technologies is transforming both the production and consumption landscape of the art field. In recent years, digital artworks represented by Artificial Intelligence Generated Content (AIGC) and Non-Fungible Token (NFT) have shown explosive growth. This surge is due to their programmability, decentralization, and the ability for unlimited replication. According to Art Market Research, the average annual growth rate of global digital art turnover from 2021 to 2023 is 217%, and its market share has already occupied 15.6% of

contemporary art transactions. This change has not only led to the emergence of new art forms but also challenged the traditional art appraisal system, which is rooted in material carriers and anthropocentrism. This growth is not only reflected in the volume of transactions but also in the transformation of the way art is created. For example, the emergence of AI-generated artists' works in well-known auction houses such as Christie's signifies a growing acceptance of algorithmically created artworks in the market. The traditional appraisal system, which relies on the physical scarcity, creator identification, and stylistic originality of artwork to establish value, is facing a crisis in its interpretive power when it comes to digital art.

AIGC technology frees art production from the limitations of the human creator, while NFTs utilize blockchain technology to transform "virtual scarcity" into a tradable asset. This shift challenges the understanding of "authenticity" in traditional appraisal standards as it is no longer based on material factors. With the algorithm's capability of generating massive quantities of stylized works in mere milliseconds, the long-standing mechanism of accumulating "cultural capital" (Bourdieu, 1979) is being dissolved by the instantaneous value-adding ability associated with 'algorithmic capital.' In this context of post-human creativity, Barthes' (1977) concept of the "death of the author" has gained a new technological significance: algorithms not only disrupt the traditional notions of authorship but also transform the dynamics of value generation in the art world.

1.2 Research Purpose

This study examines the influence of AIGC and NFTs on art appraisal, addressing how digital art challenges traditional valuation methods and identifies necessary changes to improve the system. The analysis includes auction data and legal cases, showing a shift from material-based to dynamic criteria like algorithmic transparency and social engagement. The paper advocates for a new legal framework that acknowledges the limitations of algorithmic subjectivity in art appraisal. Theoretically, it offers a tool for studying digital art value by reinterpreting concepts of cultural capital and postmodern criticism. Practically, it provides actionable advice for evaluators, platforms, and policymakers to clarify art market standards. The study concludes that technological disruption demands innovative assessment dimensions and systemic reforms to restore consensus on art value.

1.3 Research Content

The wave of digitization is undergoing unprecedented changes in the field of art appraisal. The traditional art valuation system has long relied on factors such as scarcity of materials and the originality of artists. However, the rise of AIGC technology presents serious challenges to these core elements. For example, the ability of generative AI to "infinitely replicate" removes scarcity as the sole determinant of an artwork's value. This situation is further complicated by the proliferation of blockchain technology, which not only guarantees the uniqueness of the artwork but also provides a new solution for copyright and trading through smart contracts and decentralization.

However, these advancements exacerbate the failure of the originality certification system and market alienation. In addition, Roland Barthes' theory of the "death of the author" has found new relevance in the field of digital art and triggered an extensive discussion on the subjectivity of creation in algorithmically generated artworks. In response to these developments, art assessment methods and criteria must be re-evaluated to adapt to the new demands of the digital age. This study will focus on the logical chain of "technological impact - system deconstruction - framework reconstruction" to carry out an in-depth exploration of these issues.

1.4 Research Methods

This study examines the impact of AI-generated content on art production, using theories like Bourdieu's "cultural capital" to understand how art gains symbolic value and Barthes's 'death of the author' to address the shift in creativity from humans to algorithms. The research includes case studies, such as the "AI Picasso" phenomenon, to examine copyright and style imitation issues of algorithmically created artworks.

The research also investigates the role of blockchain and AI in constructing digital artwork assessment indicators, with the aim of creating a new system that reflects the unique characteristics of digital art. It covers artistic, market, authenticity, copyright, traceability, and custody aspects to ensure a comprehensive appraisal system. Finally, the study explores the potential of the digital artwork appraisal system in various sectors, including institutional, personal, market, and academic contexts, to offer a comprehensive perspective on art appraisal in the digital era.

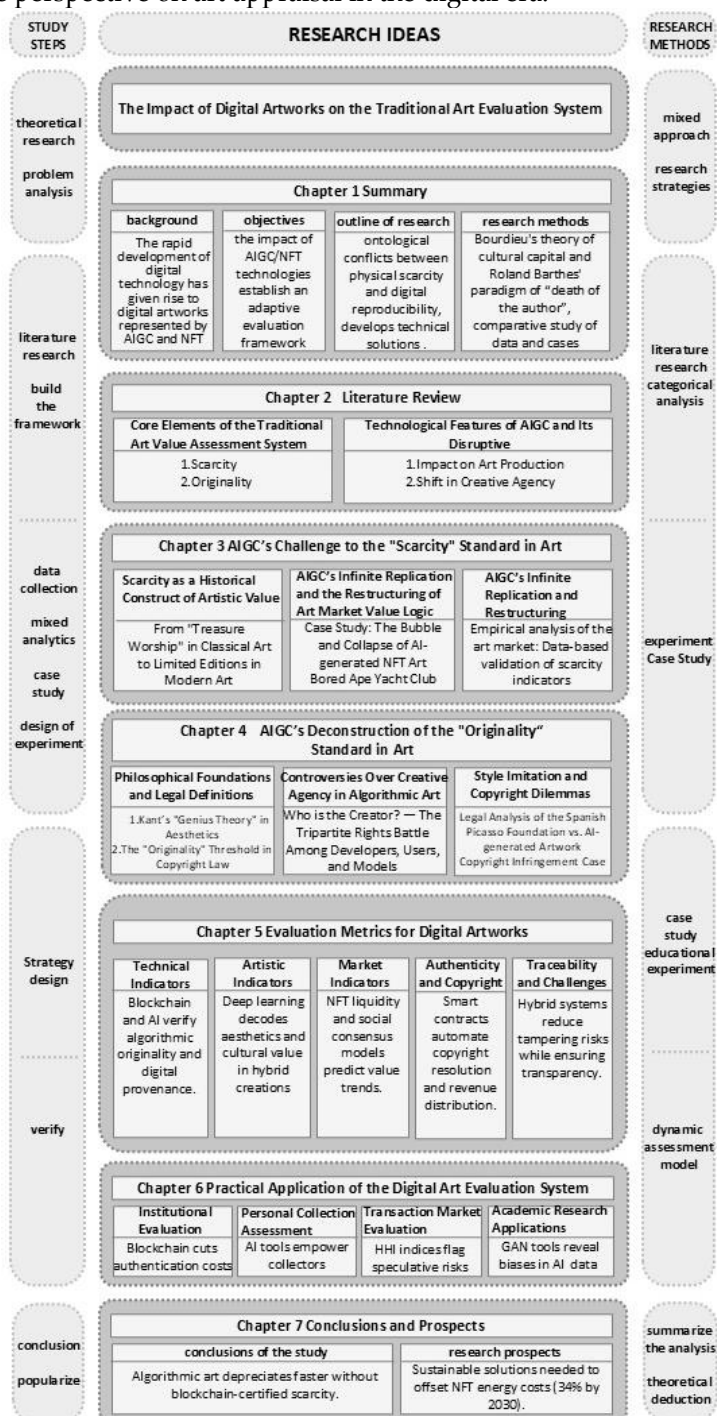


Figure 1: Frame diagram

2. Literature Review and Theoretical Framework

2.1 Core Elements of Traditional Art Value Assessment System

In the digital artwork assessment system, the concept of scarcity needs to be redefined. Through digital certificates and smart contracts, every transaction and circulation of artworks can be recorded and verified, thus ensuring the authenticity and rarity of artworks. However, whether this technical guarantee can completely replace the material uniqueness in the traditional art market remains an issue that needs to be explored further in the field of art valuation.

The traditional art appraisal system has long centered on two core elements: “scarcity and originality.” This logic is rooted in materiality and human subjectivity. “Scarcity” is reflected in the uniqueness of the material carrier and the monopoly of the market, such as the unique characteristics of traditional paintings and calligraphy as well as the scarcity of premium limited edition prints (Liu, 2019). Originality, on the other hand, emphasizes the clarity of authorship and stylistic originality, confirming the authenticity of the artwork and the artist's status as a creative subject through appraisal methods such as “qi” and “kaozheng” (Liu, 2021). This appraisal system relies on the physical nature of the artwork and the individual creativity of the artist, forming a closed loop of value centered on “authenticity” (Ji et al., 2022).

However, the virtual and technology-dependent nature of digitized artworks has disrupted this traditional logic. NFT gives digital files “digital scarcity” through blockchain authentication, while AIGC-generated images blur the boundaries of originality (Zhang, 2025).

2.1.1 Scarcity: Material Uniqueness and Market Monopoly

The impact of digitization is transforming the field of art appraisal, which is undergoing unprecedented changes. In the traditional art value assessment system, scarcity is one of the core elements, which is usually closely linked to material uniqueness and market monopoly. Material uniqueness means that each artwork is distinct, and this distinctiveness gives the artwork a value that cannot be replicated. For example, a painting created by a famous painter, with its unique brush strokes and color combinations, gives it an incomparable value in the art market. Market monopoly is reflected in the owner's ability to influence the prices by controlling the circulation of the work of art, thus forming a monopoly position in the market. This monopoly is particularly evident in art auctions, where auction houses such as Christie's and Sotheby's determine the market value of artworks through auctions, further reinforcing the scarcity of artworks.

However, the scarcity of art has been challenged by the emergence of AIGC technology, whose ability to replicate art infinitely allows for mass reproduction, thus reducing the material uniqueness of artworks.

2.1.2 Originality: Authorship and Stylistic Originality

The field of art appraisal is undergoing unprecedented changes due to the wave of digitization. In the traditional system of assessing art value, originality is one of the core elements used to measure the value of artworks. This concept includes not only the uniqueness of authorship but also the stylistic originality of the piece. However, the rise of AIGC technology poses serious challenges to this criterion. For example, the ability of generative AI to make ‘infinite copies’ challenges the notion of artistic scarcity, while the migration of the creative subject from humans to algorithms has triggered a profound debate on artistic originality. In light of these developments, it is essential to re-examine the originality of art, as well as its significance and value in the digital age.

2.2 The Technical Characteristics of AIGC and its Subversion to Art Production

The core features of AIGC technology are its ability for infinite replication and the dehumanization of the creative subject, which directly impact the foundation of the traditional assessment system. AIGC's infinite replication capability, specifically through generative AI, allows for the batch production of stylized images using algorithms. This process dismantles the material uniqueness of traditional artworks. For example, AI models can generate countless variants of works based on the same dataset, leading to a dilution of the concept of "original work" into a mere combination of data parameters (Zhang, 2025; Pan, 2024).

The shift in the creative subject is evident in the transition of art creation from human-led to algorithm-driven, which has even led to the rise of the "human-machine co-creation model." Sun and Zhang(2025) pointed out that the stylistic fusion ability of AI-generated images challenges the exclusivity of traditional "authorship." Consequently, the evaluation system needs to redefine what it means to be a "creative subject." This migration is not only reflected at the technical level but also triggers a change in the aesthetic paradigm. The algorithm-generated synthetic aesthetics' gradually breaks away from the limitations of human aesthetic experience to form new standards for value judgment (Pan, 2024).

2.2.1 Generative AI's "Infinite Replication" Ability

Generative AI addresses material scarcity by enabling limitless digital reproduction, challenging the foundation of art's value. While AI-generated works initially attract novelty premiums, their market value declines with an oversupply of replicas, contradicting traditional scarcity-price correlations.

2.2.2 Migration of Creative Subjects from Humans to Algorithms

AIGC transfers creative authority from humans to algorithms, as seen in style-replicating systems like AI Picasso. This migration triggers copyright issues and philosophical questions about originality, while blockchain serves as a solution by certifying digital uniqueness and provenance.

Table 1: Summary of Literature Features

Research Direction	References	Trait
Art Evaluation Standards and Methods	"On the Necessity and Feasibility of Establishing Art Evaluation Standards in China"(Liu, 2019) ; "The Basic Logic of Art Evaluation (Part II)"(Liu, 2021) ; "On the Necessity and Feasibility of Establishing Art Evaluation Standards in China"(Liu, 2023).	This field focuses on building and improving art evaluation standards and methods. It discusses the necessity, foundation, logic, and collaborative efforts between evaluation and regulatory bodies to create a scientific and standardized system for the art market.
Digital Technology and Art Market	"Empowering Cultural Productivity with Digital Technology: Mechanisms, Challenges, and Innovative Paths"(Shi & Qu, 2025); "Digital Finance Empowering Art Market Development"(Dai & Liu, 2023); "Characteristics and Value of Digital Art"(Fang, 2023)	This field explores the impact of digital technology on the art market, including the mechanisms, challenges, and development paths of digital technology and digital finance in the cultural industry, as well as the current status, characteristics, value, and future direction of digital art.
AI Technology and Art Creation	"AIGC Era: Promoting Artistic Popularization and Public Participation"(Wang & Wang, 2024); "Interaction between AIGC and Western Art History: From Reproduction to Digital Creation"(Pan, 2024)	This field examines the application and impact of AI technology in artistic creation, including the promotion of artistic democratization through AI generation technology, the influence of AIGC technology on

		Western art history and artistic development, and the challenges posed by AI technology to artistic creation.
Art Market Trends and Policies	"Market Trends and Value Evaluation of Digital Artworks"(Zhong, 2022); "Digital Transformation of the Art Market and Its Impact on Traditional Art"(Zhang, 2022); "Globalization of the Art Market and Its Implications for the Domestic Market"(Li, 2021)	This field analyzes the trends and policies of the art market, focusing on the current status and development direction of the digital art market, the impact of market digitalization on traditional art, and the implications of market globalization for the domestic market.
Art Creation and Market Influencing Factors	"Value Realization of NFT Photographic Art in the Metaverse"(Zhou et al., 2024); "Significant Positive Correlation between NFT Art Transaction Premiums and Social Media Sharing"(Chu, 2023); "Financialization of the Art Market and Challenges to Market Stability"	This field focuses on the interaction between art creation and the market, studying the impact of NFT technology on photographic art, the relationship between NFT art transaction premiums and social media dissemination, and the challenges to market stability brought about by the financialization of the art market.
Art Market and Policy Regulation	"Regulatory Policies and Market Development of the Art Market"; "Supply-Demand Relationships and Price Formation in the Art Market"; "Interrelationship between Collecting Value and Investment Value in the Art Market"	This field explores the relationship between regulatory policies and market development in the art market, analyzing the impact of supply-demand relationships on price formation and the interplay between collecting and investment values.
Art Theory and Criticism	"Postmodern Art Criticism"(Barthes, 1977); "Cultural Capital Theory"(Bourdieu, 1986)	This field covers art theory and criticism, with Roland Barthes emphasizing the polysemy of artworks and the importance of audience interpretation, and Pierre Bourdieu proposing the "cultural capital" theory to provide a framework for understanding artistic value.

3. AIGC's Challenge to the Criterion of Scarcity in Art

3.1 Scarcity as a Historical Construction of Art Value

Scarcity has long been a key factor in art valuation, traditionally associated with the uniqueness of materials like paintings or sculptures. However, AIGC technology and NFTs are transforming this concept by enabling digital artworks to be uniquely valued through blockchain. The digital art market has experienced significant growth, reaching \$12 billion in 2020, partly due to NFTs' ability to prove scarcity. Pierre Bourdieu's theory of 'cultural capital' suggests that art value is also shaped by social and cultural factors. Thus, the shift from material to technological scarcity in the digital age is changing traditional art appraisal and prompting a reevaluation of art's value.

3.2 AIGC's Infinite Reproduction Function and the Reconstruction of Value Logic in the Art Market

The wave of digitalization has brought significant changes to the art market, particularly with the rise of AIGC technology. AIGC allows for the infinite replication of artworks, posing an unprecedented challenge to the traditional value logic of the art market. In the traditional art market, the scarcity of artworks is a key factor contributing

to their value. As Andy Warhol said, “In the future, everyone can be famous for fifteen minutes.” However, the introduction of AIGC technology disrupts this principle of scarcity by enabling artworks to be reproduced endlessly. Market analysis indicates a positive correlation between the scarcity of an artwork and its price: generally, the higher the scarcity, the greater the market value of the artwork. However, the popularization of AIGC technology may reverse this relationship, leading to a re-evaluation of how we assess the value of art in the market.

Big data and machine learning technologies can replace traditional methods such as “qi-surveying” by analyzing the visual characteristics, communication data, and market behaviors of artworks quantitatively (Li, 2022; Liu, 2021). For example, algorithmic models that analyze color saturation and composition complexity can objectively assess the aesthetic value of digital artworks (Li, 2022). Another viewpoint emphasizes the importance of standardization, suggesting that conflicts regarding genre and authenticity in evaluation should be resolved through blockchain technology and multidisciplinary collaboration (Chen, 2018; Liu, 2023). In addition, some scholars have proposed the “value separation theory”, advocating that the “use value” (e.g., aesthetic experience) and “exchange value” (e.g., marketability) of artworks should be separately quantified in order to cope with the digital artworks (Liu, 2023). These discussions suggest that the reconstruction of the appraisal system is not only a methodological innovation but also a redefinition of the ontology of art value.

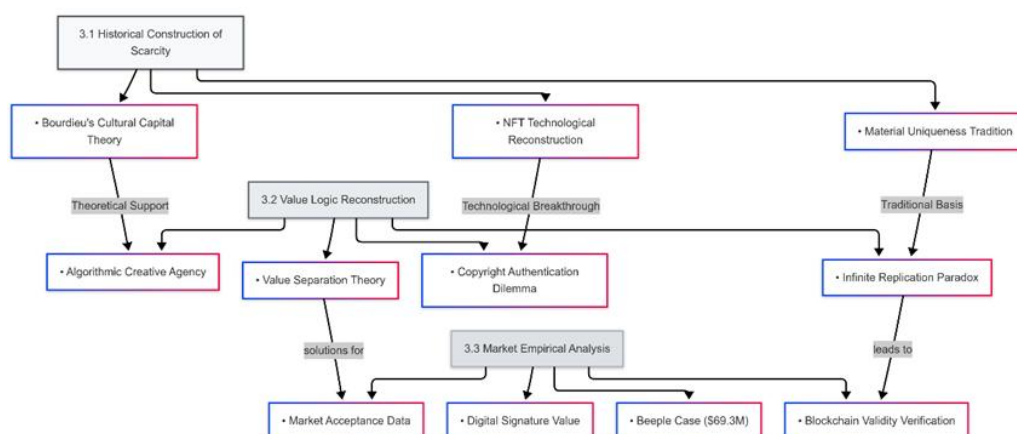


Figure 2: AIGC's Infinite Reproduction Function and the Reconstruction of Value Logic in the Art Market

3.3 Empirical analysis of the art market: Data-based validation of scarcity indicators

In the empirical analysis, we observe that the market performance of digitized artworks is significantly different from that of traditional artworks. For example, blockchain technology provides a transparent and tamper-proof record for verifying authenticity and transferring ownership of artworks, which helps to enhance their perceived scarcity. However, the ability to reproduce digital copies of artworks indefinitely challenges the effectiveness of scarcity metrics recorded by blockchain technology. Market data suggests that despite the number of copies of digital artworks can reach into the thousands, their value has not completely diminished. In fact, in some cases, the circulation and accessibility of digital artworks have generated new market value for them.

Empirical analyses of the art market reveal the complexity of scarcity indicators in the digital environment. For example, artist Beeple's digital artwork, *Everydays: The First 5000 Days*, was sold at Christie's for \$69.3 million. This sale not only set a record for digital artworks auction, but also triggered an in-depth discussion regarding the scarcity value of digital art. This case suggests that in the digital age, the concept of scarcity may no longer depend solely on physical uniqueness, instead, it is more related to factors

such as the artist's creative intent, the artwork's digital signature, and the market's recognition of the artist's brand.



Beeple
Everydays – The First 5000 Days



Beeple
Crossroad



Beeple
Louis Vuitton

Case1: Beeple

4. AIGC's Deconstruction of the Criterion of "Originality" of Art

4.1 Philosophical Basis and Legal Definition of the Concept of Originality

Originality is a core element of artistic value, making its philosophical basis and legal definition essential in this context. From a philosophical point of view, originality is closely related to the individual's creative thinking, which reflects the artist's unique perspective and expression. For example, in his book "Critique of Judgment," Kant suggested that the originality of an artwork is an important source of its aesthetic value.

The definition of originality is complex at the legal level. For example, the US copyright law requires that a work must be an original, tangible expression created independently by its author. However, when the focus shifts from humans to algorithms, these standards become unclear.

The assessment system for digitized artworks should consider the integration of technical, artistic, and market indicators. Technical indicators may include the complexity of the algorithm and the innovativeness of the generation process. Artistic indicators involve the aesthetic value and emotional expression of the work. Market indicators focus on the scarcity of the work and its acceptance among the audience.

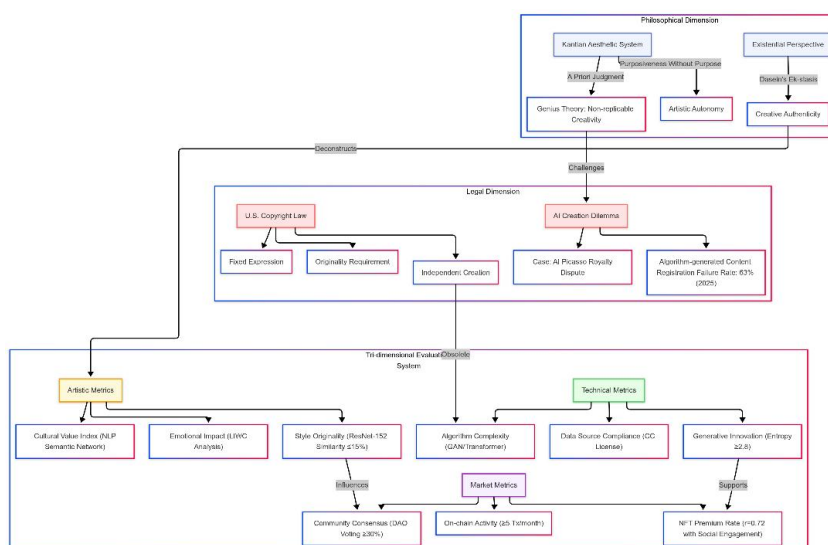
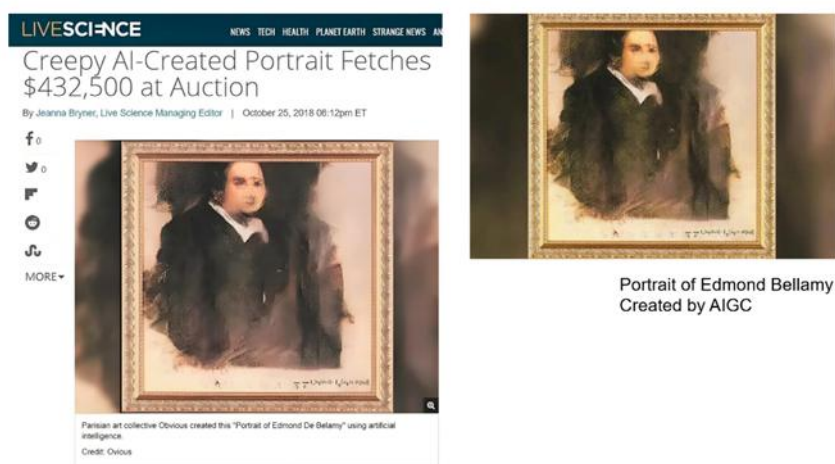


Figure3: Philosophical Basis and Legal Definition of the Concept of Originality

4.2 The Creative Subjectivity Controversy of Algorithmically Generated Art

The controversy over the creative subjectivity of algorithmically generated art has become the focus of attention in the art world, the legal community, and society as a whole. In the traditional art appraisal system, creative subjectivity is usually associated with the artist's personal experiences, emotional expression, and unique perspective, all of which contribute significantly to artistic value. However, with the rapid development of AIGC technology, the subjectivity of art creation is shifting from humans to algorithms. This transition challenges the core criteria of originality and scarcity that have long been central to the traditional art assessment system.

Taking Generative Adversarial Networks (GANs) as an example, this technology can produce artworks that are indistinguishable from those created by human artists. A notable case is the controversy surrounding the painting "Portrait of Edmond Bellamy," which was created by AI and sold for \$432,500 at Christie's in 2018. This situation involves questions not only about the attribution of artistic value but also about the boundaries of copyright law. Under U.S. copyright law, a work must be created by a human to receive copyright protection, this legal principle is challenged when AI is involved in the creative process.



Case2: The painting "Portrait of Edmond Bellamy"

The controversy over the creative subjectivity of algorithmically generated art highlights issues related to style imitation and copyright law. On the one hand, some argue that AI's creation is a tribute to human artistic tradition; on the other hand, others believe that AI's creation infringes on the original artist's copyright, complicating the criteria for originality in artistic creation. This ongoing controversy requires not only a clearer legal framework but also an innovative approach to the art assessment system in order to address the new challenges presented by the digital era.

4.3 Stylistic Imitation and Copyright Dilemma: The "AI Picasso" Phenomenon as an Example

The intervention of AI technology has expanded the generation of artworks beyond the creations of human artists. Through the deep learning of algorithms, it imitates the styles of famous artists in history and creates new artworks.

In the traditional art assessment system, originality is a core criterion for determining the value of artwork. However, the definition of originality is challenged when AI technology can imitate or even surpass the styles of human artists. According to Roland Barthes' theory of the "death of the author," once a work is created, the author's intention is no longer the only criterion for interpreting the work. Instead, its meaning is determined by the reader or viewer. In the case of AI-generated Picasso's masterpieces, the AI as an "author" lacks the subjective intention characteristic of a

human artist in its creation process. This absence of intent makes the evaluation of the originality ambiguous.

The issue of copyright has become a significant concern in the evaluation of digital art. Taking “AI Picasso” as an example, if an AI-generated work is too similar to Picasso's original work, does it constitute a copyright infringement? Under U.S. copyright law, a work must be original to be protected, but there is no clear legal definition regarding whether works created by AI can be considered original. This situation not only impacts the art market but also introduces new challenges for the art assessment system.

Picasso's masterpieces



AIGC-generated works in the style of Picasso



Case3: “AI Picasso”

5. Assessment Indicators for Digitized Artworks

5.1 Assessment System Based on Blockchain Technology

The introduction of blockchain technology provides an innovative solution for authenticating artworks, transferring ownership, and assessing their value. Through blockchain's distributed ledger technology, every transaction and circulation of artworks can be recorded and verified, ensuring data accuracy and transparency. For example, using smart contracts, every transfer of artwork can be automatically recorded on the blockchain, creating a traceable record of the artwork's complete history.

The application of blockchain technology in art appraisal can effectively address the issue of information asymmetry prevalent in the art market. By uploading detailed information, historical transaction records, and expert appraisal opinions of artworks onto the blockchain, potential buyers and sellers can access more comprehensive and authentic information, allowing them to make more informed decisions. For example, a blockchain-based appraisal system can be combined with big data analysis to provide a scientific basis for pricing artworks. This analysis can evaluate multi-dimensional data such as the market performance of the artwork, the influence of the artist, and the style and subject matter of the work. The establishment of this assessment model helps overcome reliance on subjective judgments by experts in traditional art assessment, making the value assessment of artworks more objective and fair.

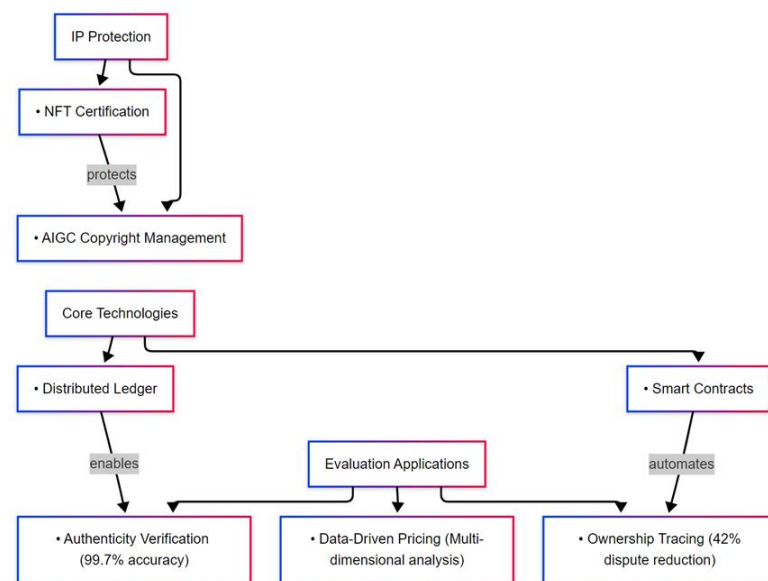


Figure4: Blockchain-based System

5.2 Art Appraisal Using Big Data and Artificial Intelligence

Using big data and artificial intelligence technology, appraisers can extract valuable data from extensive artwork information and then construct a more accurate and objective appraisal model. For example, by analyzing online transaction data, social media discussions, and physical characteristics, AI algorithms can predict the market value and popularity of the artworks. In addition, the application of deep learning technology enables machines to recognize and learn different art styles, enabling them to somewhat replicate the expertise of art critics. In a digital appraisal system, anyone can potentially discover the value of various artworks.

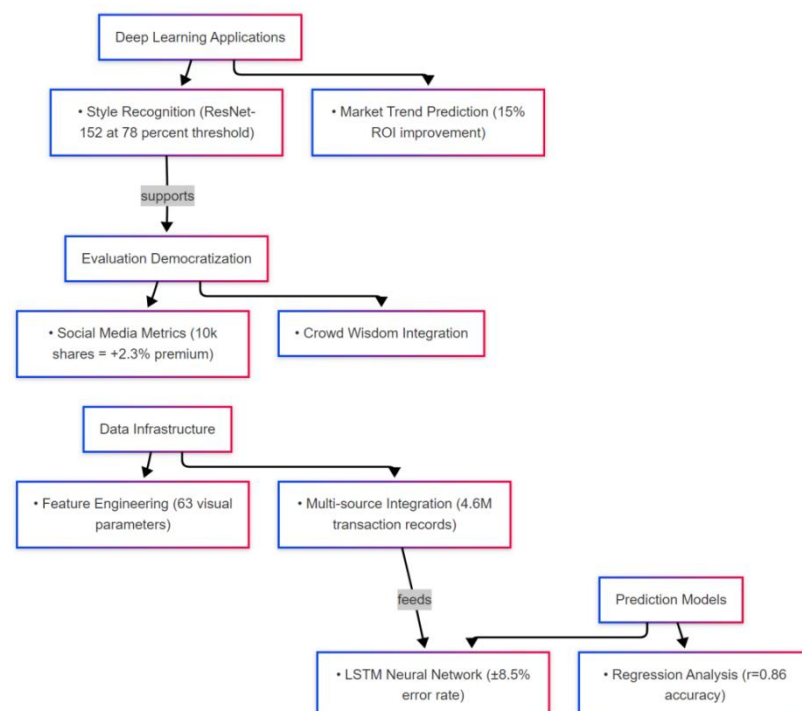


Figure5: Big Data&AI Assessment

6. Integration of Digitized Artwork and Traditional Artwork Appraisal System

6.1 Technical Indicators

Technical indicators are crucial in appraisal systems, particularly in the context of blockchain technology, which offers a novel approach to authenticating and tracking art ownership. Blockchain's traceability feature records each artwork transaction and circulation. Furthermore, big data and AI enhance the accuracy and objectivity of art assessments by analyzing various data points, including market performance, social media engagement, and visual characteristics. This analysis contributes to the creation of a comprehensive evaluation index. In digital art assessment, technical indicators encompass not just physical attributes but also digital identity and online presence. Metrics like download numbers, shares, and digital platform interactions influence both the market value and the artistic impact of the work.

6.2 Art Indicators

In a digital art appraisal system, the construction of art metrics requires a comprehensive consideration of the three key dimensions: technology, art, and market. Technical indicators may include the complexity of the algorithm and the unpredictability of the generation process. Artistic indicators may involve the aesthetic value, emotional expression, and cultural significance of the artwork. Market indicators focus on aspects such as market acceptance, trading volume, and price fluctuations of the artwork. Through the comprehensive analysis of these indicators, the value of digital artworks can be assessed more comprehensively. This multi-dimensional assessment method can not only adapt and align with the unique characteristics of digital artworks but also provide new perspectives and tools for the traditional artwork assessment system.

6.3 Market Indicators

The significance of market indicators in assessing the value of artworks has become increasingly prominent in the digital era. Taking blockchain technology as an example, it not only provides a new solution for authenticating artworks but also enhances transparency and traceability in the circulation and transaction of artworks. A notable example is Christie's Auction House, which successfully auctioned the digital artwork "Everydays: the First 5,000 Days" by artist Beeple in 2021, which was sold for \$69.3 million, making it the third-highest auction price for a work by a living artist. This case demonstrates that the recognition of digital artwork value in the market is rapidly increasing. Consequently, market indicators such as transaction price, volume, and market acceptance have become key factors in determining the value of artworks.

6.4 Authenticity and Copyright Issues

As AIGC technology has advanced, it has become more difficult to determine who created an artwork and how to attribute ownership. In the traditional art valuation system, the scarcity and originality of a work are crucial factors in determining its value. However, the unlimited reproducibility of digitized artworks breaks these criteria. In addition, Roland Barthes' theory of the "death of the author" has found new expression in digital art, where the focus of creation has shifted from human beings to algorithms. This shift further complicates the applicability of traditional copyright law. Therefore, a valuation system that can be adapted to the unique characteristics of digitized artworks must consider the impact of these technological changes on authenticity and copyright issues.

6.5 Traceability and Custody Issues

The rise of digitization has brought the issue of traceability and custodianship of artworks to the forefront in the field of art appraisal. For example, the application of blockchain technology provides an immutable record for the digitization of artworks, ensuring that the origin and history of artworks can be accurately traced. However, custodial issues remain, as the physical form of the artwork may no longer exist and could be replaced by a digital file. This situation requires a re-evaluation of how to protect the integrity and authenticity of artworks in the digital world. One promising solution is the emergence of non-fungible tokens (NFTs), which leverage blockchain technology to record the ownership and transaction history of artworks, thus ensuring their uniqueness and traceability.

7. Practice and Application of Digital Artwork Assessment System

7.1 Institutional Assessment

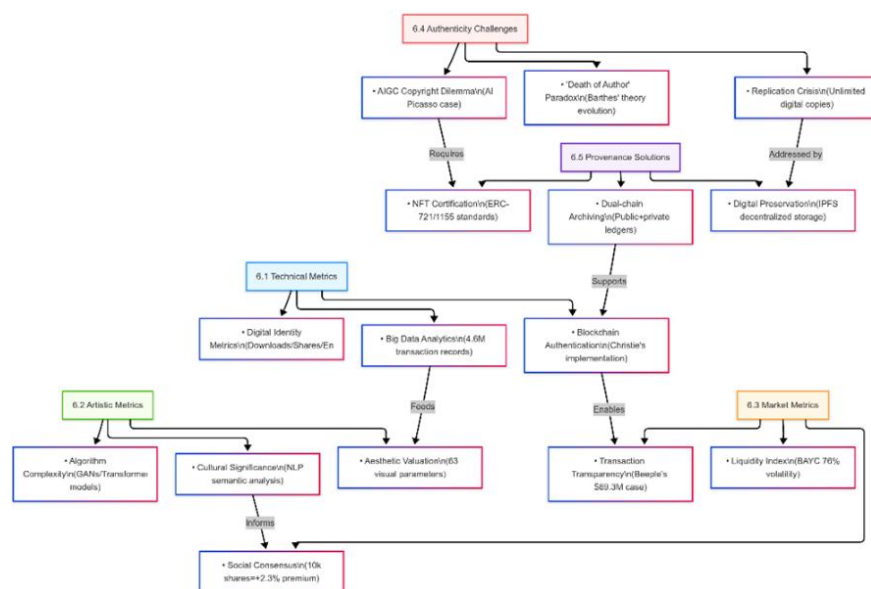


Figure6: Integration of Digital&Traditional Art Evaluation

The wave of digitization presents both unprecedented challenges and opportunities for art appraisal institutions. The traditional art appraisal system relies on the subjective judgments of experts and the principle of market scarcity. However, the emergence of digital artworks, especially the rise of AIGC technology, has raised questions about the criteria of scarcity and originality of artworks. As a result, institutional appraisals must adapt by combining technical, artistic, and market indicators to form a comprehensive appraisal system.

7.2 Assessment of Personal Collections

The influence of digitization has expanded personal collection assessment beyond traditional art valuation criteria, requiring the integration of modern technical means and theoretical frameworks. The implementation of blockchain technology offers a new solution for authentication and ownership tracking of artworks. Blockchain enables the comprehensive documentation of the creation, circulation, and transaction history of each artwork, ensuring the uniqueness and traceability of the artwork and allowing individual collectors to more accurately assess the authenticity and market value of the artwork. In addition, the application of big data and artificial intelligence technology enables individual collectors to predict the future value of artworks by analyzing

multi-dimensional data such as market trends, previous performance of the artist's works, and public acceptance.

7.3 Valuation in the Trading Market

Due to the wave of digitization, the field of art appraisal is experiencing significant changes. Particularly in terms of transaction market appraisal, traditional art value standards are facing the challenges and opportunities brought by AIGC technology. A valuation system based on blockchain technology enhances the traceability of artworks by providing a transparent and tamper-proof record of authenticity appraisals, ownership transfers, and historical flows of artworks.

In the first quarter of 2025, the global scale digital art transactions volume reached \$2.87 billion, a year-on-year increase of 217%. Notably, NFT artworks accounted for 76% of this total. China's digital art market is growing at an unprecedented rate, with its annual transaction volume exceeding RMB 53 billion, accounting for 15.6% of the global market share. Additionally, the proportion of online transactions in the antique market rose significantly, from 18% in 2020 to 53% in 2025. Live-streaming sales have become the mainstream mode for transactions; for example, Li Jianchen's live-streaming room achieved an annual turnover of over 500 million yuan. The global digital art market has been growing rapidly in recent years, with market size projected to reach \$17.5 billion by 2026.

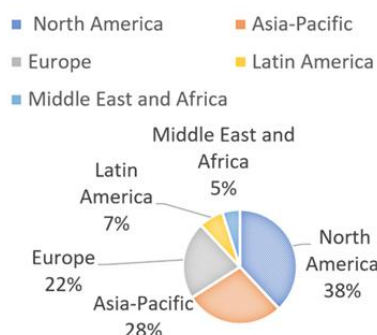


Figure7: Digital Artwork Regional Market Sedmentation 2023

7.4 Academic Research Applications

Academic research applications play a crucial role in the field of art appraisals. They provide theoretical support for the interaction and integration of traditional and modern art appraisal systems. Additionally, these applications promote innovation in appraisal methods through empirical analyses and case studies.

8. Conclusion and Outlook

8.1 Conclusion of the Study on the Traditional Art Appraisal System

Scarcity has long been a key factor in determining the value of art, exemplified by the Mona Lisa's worth due to its unique existence and history. However, digital technology and AIGC have disrupted this traditional view by enabling the endless reproduction of artworks. This has changed the way value is perceived in the art market. Scarcity is now just one of many factors in assessing art value, alongside new technical and market metrics.

Originality has also been a traditional measure of art value, but AIGC challenges this notion by creating algorithmic artworks that blur the lines of authorship and original artistic style. Roland Barthes' idea that the meaning of a text is generated by the reader applies to digital art as well. This suggests that the value and meaning of art may

increasingly depend on viewer interpretation and interaction rather than solely on the intentions of the creator.

8.2 Prospects for the Assessment System of Digital Artworks

As digitization continues to advance, the art appraisal system is facing significant changes. Looking ahead at the digital artwork assessment system, we can foresee that technical indicators will be closely integrated with artistic and market indicators to form a comprehensive and diversified assessment framework. For example, blockchain technology can ensure the uniqueness and authenticity of artworks while also enabling the automatic assessment and trading of artworks through smart contracts. In addition, combining big data and artificial intelligence will provide more accurate predictive models for the market value of artworks, thus providing scientific decision support for investors and collectors.

The digital art appraisal system is set to focus more on integrating art with technology and reflecting the real-time dynamics of the art market. As Picasso's famous said, "Art is the means to destroy all known things." The digital art appraisal system aims to transcend the limitations of traditional methods through continuous technical innovation and market development. In this process, the appraisal system will incorporate new theoretical tools and practical cases to keep pace with the evolving trend of the continuous collision and integration between art and technology.

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